ORDER

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Consolidated reprint containing changes 1 through 5.

AIRWORTHINESS INSPECTOR'S HANDBOOK

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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CHANGE TO BASIC	SUPPLEMENT			OPTIONAL	CHANGE TO BASIC	SUPPLEMENTS			OPTIONAL
1 thru 5									

FOREWORD

This order standardizes the handbooks used by Aviation Standards (AVS) field inspectors.

The adequacy and accuracy of the services provided to the public and the coordination of efforts affecting the promotion of aviation safety require that users of these handbooks are thoroughly familiar with the contents and make every effort to comply with the instructions and guidelines herein.

Suggestions for changes or additions and comments on the content of this order are invited and will be given careful consideration in keeping the order and its associated appendices current and valuable to all users. As appropriate, user comments should be addressed to:

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Office of Flight Standards
Aircraft Maintenance Division, AFS-300
800 Independence Avenue, SW.
Washington, DC 20591

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Acting Director, Flight Standards Service
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CHAPTER 1 GENERAL INFORMATION

Section 1 General

1. PURPOSE. This order is referred to as a handbook and, as such, directs the activities of Airworthiness Inspectors who are responsible for the certification, technical administration, and surveillance of individuals and organizations in accordance with FAR Parts 65, 91, 121, 125, 129, 133, 135, 137, 141, 145, 147, 149, and 183. This handbook also provides guidance for inspector tasks related to aircraft accidents and incidents, enforcement, accident prevention, and administrative areas, as well as certain miscellaneous tasks not related to a specific Federal Aviation Regulation.

3. DISTRIBUTION. This order is distributed to all addressees on special distribution list ZFS-830.

5. CANCELLATION. The chapters of this order are scheduled to be published in phases. As a chapter or series of chapters is published, the change will also cancel the applicable portions of Order 8300.9 and/or other stated guidance. Unless specifically cancelled in this manner, the guidance contained in existing orders will be followed.

NOTE: The previous reference to Order 8720.2 in the original issuance of this paragraph was in error.

SECTION 2 HANDBOOK BACKGROUND AND GENERAL INFORMATION

7. BACKGROUND. This handbook has been designed to serve as a multipurpose document that will meet the needs of new inspectors entering the Federal Aviation Administration (FAA) workforce as well as inspectors with many years of experience. Historical information regarding FAA's evolution and the latest material available are also included. Information currently found in many separate documents has been compiled to make the handbook as comprehensive as possible. When completed, the handbook will consist of a compilation of all the tasks performed by the airworthiness safety inspector. Volume I is general in nature. Volume II (Certification) and Volume III (Surveillance) contain all the tasks accomplished by airworthiness inspectors and are organized by FAR Part or in related areas.

A. *Handbook Definition.* The handbook is a directive designed to provide essential overall instructions, guidance, and requirements for operations, airworthiness, and manufacturing field personnel to accomplish their job functions.

B. *Directive Information.* Guidance of a directive nature uses terms such as "shall" and "must" and means that the actions are MANDATORY. "Shall not" or "must not" means the action is PROHIBITED. The use of these terms allows the field inspector no flexibility, and their direction shall be followed unless authorized by headquarters division managers.

C. *Guidance Information.* Guidance information is material that is guiding in nature and contains terms such as "should" or "may." These terms indicate actions that are desirable, permissible, or not mandatory, and flexibility on the part of the field inspector is allowed.

D. *Task Chapters.* Each chapter in Volumes II and III represents a separate task that could be accomplished by an inspector. Tasks were initially identified from the 1985 Job Task Analysis and are revised as inspector responsibilities change. Each chapter is divided into two sections, Background and Procedures.

(1) Section 1, Background, contains expository material that indicates why the task is done, historical considerations, and statements of existing FAA policy.

(2) Section 2, Procedures, contains a step-by-step outline of how to perform the task. All steps in the task are included; however, some steps may also be separate tasks. In that instance, the related task is identified, and that task must be performed before resuming the procedures in the original task. Objective criteria, by which the inspector judges whether a step has been completed satisfactorily or unsatisfactorily, accompany the procedures. The criteria are either included with the step, or the location of the objective criteria is identified (i.e., practical test standards, FAR section, etc.)

B. *Optional Job Aids.* Some forms are optional, that is, designed to assist the field inspector in accomplishing the job function. These are not official Federal Aviation Administration forms and bear no form number. Examples are the certification job aids and detailed schedules of events found in the air operator or air agency certification tasks. The examples provided with the tasks are just that, examples. Inspectors will obtain job aids for their use from the Job Aid Disk issued to each district office.

9. IMPLEMENTATION. During the development of this handbook, chapters containing related tasks specific to a FAR part will be published as they are completed. Material not yet developed or in the coordination process will be indicated by "TBD"--"to be developed."

11. INSPECTOR USE OF THE HANDBOOK

A. *Handbook Objective.* A primary objective in the development of this handbook is to make it as comprehensive and as easy to use as possible. Pages have been reserved at the end of each chapter and chapters have been reserved at the end of each group of related tasks to allow for expansion without re-issuance of huge amounts of material.

B. *Related Task References.* Where a related task is referenced, the volume number, chapter number and name of the task is used; for example, "See related task Vol. II, Ch. 8, Approved Minimum Equipment List/Revision."

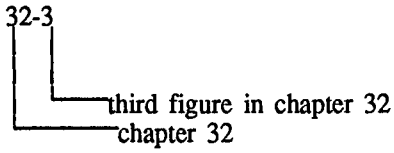
C. *Figure and Table References.* Figures are placed at the end of the procedures section in each task. Figures are referenced in the procedures, both under the paragraph "References, Forms, and Job Aids" and in the text of the procedures. Placing them after the procedures means they are in proximity to the reference but do not interfere with the natural flow of the step-by-step procedures. Tables are generally placed within the text of the Background section.

13. AUTHORITY TO CHANGE THIS DOCUMENT. The Office of Flight Standards is responsible for all changes to this order and its appendices. Regional supplements to this order are prohibited. Any proposed change must be submitted to the Office of Flight Standards, AFS-1, for review and determination of acceptability.

15. HANDBOOK FORMAT

A. *Paragraph Numbering.* Paragraphs are numbered consecutively, starting at number 1 in the first chapter of each volume. Only odd numbers are used: 1., 3., 5., and so on. This enables greater ease of revision; for example, new information in future updates will be included as paragraphs 2., 4., 6., and so on.

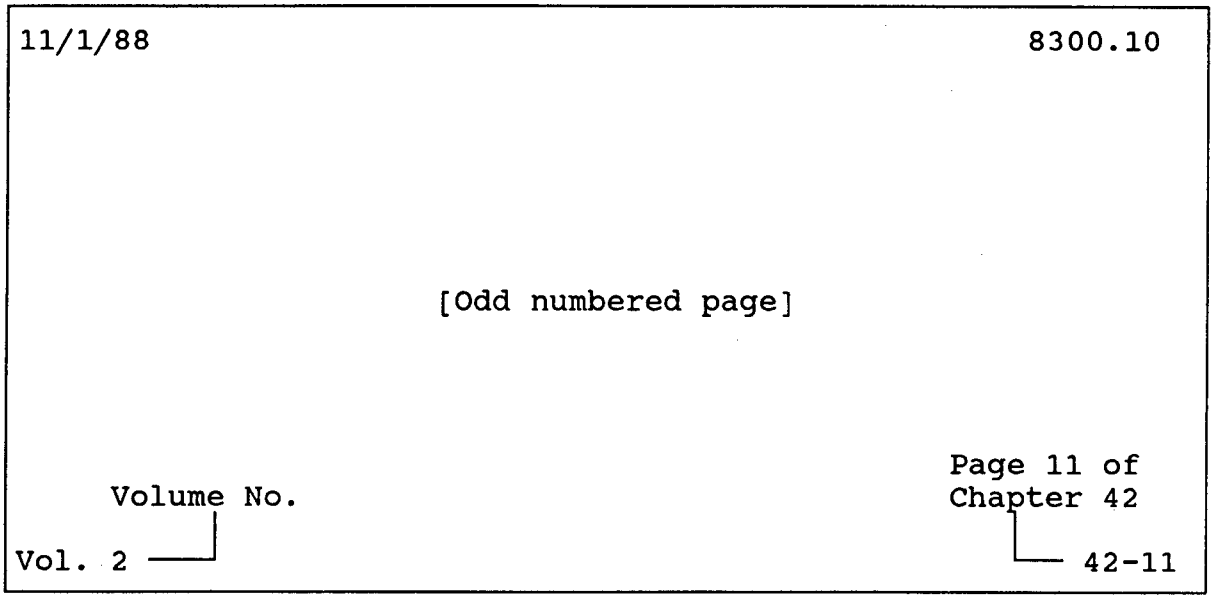
B. *Figure Numbering.* The numbering of figures enables the field inspector to note the chapter to which the figure refers. For example, Figure 32-3 is interpreted as follows:

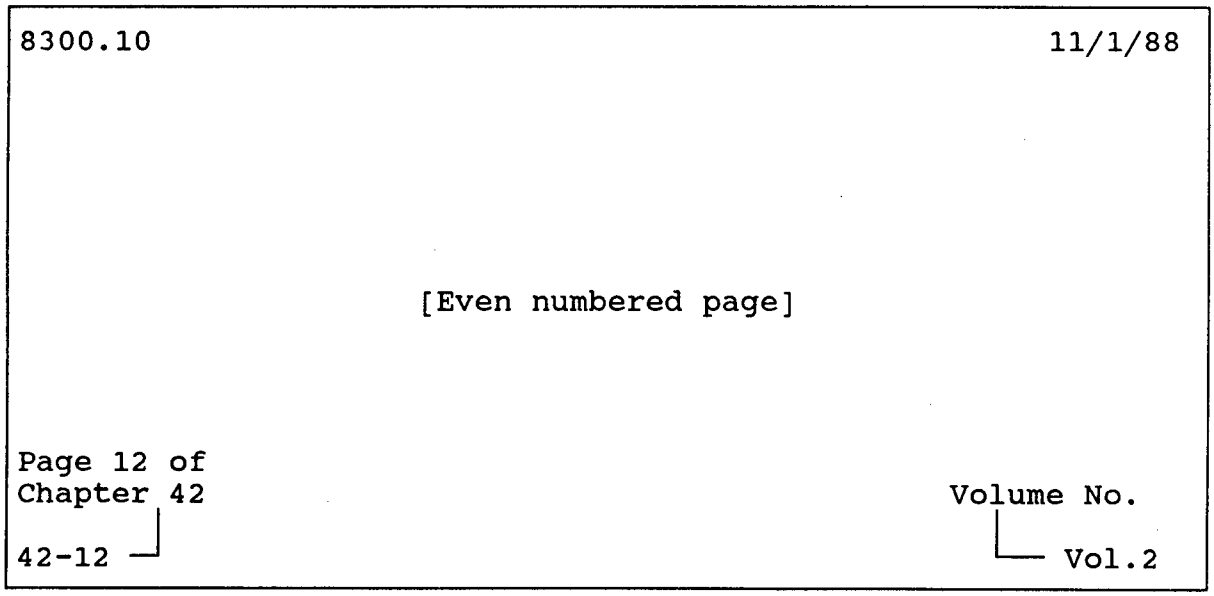


C. *Chapter Pagination.* The pagination of each chapter is designed to facilitate insertion of revisions, replacement of lost or misplaced pages, and location of subject areas. Each chapter begins with page one and is identified with the chapter number; i.e., 131-1 is chapter 131, page 1. On each page the top margin contains the handbook number and the date the page was issued; position (either right or left) is reversed on odd and even pages. The bottom margin contains the volume number and the page number of the chapter (again, reversed on odd an even pages). For example:

D. *Reserved Pages, Chapters and Paragraphs.* For the purposes of this handbook, reserved pages, chapters, and paragraphs are present to preserve the sequence of codification and allow for revisions without re-numbering the succeeding portions.

17. DEFINITIONS. In addition to the definitions used in FAR Part 1 or other sections of the Federal Aviation Regulations, definitions are included in this handbook for clarification. If any particular task has definitions of terms not found in other sections of the Federal Aviation Regulations, the definitions will be included in Section 1 Background, in the "General" paragraph.





CHAPTER 2. FAA REGULATORY RESPONSIBILITY AND METHODOLOGY

19. GENERAL

A. *Authority.* Within the executive branch of the federal government, regulatory agencies carry out the will of Congress, expressed in public law and considered to be in the public interest. One such agency is the Federal Aviation Administration (FAA), which was established by the Federal Aviation Act of 1958 (FA Act). In fulfilling the FAA's regulatory responsibility, the FAA Administrator must take into consideration the following items as being in the public interest:

- Regulation of air commerce in a manner that promotes its development and safety and fulfills the requirements of national defense
- Promotion, encouragement, and development of civil authorities
- Controlled use of the navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and efficiency of both
- Consolidation of research and development with respect to air navigation facilities, as well as the installation and operation of these facilities
- Development and operation of a common system of air traffic control and navigation for both military and civil aircraft

B. *The Regulatory Process.* It is with these broad public considerations in mind that the FAA Administrator regulates air commerce. The regulatory process is interactive and its speed is regulated by the need to involve the public in the process. Only in an emergency may the normal regulatory process be accelerated.

21. REGULATORY PROCEDURES. General rule-making procedures followed by the FAA are explained in FAR Part 11. The procedures require establishment of a public docket, which is maintained as an official FAA record of each rule-making action. Certain rule-making responsibilities have been delegated to FAA regional directors. For example, responsibility for processing aircraft and engine regulatory proposals and final rules is delegated to certification directorates. However, it is important to remember that the Administrator is the final authority with respect to all aviation safety rule-making actions.

23. FAA RESPONSIBILITIES. To fulfill the FAA's regulatory responsibility, the Administrator gives full consideration to the obligation of air operators and air agencies to perform their services with the highest degree of safety in the public interest. The Administrator also considers any differences between air transportation and air commerce. Safety standards, rules, regulations, and certificates are prescribed and revised from time to time to recognize those differences. For example, the regulatory requirements for issuance of a repairman certificate are less stringent than the requirements established for the issuance of an airframe and powerplant mechanic certificate. Accordingly, the privileges of the repairman certificate are limited compared to those of an airframe and powerplant mechanic certificate.

25. PUBLIC RESPONSIBILITIES AND RIGHTS. Any interested person may petition the Administrator to issue, amend, or rescind a Federal Aviation Regulations requirement. Petitions for rule-making may also be initiated from within the FAA. All petitions must be specific as to scope and purpose and must contain any information, views, and arguments which support the requested regulatory action. A summary of each public petition is published in the Federal Register to allow for public comment. Normally, the public has 60 days to submit comments on the petition for rule-making. After the close of the public comment period, the FAA considers all comments received and decides whether to accept or deny the petition. If the decision is to deny, a denial of petition is prepared, coordinated, signed, and mailed to the petitioner.

27. PROCESSING PROPOSED RULES

A. *Petition for Rule-Making.* If the FAA decides to accept the petition for rule-making, a Notice of Proposed Rule-Making (NPRM) is prepared by the appropriate FAA office. The Notice of Proposed Rule-Making is signed and published in the Federal Register for public comment. If considered appropriate by the FAA, a public hearing may be held during the public comment period. The public comment period may vary based on the complexity and significance of the proposed regulatory action. After the close of the public comment period, the FAA considers all comments received and decides whether to proceed with a final rule or to withdraw the Notice of Proposed Rule-Making. In either case, the decision is prepared, coordinated, signed, and published in the Federal Register. Generally, a final rule is effective 30 days after publication in the Federal Register.

B. *FAR Part 11.* The preceding description of the rule-making process is generalized and abbreviated. It is not to be construed as a substitute for FAR Part 11, associated Acts (for example, the Administrative Procedures Act and the National Environmental Policy Act), Executive Orders, Department of Transportation policies and procedures, or FAA rule-making policy and procedures.

CHAPTER 3. THE GENERAL PROCESS FOR APPROVAL OR ACCEPTANCE

29. GENERAL

A. *Generic Process.* The general process for approval or acceptance of certain operations, programs, documents, procedures, methods, or systems is an orderly method used by flight standards inspectors to ensure such items meet regulatory standards and provide for safe operating practices. It is a generic process that can be applied to many types of approval or acceptance tasks. The process generally consists of five related "phases". The process can result in approving or not approving, accepting or not accepting an applicant's proposal. It is important for an inspector to understand that the process described in this section is not all-inclusive, but rather a tool to be used with good judgment in conducting day-to-day duties and responsibilities.

B. *Understanding the Process.* It is essential for the inspector to understand that any process described in this handbook may result in a decision to approve or accept a proposal. This process, combined with job task procedures, is used to assist in making both positive or negative determinations.

C. *Process Supplementing Task Procedures.* This general process applies to many tasks described throughout this handbook. The general process supplements the procedures outlined in each task.

31. PHASE ONE. The first phase is initiated when an applicant for a certificate, an operator, a person, an aviation interest, or the FAA inquires about or states a need for a change in some aspect of an aviation activity.

A. *Applicant Initiation.* The person or operator conveys to the FAA a need which is related to the operation. This "need" may be a requirement for FAA approval or acceptance. For example, an operator may need, want, or be required to have a Minimum Equipment List (MEL) change. The operator initiates the process by inquiring about the correct procedures to receive approval from the FAA for the change. During initial inquiries it is important for the FAA and the operator to become familiar with the subject matter. If, for example, an operator requests an operational approval, the inspector must:

- Become thoroughly familiar with existing FAA policy and approval requirements
- Become familiar with the appropriate technical material
- Accurately assess the character and scope of the proposal
- Determine if a demonstration is required
- Determine the need for any coordination requirements
- Ensure the operator has a clear understanding of the minimum requirements which constitute an acceptable submission
- Determine the date the operator intends to implement the proposal

B. *FAA Initiation.* Phase one may also be initiated when the FAA conveys to the operator or person a requirement related to the operation that must be approved or accepted. The principal inspector should act in an advisory capacity to the operator during the preparation of the submission. Such advice may include the following:

- The need for a deviation, authorization, waiver, or exemption
- The need for required demonstrations
- Clarification of Federal Aviation Regulations or handbook information
- Sources of specific technical information
- Acceptable standards for submission

C. *Responsibility for Development of Submission.* An element common to either an operator or an FAA-initiated action is the effort expended by the operator in preparing or developing a submission to be evaluated by the FAA. However, it is essential (particularly in phase one) for the operator to have a clear understanding that although the inspector may provide advice and guidance, the development of the final product submitted to the FAA is solely the responsibility of the operator.

D. *Applicant-FAA Communication.* In phase one, the inspector must ensure the operator clearly understands the form, content, and documents required for the submission to be acceptable to the FAA. The operator must be informed of the benefits of submitting required documents as early as possible. The operator also must be made aware of its responsibility to advise the FAA, in a timely manner, of any significant changes in the proposal.

E. *Phase One Illustration*

(1) Phase one of the process is illustrated as follows:

- Operator makes inquiry or request to FAA

—OR—

- FAA requires operator to take an action

(2) During phase one the following actions should occur:

- FAA and operator develop an understanding of subject area
- Operator understands form, content, and documents required for acceptable submission

33. PHASE TWO. Phase two begins when the operator formally submits a proposal for FAA evaluation. The request may be submitted in a variety of ways, e.g., registered mail, hand-carried, etc.

A. *Initial Action.* The inspector's initial action, in phase two, is to review the operator's submission to ensure that the proposal is clearly defined and that the documentation specified in phase one has been provided. Furthermore, the required information must be complete and detailed enough to permit a thorough evaluation of the operator's capability and competence to fully satisfy the applicable regulations, national policy, and safe operating practices. Phase two does not include a detailed operational and technical evaluation or analysis of the submitted information (see phase three). However, in phase two the submission must be examined to assess the completeness of the required information.

B. *Submission Unsatisfactory.* If the operator's submission is not complete or the quality is obviously unacceptable, it must be immediately returned, with an explanation of the deficiencies, before any further review and evaluation is conducted.

(1) Normally, an unacceptable submission should be returned with a written explanation of the reasons for its return.

(2) In many complex cases, a meeting with the operator's key personnel may be necessary to resolve issues and agree on a mutually acceptable solution. If mutual agreements cannot be reached, the inspector must terminate the meeting, inform the operator that the submission is unacceptable, and return the submission.

(3) If all parties are able to reach agreement on measures to correct omissions or deficiencies, and the principal inspectors (operations, maintenance, and avionics, if applicable) determine that the submission is acceptable, the operator is informed, and phase three begins.

C. *Status Reports.* It is important for the inspector involved to keep the operator advised of the status of the proposal. If the inspector takes no other action, or if the submission is deficient and not returned in a timely manner, the applicant may assume the FAA has tacitly accepted the submission and is continuing with the process. Timeliness of action depends on the situation as well as inspector judgment and is discussed in sections of this handbook pertaining to the subject matter.

D. *Phase Two Illustration*

(1) Phase two of the process is illustrated as follows:

- Operator submits proposal
- FAA makes initial examination of the documents for completeness with respect to requirements established in phase one

(2) As a result of phase two:

- FAA accepts submitted proposal

—OR—

- FAA returns submitted proposal

35. PHASE THREE

A. *Detailed Analysis.* Phase three is the FAA's detailed analysis, review, and evaluation of the operator's proposal. These actions may take place entirely within a field office, at the site of operations, or at both facilities. In phase three the FAA evaluation is focused on the form, content, and technical quality of the submitted proposal to determine that the information:

- Is not contrary to any applicable Federal Aviation Regulations
- Is not contrary to the direction provided in this handbook or other safety related documents
- Provides for safe operating practices

B. *Evaluation Criteria.* Criteria for evaluating the formal submission is found in the applicable chapters of this handbook. The inspector must ensure that the documents adequately establish the operator's capability and competence to conduct operations safely in accordance with the submitted proposal.

C. *Addressing Deficiencies.* During phase three the FAA inspector must address any deficiencies in the submitted material in a timely manner before proceeding to subsequent phases. Discussion with the operator may be sufficient to resolve certain discrepancies or questions or to obtain additional information. It may be necessary to return certain portions of the submission to the operator for specific changes. However, when an inspector determines that, for specific reasons, the material is unacceptable, the inspector must return the submission to the operator with an explanation and immediately terminate the process. If the results of the evaluation are acceptable and a demonstration is necessary, the inspector may need to grant some form of conditional, initial, or provisional approval to the proposal before continuing with the process.

D. *Phase Four Planning.* An important aspect of phase three is for FAA inspectors to begin planning the conduct of phase four. While evaluating the operator's formal submission, inspectors should begin to formulate plans to observe and evaluate the operator's ability to perform. These plans must be finalized before the actual demonstrations.

E. *Phase Three Illustration*

(1) Phase three is illustrated as follows:

- FAA evaluates the formal submission for compliance with the Federal Aviation Regulations, compliance with the direction provided in this handbook, and compliance with other safety-related documents and safe operating practices
- When results of FAA evaluation are unsatisfactory, return submission to the operator for correction and/or terminate the phase
- Begin planning of phase four (if required)

(2) As a result of phase three, the following actions should be taken:

- When results of FAA evaluation are satisfactory, proceed with phase four (if a demonstration is required) and if appropriate, grant conditional approval or acceptance

—OR—

- Proceed to phase five if demonstration is not required

37. PHASE FOUR

A. *Observation and Evaluation of Demonstration.* Phase four is an operational evaluation of the operator's ability to function in accordance with the proposal evaluated in phase three. Usually these demonstrations are required by regulation. Some examples include training programs, emergency evacuation demonstration, external load class operational tests, and non-destructive inspection tests.

B. *Evaluation Criteria.* Criteria and procedures for evaluating an operator's demonstrated ability are described in applicable chapters of this handbook.

C. *Handling Discrepancies.* The inspector must plan for the conduct and observation of the demonstration to include such things as participants, evaluation criteria, and sequence of events. During these demonstrations it is normal for minor discrepancies to occur. Discrepancies can often be resolved during the demonstration by obtaining commitments from responsible company officials.

(1) The inspector responsible for overseeing a demonstration must evaluate each discrepancy in terms of its overall impact on the operator's ability and competence to conduct the proposed operation.

(2) The inspector must stop the demonstration in phase four when deficiencies or unacceptable levels of competency are observed. The inspector must identify the phase of the general process to which the applicant must return or decide to terminate the process entirely. For example, if an emergency evacuation demonstration is unsatisfactory because of equipment failure (a slide fails to inflate), it may be appropriate to require the operator to reenter the process at phase four and conduct another demonstration. However, if the demonstration is unacceptable because crewmembers were unable to perform their assigned duties, it may be appropriate to advise the operator that the process is terminated and a new proposal should be submitted.

C. *Acceptable Demonstration.* If the FAA evaluation of the operator's demonstrated ability is acceptable, the process continues. An operator will not, under any circumstances, be authorized or otherwise approved to conduct any particular operation until all airworthiness and operations requirements are met and the operator is clearly capable of conducting a

safe operation in compliance with FAA regulations and safe operating practices.

D. *Phase Four Illustration*

(1) Phase four of the process is illustrated as follows:

- FAA observes the demonstration
- Operator demonstrates ability

(2) As a result of phase four:

- Demonstration is satisfactory

—OR—

- Demonstration is unsatisfactory

39. PHASE FIVE

A. *Approval or Acceptance.* In phase five, the FAA approves or accepts the operator's proposal. If the proposal is not approved or accepted, the operator is notified in phase three or four.

B. *Indicating Approval.* Approval is granted by letter, a stamp of approval, the issuance of operations specifications, or some other official means of conveying approval. Each chapter of Volume II which discusses a requirement for approval provides specific guidance concerning approval procedures and documentation.

C. *Acceptances.* Other proposals, submissions, or requests not requiring specific FAA approval but required to be submitted to the FAA are items that are presented for acceptance. Acceptance of an operator's proposal may be accomplished by various means including a letter, verbal acceptance, or by taking no action, which indicates there is no FAA objection to the proposal. Methods and procedures used to accept operator proposals or submissions, when appropriate, are discussed in the applicable chapters of this handbook.

D. *Conditional Approval or Acceptance.* Sometimes FAA approval or acceptance of an operator's proposal may be conditional in nature. For example, a training program may be initially approved, provided the simulator to be used in that program receive approval from the National Simulator Evaluation Team.

E. *Phase Five Illustration*

(1) Phase five is illustrated as follows:

- FAA approves submission

—OR—

- FAA accepts submission

CHAPTER 4. THE GENERIC PROCESS FOR CERTIFICATING ORGANIZATIONS

Section 1. General Information

41. GENERAL. The purpose of the certification process is to provide a means by which prospective air operators or air agencies are empowered to conduct business in a manner which complies with all applicable Federal Aviation Regulations (FAR), the Federal Aviation Act of 1958 (FA Act), and Federal Aviation Administration (FAA) directives. The process is designed to preclude the certification of applicants who are unwilling or unable to comply with the Federal Aviation Regulations or to conform to safe operating practices.

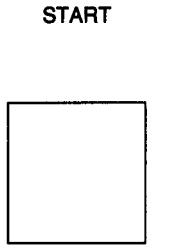
43. GUIDANCE FOR THE PROCESS. The inspector will find that this chapter delineates in detail a familiar process. Previously, many areas of the certification process differed from region to region. This chapter will standardize the process on a national basis; the guidance contained herein precludes and replaces any previous guidance, including regional supplements.

45. EXPLANATION AND USE OF THE FLOW CHARTS. Flow charts are used in this handbook to illustrate how the various actions and components of job tasks relate as a specific process. Any basic certification function, for example, begins when an applicant approaches the FAA to be evaluated for ability and competency to qualify for a particular certificate. This usually involves three stages:

The applicant requests FAA ----> certification.	The FAA evaluates the applicant for ----> the qualifications to hold a certificate.	The FAA issues or denies issuance of the certificate.

A. The three stages, viewed independently, are overly simplistic to describe what is actually a dynamic process. The process is orderly in chronological sense and provides a systematic, step-by-step course of action for an inspector to follow when conducting a specific job task.

B. Refer to any of the flow charts concerning the certification process in Volume II. An explanation of the symbols follows.

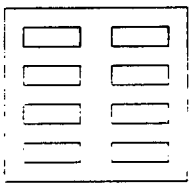


A Start Circle is used to signify the beginning of a process and always precedes the first step, action, or behavior that initiates the process.

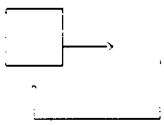
An Action Block specifies an action, behavior, or some form of "trigger mechanism" that, once accomplished, begins the next step in the process.

A Diamond is used to denote the beginning of a particular phase within the process. It normally contains a question and is bracketed on two of its sides with "yes" and "no" to indicate the appropriate direction to proceed once the question is answered.

A Stop Circle is used to signify the end of any action, segment, or phase of a process either because of FAA determination of non-qualification or an applicant's inability or refusal to function within the parameters of the process.



A Multiblock Segment is used to illustrate multiple actions, items, or events that make up a particular segment in a phase. These items may be presented or accomplished separately or simultaneously, but they must all be presented or accomplished before moving to the next Action Block. Normally, a Multi block Segment is labelled to indicate what the actions, items, or events constitute (e.g., "document compliance").



The Recursive Loop consists of dashed lines that flow in a direction reverse from the normal course of the logic diagram. This permits a phase or segment of the process to be reactivated or repeated when deficiencies or other factors would otherwise impede the continuation of the process.

Section 2. The Certification Process

47. GENERAL. This section describes the certification process. When followed by the aviation safety inspector, the guidance provided here will result in the operator's compliance with the FA Act and applicable Federal Aviation Regulations. Under no circumstances will an applicant be certificated until the district office is assured that the applicant is capable of fulfilling responsibilities and complying with the Federal Aviation Regulations in an appropriate and continuing manner.

49. THE CERTIFICATION PROCESS. In the narrative which follows, the certification process is detailed in a series of five phases or steps:

- Preapplication
- Formal Application
- Document Compliance
- Demonstration and Inspection
- Certification

A. *Inspector Judgment.* For simple organizational certifications, the steps outlined here can be condensed or eliminated. It is important for the inspector to realize that the simplicity or complexity of the certification process is determined based upon the inspector's assessment of the applicant's proposed operation.

B. *Differences Among Applicants.* The inspector must also realize that some applicants, even though they are proposing a simple operation, may lack a basic understanding of what is required for certification. In such an instance, and after considering all factors, the inspector may want to insist upon following all steps in the process to assure that safety is enhanced. Conversely, other applicants may propose a very complex operation but be well-prepared and knowledgeable. The process must be complex enough to apply to all possibilities and, at the same time, flexible enough not to discourage the aviation public or overburden the inspector.

51. THE PREAPPLICATION PHASE. Initial inquiries about or requests for an application for an air operator or air agency certificate may come from individuals or organizations and may be in writing or in the form of informal meetings with district office personnel. Usually, however, initial contact is made over the telephone, or the applicant may "walk in" to the district office. The experience level of the applicant will determine how formal the process must be.

A. *Initial Inquiry.* During the initial contact, the applicant will usually have specific questions about the certificate requirements.

(1) The inspector should explain to the applicant basic equipment and facility requirements and discuss pertinent Federal Aviation Regulations and advisory circulars. The inspector should tell the applicant how to obtain current copies of these documents and explain that the applicant must review them carefully before filling out an application.

(a) At this point, if the inspector decides that the applicant is sufficiently aware of the certification requirements and if the applicant wishes to continue with the process, the inspector provides the applicant with copies of the appropriate application form.

(b) The applicant may provide three choices (in order of preference) of a three-letter designator, which will become part of the operator certificate number. The applicant will have to provide the choices to the inspector (preferably in writing) at some point during the certification process. Otherwise, the applicant will receive a random, computer-generated number. Obtaining certificate numbers is covered in Vol. II, Ch. 228, "Obtaining Certificate Numbers (Air Operators and Air Agencies)."

(2) If the applicant is proposing a complex operation (i.e., a large number of complex aircraft or an operation conducted in several district office jurisdictions) or seems unclear about the specific requirements, the inspector may ask the applicant to describe the intended operation in writing.

(a) In such an instance, an applicant for a FAR Part 125 certificate is given FAA Form 8400-6, Preapplication Statement of Intent (PASI), to fill out and return for review.

(b) Applicants for FAR Part 145 certificates could be asked to submit a letter of intent, detailing the operation they wish to undertake, the equipment they have available, the facilities they plan to use, and approximately when they plan to begin operation.

(c) The scope of the proposed operation may also require that the applicant (or representative) come to the district office for a preapplication meeting in addition to submitting a Preapplication Statement of Intent or letter of intent. If there is any question about the need for such a meeting, the inspector should consult with the district office manager or unit supervisor.

(3) An applicant who is already familiar with the certification process (e.g., a pilot who has worked for a certificated air operator or air agency and wishes to start a similar business) may simply submit a completed application form during the initial contact with the district office. The applicant may present the application in person along with any manuals and other documents that might be required. This would occur normally when the complexity of the applicant's operation is limited.

B. *District Office Assignment.* Assuming that the applicant has chosen the correct district office to contact, that office will generally be the one, under the geographical area concept, that conducts the certification. There, of course, can be exceptions to this.

(1) An applicant who has contacted the wrong district office should be referred to the proper office, i.e., the one having geographical jurisdiction over the proposed main base of operations.

(2) An applicant's business office may be in one region. However, the applicant's aircraft and main base of operations (where records are kept, aircraft are based, etc.) may be in a different region. The region where the main base of operations exists should be where the Certificate Holding District Office is located. The district office initially contacted must determine if this is the case as early in the process as possible so that coordination with the appropriate region can be made in a manner expedient to both the applicant and the district offices concerned.

(3) A district office manager may determine that the office does not have the resources to conduct a certification. If so, the regional office should be contacted to obtain resources from other district or regional offices.

C. *Certification Team Assignment.* The district office manager will assign the project to the appropriate unit supervisor (if applicable) who will assign sufficient inspectors to a certification team. One team member will be designated as a Certification Project Manager (CPM). The Certification Project Manager will not only coordinate certification matters with the applicant, but will also ensure that the unit supervisor is kept fully informed of the project's current status (e.g., during staff meetings). Team members must strive at all times to maintain a professional and responsive relationship with the applicant. From the time of its appointment, the certification team handles all matters pertaining to the applicant, regardless of whom the applicant initially contacted.

D. *Preapplication Meeting.* If, after its assignment to the project, the certification team has determined that a preapplication meeting is necessary, the Certification Project Manager or team leader shall contact the applicant to arrange the meeting as soon as practicable.

(1) The meeting should include, but not be limited to, the following:

- A review of the Preapplication Statement of Intent or letter of intent to verify that all information is complete and accurate
- A review of applicable Federal Aviation Regulations and advisory circulars (and how to obtain them, if not already accomplished)
- A review and discussion of the certification procedures to ensure that the applicant understands what is expected
- A review of what is required on the application and what is to be submitted with the application
- Provision of a certification job aid to the applicant
- An indication of which inspectors will conduct which aspects of the certification

(2) Operator certification tasks in Volume II provide guidance on preapplication meetings for the different types of air operator or air agency certificates.

E. *Terminating the Preapplication Phase.* The Preapplication Phase ends when the certification team is satisfied that the applicant is prepared to proceed with formal application. If the applicant is not ready, the team should advise the applicant of the problems and work with the applicant to arrive at solutions or terminate the certification process.

53. THE FORMAL APPLICATION PHASE. An applicant's presentation of an application package and the district office's review is considered the Formal Application Phase.

A. *Receipt of Formal Application Package.* The application package may be received by mail, or it may be hand-delivered by the applicant. If it is hand-delivered, the applicant will be informed that the FAA will need a brief period of time to review it. Discussions of its acceptability should be avoided at this time. Persistent applicants should be informed that further discussion will not be productive until the certification team has reviewed the formal application. The applicant will then be advised that the certifica-

tion team will be in contact, normally within five working days, concerning the application package's acceptability and to arrange for a formal application meeting if necessary.

B. *Application Package Initial Review.* Upon receipt of an application package, the certification team must initially review it to determine its acceptability. The package generally consists of:

- Copies of the application form (or letter of formal application for a FAR Part 125 applicant)
- Documentation that the applicant has or can obtain use of an aircraft or appropriate facilities, as applicable
- Any partial or complete manuals, as applicable
- Curricula or personnel training programs, as applicable
- A schedule of events (see below)

C. *Schedule of Events.* For a FAR Part 125 certification, a schedule of events is required to be submitted with the application. However, for FAR Parts 133, 137, 141, 145, or 147 applicants, a schedule of events is only necessary for an applicant who proposes a large operation where multiple meetings and demonstrations may be required. It is up to the certification team to determine if the applicant's proposed operation indeed warrants a schedule of events. If one is requested from the applicant, the certification team must carefully consider the feasibility of the proposed schedule with respect to logic of sequence, timeliness of events, completeness of events, and inspector availability.

- LOGIC OF SEQUENCE: Many of the activities or events listed in the schedule must occur before other activities or events.
- TIMELINESS OF EVENTS: The schedule of events must provide realistically sufficient time for the certification team to review the applicant's various documents, manuals, and proposals.
- COMPLETENESS OF EVENTS: The number of and kinds of submissions made by the applicant for evaluation and acceptance or approval may vary according to the complexity of the proposed operation.
- INSPECTOR AVAILABILITY: Another concern in meeting the schedule of events is the availability and the capability of the office personnel resources. Sufficient qualified inspectors must be made available to ensure timely completion of the certification process.

D. *Formal Application Meeting.* If the certification team determines the necessity for a formal application meeting, all members of the certification team must be present, barring unanticipated circumstances. During the meeting the certification team and the applicant will review the application package and resolve any discrepancies.

(1) If mutual agreements cannot be reached on any discrepancies, the team should terminate the meeting and inform the applicant that the application package is not acceptable. The application package must then be returned to the applicant with a letter explaining the reasons for the rejection.

(2) When agreement has been reached on corrective action for deficiencies, the team should then encourage the applicant to present any questions concerning the upcoming certification. The certification team members should answer these questions fully and candidly.

(3) Before the conclusion of the formal application meeting, the team must make certain the applicant clearly understands the following:

(a) The applicant will receive notification in writing in the event the application is rejected. This notification should be made within five days after the formal application meeting. A telephone call concerning the application rejection shall be made to the applicant as soon as the determination is made, indicating that written notification will follow and will include the reasons for the rejection.

(b) If the application is acceptable, the certification process continues with an in-depth examination of the application and associated documents during the "document compliance phase." In some cases, telephone confirmation is sufficient; however, written confirmation is encouraged. A letter accepting the application is necessary because the time limit begins upon receipt of the application in an acceptable form.

(c) Acceptance of the application does not constitute acceptance or approval of any attached documents (curricula, sample manuals, etc.). They will be reviewed further, and the applicant will be expected to take corrective action if required. Acceptance or approval of each attachment will be indicated separately.

E. *Application Rejection.* Rejection of an application will be a sensitive issue, since the applicant will most likely have already expended funds and resources to this point. Therefore, it is important for the team to document thoroughly the reasons for the rejection. The reasons should clearly indicate that to proceed with the certification process would not be productive unless the applicant is willing to accept the team's corrective suggestions. Reasons for rejection might include lack of agreement on appropriate courses of action or evidence that the applicant misunderstands regulatory requirements and the certification process. In the event of rejection, the application and documents submitted are returned to the applicant with a letter of rejection.

F. *Terminating the Formal Application Phase.* If the certification team accepts the application package, the Formal Application Phase of the certification process is terminated, and the Document Compliance Phase begins.

55. THE DOCUMENT COMPLIANCE PHASE. The document compliance phase is that part of the certification process where the applicant's manuals and other documents are carefully reviewed and either approved or rejected. This phase, for the most part, is performed in the district office by members of the certification team.

A. *Required Documents.* The required documents vary with the type of certificate under consideration.

B. *Unacceptable Documents.* If any of the documents are unacceptable, they will be returned to the applicant. Depending upon the reasons for rejection of the documents, the team may want to send the applicant a letter of rejection stating those reasons.

C. *Acceptable Documents.* If the team finds all documents acceptable, the certification process proceeds with the Demonstration and Inspection Phase.

D. *Applicant Profile.* The team shall obtain a profile of the applicant and personnel using the Enforcement Information System (EIS) and the Accident/Incident Data Subsystem (AIDS). This profile may determine if the certification process should continue; for example, the information obtained in the profile indicates a suspension or revocation order is in effect, which would prohibit certification.

E. *Terminating the Document Compliance Phase.* Once all required documents are approved or accepted, the Document Compliance Phase ends. The certification process continues in the Demonstration and Inspection Phase. Although the Document Compliance Phase and the Demonstration and Inspection Phase are dealt with as distinct, separate phases, the two overlap or occasionally coincide.

57. THE DEMONSTRATION AND INSPECTION PHASE. In the Demonstration and Inspection Phase, the certification team inspects the applicant's facilities and equipment and observes personnel in the performance of their duties. Emphasis in this phase is on compliance with regulations and safe operating practices. Through observation, monitoring, and other forms of on-site evaluation, the certification team will be exposed to many types of activities.

A. *Regulatory Compliance.* During evaluation, the team shall determine the applicant's ability to comply with all applicable sections of the Federal Aviation Regulations.

B. *Determination of Approval or Disapproval.* Throughout the demonstration and inspection phase, the team will ensure that all aspects of the applicant's required demonstrations are observed and that a determination of approval or disapproval for each is made.

C. *Handling Deficiencies.* If, at any time, certain items or the applicant's conduct of activities prove to be deficient, appropriate corrective action must be taken. If necessary, the certification team shall advise the applicant of the impracticality of continuing the certification process because of the extent of the deficiencies.

D. *Specific Guidance.* Operator certification tasks in Volume II provide specific guidance for this phase.

E. *Unsatisfactory Demonstration.* If a particular demonstration of compliance is unsatisfactory, the certification team must discuss with the applicant how to correct the problem. Reinspection should be scheduled as necessary. The team may want to follow up with a letter indicating the nature of the failure and its corrective action. Deficiencies will have to be corrected before the process can continue.

F. *Satisfactory Demonstrations.* If the applicant's demonstrations are successful, appropriate documentation will be issued by the certification team.

G. *Terminating the Demonstration and Inspection Phase.* When all demonstrations are satisfactorily completed, the Demonstration and Inspection Phase is

ended, and the applicant is ready for issuance of the certificate.

59. THE CERTIFICATION PHASE

A. *Obtaining Certificate Numbers.* The Certification Project Manager is responsible for assuring that a certificate number is obtained from the National Safety Data Branch, AVN-120, in Oklahoma City, OK. An inspector on the certification team shall telephone AVN-120 when a pre-certification number (FAR Part 125 only) or certificate number is required.

(1) When contact is made, the inspector will state that the purpose of the call is to obtain a certificate number for an air operator or air agency. The inspector follows the procedures found in Vol. II, Ch. 228 for obtaining the certificate number.

(2) AVN-120 uses a systematic scheme for the construction of standard certificate numbers. See Vol. II, Ch. 228, Section 1 for an explanation of how this number assignment system was developed and works.

(3) Federal Aviation Regulations require the issuance of a precertification number. See Vol. II, Ch. 228.

B. *Preparation of Certificate.* The air operator or air agency certificate, as appropriate, will be prepared in the district office for the manager's signature. The newly certificated operator cannot conduct any operations without the certificate in possession. The operator may elect to pick up the certificate from the district office in person, or it may be mailed to an address the operator specifies.

C. *Certification File.* The certification team will assemble a certification file. The file, which is maintained at the Certificate Holding District Office, will include:

- A copy of the preapplication statement of intent or letter of intent, as appropriate
- A copy of the application
- A copy of the operator's certificate
- A copy of any manuals or approved curricula
- A copy of the completed certification job aid
- A copy of the operations specifications, if applicable
- A summary of any difficulties encountered during any phase of the certification or recommendations for future surveillance (Certification Report)
- Enforcement Information System (EIS) and Accident/Incident Data System (AIDS) profiles for the applicant and the pilots
- Copies of leases, agreements, and contracts, if applicable
- Compliance statement, if applicable
- Any correspondence between the applicant and the FAA

D. *Post-Certification Surveillance Plan.* After the new air operator or air agency is certificated, the certification team will establish a post-certification plan using the Work Program Management System and national program guidelines as a basis for inspection and surveillance.

(1) When developing the post-certification plan, the certification team may decide to direct additional surveillance during the first few months the newly certificated operator is in business. This may assist the operator in continuing compliance with pertinent regulations.

(2) The team is also responsible for assembling a Certification Report, which includes the names and titles of each team member. The report shall be signed by the Certification Project Manager and have a summary of any difficulties or recommendations encountered during the certification process. This report will be valuable in preparing surveillance plans, since it will have highlighted possible weak areas which can be emphasized during an inspection. (Figures 4-1, 4-2, 4-3, and 4-4)

FIGURE 4-1 CERTIFICATION REPORT FAR 125

Name and Address

Certificate Number: AAAB001A

The certification team consisted of Edward Pendleton, Principal Operations Inspector; Margaret Pelham, Principal Maintenance Inspector; and James Madison Eastham, Principal Avionics Inspector.

The above operator applied for certification on 01-15-88 and was certificated on 03-15-88.

Of the four pilots-in-command (C-46) who applied for the qualification, two failed the first time, Mr. Stevens and Mr. Cartwright. In both cases the deficient areas were identified: 1) The methods used for circling approaches placed the aircraft too far from the airport because of incorrect aircraft speed and configuration; 2) Failure to use the co-pilot during circling approaches which placed the aircraft in a position that would not allow the captain to observe the airport environment; 3) Not observing sterile cockpit procedures below 10,000 feet; 4) Failure to be able to identify Hazardous Materials; 5) Failure to use company established standard call-outs by the pilot not flying. Although the crew stated that training was covered in these problem areas, it was evident that there was not enough emphasis placed upon them during the training of pilot flight crewmembers. The crew was given additional training. Both Stevens and Cartwright passed their Pilot-In-Command check on the second try.

The company procedure to identify hazardous material is to carry a copy of Title 49, CFR aboard the aircraft and to refer to it when questionable cargo comes to the attention of any crewmember or ground person. Neither Stevens nor Cartwright were able to identify whether or not three different types of suspected materials were controlled by 49 CFR. Retesting in this area indicated adequate knowledge.

It is recommended that during the post certification phase emphasis be placed in the pilot crew training and testing area.

_____ _____

Certification Project Manager Date

FIGURE 4-2 CERTIFICATION REPORT PART 133

Name and Address

Certificate Number: BBBL001B

The certification team consisted of Edward Pendleton, Principal Operations Inspector; Margaret Pelham, Principal Maintenance Inspector; and James Madison Eastham, Principal Avionics Inspector.

The above operator applied for certification on 01-15-88 and was certificated as an External-Load Operator on 03-15-88.

The company operates one Bell 206 helicopter, a BK-117, and a Sikorsky SK-64 and employs four pilots, two aircraft crewmembers, and five trained external-load ground personnel.

During the Bell 206 class B external-load skill demonstration by pilot P. Stevens, it was noted that he was unable to release the load combination manually. Further inspection revealed that the release mechanism was inoperative and that it may not have been properly preflighted in accordance with the FAA Approved Rotorcraft Load Combination Flight Manual procedure. The device was repaired and returned to service by a company mechanic, and the test was continued.

Pilot flight crews had not established procedures for determining 12 month currency for Class D external loads. A procedure was established by each of them.

It is recommended that emphasis be placed on these items during the post certification phase of inspector activity.

_____ _____

Certification Project Manager Date

FIGURE 4-3 CERTIFICATION REPORT PART 137

Name and Address

Certificate Number: BBBG001B

The certification team consisted of Edward Pendleton, Principal Operations Inspector; Margaret Pelham, Principal Maintenance Inspector; and James Madison Eastham, Principal Avionics Inspector.

The above operator applied for certification on 01-15-88 and was certificated as an Agricultural Aircraft Operator on 03-15-88.

The company operates one Bell 47G3B-2A helicopter, an Aero Commander Snow, and three Grumman AgCats. The company employs four pilots and five trained loader ground personnel.

During the helicopter pilot skill demonstration (FAR § 137.19(e)) by pilot John W. Slade, it was noted that the aircraft had a leaky spray nozzle. Further inspection revealed that the nozzle mechanism was probably inoperative before the flight and that it may not have been preflighted in accordance with industry standard good operating practices. The device was repaired and returned to service by a company mechanic and the test was satisfactorily completed. This type of operation could result in non-compliance with Federal Aviation Regulations if not noticed and corrected by the operator.

Although the helicopter is equipped with shoulder harnesses, it became apparent during the skill test that Mr. Slade may have a tendency not to wear his shoulder harness. This was concluded as a result of the team leader observing the shoulder belts neatly tucked away behind the pilot seat back immediately after the aircraft was landed at the duster strip.

It is recommended that emphasis be placed on these items during the post certification phase of inspector activity.

_____ _____

Certification Project Manager Date

FIGURE 4-4 CERTIFICATION REPORT PART 141

Name and Address

Certificate Number: BBBV001B

The certification team consisted of Edward Pendleton, Principal Operations Inspector; Margaret Pelham, Principal Maintenance Inspector; and James Madison Eastham, Principal Avionics Inspector.

The above operator applied for certification on 01-15-88 and was certificated as a Pilot School on 03-15-88.

The company operates three Cessna 152 aircraft, one Cessna 182, and one Cessna 182RG. They employ two full time instructors, Mr. Craig Adams and Mr. Phil Johnston. Mr. Adams also serves as the Chief Flight Instructor for all courses, and Mr. Johnston is his assistant. Both meet the experience requirements to serve in their respective capacities.

Course approvals are: Private Pilot Certification ASEL; Commercial Pilot Certification ASEL; Instrument Rating Airplane.

The Training Course Outlines (TCO's) presented for approval by the school were previously approved at Addison Aviation, Inc. and modified with their company name. Although Adams and Johnston were found to be knowledgeable concerning the Training Course Outlines content, it should be noted that they did not actually write them. They were cautioned to ensure that the Training Course Outlines is followed and that student participation is properly documented. Because this is a new pilot school, future surveys and inspections should place emphasis in this area.

During the certification inspection, discrepancy logs were not available for each aircraft to document any equipment deficiency so that it could be brought to the attention of airworthiness personnel. When this was brought to Mr. Adams' attention, he devised a form that would serve such a purpose and placed it on the clipboard along with the tach sheet. Future surveys should include a check of the aircraft discrepancy log for write ups and corrective actions.

It is recommended that emphasis be placed on these items during the post certification phase of inspector activity.

_____ _____

Certification Project Manager Date

CHAPTER 5. PREPARATION OF FAA OPERATING CERTIFICATES

61. FORMS TO BE USED. FAA Form 8430.21 shall be used for an Operating Certificate. Air agency certificates are not affected by this section. They will continue to be issued in the current manner using the existing form.

63. REQUIRED INFORMATION. The following information must be typed on the form when preparing the certificate for issuance.

A. *Legal Name.* The certificate holder's legal name shall be entered directly below the words, "This certifies that." Any additional business names shall be placed on the certificate below the legal name.

(1) The additional business name will be preceded by the acronym "d/b/a" (doing business as).

(2) The certificate holder shall provide evidence that all business names have been authorized by the appropriate state or local government, as applicable.

(3) The certificate-holding district office should not restrict the number of d/b/a's used by a certificate holder. Should there be insufficient space on the certificate to accommodate all d/b/a's, the legal name and address should appear on the certificate with a notation to see an accompanying letter for a list of d/b/a's. FAR Part 125 operators will have d/b/a's placed on their operations specifications.

B. *Address of Principal Base.* The address of the certificate holder's principal base of operations shall be entered directly below the certificate holder's name. A post office box address is not acceptable unless it also reflects the physical location of the principal base of operations.

C. *Statement of Authority.* The pre-printed certification statement of authority on FAA Form 8430.21 shall not be modified. However, the statement of authority must be completed by typing either "Part 125 Operations", "Rotorcraft External Load Operations", "Private Agricultural Aircraft Operations", or "Commercial Agricultural Aircraft Operations Repair Station", as appropriate, in the space provided.

D. *Certificate Number.* The certificate number will be obtained from AVN-120 in accordance with Vol. II, Ch. 228, Section 2 and will be typed in the space provided on the form.

E. *Effective Date.* The date all the requirements for certification were met will be entered in the space provided for the certificate effective date. If a certificate is to be amended because of an address change or a change of the Certificate Holding District Office, the date of original issuance will be retained on the amended certificate.

F. *District Office Designator.* The four-character alphanumeric designator of the certificate-holding district office and its city location shall be typed in the "issued at" space of the form. For example: EA16, Richmond, VA.

G. *Signature.* Operating certificates issued to air operators complying with FAR Parts 125, 133, or 137 and air agency certificates issued for FAR Part 145 shall be signed by the district office manager in the space provided. When the district office manager signs the certificate, the acronym of the region and the Flight Standards District Office acronym (FSDO) and FSDO number will be entered in the "title" space, e.g., ANM-FSDO-01.

65. CHANGE OF NAME. A change of legal name must be approached with care. Whatever the complexity of the legal name change, the change of name has the effect of a new certification and, therefore, a new certificate and certificate number will be issued. This does not include a change to a d/b/a, only the legal name.

A. *Legal Authorization.* The certificate holder must provide evidence that the change of legal name has been authorized by the appropriate state or local government, as applicable. The inspector must be satisfied that the name change is not used to circumvent initial certification requirements.

B. *Sole Proprietor.* A sole proprietor who incorporates under state law is not treated as a name change only. This "new" person must meet all the initial certification requirements of the Federal Aviation Regulations in order to be issued an operating certificate. However, the certification process, in this case, may not be as detailed as usual.

CHAPTER 6. THE FAA AND FLIGHT STANDARDS: HISTORY, ORGANIZATION, AND THE PUBLIC LAW

Section 1. History of the Federal Aviation Administration

67. EARLY REGULATORY AUTHORITY AND RESPONSIBILITIES

A. *Air Commerce Act of 1926.* Aviation regulatory authority in the United States began with the enactment of the Air Commerce Act of 1926. This legislation was passed in response to requests from the aviation industry, which believed commercial use of the airplane could not reach its full potential without Federal safety regulation. The Air Commerce Act commissioned the Secretary of Commerce to foster air commerce, issue and enforce air traffic rules, certificate pilots and aircraft, establish airways, and operate and maintain air navigation aids. During the next decade, the Department of Commerce continued to fulfill its civil aviation responsibilities as specified by the Air Commerce Act. A major responsibility was added in 1936 when the Department of Commerce assumed the task of controlling en route air traffic. This function soon became the Department's most demanding civil aviation responsibility.

B. *Civil Aeronautics Act of 1938.* The Civil Aeronautics Act of 1938 was passed to cope with growing economic forces and air traffic control needs. This act established a new, independent agency known as the Civil Aeronautics Authority, which was given additional power to issue air carrier route certificates and regulate airline fares. In 1940, President Franklin Roosevelt divided the Civil Aeronautics Authority into the Civil Aeronautics Board and the Civil Aeronautics Administration. The Civil Aeronautics Board was established as an independent agency. It was given authority and responsibility for economic and safety rule making and accident investigation. The Civil Aeronautics Administration was reassigned to the Department of Commerce. It was given responsibility for air traffic control, airman and aircraft certification, safety enforcement, and airway development. In 1946, Congress added a federal-aid airport program to the responsibilities of the Civil Aeronautics Administration.

69. ESTABLISHMENT OF THE FAA

A. *Federal Aviation Act of 1958.* In the 13 years following World War II, air commerce, aviation technology, and the public demand for air services reached unforeseen levels of complexity. Under the Department of Commerce, the Civil Aeronautics Administration could not efficiently fulfill its responsibilities or solve many of the difficulties caused by this rapid growth and increasing complexity. To combat these problems, Congress passed the Federal Aviation Act of 1958 (FA Act). This law created an independent agency, the Federal Aviation Agency. It gave the agency the sole responsibility for developing and maintaining a common civil/military system of air navigation and air traffic control in addition to the former responsibilities of the Civil Aeronautics Administration and the safety rule-making functions of the Civil Aeronautics Board.

B. *Department of Transportation.* In 1967, the Federal Aviation Agency was placed in the newly created Department of Transportation (DOT) and renamed the Federal Aviation Administration (FAA). This action was based on the beliefs of Congress, the executive branch, and the transportation industry that integrated and balanced transportation systems were necessary for the nation's transportation needs and that such systems could best be managed by a single department. Subsequently, the FAA acquired additional responsibilities through amendments to the FA Act. Examples of these added responsibilities are aviation security, aircraft noise abatement, and airport certification. The Airport and Airway Development Act authorized the FAA Administrator to establish minimum safety standards for airports and to issue operating certificates to air carrier airports meeting those standards.

71. ORGANIZATION OF THE FAA

A. *Early Organization*

(1) In 1927, the Department of Commerce employed 234 persons working in the Air Regulations Division and the Air Information Division. When the Civil Aeronautics Administration was created, it was administered by five appointed officials and had the authority to regulate civil aviation. Its associated agency, the Air Safety Board, was responsible for investigating accidents, determining probable cause of each accident, and making recommendations for accident prevention. From 1938 through 1958, the number of Civil Aeronautics Administration employees grew from 2,938 to 25,805.

(a) As of 1958, six domestic regions, one international region, the Aeronautical Center, and a Technical Development and Evaluation Center (FAA

Technical Center) were directly responsible to the Civil Aeronautics Administration Administrator.

(b) Within Civil Aeronautics Administration headquarters, a major operational office was directed by the Assistant Administrator for Operations. A subordinate office to the Assistant Administrator for Operations was called the Office of Aviation Safety. The Office of Aviation Safety was the predecessor of the Bureau of Flight Standards. Other subordinate offices to the Assistant Administrator for Operations were the Office of Federal Airways, the Office of Airports, and Washington National Airport.

(2) In 1959, the first year of the newly formed independent FAA, the FAA's Washington headquarters organizational structure was as follows:

(a) Three staff level Assistant Administrators:

- Management Services
- Plans and Requirements
- Personnel and Training

(b) Five specialized offices:

- General Counsel
- Civil Air Surgeon
- Congressional Liaison
- Public Affairs
- International Coordination

(c) Five operational bureaus:

- Research and Development (included the FAA Technical Center)
- Flight Standards
- Facilities and Material
- Air Traffic Management
- National Capital Airports

(3) In 1959, the FAA's regional organizational structure included six domestic regions, one international region, and the Aeronautical Center.

B. *Current FAA Organizational Structure (1988).* The FAA currently employs approximately 45,000 personnel and its organization is, for the most part, decentralized. At Washington Headquarters, five specialized offices perform staff functions for the FAA Administrator. Seven Associate Administrators are also based in Washington Headquarters. The Associate Administrators report directly to the Administrator and are responsible for the development of policy, regulations, methods, and certain other operational functions of the FAA. There are nine domestic regional offices and the Aeronautical Center, whose directors report directly to the Administrator. Regional directors are responsible for managing FAA programs at the field level.

73. HISTORY OF FLIGHT STANDARDS. When the FAA was created in 1958, the Bureau of Flight Standards was established as one of the five operating bureaus within the FAA. This bureau included most safety functions of the earlier Aeronautics Branch of the Department of Commerce and its successors, such as the Flight Operations Service and the Office of Flight Operations and Airworthiness.

A. In 1967, the name of the Bureau of Flight Standards was changed to Flight Standards Service. The director of this service reported directly to the FAA Administrator. The Flight Standards Service was later assigned as one of several offices within the Office of Associate Administrator for Aviation Standards, which had been established in January, 1979.

B. In July of 1979, three new offices, Flight Operations, Airworthiness, and Aviation Safety, absorbed the safety functions previously assigned to the Flight Standards Service. Most headquarters flight standards functions were performed by the Office of Flight Operations and the Maintenance Division of the Office of Airworthiness.

C. In November of 1984, the Office of Aviation Safety was reassigned as a staff office reporting directly to the Office of the Administrator.

D. In November of 1986, the Office of Flight Standards was created at FAA headquarters by combining the Office of Flight Operations and the Maintenance Division from the Office of Airworthiness. With this change, Flight Standards safety responsibilities were aligned at the three organizational levels (headquarters, regional, and district offices).

75. ORGANIZATION OF FLIGHT STANDARDS

A. *Headquarters Organizations.* The Office of Flight Standards (AFS) is one of six offices that report to the Associate Administrator for Aviation Standards. The Office of Flight Standards consists of three divisions, which report to the Director of Flight Standards. The three divisions are the Air Transportation Division (AFS-200), the Aircraft Maintenance Division (AFS-300), and the General Aviation and Commercial Division (AFS-800).

B. *Regional Organization.* Regional headquarters are organized into special staffs and operating divisions, similar to Washington Headquarters. One of the regional divisions is the Flight Standards Division (commonly referred to as the "200 Division"). Flight Standards District Offices, through office managers, report directly to Regional Flight Standards Division managers. Regional Flight Standards Divisions and Flight Standards District Offices are responsible for accomplishing special regional programs as well as the national policies and programs developed by the Office of Flight Standards (based in Washington Headquarters). However, Regional Flight Standards Division managers report directly to Regional Directors, who report to the FAA Administrator.

Section 2. The Public Law

77. THE FEDERAL AVIATION ACT OF 1958. The Federal Aviation Act (FA Act) was signed into law on August 23, 1958. This public law created the FAA and empowered it to promote safety of flight in air commerce by prescribing safety standards. It gave regulatory authority of aviation functions to two independent agencies: the FAA and the Civil Aeronautics Board (CAB). The Civil Aeronautics Board retained the responsibility for economic regulation of air carriers and investigation of aircraft accidents. The FAA was given five basic responsibilities. The declaration of aviation policy in Section 103 of Title I—"General Provisions" of the FA Act summarizes these responsibilities, which have remained intact and are as follows:

- The regulation of air commerce in such manner as to best promote its development and safety and fulfill the requirements of national defense
- The promotion, encouragement, and development of civil aeronautics
- The control of the use of navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and efficiency of both
- The consolidation of research and development with respect to air navigation facilities, as well as the installation and operation thereof
- The development and operation of a common system of air traffic control and navigation for both military an civil aircraft

79. EVOLUTION OF SAFETY REGULATIONS. Section 8, Article 1 of the United States Constitution gives Congress the power to regulate and control interstate commerce. Interstate highway, railway, and water modes of transportation were regulated for many years before the advent of air transportation.

A. The Air Commerce Act of 1926 empowered the Secretary of Commerce to establish the necessary regulatory system to control and regulate air commerce. The regulatory system that was initially established evolved into an organized system of Civil Aviation Regulations (CAR). These regulations were supplemented by appropriately numbered Civil Aviation Manuals (CAM) which contained policies, procedures, and interpretations of each Civil Aviation Regulations section.

B. The Civil Aviation Regulations and Civil Aviation Manuals became outmoded with the rapid growth of air transportation and the introduction of turbojet transport category airplanes in the 1950's. Recodification of the Civil Aviation Regulations began in 1961 and was completed in 1964 with the adoption of the Federal Aviation Regulations (FAR).

81. AVIATION PROMOTION AND REGULATION. Regulation and promotion of civil aviation are clearly identified by the FA Act as major responsibilities of the FAA. The FAA promotes safe and efficient civil aviation by such activities as the establishment and maintenance of Federal Airways (including NAVAID's), air traffic control services, and support of airport development and aviation educational programs. The principle objective of regulation, from the FAA's point of view, is to assure safety at all levels of aviation activity. In fostering safety through regulation, the FAA promotes the use of civil aviation and helps to ensure its future. Safety of flight is dependent upon regulation and enforcement of these regulations. Many other nations use United States Federal Aviation Regulations as regulatory models for their civil aviation programs.

83. THE NATIONAL TRANSPORTATION SAFETY BOARD

A. The National Transportation Safety Board (NTSB) was established by the Department of Transportation Act; it was made a part of the Department of Transportation on April 1, 1967. The National Transportation Safety Board was given the Civil Aer-

onautics Board functions, powers, and duties concerning aviation accident investigations, findings, and formulation of aviation safety improvement recommendations.

B. On April 1, 1975, the National Transportation Safety Board was made an independent agency. This independence allows the National Transportation Safety Board to properly fulfill its responsibilities to form conclusions and make recommendations that may be critical of the Department of Transportation and the FAA. At the request of the National Transportation Safety Board, certain aviation accidents are investigated by the FAA. However, FAA representatives are not permitted to participate in determining the "probable cause" of any aviation accident investigated by the National Transportation Safety Board. The facts, conditions, and circumstances of these accidents are reported to the National Transportation Safety Board, which then determines "probable cause".

85. THE CIVIL AERONAUTICS BOARD. The Airline Deregulation Act (ADA) was enacted on October 24, 1978. This Act expressed the intention of Congress to diminish the functions of the Federal Government in regulating airline economics. To accomplish this, Congress directed that the Civil Aeronautics Board be abolished on December 31, 1984. On January 1, 1985, remaining Civil Aeronautics Board functions were transferred to the Office of the Secretary of Transportation (OST). Included in these remaining functions is the requirement that air carriers be found fit, willing, and able to perform as air carriers. These air carriers must hold economic certificates or an exemption under the FA Act in order to provide air transportation to the public.

87. FLIGHT STANDARDS AND THE FA ACT. The FAA's regulatory authority to prescribe, revise, and enforce standards is found in Title VI of the FA Act "Safety Regulation of Civil Aeronautics". Title VI is the foundation for the present structure of Flight Standards. Flight Standards is directly responsible for certain sections of Title VI. Other sections of Title VI are the responsibility of other offices within the FAA. However, Flight Standards has surveillance and enforcement responsibilities related to all sections of Title VI. The sections of Title VI are briefly described as follows:

A. *Section 601, General Safety Powers and Duties.* This section empowers the FAA to promote safety of flight for civil aircraft in air commerce. The Administrator has the duty to require minimum standards governing practices, methods, and procedures that provide for national security and safety in air commerce.

B. *Section 602, Airman Certificates.* The FAA has the authority to issue airman certificates which specify the capacity in which holders are authorized to serve as airmen.

C. *Section 603, Aircraft Certificates.* The FAA has the authority to issue type certificates for aircraft, aircraft engines, and propellers. The Administrator can also specify in regulations appliances for which the issuance of type certificates is reasonably required and issue those certificates.

D. *Section 604, Air Carrier Operating Certificates.* The FAA is empowered to issue air carrier operating certificates and establish minimum safety standards for the operation of the air carrier to whom the certificate is issued.

E. *Section 605, Maintenance of Equipment in Air Transportation.* In this section, each air carrier is given the duty to make, or cause to be made, inspections, maintenance, overhaul, and repair of all equipment used in air transportation as required by the FA Act, orders, rules and regulations of the FAA.

F. *Section 606, Air Navigation Facility Rating.* The FAA is authorized to inspect, classify, and rate the suitability of any air navigation facility available for the use of civil aircraft. The Administrator is also authorized to issue a certificate for any such navigation facility.

G. *Section 607, Air Agency Rating.* The FAA is authorized to provide for examination and rating of air agencies such as civilian flight schools, repair stations, and other air agencies. The Administrator is also authorized to issue certificates for these schools, repair stations, and agencies.

H. *Section 608, Forms of Applications.* The FAA is authorized to prescribe the form and content of applications for certificates. The Administrator may also require that these applications be administered under oath.

I. *Section 609, Amendment, Suspension, and Revocation of Certificates.* The FAA may issue orders which amend, modify, suspend, or revoke, in whole or in part, any type of certificate issued. Any person whose certificate is affected by an order of the Administrator under this section may appeal the Secretary's order to NTSB.

J. *Section 610, Prohibitions.* This section prohibits any person or organization from conducting any air commerce operation without proper certification or hiring personnel who are not properly certificated. This section also prohibits persons or organizations

from performing any aviation services contrary to regulations prescribed under Title VI.

K. *Section 611, Control and Abatement of Aircraft Noise and Sonic Boom.* The FAA, after consultation with the Secretary of Transportation and the Environmental Protection Agency, shall prescribe and amend standards and regulations for the measurement of aircraft noise and sonic boom.

L. *Section 612, Airport Operating Certificates.* The administrator is authorized to issue or exempt airport operating certificates to airports serving air carriers certificated by the Department of Transportation and to establish safety standards for the operation of these airports.

89. THE PRIVATE SECTOR RESPONSIBILITIES. The term "private sector", when applied to aviation, includes all individuals and organizations participating in air commerce. Individuals and organizations such as pilots, mechanics, air carriers, air operators, air agencies, and manufacturers participate directly in air commerce, while other individuals and organizations such as vendors, food caterers, travel agents, baggage handlers, and aircraft sales participate indirectly.

A. The FAA, which represents part of the "public sector", has the duty as authorized by the FA Act under Title VI, "Safety Regulations of Civil Aeronautics", to establish minimum standards, rules, and national policy that provide for national security and safety in air commerce. This responsibility for aviation safety, however, does not rest entirely with the FAA.

B. Persons or organizations of the "private sector" also have an obligation to provide for public safety. All airmen, air carriers, aircraft owners and operators, air agencies, and certain airport operators who qualify for and accept an FAA certificate assume these "private sector" responsibilities. A major part of air commerce is conducted by private persons or organizations engaged in air transportation. These persons or organizations are referred to as air carriers and are involved in the common carriage by aircraft of persons, property, or mail for compensation or hire.

C. The FA Act requires a classification of safety standards appropriate to the differences between air transportation and other forms of air commerce. Therefore, safety standards applicable to air transportation (air carriers) are more stringent than standards applicable to persons or organizations not involved in common carriage.

91. AIR OPERATOR RESPONSIBILITIES FOR PUBLIC SAFETY

A. *Consideration of Safety and the Public Interest.* Section 601(b) of the FA Act specifies, in part, that when prescribing standards and regulations and in issuing certificates, the FAA shall give full consideration "to the duty resting upon air operators to perform their services with the highest possible degree of safety in the public interest . . ." In other words, the FA Act charges the FAA with the responsibility of promulgating and enforcing adequate standards and regulations. At the same time, the FA Act recognizes that holders of air operator certificates have a direct responsibility for providing air transportation with the highest possible degree of safety. The meaning of Section 601(b) of the FA Act should be clearly understood. It means that this responsibility rests directly with the air operator, irrespective of any action taken or not taken by an individual FAA Inspector or the FAA.

B. *Complying with the FA Act and the Federal Aviation Regulations.* Before certification, the FAA's objective is to make a factual and legal determination that a prospective certificate holder is willing and able to fulfill its duties as set forth by the FA Act and comply with minimum standards and regulations prescribed by the FAA. This objective continues to exist after certification.

(1) If a certificate holder fails to perform its services with the highest degree of safety or fails to comply with the minimum standards and regulations, Section 609 of the FA Act specifies that the certificate may be amended, modified, suspended, or revoked in whole or in part.

(2) Additionally, Section 605(b) generally provides that whenever an inspector finds that any aircraft, aircraft engine, propeller, or appliance used or intended to be used by any air operator in air transportation is not in condition for safe operation, the inspector shall notify the operator and the product shall not be used in air transportation unless the FAA subsequently finds it to be in a condition for safe operations.

C. *Non-Compliance.* The following are conditions and/or situations which could indicate that an air operator is unable and/or unwilling to carry out its duties as set forth by the FA Act.

(1) Repetitive noncompliance with the minimum standards and regulations is indicative that the air operator is incapable or unwilling to perform services with the highest possible degree of safety. Air operators must demonstrate the ability to consistently

comply with the minimum standards and regulations without constant FAA surveillance. Circumstances that indicate a need for constant surveillance of all operations of an air operator should provide sufficient reasons and evidence to invoke the provisions of Section 609 of the FA Act to suspend or revoke the certificate or to amend the operating authority specified in operations specifications.

(2) Inadequate knowledge of minimum standards, regulations, or safe operating practices displayed by air operator management personnel may indicate a lack of concern for the duty of the air operator as recognized in the FA Act. A lack of knowledge and/or understanding of minimum standards and safe practices displayed by an air operator's employees is evidence that the air operator is not providing sufficient training and guidance required by current regulations and, consequently, not fulfilling its duties.

(3) Current regulations specify the certificate holder is responsible for the operational control and airworthiness of its aircraft. Control and discipline of an air operator's employees and agents are essential factors in fulfilling these responsibilities. The inability or lack of motivation to exercise such operational and/or quality airworthiness control clearly indicates that an air operator cannot or will not fulfill its duty.

(4) Accurate recordkeeping is a key factor in assuring positive operational and quality airworthiness control. It is the only method currently recognized of demonstrating that such control has been exercised. Accurate recordkeeping is also the only known method for an air operator to show continuing compliance with the minimum standards and regulations. Usually, compliance can only be substantiated by records and should never be presumed. Inaccurate and/or incomplete records should not be condoned. Knowing and willful falsification or alteration of records is a misdemeanor under Section 902(e) of the FA Act and should be promptly prosecuted in accordance with the appropriate provisions of the applicable statutes and regulations.

D. *Higher Standards.* Society accepts the concept that those holding out their services to the public shall be held to a higher standard of care. The FA Act and current regulatory policies recognize the safety duties of air operators. Consequently, only minimum standards and regulations have been promulgated. These policies consider the concepts of private rights and public responsibilities. However, public safety and national security must be among the FAA's highest priorities. FAA inspectors must therefore maintain an "action attitude" with respect to any air operator that does not or cannot fulfill its duty to perform its services with the highest possible degree of safety.

CHAPTER 7. ENVIRONMENTAL CONSIDERATIONS AND RESPONSIBILITIES

Section 1. Background

93. THE PUBLIC LAW. The following congressional acts and executive orders implemented through FAA regulations and orders require consideration and action by flight standards aviation safety inspectors.

A. *The Federal Aviation Act of 1958.* Section 611 of the FA Act, as amended in 1968, directs the FAA to provide present and future relief and protection to the public health and welfare by the control and abatement of aircraft noise. The FAA must consider whether noise abatement regulations are economically reasonable, technologically practicable, and appropriate for the particular type of aircraft.

B. *The National Environmental Policy Act of 1969 (NEPA).* This public law establishes a broad national policy to promote efforts for improving the relationship between human beings and their environment. The National Environmental Policy Act sets certain policies and goals concerning the environment and requires that to the fullest extent possible, the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with those policies and goals. The National Environmental Policy Act requires that all "major Federal actions" be evaluated for environmental impact through multidisciplinary studies.

C. *Executive Order No. 11514.* This order, issued in 1970, directs all federal agencies to monitor, evaluate, and control their activities to protect and enhance the quality of the environment. This order also requires the review of regulations, policies, and procedures relating to licenses and permits. It further requires implementation of any corrective action necessary to ensure compliance and consistency with the National Environmental Policy Act.

95. ENVIRONMENTAL RESPONSIBILITIES. Flight standards environmental responsibilities are stated in paragraph 1 of Appendix 4 of FAA Order 1050.1D, "Policies and Procedures for Considering Environmental Impacts". Normally, the district/field office responsible for the action is also responsible for the environmental assessment.

A. If additional aircraft operations will significantly impact the environment, certain procedural reviews which consider the "public need" must be accomplished before an operator's operations specifications are issued or amended.

B. The FAA and its employees are also responsible for ensuring compliance with regulations and procedures established to protect and enhance the environment. The following sections provide direction and guidance for fulfilling Flight Standards' responsibility with respect to the national environment.

97. AVAILABILITY OF ASSISTANCE. A thorough discussion on the subject of environmental and aircraft noise requirements is not possible within the framework of this handbook. Additional information is contained in FAA Orders 1050.13A and 1050.1D. Flight standards inspectors should not hesitate to request assistance.

A. Assistance is available through the regionally assigned noise abatement officer (NAO) (FAA Order 1050.11A) and Washington headquarters staff personnel in the Office of Environment and Energy (AEE-110 and AEE-120).

B. Assistance on performance and aircraft noise considerations is available through the appropriate Aircraft Evaluation Groups (AEG's) and AFS-300.

C. Regional flight procedures staff personnel can often provide assistance on departure and arrival procedures established for noise abatement purposes.

D. Questions concerning flight crew operational procedures for noise abatement procedures should be directed to Headquarters flight standards staff personnel (AFS-300).

Section 2. Aircraft Noise

99. PERTINENT REGULATIONS AND ORDERS

A. As a result of Section 611 of the FA Act, the FAA adopted FAR Part 36 (effective December 1, 1969), which establishes noise standards for issuance of aircraft type certificates and changes to those certificates and standard airworthiness certificates. To complement Part 36, the FAA issued FAR Part 91, Subpart E (effective January 24, 1977), requiring civil,

subsonic turbojet aircraft over 75,000 pounds not meeting the Part 36 noise standards to be modified by January 1, 1985, if these aircraft are to operate at U.S. airports.

B. Special Federal Aviation Regulation No. 47 (SFAR 47, effective February 26, 1985) provides for limited issuance of special flight authorizations to conduct certain nonrevenue operations that are otherwise prohibited by the noise restrictions in Part 91, Subpart E. Permissible operations include flights to an airport for alterations to achieve noise compliance, for exportation of the aircraft, and for scrapping the airplane. These special flight authorizations are issued by the Office of Environment and Energy (AEE-1).

C. FAA Order 1050.13A establishes procedures and assigns responsibilities for aircraft noise compliance plans submitted by U.S. operators under Part 91, Subpart E.

101. FLIGHT STANDARDS RESPONSIBILITIES. As of January 1, 1985, all civil turbojet aircraft with maximum weights of more than 75,000 pounds that are U.S.-registered, have standard airworthiness certificates (or equivalent aircraft which are foreign registered), and operate into U.S. airports must have been shown to comply with Stage 2 or Stage 3 noise levels as specified in Appendix C of FAR Part 36. The showing of compliance, for aircraft issued original standard airworthiness certificates after the appropriate dates specified in FAR § 36.1, is accomplished during the aircraft certification process.

A. Operators of these aircraft automatically comply with Part 91, Subpart E aircraft noise requirements and no specific flight standards responsibilities are defined. Operators of aircraft issued original standard airworthiness certificates before the appropriate dates specified in FAR § 36.1 were required by FAR Part 91, Subpart E to make a specific showing of compliance or submit a compliance plan and status reports to the Office of Environment and Energy (AEE-1). Alternatively, the operator may apply for an exemption from that office.

B. Questions concerning a specific aircraft type or a specific operator's compliance status with FAR Part 91, Subpart E should be directed to AEE-110. In addition, AEE-110 will provide copies of compliance plans, status reports, and any exemptions upon request. With respect to aircraft noise and Part 91, Subpart E requirements, Flight Standards inspectors are responsible for the following:

(1) Any flight operation suspected of being in violation of Part 91, Subpart E. An investigation must be initiated and an Enforcement Investigation Report prepared if appropriate (see Order 2150.3, Compliance and Enforcement Program). Upon initiation of an investigation, the Office of Environment and Energy (AEE-1) and the Regional Flight Standards Division shall be notified. Assistance may be requested from these offices if considered necessary.

(2) When known, the Regional Flight Standards Division will be notified of any operator who has failed to submit the compliance plans and status reports required by FAR § 91.308. The Flight Standards Division will also be notified when it is suspected that an operator has failed to comply with his submitted compliance plan. The Flight Standards Division will, in turn, notify AEE-1 and Regional Counsel. Flight standards field inspectors will take action only when directed by the Regional Flight Standards Division in coordination with both the Regional Counsel and AEE-1.

(3) Surveillance of assigned FAR Part 121, 135, and 125 certificate holders (including Part 125 deviation holders) who operate Stage 1 aircraft under FAR § 91.301 to determine the following:

(a) An appropriate exemption (either under FAR Part 11 or § 91.307) is aboard each aircraft.

(b) The operator continues to provide the Office of Environment and Energy with current compliance plan status reports as required by FAR § 91.308. Order 1050.13A provides additional information on required compliance plans and status reports.

(c) The operator is complying with all exemption restrictions such as night curfews.

(d) District offices having responsibility for FAR Part 129 operators should conduct liaison and/or surveillance as necessary to determine compliance with the Part 91 noise limits. Suspected violations must be investigated and an enforcement investigative report prepared, if appropriate.

(e) Surveillance of flight operations conducted under SFAR 47 to determine the following:

- A special flight authorization is on board the airplane during all operations at U.S. airports
- The operator is complying with all conditions and limitations established by the authorization
- The airplane has an appropriate airworthiness certificate or ferry permit to perform the flight

Section 3. Environmental Assessments

103. GENERAL. The National Environmental Policy Act and Executive Order 11514 require federal agencies to assess the potential impact which any major federal action will have on the environment. Order 1050.1D is the FAA's directive that implements the requirements of the National Environmental Policy Act and Executive Order 11514. This section describes situations where flight standards field inspectors shall prepare an Environmental Assessment (EA) and provides direction and guidance for following the appropriate environmental analysis procedures outlined in Attachment 2 of Order 1050.1D.

105. TYPES OF ACTION REQUIRING AN ENVIRONMENTAL ASSESSMENT BY FIELD INSPECTORS. Operations specifications authorize the use of specific airports for scheduled passenger-carrying operations. The issuance of an air carrier certificate or operating certificate and associated operations specifications, in addition to the amendment of current operations specifications, may significantly change the character of the operational environment of an airport. Thus, the flight standards field inspector responsible for the issuance or amendment of certain operations specifications is also responsible for the preparation of the Environmental Assessment. Normally, the following situations will require the preparation of an Environmental Assessment:

- Amendment of any operations specifications authorizing an operator to use turbojet airplanes for scheduled passenger service into an airport not previously serviced by any scheduled passenger-carrying turbojet airplanes
- Issuance or amendment of any operations specifications authorizing an operator to use the Concorde for any scheduled/nonscheduled service into an airport, unless an environmental assessment for such service has been previously prepared
- Issuance of any operations specifications to a scheduled passenger-carrying operator to initially authorize the use of turbojet airplanes and to serve an airport not previously serviced by scheduled passenger-carrying turbojet airplanes

107. OFFICIAL RESPONSIBLE FOR ACCOMPLISHING THE ENVIRONMENTAL ASSESSMENT.

A. Administrative procedures require the governmental official who finalizes the federal action to also decide what actions will be taken as a result of the environmental assessment. In most cases, this official will be the assigned Principle Operations Inspector responsible for approving operations specifications that authorize airports for scheduled passenger service with turbojet aircraft.

B. Due to the varied and complex procedures used in determining whether a particular operation will have a significant impact on the environment, the Principle Operations Inspector must coordinate significant noise activities with appropriate offices. The Principle Operations Inspector or Certification Project Manager will coordinate through the certificate holding regional Noise Abatement Officer with the affected geographic regional Noise Abatement Officer when an Environmental Assessment is required for operations at an airport outside the certificate holding region.

109. COLLECTION OF INFORMATION

A. To prepare an Environmental Assessment, certain types of information must be collected. When an applicant air operator is involved in the certification process, the Certification Project Manager is responsible for collecting the information from the operator. In other situations, the Principle Operations Inspector assigned to the operator is responsible for collecting the information from the operator. The operator shall be advised that this information is necessary for preparing an Environmental Assessment and that an Environmental Assessment is required before the operations specifications can be issued or amended.

B. The operator may prepare the Environmental Assessment or contract with another person to prepare the Environmental Assessment. The operator should be advised that the Environmental Assessment report must be prepared in accordance with Order 1050.1D. Most private contractors who perform this type of work are familiar with this order. The operator-prepared Environmental Assessment must be forwarded to the responsible inspector for processing.

C. The information that must be collected is described as follows:

- Proposed airports at which scheduled passenger turbojet aircraft service will be introduced
- Type aircraft and engines to be used
- Number of proposed scheduled passenger-carrying operations per day

- Number of proposed landing and takeoff operations during daytime (0700-2159 local) at airports to be served
- Number of proposed landing and takeoff operations during night-time (2200-0659 local) at airports to be served
- Operator's long range plans (1 to 2 years) to include planned service expansion, planned changes to service to new airports, planned changes in flight frequency, and planned changes in daytime or night-time scheduled passenger-carrying operations

111. PROCESSING THE ENVIRONMENTAL ASSESSMENT

A. Attachment 2 of Order 1050.1D identifies the environmental subjects and outlines the procedures to be used in preparing an Environmental Assessment. Normally, aircraft noise will be the primary subject of a Flight Standards Environmental Assessment to support the issuance or amendment of operations specifications.

B. Upon receipt of the operational information described in paragraph 1145, a noise analysis will be performed using the Area Equivalent Method (AEM) discussed in paragraph 1 of Attachment 2 of Order 1050.1D and in FAA Report No. EE-84-12. Assistance is available from both the regionally assigned Noise Abatement Officer and AEE-110/120. For example, the Certification Project Manager or Principle Operations Inspector may mail the operational information to AEE-110/120 with a request to perform the Area Equivalent Method noise analysis.

C. Generally, if the results of the Area Equivalent Method calculations show less than a 17 percent increase in the Decibel Noise Level (DNL) area contour, it may be concluded that the Federal action would not significantly change the operational environment of the airport and a Finding Of No Significant Impact (FONSI) should be prepared. The preparation of the Finding Of No Significant Impact in accordance with chapter 4 of Order 1050.1D is the responsibility of the Certification Project Manager or the Principle Operations Inspector.

D. In the event that the Area Equivalent Method calculations show at least a 17 percent increase in the Decibel Noise Level contour, the FAA's Integrated Noise Model (INM) or an FAA-approved equivalent computer model will be used to perform a noise sensitive area analysis. Such events should seldom occur because more quiet and fuel efficient turbojet aircraft are being used to introduce or increase scheduled passenger service at small and medium hub airports. The Integrated Noise Model calculation may also be performed by AEE-120 and the results and recommendation would be provided to the Certification Project Manager or Principle Operations Inspector who would be responsible for preparing and coordinating the Finding of No Significant Impact which may be approved by the regional director or designee. An Environmental Impact Statement (EIS) may be recommended by AEE-120.

E. In case of doubt as to whether an Environmental Impact Statement is necessary, the Flight Standards Division Manager or designee shall consult with the regional Noise Abatement Officer, AEE-1, and AGC-1. If an Environmental Impact Statement is required, the flight standards division manager or designee shall advise the operator and obtain any additional information necessary to prepare a draft Environmental Impact Statement. The new or amended operations specifications will not be issued until all issues and questions associated with the Environmental Impact Statement are fully resolved and the regional director has concurred with the issuance or amendment of the operations specifications. No decision on the proposed action can be made until 90 days after the Environmental Protection Agency has published a notice in the Federal Register for a draft Environmental Impact Statement or 30 days after publication of the notice for a final Environmental Impact Statement. See Order 1050.1D for Environmental Impact Statement process.

FIGURE 7-1 DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT FOR AMENDMENT OF OPERATIONS SPECIFICATIONS

TEE TAIL AIRWAYS, INC., TURBOJET OPERATIONS

A. *Proposed Action*

Tee Tail Airways, Inc., commencing on or about January 1, 1988, proposes to operate twin engine turbojet Fokker F-28 1000 aircraft over certain of its scheduled passenger air carrier routes. The turbojet aircraft will supplement Tee Tail's current fleet of turbopropeller airplanes.

B. *Environmental Considerations*

1. All aircraft that will be served by Tee Tail's F-28 aircraft, except for Mount Rock Airport, Anytown USA, are currently served by scheduled air carriers with turbojet aircraft of equal or greater size.

2. Mount Rock Airport currently accommodates approximately 32,500 aircraft per year, of which approximately 2,490 are business jets that include Learjets, Gulfstream II's, Saberliners, Westwinds.

3. Tee Tail Airways proposes to operate only one flight per day into Mount Rock Airport with F-28 aircraft.

4. All operations will be conducted in accordance with established noise abatement rules and procedures.

5. A draft compatibility study recently completed for Mount Rock Airport by Morey Associates, Oxon Hill Airport Consultants, relative to noise control and land use planning, does not indicate that the frequency of operations at present or anticipated in the near future are considered to cause a significant impact on the air and water quality, aesthetics, and/or social conditions. Additionally, construction, wetlands, flood plains, historic sites, coastal zones, and prime farmland considerations are not involved.

6. According to Advisory Circular AC-36-3B, the Fokker F-28 aircraft estimated DBA at maximum takeoff gross weight is 79.2. This is lower than many business jets and certain models of the B-737 and DC-9 aircraft which operate into most of the affected airports.

7. According to the Office of Environment and Energy Noise Abatement Division (AEE-100), a computer analysis for Mount Rock Airport disclosed that the 65 Decibel Noise Level contour would be increased by 6.5 percent from the addition of one F-28 aircraft flight per day. This is well within the limits established for a finding of no significant impact statement. The normal increase limit established for that purpose is 17 percent.

8. These flights will be operated during daylight hours only.

C. *Alternatives*—No Action.

This alternative was not considered appropriate in this instance.

D. *Conclusion*

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and that it will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

APPROVED:

REGIONAL DIRECTOR, XXX-1 DATE:

CHAPTER 8. EXEMPTIONS, DEVIATIONS, WAIVERS, AND AUTHORIZATIONS

Section 1. Exemptions

113. GENERAL. The granting of an exemption is generally viewed as an alternative method of complying with a regulatory requirement. Exemptions are promulgated under FAR Part 11. A grant of exemption and each specific condition and limitation is a regulatory requirement. A petition for exemption may be submitted to the FAA by any interested person.

115. CONTENT OF PETITION. Each petition for an exemption should contain the following:

- The rule requirement from which exemption is sought
- The nature and extent of the requested regulatory relief
- A description of each person or aircraft to be covered by the exemption
- Any information, views, or arguments to support the action sought
- The reasons why a grant of exemption would be in the public interest
- The action to be taken by the petitioner to provide a level of safety equivalent to that provided by the rule from which exemption is sought or the reason why a grant of exemption would not adversely affect public safety

117. PREPARING AND MAILING THE PETITION. Each petition should be submitted to the FAA at least 120 days before the proposed effective date of the requested exemption. FAR Part 11 specifies the address for the proper FAA action office based on the subject of the petition. Frivolous or ill-prepared petitions are rejected and both the petitioner's and the FAA's resources are ill-used in the rejection process.

A. Petitions are frequently rejected because the petitioner failed to identify and explain the reasons why a grant of exemption would be in the public interest. The petitioner's interest is not necessarily considered to be in the "public interest". A petitioner's statement that a grant of exemption would be in the public interest because it would reduce the petitioner's operating costs is not acceptable and is a reason for FAA rejection of the petition.

B. Each petition for exemption should be well-conceived and in writing.

119. PROCESSING THE PETITION. A summary of each petition for exemption is normally published in the Federal Register and the public has 20 days to submit comments to the FAA assigned public docket. After the close of the public comment period, the FAA action office considers all comments received and decides whether to accept or deny the petition. The decision document is then prepared, coordinated, signed, and mailed to the petitioner.

121. DISTRIBUTION AND AVAILABILITY OF EXEMPTIONS. Additional copies of both grants and denials of exemptions are mailed to each Regional Flight Standards Division. Each document is also placed in the archives of the FAA's computer system located in Oklahoma City (AVN-120) and may be accessed through the Automated Exemption System (AES). Access to the system may be obtained by contacting the program manager at each regional headquarters. A grant of exemption normally contains conditions and limitations applicable to the grantee and is valid for a period of two years. However, some grants of exemption may be valid for only a few months (for example, delayed compliance with an aircraft modification due to the non-availability of parts).

123. AMENDING OPERATIONS SPECIFICATIONS. The operations specifications of an operator granted an exemption are amended to show that the certificate holder is authorized to use the exemption in conducting its operations. See paragraph A5 of the operations specifications.

125. PETITIONING FOR RECONSIDERATION. A petitioner who is denied an exemption may petition the FAA Administrator for reconsideration within 30 days after being notified of the denial of exemption. If a petition for exemption is granted, a person other than the initial petitioner may file a petition for reconsideration with the FAA Administrator within 45 days after the grant of exemption is issued. The petitioner's request for reconsideration of its petition must be based on the existence of one or more of the following:

- An erroneous material fact
- A necessary legal conclusion that is without governing precedent or is a departure from or contrary to law, FAA rules, or precedent

- An additional fact relevant to the decision which was not presented in the initial petition for exemption. (The petition for reconsideration must state the reason the additional fact was not presented in the initial petition.)

127. PROCESSING A PETITION FOR RECONSIDERATION. A summary of a petition for reconsideration of a grant or denial of exemption may be published in the Federal Register. If accomplished, a reasonable period for public comment is announced in the summary. In either event (with or without publication in the Federal Register), the FAA action office prepares and coordinates the decision document.

A. If a grant or partial grant of exemption is issued, the document is signed by the FAA official who has been delegated such authority and responsibility in FAR Part 11.

B. If a denial of petition for reconsideration is prepared and coordinated, the decision document is signed by the FAA Administrator. Copies of the grant, partial grant, or denial of petition for reconsideration are mailed and placed in archives as previously discussed. If the petitioner disagrees with the FAA Administrator's decision, the petitioner may institute legal action within the Federal Appeals Court system.

Section 2. Deviations, Waivers, and Authorizations

129. GENERAL. Certain FAR Sections allow the Administrator to issue a Certificate of Waiver, a Certificate of Authorization, or operations specifications which authorize a deviation. These actions permit a person or an organization to either deviate from a specific regulation or comply with special alternative provisions, conditions, or limitations. This regulatory flexibility is available to the Administrator when the specific regulatory section stipulates that it is available. There are three options available which are referred to as follows:

A. *Deviation.* When a regulatory section contains phrases such as " unless otherwise authorized by the Administrator ", " the Administrator may . . . ", " if the Administrator finds . . . ", " the Administrator may authorize . . . ", " the Administrator allows a deviation . . .", " notwithstanding the Administrator may issue operations specifications . . . ", or other similar words, the regulatory flexibility is referred to as a deviation.

B. *Waiver.* When the regulatory section contains phrases such as "the Administrator may issue a certificate of waiver . . .", "in accordance with the terms of a certificate of waiver issued by the administrator", or other similar words, the regulatory flexibility is referred to as a waiver.

C. *Authorization.* When the regulatory section contains words such as "in violation of the terms of an authorization issued under this section", "unless a certificate of authorization. . .", or other similar words, the regulatory flexibility is referred to as an authorization.

NOTE: If the specific regulatory section does not stipulate that a deviation, waiver, or authorization may be granted or issued, compliance with the regulation is mandatory. In these cases, the only methods of obtaining relief from the regulation is through the exemption process.

131. WAIVERS AND AUTHORIZATIONS. When a regulatory section stipulates that a waiver or authorization is permitted, any person may apply for a certificate of waiver or a certificate of authorization. FAA Form 7711-2, "Application for Certificate of Waiver or Authorization" must be prepared and signed by the applicant and delivered or mailed to the appropriate FAA regional or district office for processing (see Figure 4-1).

A. The application must be processed in a timely manner. The assigned inspector shall review the application, obtain appropriate additional information from the applicant, if necessary, and determine whether the applicant has provided adequate justification for a temporary waiver or authorization. The inspector shall also determine whether the applicant will provide an equivalent level of public safety during the conduct of any operation under a certificate of waiver or authorization.

(1) If the application is denied, the reasons for denial shall be specified in a letter to the applicant.

(2) If the waiver or authorization is granted, the inspector shall prepare FAA Form 7711-1, "Certificate of Waiver or Authorization", (Figure 4-2) for review by the authorizing FAA manager or designated representative. The completed Certificate of Waiver or Authorization, dated and signed by the responsible FAA manager, will be mailed or delivered to the applicant. A copy of the application for a Certificate of Waiver or Authorization, both front and back, and a copy of the completed Certificate of Waiver or Authorization, shall be retained in the files of the issuing office.

B. A Certificate of Waiver or Authorization shall not be issued for any operation conducted under FAR Parts 121, 125, 129, or 135. Requests for a deviation from these FAR Parts must be requested and processed in accordance with the following paragraphs.

133. DEVIATIONS. Any person or organization may apply for a deviation when a regulatory section stipulates that a deviation is permitted. Deviations may be granted and issued to operators conducting operations under FAR Parts 121, 129, or 135. To apply for a deviation, an operator must submit a specific request to the FAA.

A. The application must be made by a letter that identifies the specific regulatory sections from which a deviation is requested. The letter and attachments, if appropriate, must contain the specific reasons the deviation is requested, information to show that an equivalent level of safety will be maintained, and any other information the FAA may require.

B. The types of information that must be submitted with the request for a deviation are described in other sections of this handbook that relate to the specific subject matter. Unless otherwise specified by this handbook, deviations requested by operators conducting operations under FAR Parts 121, 129, and 135 must be authorized for use by operations specifications. The approval, denial, and reconsideration procedures for processing deviation requests shall be the same as the procedures for processing, issuing, or amending operations specifications.

C. The district office recordkeeping requirements for each deviation are the same as operations specifications recordkeeping requirements.

135. DEVIATIONS FOR MILITARY CONTRACT OPERATIONS

A. Section 1117 of the FA Act provides for the air transportation of government-financed passengers and property. Normally, the transportation of such persons and property must be provided by air carrier certificate holders authorized to operate under FAR Part 121.

(1) FAR § 121.57 permits the Administrator to authorize deviations to the applicable requirements of FAR Part 121, when necessary, so that operators may perform certain unique operations under a military contract. The operator must submit an application for the deviation (application to amend operations specifications) directly to the Manager, Air Transportation Division, AFS-200 with a copy to its Certificate Holding District Office.

(2) The district office shall immediately advise its regional office that the operator has forwarded the application for a deviation and amended operations specifications to AFS-200.

B. AFS-200 shall coordinate the request with AFS-300, if appropriate. AFS-200 shall coordinate the request with the Department of Defense (DOD) in order to verify that the proposed operation is essential for national defense and not based on either an economic advantage or convenience to either the air carrier or the United States. Section 1117 of the FA Act permits the use of a foreign operator pursuant to bilateral agreement and the government of the foreign air carrier.

(1) When AFS-200/Department of Defense coordination has been accomplished, AFS-200 will advise the appropriate regional flight standards division manager whether the deviation is approved. If the deviation is denied, AFS-200 shall notify the operator in writing. Copies of the denial shall be provided to the appropriate region, district office, and Department of Defense offices. If the application is approved, AFS-200 will prepare a draft of the operations specifications authorizing the deviation. AFS-200 shall include any conditions or limitations considered necessary.

(2) AFS-200 shall forward the draft operations specifications directly to the district office, and a copy to the appropriate Regional Flight Standards Division. The district office shall issue the amended operations specifications to the operator. The amendment shall contain an expiration date consistent with the duration of the specific military operation. However, the operator shall be advised that the Administrator may, at any time, terminate the grant of deviation authority covered by the amended operations specifications.

137. DEVIATION TO PERFORM AN EMERGENCY OPERATION

A. FAR §§ 121.57 and 135.19 specify requirements for obtaining deviation authority to perform an emergency operation.

(1) The term "emergency operations" means an immediate but temporary action to prevent or reduce the loss of life or property when an unanticipated threat to life or property occurs. Operations under a long term contract to provide certain types of protection (such as rescue, fire-fighting, security) to the public cannot be classified as an unanticipated, temporary action.

(2) An "emergency operation" under FAR §§ 121.57 and 135.19 is not related to the pilot-in-command responsibility and authority (emergency authority) provided in FAR § 91.3.

B. The nature of the emergency dictates whether a verbal or written amendment of operations specifications is justified. The manager of the Certificate Holding District Office must make this determination. If time permits, the district office manager may wish to consult by telephone with the regional flight standards division manager. The authorization to deviate, whether verbally or by written amendment to the operations specifications, must be justified and applicable only to a specific emergency operation. The authorization must also be for a temporary and limited period of time. If a verbal authorization is given, the certificate holder must provide documentation describing the nature of the emergency to the district office within 24 hours after completing the operation.

CHAPTER 9 AIR OPERATOR/AGENCY CERTIFICATE NUMBERS

1. GENERAL. The Operational Systems Branch, AVN-120, manages and controls all air operator and air agency certificate numbers. AVN-120 provides a standardized format, a multitude of possible numbers, and a central location for assigning, storing, and retrieving information.

3. ELEMENTS OF A CERTIFICATE NUMBER

A. *Four Elements of a Certificate Number.* A certificate number consists of four elements: the "designator" element, the "type" element, the "numeric" element, and the "alpha suffix" element. For example, the air operator certificate number RWI-L-001-A consists of the following:

(1) *RWI (designator element).* The "designator" element is a designation using a combination of three letters. An air operator or air agency applicant may request a specific three-letter designator to personalize the designator received.

(a) Applicants under FAR Parts 121, 125, 135, 145, 147, or 149 should submit three choices on the Preapplication Statement of Intent.

(b) Applicants under FAR Parts 129, 133, 137, or 141 should submit three choices in the letter of intent and/or on the respective application forms.

(c) AVN-120 shall attempt to accommodate the applicant's request. If all three choices have already been assigned or if the applicant does not provide any choices, AVN-120 will issue the first random designator available.

(2) *L (type element).* The "type" element identifies the type of certificate and the applicable regulation. When an organization has several types of operations with different types of certificates, each certificate will have the same three-letter designator with the "type" element ensuring the differentiation. For a complete breakdown of "type" elements, see Figure 9-1.

(3) *001 (numeric element).* The "numeric" element provides 999 (001 to 999) certificate number combinations for each type of certificate.

(4) *A (alpha suffix element).* The "alpha suffix" element provides even more possible combinations by establishing 25 alphabet groups (A through Z, excluding P, which is used to denote a precertification number for FAR Parts 121, 125, 135, or 145 only).

(a) When all possible number element combinations (001 to 999) have been used for a specific type of certificate, either air agency or air operator, the alpha suffix changes to a letter chosen by AVN-121.

(b) For example, an external-load operator is assigned the certificate number ELO-L-999-A. The next air operator to obtain a certificate number, regardless of the designator element, might get XYZ-B-001-B.

B. *Certificate Commonality.* This number system allows an operator holding several different types of certificates to maintain a certain amount of commonality in certificate numbers. For example, an air operator who is also an air agency will have the same designator prefix as well as the same certificate number suffix. The fourth letter of the designator differentiates the type of operation.

Number: RWI-L-001-A

Elements: RWI - Rotorworks International
L - External-Load Operator
001 - First certificated external-load operator
A - AVN-121 assigned air operator suffix

Number: RWI-R-002-B

Elements: RWI - Rotorworks International
R - Repair Station
002 - Second certificated repair station
B - AVN-121 assigned air agency suffix

5. PRECERTIFICATION NUMBERS. The letter "P" is used as the alpha suffix element for the temporary precertification numbers used for FAR Part 121, 125, 135, or 145 applicants. Upon successful completion of the certification process and the issuance of the actual certificate number, the

"P" is changed to the appropriate alpha suffix element (A through Z, excluding P).

NOTE: The exception to this is FAR Part 145. When a FAR Part 145 precertification number is assigned, the actual certification number, although inactive, is assigned at the same time.

7. RESTRICTIONS

A. *Number Assignment.* The complete certification number (all eight characters), once assigned to a particular organization, is never assigned to another.

B. *Reassignment of Designators*

(1) Regardless of the type of certificate, the designator element of an organization that has become inactive or that has terminated operations shall not be reassigned to a different organization for at least three years. During the three year period, the designator can be reassigned to the original organization if it resumes operations.

(2) After the three year period, the designator can be assigned to another organization provided there is no record of significance associated with that element in any of the databases maintained by AVN-120. "Record of significance" refers to any action or record covered under the Freedom of Information Act. If a designator element has an associated record of significance, AVN-120 will not reassign the designator element for at least 10 years.

(3) A change of name in an air operator results in a certificate number change. Although the designator would remain the same the operator would receive the next available numeric element in the sequence log. This does not apply to external load and agricultural operators.

NOTE: A change of ownership for an operator or air agency results in a completely new certificate number.

C. *Numeric/Alpha Suffix Element Reassignment.* A specific numeric element can be reassigned provided a different alpha suffix element is used. For example, 999 can be used with an "A" alpha suffix and with a "B" alpha suffix.

D. *Repair/Satellite Station Unique Certification Number Elements*

(1) Unlike other air operators and air agencies, repair stations may be assigned a three-character alpha-numeric designator instead of just a three-letter designator element. For example, the unique designator element for a repair station could be RAA (three-letter designator) or RA9 (three-character alpha-numeric designator). When a numeric element is included, it means that the designator was machine assigned by AVN-120.

(2) The three-letter/character alpha-numeric designator assigned to satellite stations will be the same as the designator used for the parent station. The only element that will differ is the "type" element. When the repair station has only one satellite station, the type element will be a "D". When a repair station has more than one satellite, the first satellite will use a "D" with all succeeding stations using successive numbering starting with "2".

Number: RWI-R-001-B

Elements: RWI - Rotorworks International
R - Repair Station
001 - Certificated repair station
B - AVN-121 assigned air agency suffix

Number: RWI-R-00D-B

Elements: RWI - Rotorworks International
R - Repair Station
00D - First satellite repair station
B - AVN-121 assigned air agency suffix

Number: RWI-R-002-B

Elements: RWI - Rotorworks International
R - Repair Station
002 - Second satellite repair station
B - AVN-121 assigned air agency suffix

(3) Occasionally the same parent company will own several related repair stations. Since these are separate related facilities and not satellites, these repair stations will all use the same three letter designator. The difference in certificate numbers will be in the type element. Where the satellite station uses a "D" for the first satellite station, related stations

start off with a "2". In addition, a remark will be added by AVN-120 in the comment section that this is not a satellite station.

Number: RWI-R-001-B

Elements: RWI - Rotorworks International
R - Repair Station
001 - Certificated repair station
B - AVN-121 assigned air agency suffix

Number: RWI-R-00D-B

Elements: RWI - Engineworks International
R - Repair Station
002 - First related repair station
B - AVN-121 assigned air agency suffix

Number: RWI-R-002-B

Elements: RWI - Frameworks International
R - Repair Station
003 - Second related repair station
B - AVN-121 assigned air agency suffix

9. TERMINATION OF THE CERTIFICATION PROCESS. If an applicant terminates the certification process prior to certificate issuance, the district office must inform AVN-121. The same holds true for when the FAA terminates the process. Disposition of the designators will be in accordance with paragraph 7B, above.

FIGURE 9-1

AIR OPERATOR/AGENCY TYPE ELEMENTS

TYPE OF CERTIFICATE	TYPE ELEMENT	FAR PART
AIR OPERATORS		
Air Carrier Certificate	A	121/135
Operating Certificate (Business/private carriage)	B	125
Operating Certificate (commercial)	C	121/135
Foreign Operator (Operations specifications only)	F	129
Agricultural Aircraft Operator	G	137
Rotorcraft External-Load Operator	L	133
FAR Part 125 Full Deviation Holder (Certificate number not issued)	M	91
AIR AGENCIES		
Domestic Repair Station	R	145
Domestic Satellite Repair Station	D	145
Foreign Repair Station	Y	145
Foreign Satellite Repair Station	Z	145
Pilot School	S	141
Provisional Pilot School	V	141
Aviation Maintenance Technician School	T	147
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CHAPTER 1 PERFORM FIELD APPROVAL OF MAJOR REPAIRS AND MAJOR ALTERATIONS

Section 1 Background

1. **WPMS ACTIVITY CODES**

A. *Maintenance:* 3414/3416

B. *Avionics:* 5414/5416

3. **OBJECTIVE.** This chapter provides guidance in determining the category of a repair or alteration and ensuring that the aircraft can be returned to service in accordance with approved technical data.

5. **GENERAL**

A. *Definitions*

(1) *Major alteration:* An alteration not listed in the aircraft, aircraft engine, or propeller specifications that:

- Might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness
- Is not done according to accepted practices or cannot be done by elementary operations

(2) *Major repair:* A repair that:

- If improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness
- Is not done according to accepted practices or cannot be done by elementary operations

(3) *Minor alteration:* Any alteration that is not classified as a major alteration.

(4) *Minor repair:* Any repair that is not classified as a major repair.

(5) *Field approval:* An approval by an authorized inspector of a major repair or major alteration that is accomplished by:

- Examination of data only - one aircraft
- Physical inspection, demonstration, testing, etc. - one aircraft
- Examination of data only - duplication of identical aircraft

(6) *Data:* Information that supports and/or describes the alteration or repair, including the following:

- Drawings, sketches, and/or photographs
- Stress analysis
- Engineering Orders
- Operating limitations

(7) *Approved data:* Data used to approve major repairs and major alterations, including the following:

- Type Certificate Data Sheets
- Supplemental Type Certificates (STC's)
- Airworthiness Directives
- Manufacturer's FAA approved data
- Designated Engineering Representative (DER) approved data
- Designated Alteration Station (DAS) approved data developed for alterations performed by that station only

B. *Inspector Qualifications.* The inspector must be authorized, experienced, and/or trained with the methods, techniques, and materials involved in the major repair/major alteration.

C. *Inspector Responsibilities.* The inspector must be able to determine that, by granting a field approval, the affected product can reasonably be expected to result in safe operation and conform to regulatory requirements. If the

inspector is not thoroughly familiar with all aspects of the alteration or repair or has any doubt about the expected airworthiness, approval or denial will not be given until the necessary assistance has been acquirded.

D. *Data Requirements and Coordination*

(1) The source of data presented by an operator is strictly the operator's responsibility. Inspectors should not obtain nor provide data for the operator's use. Source, cost, and other matters concerning an operator's acquisition of data, presented as part of an alteration approval action, should not be questioned.

(2) Acceptable data that may be used on an individual basis to obtain approval are:

- FAA Advisory Circulars (e.g., Advisory Circulars 43.13-1A and 43.13-2A)
- Manufacturer's technical information (e.g., manuals, bulletins, kits, etc.)
- Mil Specs
- FAA Field Approvals

E. *Designated Engineering Representatives (DER).* If an appropriately rated Designated Engineering Representative is employed by the operator, the inspector should coordinate with the operator.

(1) The Designated Engineering Representative may be limited to technical areas that do not fully cover the entire project. Any area not covered by this approval must be reevaluated by the FAA.

(2) The Designated Engineering Representative should not be permitted to make any determination as to which inspections are necessary for the pertinent alteration or repair, since this activity is outside the scope of the DER's authorization.

(3) Designated Engineering Representatives do not have authority, by virtue of their delegation, to:

- Grant field approvals or otherwise "sign off" an FAA Form 337 in any way
- Issue Supplemental Type Certificates
- Grant data approvals by signing log books or other similar documents

7. REQUIRED ENGINEERING APPROVAL

A. Many alterations that are commonly called major alterations are actually major design changes and will require a Supplemental Type Certificate. Previously unapproved major changes to structural strength, reliability, and operational characteristics affect the airworthiness of the product and therefore require engineering approval. Typical major alterations in this category include the following:

(1) Increase in gross weight and/or changes in center of gravity range

(2) Installation or relocation of equipment and systems or changes that may adversely affect structural integrity, flight, or ground handling characteristics of the aircraft

(3) Any change (alteration) of movable control surfaces that may adversely disturb the dynamic and static balance, alter the contour, or make any difference (plus or minus) in the weight distribution

(4) Change in control surface travel outside approved limits, control system mechanical advantage, location of control system component parts, or direction of motion of controls

(5) Changes in basic dimensions or external configuration of the aircraft, such as wing and tail platform or incidence angles, canopy, cowlings, contour or radii, or location of wing and tail fairings

(6) Changes to landing gear, such as internal parts of shock struts, length, geometry of members, or brakes and brake systems

(7) Any change to manifolding, engine cowling, and/or baffling that may adversely affect the flow of cooling air

(8) Changes to primary structure that may adversely affect strength or flutter and vibration characteristics

(9) Changes to systems that may adversely affect aircraft airworthiness, such as:

- Relocation of exterior fuel vents
- Use of new type or different hydraulic components
- Tube material and fittings not previously approved

(10) Changes to oil and fuel lines or systems that may adversely affect their operation, such as:

- New types of hose and/or hose fittings
- Changes in fuel dump valves
- New fuel cell sealants
- New fuel or oil line materials
- New fuel or oil system components

(11) Any change to the basic engine or propeller design controls, operating limitations, and/or unapproved changes to engine adjustments and settings having an affect on power output

(12) Changes in a fixed fire extinguisher or detector system that may adversely affect the system effectiveness or reliability, such as:

- Relocation of discharge nozzle or detector units
- Use of new or different detector components in new circuit arrangements
- Decreasing amount or different type of extinguishing agent

(13) Changes that do not conform to the minimum standards established in a Technical Standard Order under which a particular aircraft component or appliance is manufactured

(14) Modifications to approved type (TSO or CAATC) radio communications and navigational equipment that may adversely affect reliability or airworthiness, such as:

- Changes that deviate from the vacuum tube or semiconductor manufacturer's operating limitations
- Any changes to IF frequency
- Extension of receiver frequency range above or below the manufacturer's extreme design limits
- Major changes to the basic design of low approach aids
- Changes that deviate from the design environmental performance

(15) Changes to aircraft structure or cabin interior of aircraft that may adversely affect evacuation of occupants in any manner

(16) Changes in aircraft flight manuals and/or manual information in the form of placards or markings

B. Engineering assistance and advice should be requested when working in areas that include:

- Use of synthetic covering material
- Substitution of parts
- Processes on which insufficient information is available
- New chrome plating applications
- New titanium applications
- Ceramic coatings
- New magnesium applications
- Use of synthetic resin glues
- New stripping or plating coatings
- New welding or brazing techniques
- Welding of certain types of propeller or engine parts
- Application of Technical Standard Orders to specific installations
- Alternative means for complying with Airworthiness Directives
- Any change to a required aircraft instrument system
- Any other complex special process that if not properly performed could have an adverse effect on the integrity of the product

C. Requests for engineering evaluation/assistance and/or approval of non-Designated Engineering Representative

approved data for field approvals should be made by the inspector, not the operator.

D. When the alteration or repair data file is forwarded to engineering for review, a memorandum of transmittal must accompany the file. When necessary, the transmittal will provide pertinent and detailed information not contained in the submitted data, such as the airworthiness inspector's recommendations, viewpoints, and specific requests for advice.

E. When engineering assistance is requested for field approval purposes, the inspector who will complete the field approval will normally be expected to coordinate and implement the assistance requested by engineering.

F. The inspector should be aware that the data approved by FAA engineering may not cover all the steps and procedures needed to accomplish the alteration or repair. A Field Approval by the inspector may be required for the completion of the task.

9. FLIGHT TEST AND OPERATION CHECK REQUIREMENTS

A. An alteration or repair requiring a change to a flight manual or operation limitation must be coordinated with the appropriate engineering office.

B. Avionics alterations requiring flight manual supplement or operations limitations changes must be coordinated with the Aircraft Certification Office.

C. Any alteration or repair that may have appreciably changed the aircraft flight characteristics or substantially affected its operation in flight will be operationally checked in accordance with FAR § 91.167 and the results recorded on the aircraft records.

D. If an operational check is unsatisfactory as a result of using approved data, additional data must be developed by the operator.

11. FAA FORM 337, MAJOR REPAIR AND ALTERATION

A. *Data Approval*

(1) Data approval issued for one aircraft is applicable to only the aircraft described in Block 1 of FAA Form 337. This data cannot automatically be used as approved data for other aircraft. The data may be used only with the approval of the local office as the basis for obtaining approval on other aircraft.

(2) Data approval issued for duplication of identical aircraft may be used as approved data only when the identical alteration is performed on an aircraft of identical make, model, and series by the original modifier.

(3) When the alteration has been performed by persons other than the original modifier, this data may be used as the basis for obtaining approval on other aircraft.

B. Approval for return to service (Block 7 of FAA Form 337) by a Flight Standards airworthiness inspector will be performed only when the operator's designated person(s) is not available.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 21, 43, and 65
- Completion of the Airworthiness Inspectors Indoctrination Course and the Aircraft Alteration Course
- Identification and authorization to perform field approvals by the regional Flight Standards Division

B. *Coordination.* This task may require coordination or assistance from engineering, operations, other technical personnel and the operator.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 23, 25, 27, 29, and 145
- Order 8000.42, Authorization To Develop and Use Major Repair Data Not Specifically Approved By The Administrator, as amended
- Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended
- Advisory Circulars 43.9, Maintenance Records, and 20-114, Manufacturer's Service Documents, as amended
- CAR 3, 4a, and 4b
- Type Certificate Data Sheets

B. *Forms:*

- FAA Form 337, Major Repair and Alteration

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator Submitted Data.* Inspectors must determine that the data supplied is complete enough to proceed with evaluation of proposed alteration or repair.

(1) The inspector must review and evaluate the following:

(a) A formal application submitted on one of the following:

- FAA Form 337 completed in duplicate
- Other administrative forms used by a manufacturer or operator that are acceptable to the Administrator

(b) Data that may include, but is not limited to, the following:

- Detailed description of the proposed alteration or repair
- Detailed design standards such as methods, sketches, drawings, stress analyses, photographs, electrical load analyses, etc.
- Testing procedures or methods to meet certification and/or operating rules, such as flammability, carbon monoxide, and noise requirements

(c) The description of proposed alteration or repair to ensure that it correctly and accurately describes the alteration or repair

(d) Detailed design standards, to ensure that the operator has considered all applicable design standards and has analyses to substantiate the findings in this regard. The standards must consider at least the following:

- The structural requirements that may be affected by the alteration or repair
- Any hazards that may affect the aircraft or its occupants
- Weight and balance computations
- Operating limitations
- Any other factors affecting safety or airworthiness

(e) Test procedures, to ensure that they include all tests necessary to substantiate that the alteration or repair meets applicable certification requirements and are appropriate to the alteration or repair.

(2) If data is not complete, the operator must supply any additional information needed.

B. *Evaluate Proposal.* To determine compatibility with the current aircraft configuration, make a preliminary evaluation of the proposed alteration or repair and an inspection of the aircraft, as required. Accomplish at least the following, as applicable:

(1) Review aircraft records for previous alterations and repairs that may have an affect on the proposed alteration or repair

(2) Review maintenance and inspection procedures to determine that the alteration or repair is referenced

(3) Inspect aircraft for the following:

- Previous alterations or repairs that may not have been recorded

- Compatibility of previous alterations or repairs with intended alterations or repairs

(4) If a determination is made that the proposed alteration is beyond the scope of a field approval, advise the operator that FAA engineering evaluation is necessary. Assistance to the operator will include:

- Furnishing an application for Type Certificate, Production Certificate, or Supplemental Type Certificate, as applicable
- Furnishing FAA Form 8110-12 (OMB 2120-0031)
- Advising that supporting data must be attached

(5) If the inspector determines that assistance from engineering is needed for approving a major repair, the inspector will contact FAA engineering. Coordination with the operator will include:

- Requesting that the operator provide all supporting data
- Cautioning against proceeding with the repairs prior to receiving engineering approval

C. *Evaluate Alteration or Repair After Data Approval or Acceptance.* The inspector will schedule a conformity inspection with the operator to verify workmanship and compliance to accepted or approved data.

(1) The inspection must account for activities during and after the alteration or repair process. This includes but is not limited to the following:

- Witnessing that loading requirements are properly accomplished
- Operational tests and checks
- Any other techniques or methods as deemed necessary

(2) If, during the conformity inspection, it is determined that the operator cannot comply with the data submitted, the operator must revise the data accordingly.

(3) When an operator's data is "data approved only", check the operator's workmanship, conformity, and compliance with the alteration or repair data as part of normal surveillance.

D. *Review the Approval for Return to Service.* The aircraft must be approved for return to service by a person authorized by FAR § 43.7 by completing block 7 of FAA Form 337 and making a maintenance record entry.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the approval of data, alteration, or repair by an FAA inspector. This approval will be recorded by entering the appropriate statement in Block 3 of FAA Form 337 and identify the district office, the approval date, and the signature of the inspector. When recording approvals, the inspector will use one of the following statements:

(1) *Approval by Examination of Data Only - One Aircraft:*

- "The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR 43.7."

(2) *Approval by Physical Inspection, Demonstration, Testing, etc. - One Aircraft:*

- "The alteration or repair identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR Part 43, Section 43.7."

(3) *Approval by Examination of Data Only - Duplication of Identical Aircraft:*

- "The alteration identified herein complies with the applicable airworthiness requirement and is approved for duplication on identical aircraft make, model, and altered configuration when accomplished by the original modifier."

9. FUTURE ACTIVITIES. None.

CHAPTER 2 ISSUE SFAR 36 AUTHORIZATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3347

B. *Avionics:* 5347

3. OBJECTIVE. This chapter provides information and guidance for issuing an SFAR 36 authorization.

5. GENERAL. FAR §§ 121.379(b), 127.140(b), and 145.51 state that major repairs and major alterations must be accomplished according to technical data approved by the Administrator. SFAR 36 permits certain FAR Part 121 and 145 operators to develop their own technical data for performing major repairs on aircraft, airframes, engines, propellers, and/or appliances when approved data does not exist.

A. The applicant for an SFAR 36 authorization must submit a written application to the FAA district office in the area where the applicant is located. The applicant is required to submit for approval procedures that clearly define personnel responsibilities, authorities, and the data development process. The applicant's facilities, products, and records must be inspected as part of the approval process.

B. An applicant's eligibility for an SFAR 36 authorization is determined by FAA Engineering staff. Responsibility for the issuance of an SFAR 36 authorization is shared jointly by the FAA Engineering staff and the Certificate Holding District Office. FAA Engineering is also responsible for approving the applicant's SFAR 36 procedures manual.

C. An authorization issued under SFAR 36 applies only to products covered by the following:

- The applicant's repair station rating
- The applicant's operations specifications
- The applicant's certificate
- The applicant's maintenance manual

D. Once approved, the SFAR 36 authorization is not transferrable.

7. MAINTAINING ELIGIBILITY

A. To maintain eligibility, each holder of an SFAR 36 authorization must continue to meet the requirements for the issuance of the authorization.

B. The authorization holder must notify the Administrator within 48 hours of any changes (including a change of personnel) that could affect the ability of the holder to meet those requirements.

C. The authorization holder's facilities, records, items being repaired, and completed work will be made available for surveillance at the request of the Administrator.

D. Each authorization issued under SFAR 36 is effective from the date of issuance until it is surrendered or until the Administrator suspends, revokes, or otherwise terminates it at an earlier date.

9. DATA REVIEW AND SERVICE EXPERIENCE

A. *Investigating Defects*

(1) The authorization holder, upon notification by the Administrator, must investigate defects under the following circumstances:

- If the Administrator finds that a product for which repair data was developed under SFAR 36 does not meet the applicable airworthiness requirements
- If an unsafe feature or characteristic caused by a defective repair exists

(2) The authorization holder will report to the Administrator the result of the investigation and any corrective action either taken or proposed.

B. *Corrective Actions.* If corrective action by the user of the repaired item is necessary, the authorization holder must submit the information necessary for the issuance of an Airworthiness Directive under FAR Part 39 to the Certificate Holding District Office. The Certificate Holding District Office will forward this information to the regional FAA Engineering Office responsible for the SFAR 36 authorization.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of SFAR 36 and FAR Parts 121, 135, and 145, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the airworthiness staff, the operator, and FAA Engineering staff. Coordination may also be required with regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39 and 43
- Advisory Circular 140-6, Development and Use of Major Repair Data Under Provisions of Special Federal Aviation Regulation No.36

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Conduct the Pre-application Meeting With Applicant.* Inform applicant of the requirements of an SFAR 36 authorization.

B. *Receive Formal Application*

(1) Receive letter of application and procedures manual.

(2) Notify and coordinate with FAA Engineering Staff.

C. *Review the Application.* Ensure the application contains the following:

(1) The repair station certificate number held by the applicant

(2) The current ratings covered by the certificate

(3) A copy of the repair station's operations specifications, if applicable

(4) The air carrier certificate number held by the applicant, if applicable

(5) The products that the applicant may maintain under an air carrier certificate

(6) The names, signatures, and titles of the persons for whom authorization to approve the use of technical data for major repairs is requested

(7) A description of the applicant's staff

D. *Review the SFAR 36 Procedures Manual.* Ensure the applicant's procedures manual contains at least the following:

(1) The procedures for developing and determining the adequacy of technical data for major repairs

(2) The name, signature, and responsibilities of each person who:

- Has authority to make changes in procedures that require a revision to the procedures manual
- Prepares or determines the adequacy of technical data
- Plans or conducts tests
- Approves the results of tests

(3) A "log-of-revisions" page with space for the identification of each revised item, page, date, and the signature of the person approving the change for the Administrator

(4) Procedures and sample forms for approving technical data

(5) Procedures for keeping records of technical data and major repairs

(6) Procedures to provide the Certificate Holding District Office, records of all major repairs accomplished

NOTE: The manual must be reviewed by both FAA Engineering and Flight Standards and be approved by Engineering.

E. *Inspect the Applicant's Facility.* Determine that the applicant has the capability to meet the regulatory requirements of the authorization sought. See the following related tasks in Order 8300.10, Vol. 2, as applicable:

- Ch. 162 "Certificate FAR Part 145 Domestic Repair Station/Satellite Station"
- Ch. 221 "Evaluate/Inspect Operator's Main Base Facility"
- Ch. 223 "Evaluate/Inspect Operator's Line Station"

F. *Inspect the Applicant's Operating Manual.* Ensure the applicant's operating manual contains references that direct the reader to the SFAR 36 procedures manual in the operator's manual system.

G. *Debrief Operator.* Brief applicant on inspection findings and discuss how to resolve deficiencies.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- A letter denying the authorization and listing the reasons for denial
- A letter approving the authorization

C. *Document Task.* File all supporting paperwork in the applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 3 EVALUATE CATEGORY I/II/III/IIIA LANDING MINIMUM MAINTENANCE/INSPECTION PROGRAMS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3435

B. *Avionics:* 5435

3. OBJECTIVE. This chapter provides guidance for evaluating and accepting applications for lower approach and landing minimums in respect to the appropriate support program.

5. GENERAL

A. *Responsibilities*

(1) The airworthiness inspector's primary responsibility is to provide technical support to the operations inspector and applicant. The responsibility for monitoring all applicants during the evaluation period should be coordinated between the avionics and operations inspectors, to include:

- Approvals
- In-flight evaluation observations
- Surveillance

(2) It is the applicant's responsibility to obtain and submit all documents that establish the eligibility of its aircraft, such as:

- The required maintenance/inspection program necessary for continued eligibility
- The applicant's Minimum Equipment List with the limitations for Category I operations, if applicable
- An acceptable means for maintaining the reliability of the flight guidance control and associated systems

B. *Qualifications for Low Approach Landing Minimums.* Low approach and landing minimums are issued to qualified operators operating under FAR Parts 91, 121, 125, 129, or 135. While the operating rules for each of these authorizations may vary significantly, the approval guidelines do not. Approval for low or minimum approaches in all categories will require regulatory compliance in the following three major areas:

- Airborne equipment and systems
- Flight crew and maintenance personnel qualifications
- Lowered minimum procedures, including a maintenance/inspection program

C. *Deviations.* Commitments to deviations should not be made without coordination between the maintenance, avionics, and operations inspectors. All requests for deviations must be forwarded to AFS-210 and AFS-350 by the operations inspector. The applicant should be advised not to proceed in operating under its lower minimum proposal until the deviation request is resolved.

7. CATEGORY I OPERATIONS. The airworthiness avionics inspector's responsibilities for Category I authorizations are primarily limited to the evaluation of the flight director and/or autopilot systems. The Principal Operations Inspector is responsible for determining the overall suitability of an operator's Category I capabilities.

9. CATEGORY II EQUIPMENT APPROVAL UNDER FAR PARTS 91 AND/OR 135 (9 OR LESS)

A. *Lower Approach Minimum Approval.* An application for lower approach minimum authority should specify the basis for the aircraft approval to conduct lower minimum approaches. This authority may be based on:

(1) Type certification and the Airplane/Rotorcraft Flight Manual

(2) Supplemental type certification

(3) Operational evaluation

(4) Any acceptable combination of the above

B. *Requirements for Category II Approval*

(1) Requirements for Category II approval for general aviation operators have been established in FAR §§ 91.6, 91.33, 91.34, and Appendix A. These sections specify:

- Required instruments and items of equipment
- Methods of approval
- Evaluation program conduct
- Calibration standards
- Maintenance/inspection programs

(2) Advisory Circular 91-16 is available to assist operators in developing and obtaining approval of Category II equipment installations and maintenance/inspection programs.

C. *Operational Evaluation Programs.* Engineering coordination should be requested when necessary, particularly for those aircraft in which the functions and limitations of the automated systems are significant factors for safe operation.

D. *Flight Director Systems.* Inspectors should be aware that single flight director systems with dual displays in which the second display repeats only the ILS information on the pilot's display will not meet the requirements for two ILS receiving systems.

E. *Optional Avionics Equipment.* Optional avionics equipment installed by the operator will either be approved in the field or referred to FAA Engineering for evaluation. The engineering evaluation can assist in determining if flight testing is required, what limitations may apply, and whether or not the installation may require a Supplemental Type Certificate. If a Supplemental Type Certificate is required, avionics personnel will assist in the accomplishment of a compliance and conformity inspection, as necessary, when requested by the engineering and manufacturing office. Optional equipment that may be installed and require approval includes the following:

- Flight director systems
- Automatic throttle control systems
- Autopilot and approach coupler systems
- Speed control command systems
- System fault detection and warning systems
- Radio altimeters

F. *Alterations.* Proposals to alter installed avionics equipment required for a particular category of operation should be carefully reviewed and handled in accordance with established procedures. Each proposal should be evaluated for its affect on system performance, compatibility with the original standard, and compliance with Category II criteria.

(1) When manufacturer-proposed alterations to existing avionics equipment appear to be major, verify the approval status before sanctioning incorporation of the change by the operator. If FAA approval of the alteration is not clearly indicated in the manufacturer's instructions, the operator should obtain such approval before performing the alteration.

(2) An inspector should exercise a cautious approach to field approval of alterations. Pressure from any source should not discourage the inspector from verifying that the alteration is being made in accordance with approved technical data and that the technical evaluation is clearly within the scope of the inspector's training, experience, and approval authority.

(3) Alterations originating in an operator's engineering department should also be examined carefully and, when necessary, referred to the appropriate FAA Engineering and Manufacturing Office.

11. CATEGORY II EQUIPMENT APPROVAL UNDER FAR PART 121/135 (10 OR MORE)

A. *Large Aircraft Criteria.* Operators using large aircraft required to be operated under FAR Part 121 should meet all of the requirements that are outlined in Advisory Circular 120-28C or 120-29, as applicable.

B. *Turbojet Criteria.* All operators using turbojet aircraft must comply with the aircraft systems evaluation criteria that applies to FAR Part 121 operators. Applicants certificated under FAR Part 135 using turbojet aircraft should also use the aircraft equipment evaluation standards outlined in Advisory Circular 120-28C or 120-29.

C. *Systems Evaluation Approval.* Systems evaluation approval should be accomplished in accordance with Advisory Circulars 91-16, 120-28C, or 120-29, as applicable.

D. The aircraft requirements for Category IIIa authorization include requirements for the total aircraft performance and associated systems. The acceptance of an aircraft for this category must be completely based on performance and approved FAA data.

(1) Upon receiving an operator's request for Category IIIa authorization, the assigned avionics inspector should immediately contact the type certificating region. This action is to determine whether the aircraft has been approved for such operation and what equipment and systems have been approved. If the aircraft has not been Category IIIa certified, the inspector should request assistance from the appropriate Aircraft Certification Office so that an application for a Supplemental Type Certificate can be properly consolidated.

(2) Advisory Circular 120-28C outlines the requirements for the maintenance program. The nature of this type of operation will necessitate a detailed evaluation supported by well-defined maintenance, training, and reliability programs. All maintenance and reliability supporting documents become part of the accepted program.

(3) The initial program should also include appropriate programs identified in the Maintenance Review Board document. The frequency of maintenance actions may be revised when sufficient experience has been gained to justify a change and when there is no conflict with the certification requirements.

(4) The reliability of systems and/or components set forth as substantiation for the Category IIIa certification becomes the performance criteria for the program.

(a) Controlled monitoring of the Category IIIa system reliability will require that the operator, after initial evaluation, incorporate the pertinent systems and components into the approved reliability program. If the Category IIIa system reliability exceeds the approved program, the operator should be allowed a reasonable time period in which to improve the reliability.

(b) The type certificating regional engineering office should be advised when the monthly removal rate is exceeded and informed of the probable cause. The reliability reporting is a necessity, particularly when operational approval was predicated upon probability analysis.

(5) The maintenance manual should identify all special techniques, maintenance/inspection frequencies, and test equipment requirements to support the program. It should also specify the method of controlling the operational status of the aircraft. Those technicians qualified to release an aircraft for Category IIIa must be identified.

(6) An approved training and recurrent training program must be provided. The listing of such personnel must be current. Only those persons trained and qualified should be permitted to perform Category IIIa maintenance/inspections.

(7) The operational demand for Category IIIa airborne systems with exposure to numerous hidden functions requires that the aircraft be either periodically exercised or functionally checked. This is to ensure that all systems are operational and that no dormant failure has occurred. The initial program should provide either a periodic Category IIIa approach or periodic system functional check.

(8) Until sufficient experience and data is available (excluding the six month demonstration), it is recommended the aircraft status period not exceed 35 days. Failure to exercise the system by simulated Category IIIa approach or functionally checking the system within 35 days should automatically place the aircraft in a non-Category IIIa status. The aircraft must maintain this status until the required functional check is made.

13. PROGRAM DEVELOPMENT

A. *Initial Development.* At the time of formal application, the inspector should begin to monitor development activity. Participation in all meetings with an applicant will usually require coordination with the operations inspector. It is important for the operator to include all key personnel in any meetings.

B. *The Operator's Lower Minimums Program.* The operator's lower minimums program must be developed and the procedures used during the evaluation period. Operations specifications Part D must reflect all special Category II maintenance requirements that were developed to support repetitive evaluation of Category II systems and equipment.

15. CATEGORY II MAINTENANCE MANUAL REQUIREMENTS.

A. The maintenance manual should identify all special techniques, maintenance/inspection frequencies, and test equipment requirements that support the program. Those technicians qualified to release an aircraft with lower minimums should be listed or identified.

B. The operator's procedures must include a method for manual distribution to ensure availability to the appropriate maintenance facility.

C. Operators should be encouraged to show the method of approval of required equipment as listed in the maintenance portion of the manual.

17. MAINTENANCE/INSPECTION PROGRAMS. The proposed maintenance/inspection programs must be tailored to the applicant's operations and maintenance organization. All maintenance and reliability supporting documents become part of the accepted program.

A. *Requirements For Maintenance/Inspection Programs.* Advisory Circulars 120-28C and 120-29 outline the requirements for the maintenance/inspection programs. Maintenance/inspection programs must provide for the proper maintenance and inspection of equipment and aircraft systems.

B. *Control and Accountability.* Emphasis must be placed on control and accountability of all areas associated with lower landing minimums approvals. These areas primarily encompass the following:

- Initial and recurrent training on flight guidance control systems
- The use of test equipment
- The differences in aircraft systems between aircraft in an operator's fleet
- Special procedures for airworthiness release and control of the aircraft approach status
- Initial and recurrent training in all areas of the lower minimums program
- Training for new personnel and equipment types

C. *Operational Status of the Aircraft.* The method for controlling the operational status of the aircraft lower minimum required equipment must ensure that flight, dispatch, and maintenance personnel are kept aware of the current status.

D. *Purchase of Avionics Equipment "Package" Installations.* General aviation maintenance/inspection programs may be developed by some manufacturers and repair stations in conjunction with their Category II avionics equipment installation "package". The contents of such programs should be thoroughly evaluated for compliance and maintainability with Category II regulations.

E. *Requalification Procedures.* The program must include procedures for requalification of an aircraft for lower minimums following maintenance on any required system. This must include tests after replacements, resetting in rack, and interchange of components.

F. *Approval.* The inspector will indicate approval of the maintenance program portion of the operator's Category II manual by signing and dating each page of the program.

19. MAINTENANCE TRAINING PROGRAMS. Airworthiness avionics inspectors, during the course of normal surveillance, should evaluate the maintenance facilities performing Category II equipment maintenance to ensure that the training provided meets the requirements of lower minimum standards.

21. EXISTING MAINTENANCE/INSPECTION PROGRAMS

A. Programs can be developed to be compatible with the existing maintenance/inspection program, as long as there is a clear distinction between normal and lower minimum requirements.

B. When an operator's proposal is based on an existing maintenance/inspection program, the inspector must ensure that all procedures will provide for the lower minimums program requirements. Caution should be exercised when an applicant has used a program approved for use by another operator for developing its own.

C. The following areas of the proposal and or existing programs should be closely reviewed:

- The existing reliability program
- The training program
- The initial evaluation checks for existing aircraft and for new aircraft
- The existing parts pool, borrowed parts procedure, and control of spare parts

D. *Existing Reliability Programs.* An operator's existing reliability program may be accepted when shown to be adequate for its lower minimum operations.

23. TEST EQUIPMENT AND STANDARDS

A. *Performance Standards, Tolerances, and Calibration Procedures*

(1) Performance standards, tolerances, and calibration procedures applicable to ILS equipment have been adequately covered by:

- Technical Standard Orders (TSO)
- Radio Technical Commission of Aeronautics (RTCA) documents
- Manufacturers' instruction manuals

(2) These standards or their equivalent are generally considered acceptable for inclusion in maintenance/inspection programs for equipment operated to landing minimums of 220-1/2 (Category I). Such standards may not be adequate for Category II. Those which will not provide category system performance should be revised to provide the required level of performance.

B. *Category II Tolerances.* In many cases, the tolerances for Category II airborne equipment are more rigid than those for Category I. Therefore, the equipment used to inspect, test, and bench check Category II equipment may require more frequent test and calibration.

C. *Established Standards and Tolerances.* Standards and tolerance established in the maintenance/inspection program for testing and calibrating airborne equipment and systems that are required for Category II operations should not be relaxed following program approval without adequate substantiation that system performance will not be degraded.

D. *Self-Test Features.* Self-test features may be used for periodic inspections if:

(1) They have been evaluated and found to adequately test the system

(2) Instructions for their use and interpretation of self-test indications are included in the maintenance/inspection program portion of the Category II manual. Inclusion in the approved maintenance/inspection program will indicate Federal Aviation Administration approval.

25. MAINTENANCE PERIOD EXTENSIONS - GENERAL AVIATION

A. *Applications For Extensions*

(1) Applications for extensions of maintenance periods for general aviation operators may be considered at the completion of one maintenance cycle of at least 12 calendar months. Application should be made by letter to the Flight Standards District Office (FSDO) having jurisdiction of the area in which the operator is located.

(2) The following factors are considered in granting an extension:

- Records of Category II approaches due to malfunctioning equipment
- Number of Category II approaches (actual and simulated)
- Maintenance records of Category II equipment failures
- Service history of known trends toward malfunctioning
- Unit mean time between failures
- Records of functional flight checks

B. *Check, Test, and Inspection Extensions.* Extensions to the check, test, and inspection periods may be granted if factors indicate that the performance and reliability of the Category II instruments and equipment will not be adversely affected. General aviation extension periods, in most cases, would be one calendar month for tests, inspections, and functional flight checks, and four calendar months for bench checks. The operator's program should include procedures for obtaining the extensions.

C. *Increased Extension Periods.* The extension periods suggested in paragraph B may be increased at the discretion of the airworthiness avionics inspector.

27. FUNCTIONAL FLIGHT CHECKS. Some operators have submitted programs that provide for functional flight checks. This procedure must not be approved unless all airworthiness requirements have been satisfied before dispatch. In no instance can a functional flight check be substituted for the certification by maintenance of complete systems or equipment operation.

29. REPORTS AND RECORDS - GENERAL AVIATION

A. *Responsibilities of Record Keeping.* The persons responsible for these reports should be provided training in appropriate parts of the proposed lower landing minimums program.

B. *Category III or any Autoland Category.* Operators authorized for Category III, or any Autoland category, should be encouraged to provide reports of airborne equipment malfunctions during actual approaches. The reports may be provided on a yearly basis or at any time the malfunctions significantly affect the Autoland capability.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 91, 121, 125, 129, and 135, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires close coordination with the operations inspector, the applicant, and FAA Engineering if necessary.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 23, 25, and 61
- Advisory Circulars 91-16, Category II Operations-General Aviation Airplanes, 120-28, Criteria for Approval of Category II Landing Weather Minima, and 120-29, Criteria for Approving Category I and Category II Landing Minima for FAR 121 Operators, as amended

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Maintenance/Inspection Program.* Review the applicant's maintenance/inspection program to ensure that it contains control and accountability of the following:

(1) All maintenance accomplished on lower minimum required systems and equipment

(2) All alterations to systems and equipment

(3) Approach status of each aircraft at all times

(4) Evaluations of self test, Built-In Test Equipment (BITE), or Automated Test Equipment (ATE) to ensure suitability

(5) Spare equipment

(6) Maintenance calibration, use of test equipment, records/reporting requirements

(7) Repetitive and chronic discrepancies to ensure the affected aircraft remains out of lower minimums approach status until positive corrective actions is made

(8) All aircraft in the fleet that have not been evaluated for lower minimums approaches

B. *Review the Existing Maintenance/Inspection Programs.* Ensure that the existing maintenance/inspection program has procedures for the following:

(1) Identifying chronic discrepancies and corrective action follow-up

(2) Keeping aircraft with chronic and/or repetitive discrepancies out of a lower minimum status until positive corrective action is taken

(3) Training maintenance personnel assigned to reliability analysis

(4) Initial evaluation checks for existing aircraft and for new aircraft to the fleet before inclusion in the operator's lower minimum operations

(5) Identification of all components used in the lower minimum systems in the existing parts pool, parts borrowing procedure, and control of spare parts

(6) Ensuring that calibration standards for all test equipment used for maintaining lower minimum systems and equipment are met

(7) Ensuring that each flight crew and persons with operational dispatch authority are aware of any equipment malfunction that may restrict lower minimum operations

C. *Review the Functional Flight Checks.* If a functional flight check has been submitted, ensure that the following information is included:

(1) Maintenance clearance and/or concurrence before an aircraft is returned to a lower minimum status, even if the functional flight check was found to be satisfactory

(2) Request for a flight check by maintenance in the aircraft log

(3) Maintenance entry acknowledging the results and the action taken

D. *Evaluate the Supporting Data.* Unless the applicant provides supporting approval data, the airworthiness avionics inspector should coordinate with the operations inspector and the aircraft type certificate holding region to determine the acceptability of each aircraft for the authorizations requested.

E. *Review the Minimum Equipment List.* Appropriate sections of the Minimum Equipment List (MEL) must be revised to identify Category II required systems and special procedures, if applicable.

F. *Review the Personnel Training Requirements.* Ensure there are procedures for the following:

- Ensuring personnel contracted to perform Category II related maintenance are qualified and the program requirements are made available to these persons

- Training and/or recurrent training for the air taxi maintenance personnel. Personnel not qualified to perform maintenance on Category II systems and equipment, including flight crew and dispatch, should be trained in the airworthiness release requirements of the lower minimums program.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. The Principal Operations Inspector has the primary responsibility to grant the operator approval for lower minimums. It is the airworthiness avionics inspector's responsibility to evaluate and approve the avionics requirements and associated support programs. Successful completion of this task will therefore consist of coordination with the operations inspector for sending all original Category II and IIIa documentation to AFS-200.

9. FUTURE ACTIVITIES. None.

[CHAPTERS 4 THROUGH 20 RESERVED]

CHAPTER 21 INTRODUCTION TO FAR PART 65

1. FAR PART 65. This part prescribes the requirements and operating rules for specific certificates, added ratings, and/or authorizations.

A. The FAA has prescribed minimum standards of knowledge and skill for certificated airmen who make airworthiness determinations to ensure that the level of safety in aviation meets an acceptable standard.

B. FAR Part 65 includes certificates, ratings, and authorizations for the following:

- Mechanics (airframe and powerplant)
- Inspection Authorizations
- Repairmen
- Parachute riggers

CHAPTER 22 CERTIFICATE AIRFRAME AND/OR POWERPLANT MECHANIC/ADDED RATING

Section 1. Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3501/3508

B. *Avionics*: 5501/5508

3. OBJECTIVE. This chapter provides guidance and describes procedures for certificating applicants for mechanic certificates and ratings.

5. GENERAL. FAR Part 65 provides for the issuance of a mechanic certificate with airframe and/or powerplant rating(s).

7. ELIGIBILITY REQUIREMENTS. Applicants for a mechanic certificate must meet the requirements of FAR Part 65, Subparts A and D. For the certification of foreign applicants physically located outside the United States, as per FAR § 65.3, see Vol. II, Ch. 23.

A. Applicants must be at least 18 years of age. An applicant under 18 may take the tests, but no mechanic certificate will be issued until the applicant's eighteenth birthday.

B. Applicants must be able to read, write, speak, and understand the English language.

> **NOTE: FAR § 65.71(a)(2) states that an applicant who does not meet this requirement and who is employed outside the U.S. by a U.S. air carrier will have the certificate endorsed "Valid only outside the United States." See Vol. II, Ch. 23.**

C. Applicants must have passed all the required tests within the previous 24 months.

9. EXPERIENCE REQUIREMENTS. FAR § 65.77 requires the applicant to have practical experience in maintaining airframes and/or power plants. At least 18 months of practical experience are required for one rating. For a certificate with both ratings, the requirement is for at least 30 months experience concurrently performing the duties appropriate to both ratings.

A. The practical experience should provide the applicant with basic knowledge of and skills with the procedures, practices, materials, tools, machine tools, and equipment used in aircraft construction, alteration, maintenance, and inspection.

B. Experience gained from the military, work as an airframe or powerplant mechanic helper, or work on an experimental amateur-built aircraft should be evaluated on its own merits to determine whether it fulfills the experience requirements. (See Para. 11, Written Test Requirements.)

C. Applicants should not be expected to have become highly proficient in overhauls, major repairs, or major alterations in the minimum 18 months' experience.

D. Powerplant applicants without propeller experience should be aware that powerplant mechanic tests include questions and projects on propellers that must be successfully completed regardless of the applicant's experience.

E. In evaluating part-time practical aviation mechanic experience, an equivalent of 18 months (or 30 months) based on a standard 40-hour work week is acceptable. The months need not be consecutive. A standard work week has 8 hours per day for 5 days per week, thus totalling 40 hours per week and approximately 160 hours per month.

F. For foreign applicants otherwise eligible to take the examinations, the following are examples of the types of documents that would be acceptable to establish the required record of time and experience:

- A detailed statement from a foreign airworthiness authority of the country in which the experience was gained
- A detailed statement from an advisor of the International Civil Aviation Organization that will validate the applicant's experience

11. WRITTEN TESTS PREREQUISITES

A. A graduate of an FAA-approved Aviation Maintenance Technician School may present a certificate of graduation or completion to demonstrate training appropriate to the rating(s) sought. There is no expiration period for this eligibility.

B. Applicants who have not graduated from an FAA-approved Aviation Maintenance Technician School must present documents from an employer, co-worker, or other sources satisfactory to the Administrator to establish the required record of time and experience.

(1) Applicants should document a proportionate amount of experience directly applicable to the certificate and ratings sought.

(2) The FAA inspector should verify all statements made by the applicant to ensure eligibility.

(3) There is no expiration for this eligibility.

C. Applicants who have not graduated from an FAA-approved Aviation Maintenance Technician School and are applying based on military experience must prove their military aviation experience meets the requirements of FAR § 65.77.

(1) To help speed the review process, the applicant should supply the following documentation to the FAA:

(a) A positive form of identification, such driver's license, passport, or military i.d.

(b) A properly completed Form DD-214, which lists the total time in service and the Military Occupational Specialty (MOS) codes the applicant was assigned. For current MOS codes, see Figure 22-1.

(c) A letter from the applicant's executive officer, maintenance officer, or classification officer that certifies the applicant's length of military service, the amount of time the applicant worked in each MOS, the make and model of aircraft and/or engine on which the applicant acquired the practical experience, and where the experience was obtained.

(d) Training records showing the type of aviation schools the applicant attended and/or a record of on-the-job training. Active duty Air Force, selective guard and reserve are eligible for a transcript.

(2) Time spent in training or in an MOS for supervision/inspection should not be counted toward the 18 or 30 months of practical experience required in FAR § 65.77. Only actual hands-on experience is acceptable.

(3) Should an applicant be unable to retrieve the appropriate military records through a reasonable effort, and the only documentation available is the DD-214, the inspector may establish the applicant's military practical experience through an oral interview. The inspector should ask enough thorough and reasonable questions to determine the applicant's actual work experience in the applicable specialty.

(4) The military experience should be directly applicable to the certificate and ratings sought.

(5) There is no expiration for this eligibility.

13. ADMINISTRATION OF WRITTEN TESTS

A. When the inspector is satisfied that the applicant is eligible, arrangements should be made for administering the written tests. If the applicant is qualified, the inspector must issue FAA Form 8060-7, Airman's Authorization for Written Test, according to the requirements of Order 8610.10. Inspectors may issue up to three authorization forms, as needed. Inspectors who receive an FAA Form 8060-7 issued by another inspector may contact the issuing inspector to confirm that the applicant is indeed eligible.

B. There are three separate written tests.

(1) The Aviation Mechanic General (AMG) test has one section and covers subjects that apply equally to the airframe and powerplant ratings. This test must be completed with either of the other two tests on initial testing for a certificate.

(2) The Aviation Mechanic Airframe (AMA) test includes the following sections:

- Airframe Structures
- Airframe Systems and Components

(3) The Aviation Mechanic Powerplant (AMP) test includes the following sections:

- Powerplant Theory and Maintenance
- Powerplant Systems and Components

C. Written tests must be conducted according to the provisions of Order 8080.1, Conduct of Airman Written Tests, as amended.

D. Written test grades are reported to each applicant on AC Form 8080-2, Airman Written Test Report. The report indicates a numerical grade and an expiration date for each section passed. All sections of the written test must be passed within a 24-month period.

E. An applicant for a retest must first present a valid AC Form 8080-2. If less than 30 days have passed since the last test, the applicant must either present a letter from an appropriately certificated person indicating additional instruction received in each subject previously failed or have the bottom portion of AC Form 8080-2 properly filled out and signed. The retest must cover all subject areas in the failed section.

15. ORAL AND PRACTICAL SKILL TEST PREREQUISITES. Applicants for a Mechanic Certificate and/or added rating(s) must meet the applicable knowledge and skill test requirements of FAR § 65.79.

A. Applicants for the oral and practical tests must present a valid AC Form 8080-2 to show proof of successful completion of all sections of the written test. FAR §§ 65.71 (a)(3) and (b) require that all of the prescribed tests, which include the written test and the oral and practical skill tests, be passed within a period of 24 months.

(1) Graduates of an approved school shall complete duplicate copies of FAA Form 8610-2 when applying for oral and practical tests.

(2) Individuals applying based on experience shall present the original FAA Form 8610-2, previously completed at the district office and bearing the FAA inspector's endorsement.

B. Certificated Aviation Maintenance Technician School (AMTS) students may be authorized to take the oral and practical tests before they have met the experience and eligibility requirements and before they have passed the written tests.

(1) Aviation Maintenance Technician Schools must show that the student is in the final phase of training, has made satisfactory progress, and is prepared for the test. The proper school official should complete Items IIE (1) and (2) of FAA Form 8610-2 before the oral and practical tests are administered. The district office will fill out IIF (1) through (4), ensuring that the expiration date matches the graduation date as shown in II (4).

(2) In completing FAA Form 8610-2, the student should show the school's name and location, school certificate number, the student's curriculum, and the expected graduation date.

17. ORAL AND PRACTICAL SKILL TEST ADMINISTRATION

A. Order 8610.4, Mechanic Examiners Handbook, provides standardized procedures for conducting and processing mechanic oral and practical tests. This handbook must be used by inspectors and examiners conducting the tests to ensure a satisfactory standard of competency by applicants for mechanic certificates and ratings.

B. The only acceptable evidence of having passed a required oral or practical test is FAA Form 8610-2. In the "Results of Oral and Practical Tests" portion on the reverse side, the form must indicate either that the student has passed, with an expiration date, or that the student has failed, listing the questions and/or projects failed.

C. An applicant for a retest must first present a valid AC Form 8080-2 or FAA Form 8610-2. If less than 30 days have passed since the last test, the applicant should present a letter from an appropriate source indicating additional instruction received in each subject previously failed. The retest must cover all subject areas in the failed section.

D. Applicants for additional rating(s) who have passed the General section of the test need not retake the General section.

19. CHANGE OF ADDRESS/NAME/SEX

A. *Change of Address.* The holder of an airman certificate issued under FAR Part 65 must notify the FAA in writing within 30 days after any change in permanent mailing address. AC Form 8060-55, Change of Address, can be used.

B. *Change of Name or Sex.* The application for change of name or sex on a certificate may be made by a letter signed by the certificate holder.

(1) The application should be accompanied by appropriate documents verifying the change. Each document should conform to the laws of the state of residence.

(2) The applicant's current certificate should accompany the application. The applicant will be issued a temporary certificate to use while awaiting the changes.

21. FALSIFICATION, FRAUDULENT REPRODUCTION, OR ALTERATION OF DOCUMENTS. Persons who falsify, fraudulently reproduce, or alter certificates or other documents required to support the issuance of a certificate are subject to suspension or revocation of any airman certificate held.

23. INELIGIBLE APPLICANTS

A. An airman whose mechanic certificate is suspended or revoked may not apply for another rating during the period of suspension/revocation. The inspector should review the suspension/revocation order, which will specify any unique terms regarding its duration.

B. FAR § 65.12 prohibits issuance of a certificate to any person convicted of a drug-related offense within the previous 12 months.

NOTE: A conviction that is under legal appeal is not considered a final conviction.

25. COMPETENCY EXAMINATIONS/REEXAMINATIONS. Section 609 of the FA Act of 1958 provides for reexamination.

A. An airman demonstrating questionable competency while exercising the privileges of the certificate and ratings may be reexamined.

(1) Inspectors should consider airman competency as a factor in the following:

- Complaint investigations
- Surveillance
- Unairworthy aircraft notice issuance
- Incident investigations
- Accident investigations
- Enforcement investigations
- Hearings, both formal and informal

(2) Questions of airman competency may arise from any source.

B. Based on the results of a reexamination, the FAA may approve, amend, suspend, or revoke the airman's certificate.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 65

B. *Coordination.* None.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8080.1, Conduct of Airman Written Tests, as amended
- Order 8300.10, Vol. II, Ch. 23, Evaluate Foreign Applicants for Mechanic Certificates/-Ratings
- Order 8610.4, Aviation Mechanic Examiner Handbook, as amended
- Order 8610.10, Revised FAA Form 8610-2 (2-85) Airman Certificate and/or Rating Application

B. *Forms*

- FAA Form 8060-7, Airman's Authorization for Written Test
- FAA Form 8610-2, Airman Certificate and/or Rating Application
- AC Form 8060-4, Temporary Airman Certificate
- AC Form 8060-55, Change of Address
- AC Form 8060-56, Application for Replacement of Lost or Destroyed Airman Certificate(s)
- AC Form 8080-2, Airman Written Test Report

C. *Job Aids*

- Figure 22-1, Military Occupational Specialty Codes

5. PROCEDURES

A. *Review Application*

(1) If the applicant has previously held or currently holds an airman's certificate, check the Enforcement Information System (EIS) file. Obtain a copy of any suspension/revocation order for review. If the applicant is ineligible for a certificate/rating, return the application and take enforcement action under FAR § 65.20.

(2) If the applicant is eligible, proceed with the certification.

B. *Ensure the Applicant Meets Requirements for Certificate/Rating*

(1) Ensure the applicant has met the experience requirements.

(2) Determine that the applicant can read, write, speak, and understand the English language.

(3) Verify that the applicant is at least 18 years old. If the applicant is under 18, explain that no certificate will be issued until the applicant's eighteenth birthday.

C. *Establish Eligibility for Written Test*

(1) Require applicants who are graduates of an Aviation Maintenance Technician School to present an appropriate graduation certificate or certificate of completion.

(2) If the applicant is not a graduate of an Aviation Maintenance Technician School, ensure appropriate documentation of time and work experience is presented.

D. *Authorize Applicant for Written Test.* Arrange for the administration of the written test as needed, for applicants who have met eligibility requirements. If the written test is to be taken at another time or place, issue up to three FAA Forms 8060-7, Airman's Authorization for Written Test, as needed, in addition to FAA Form 8610-2, Airman Certificate and/or Rating Application.

E. *Ensure the Application for Oral and Practical Tests Includes Proof of Successful Completion of Applicable Written Tests.* Review FAA Form 8080-2, Airman Written Test Report, to ensure that all appropriate sections of the written test have been passed within a 24-month period.

F. *Ensure Oral and Practical Tests Are Administered and Passed.* If necessary, administer these tests to the applicant according to Order 8610.4, Aviation Mechanic Examiner Handbook, as amended.

G. *Review Oral and Practical Test Results.* Verify that all applicable sections have been successfully completed within a 24-month period.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Issue a Certificate/Added Rating*

(1) *Temporary Certificate.* After the applicant has successfully met all requirements for the certificate/rating, issue FAA Form 8060-4, Temporary Airman Certificate. This form must be either typewritten or filled out in ink.

(a) *Original issuance.* If a social security number is not provided by the applicant, enter the word "pending" in Block III. If a social security number is provided, enter the number without dashes or spaces in Block III as the certificate number.

(b) *Reissuance.* The previously assigned certificate number will continue to be shown in Block III. If a social security number is provided, however, enter the number without dashes or spaces immediately above the applicant's date of birth. A certificate may be reissued when an airman requests that the certificate number correspond to the social security number.

(2) Fill out FAA Form 8610-2.

(a) When the applicant passes a section, check the "Pass" block and indicate the expiration date. Complete the "FAA Inspector Report" portion of FAA Form 8610-2. Sign the form with the office identifier and date.

NOTE: The inspector's signature in the FAA Inspector's Report Block on the back of the application indicates only that the form has been reviewed for completeness. This signature is not an endorsement of the applicant's eligibility.

(b) Give the applicant the duplicate copy of FAA Form 8610-2 with instructions to hold until the permanent certificate is issued.

(3) Make and submit to AVN-460 a file with the following:

- A typewritten original, FAA Form 8060-4, signed by the issuing inspector
- The original copy of FAA Form 8610-2. For retests, also send a duplicate copy.

NOTE: AVN-460 will only accept originals of FAA 8610-2.

- AC Form 8080-2, Airman Written Test Report
- A document certifying additional instruction, if the test was retaken within 30 days
- AC Form 8060-1, Mechanic Certificate, when adding a rating

(4) Certification files should be sent to AVN-460 as soon as possible to permit the necessary review and processing to take place before the expiration of the temporary certificate.

C. *Deny a Certificate/Added Rating*

(1) When the applicant fails any required section of the oral or practical test or does not complete the test, accomplish the following:

- Complete the "FAA Inspector Report" portion of FAA Form 8610-2. Check the "Fail" block.
- Return the duplicate copy to the applicant as a record of the sections passed or failed
- Return other documents to the applicant, as appropriate

(2) *Retest After Failure.* Conduct written retests in accordance with the procedures in Order 8080.1, as amended.

(a) The oral and practical retests must cover all the subject areas in the failed section, as indicated on the application.

(b) If the applicant fails again, complete FAA Form 8610-2 only for the sections included in the retest. An AC Form 8080-2 presented by an unsuccessful applicant for the oral/practical retest must be returned to the applicant with a new duplicate of FAA Form 8610-2.

(c) An applicant's final certification file must include an original FAA Form 8610-2 for the original test and each retest.

D. Investigate all indications or reports of falsification, fraudulent reproduction, or alteration of airman certification documents and applications.

9. FUTURE ACTIVITIES

A. *Emergency Replacement Certificates.* In an emergency, a Temporary Airman Certificate may be issued to replace a lost or destroyed certificate.

(1) The following conditions must be met before an airworthiness inspector can issue an emergency replacement certificate:

(a) The mechanic must show that an immediate replacement of the lost or destroyed certificate is necessary to start or continue employment

(b) The mechanic must show that it is not possible or feasible to obtain a telegram according to FAR § 65.16(d)

(c) The mechanic either must be personally known to the inspector or must present, in person, acceptable evidence of identity

(d) The inspector must contact AVN-460 to confirm the validity and ratings of the lost or destroyed certificate.

(2) The temporary certificate issued should be clearly marked "EMERGENCY FIELD ISSUANCE" and be limited to the reasonable time necessary for the mechanic to obtain a duplicate certificate from AVN-460. In no case shall the temporary certificate be issued for more than 60 days.

B. Conduct routine surveillance.

FIGURE 22-1

MILITARY OCCUPATIONAL SPECIALTY CODES

Following are both the updated and the older MOS codes for the U.S. Army, Air Force, Navy, Marine Corps, and Coast Guard. The new codes are used for active duty time after January, 1990. The older codes are still valid for persons wishing to credit their military aviation maintenance experience toward meeting the requirements of the FAA airframe and powerplant mechanic certificate.

US ARMY CODES

Updated MOS Codes	Title	Creditable Experience
67G 10/20/30	Utility Aircraft Repairer	Airframe
67H 10/20/30	Observation Aircraft Repairer	Airframe
67N 10/20/30	Utility Helicopter Repairer	Airframe
67T 10/20/30	Tact/Transport Helicopter Repairer	Airframe
67R 10/20/30	AH-64 Helicopter Repairer	Airframe
67S 10/20/30	Scout Helicopter Repairer	Airframe
67Y 10/20/30	AH-1 Helicopter Repairer	Airframe
67V 10/20/30	Observe/Scout Helicopter Repairer	Airframe
67X 10/20/30	Heavy Lift Helicopter Repairer	Airframe
67U 10/20/30	Medium Helicopter Repairer	Airframe
68G 10/20/30	Aircraft Structural Repairer	Airframe
68B 10/20/30	Aircraft Powerplant Repairer	Powerplant

Old MOS Codes	Title	Creditable Experience
67G	Airplane Repairer	Airframe
67N	Helicopter Repairer	Airframe
67U	Helicopter Repairer	Airframe
67V	Helicopter Repairer	Airframe
67W	Helicopter Repairer	Airframe
67X	Helicopter Repairer	Airframe
67Y	Helicopter Repairer	Airframe
67Z	Aircraft Maintenance Sr. Sergeant	Airframe & Powerplant
68B	Aircraft Powerplant Repairer	Powerplant
68G	Aircraft Structural Repairer	Airframe
67B20	0-1/U6 Airplane Repairman	Airframe
67C20	U-1 Airplane Repairman	Airframe
67D20	Single Engine Airplane Repairman	Airframe

67E40	Single Engine Airplane Maint. Chief	Airframe
67E50	Single Engine Airplane Maint. Chief	Airframe
67J20	Multi Engine Med. Transp. Airplane Mech.	Airframe
67K20	Multi Engine Airplane Repairman	Airframe
67L40	Multi Engine Airplane Mechanic Chief	Airframe
67L50	Multi Engine Airplane Mechanic Chief	Airframe
67P20	CH-34 Helicopter Repairman	Airframe
67Q20	Single Eng., Single Rotor Hel. Repairman	Airframe
67R40	Single Eng., Single Rotor Hel. Maint. Ch.	Airframe
67R50	Single Eng., Single Rotor Hel. Maint. 1SG	Airframe
67S20	CH-21 Helicopter Mechanic	Airframe
67S30	CH-21 Helicopter Repairman	Airframe
67S40	CH-21 Helicopter Maint. Supervisor	Airframe
67S50	CH-21 Helicopter Maint. 1SG	Airframe
67M20	H-13/H-23 Helicopter Repairman	Airframe
67T20	CH-37 Helicopter Mechanic	Airframe
67T30	CH-37 Helicopter Repairman	Airframe
67T40	CH-37 Helicopter Maint. Supervisor	Airframe
67T50	CH-37 Helicopter Maint. 1SG	Airframe
68C20	Reciprocating Engine Repairman	Powerplant
68B2Z1	Reciprocating Engine Repairman	Powerplant

US AIR FORCE CODES

Updated MOS Codes	Title	Creditable Experience
43150/43130/43110	Helicopter Mechanic	Airframe
42755/42735/42715	Airframe Repair Specialists	Airframe
43153/43133/43113	Airlift Aircraft Maint. Spec.	Airframe
43151/43131/43111	Tactical Aircraft Maint. Spec.	Airframe
43170	Helicopter Technician	Airframe
42652/42632/42612	Jet Engine Mechanic	Powerplant
42653/42633/42613	Turboprop Propulsion Mech.	Powerplant
42672	Jet Engine Technician	Powerplant
42673	Turboprop Propulsion Tech.	Powerplant
45274	TAC Aircraft Maint. Tech.	Airframe-Powerplant
45254/45234/45214	TAC Aircraft Maint. Spec.	Airframe
45490	Aerospace Prop. Superintendent	Powerplant
45470	Aerospace Propulsion Tech.	Powerplant
45450/45430/45410	Aerospace Propulsion Spec.	Powerplant
45779	Stra/Airlift Maint. Super.	Airframe
45770	Stra Aircraft Maint. Tech.	Airframe

45750/45730/45710	Stra Aircraft Maint. Spec.	Airframe
45771	Helicopter Maint. Tech.	Airframe
45751/45731/45711	Helicopter Maint. Spec.	Airframe
45772	Airlift Aircraft Maint. Tech.	Airframe
45752/45732/45712	Airlift Aircraft Maint. Spec.	Airframe

NOTE: Creditable experience for the following Air Force MOS codes have been changed to airframe only based on a review of the Air Force: 43130; 43131; 43150; 43151; and, 43170.

Old MOS Codes	Title	Creditable Experience
42671	Reciprocating Engine Technician	Powerplant
42651	Reciprocating Engine Mechanic	Powerplant
42631	Reciprocating Engine Mechanic	Powerplant
42692	Aircraft Propulsion Superintendent	Powerplant
42672	Jet Engine Technician	Powerplant
42652	Jet Engine Mechanic	Powerplant
42632	Jet Engine Mechanic	Powerplant
42673	Turboprop Propulsion Technician	Powerplant
42653	Turboprop Propulsion Mechanic	Powerplant
42633	Turboprop Propulsion Mechanic	Powerplant
42799	Fabrication Superintendent	Airframe
42775	Airframe Repair Technician	Airframe
42755	Airframe Repair Specialist	Airframe
42735	Airframe Repair Specialist	Airframe
43170	Helicopter Technician	Airframe
43150	Helicopter Mechanic	Airframe
43130	Helicopter Mechanic	Airframe
43191	Aircraft Maintenance Superintendent	Airframe & Powerplant
43171	Aircraft Maintenance Technician	Airframe & Powerplant
43151	Aircraft Maintenance Specialist	Airframe
43131	Aircraft Maintenance Specialist	Airframe
43172	Airlift/Bombardment Aircraft Maintenance Technician	Airframe & Powerplant
43152	Airlift/Bombardment Aircraft Maintenance Technician	Airframe & Powerplant
43132	Airlift/Bombardment Aircraft Maintenance Technician	Airframe & Powerplant

US COAST GUARD CODES

Updated MOS Codes	Title	Creditable Experience
AD-02	Turboshaft Engines	Powerplant
AM-01	Structures	Airframe
AD	Aviation Machinist Mate	Powerplant
AM	Aviation Structural Mechanic	Airframe

US NAVY CODES

Updated MOS Codes	Title	Creditable Experience
AD-6402	Reciprocating Engine Technician	Powerplant
AD-6409	J-57 Turbojet Engine Mechanic	Powerplant
AD-6410	F-110 Turbofan Jet Engine Technician	Powerplant
AD-6414	TF-41 Turbofan Jet Engine Technician	Powerplant
AD-6415	TF-30 Turbofan Jet Engine Mechanic	Powerplant
AD-6416	J-52 Turbojet Engine Mechanic	Powerplant
AD-6417	T-400 Turboshaft Jet Engine Mechanic	Powerplant
AD-6418	T-56 Turboprop Engine Mechanic	Powerplant
AD-6419	T-58 Turboshaft Jet Engine Mechanic	Powerplant
AD-6420	T-404 Turbofan Jet Engine Mechanic	Powerplant
AD-6421	TF-34 Turbofan Jet Engine Mechanic	Powerplant
AD-6423	T-56-425/426 Turboprop Engine and Propeller Mechanic	Powerplant
AD-6424	T-64 Turboshaft Jet Engine Mechanic	Powerplant
AD-6426	T-700 Turboshaft Jet Engine Mechanic	Powerplant
AD-6427	J-85 Turboshaft Engine Mechanic	Powerplant
AM-7232	Structural Repair Technician	Airframe

Old MOS Codes	Title	Creditable Experience
AD	Aviation Machinist Mate	Powerplant
ADJ	Aviation Machinist Mate	Powerplant
ADR	Aviation Machinist Mate	Powerplant
AM	Aviation Structural Mechanic	Airframe
AME	Aviation Structural Mechanic	Airframe
AMH	Aviation Structural Mechanic	Airframe
AMS	Aviation Structural Mechanic	Airframe

US MARINE CORPS CODES

Updated MOS Codes	Title	Creditable Experience
6092	Aircraft Structures Mechanic A-4/TA-4/OA-4	Airframe
6093	Aircraft Structures Mechanic A-6/EA-6	Airframe
6094	Aircraft Structures Mechanic F-4/RF-4	Airframe
6095	Aircraft Structures Mechanic AV-8/TAV-8	Airframe
6096	Aircraft Structures Mechanic KC-130	Airframe
6097	Aircraft Structures Mechanic F/A-18	Airframe
6098	Aircraft Structures Mechanic OV-10	Airframe
6142	Helicopter Structures Mechanic CH-46	Airframe
6143	Helicopter Structures Mechanic CH-53	Airframe
6144	Helicopter Structures Mechanic U/AH-1	Airframe
6022	Aircraft Powerplant Mechanic J-52	Powerplant
6023	Aircraft Powerplant Mechanic T-76	Powerplant
6024	Aircraft Powerplant Mechanic J-79	Powerplant
6025	Aircraft Powerplant Mechanic Rolls Royce Pegasus	Powerplant
6026	Aircraft Powerplant Mechanic T-56	Powerplant
6027	Aircraft Powerplant Mechanic F-404	Powerplant
6122	Helicopter Powerplant Mechanic T-58	Powerplant
6123	Helicopter Powerplant Mechanic T-64	Powerplant
6125	Helicopter Powerplant Mechanic T-400	Powerplant

Old MOS Codes	Title	Creditable Experience
6012	Aircraft Mechanic	Airframe
6013	Aircraft Mechanic	Airframe
6014	Aircraft Mechanic	Airframe
6015	Aircraft Mechanic	Airframe
6016	Aircraft Mechanic	Airframe
6017	Aircraft Mechanic	Airframe
6018	Aircraft Mechanic	Airframe
6019	Aircraft Maintenance Chief	Airframe & Powerplant
6022	Aircraft Powerplant Mechanic	Powerplant
6023	Aircraft Powerplant Mechanic	Powerplant
6024	Aircraft Powerplant Mechanic	Powerplant
6025	Aircraft Powerplant Mechanic	Powerplant
6026	Aircraft Powerplant Mechanic	Powerplant
6027	Aircraft Powerplant Mechanic	Powerplant
6028	Aircraft Powerplant Mechanic	Powerplant
6029	Aircraft Powerplant Mechanic	Powerplant

6042	Aircraft Structures Mechanic	Airframe
6059	Aircraft Airframe Maintenance Chief	Airframe
6092	Aircraft Structures Mechanic	Airframe
6093	Aircraft Structures Mechanic	Airframe
6094	Aircraft Structures Mechanic	Airframe
6095	Aircraft Structures Mechanic	Airframe
6096	Aircraft Structures Mechanic	Airframe
6097	Aircraft Structures Mechanic	Airframe
6098	Aircraft Structures Mechanic	Airframe
6112	Helicopter Mechanic	Airframe
6113	Helicopter Mechanic	Airframe
6114	Helicopter Mechanic	Airframe
6119	Helicopter Maintenance Chief	Airframe & Powerplant
6122	Helicopter Powerplant Mechanic	Powerplant
6123	Helicopter Powerplant Mechanic	Powerplant
6124	Helicopter Powerplant Mechanic	Powerplant
6125	Helicopter Powerplant Mechanic	Powerplant
6142	Helicopter Structures Mechanic	Airframe
6143	Helicopter Structures Mechanic	Airframe
6144	Helicopter Structures Mechanic	Airframe

CHAPTER 23 CERTIFICATE FOREIGN APPLICANTS LOCATED OUTSIDE THE UNITED STATES FOR MECHANIC CERTIFICATES/RATINGS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3501/3508

B. *Avionics:* 5501/5508

3. OBJECTIVE. This chapter provides guidance and describes procedures for certificating foreign and foreign-based applicants for mechanic certificates and ratings.

5. GENERAL

A. This chapter prescribes procedures for evaluating foreign applicants located outside the United States for Airframe and/or Powerplant Mechanic/Added Rating(s). Inspectors are referred to Volume II, Chapter 22, Certificate Airframe and/or Powerplant Mechanic/Added Rating, as most procedures are identical.

(1) Those procedures that are unique to foreign applicants located outside the United States are discussed in this chapter. Certification policy is established by the following orders:

- Order 8000.16, U.S. Certification or Designation of Foreign National Airmen, Airman Schools, Examiners, and Repair Station Facilities Outside the United States, as amended
- Order 8610.10, Revised FAA Form 8610-2 (2-85) Airmen Certification and/or Rating Application, as amended

(2) This chapter does not apply to foreign applicants in the United States. According to AVN-133, any applicant who is in the United States and meets the English language and experience requirements is entitled to take the examinations for a mechanic certificate. Advisory Circular 65-11, Airframe and Powerplant Mechanics Certification Information, as amended, provides further guidance regarding foreign applicants within the United States.

B. Foreign nationals located outside the U.S. may be certificated if they show to the satisfaction of the inspector that FAA certification is required for the maintenance of U.S.-registered aircraft.

(1) To show need for certification, applicants must provide documentation, such as a letter, from an employer or an official of a company by whom they will be employed.

(2) Applicants must provide a letter signed by a responsible government official of the civil aviation authority of their native country (state) that clearly shows the need for certification.

C. *Payment of Fees.* FAR Part 187 prescribes fees for certification services performed outside the United States on behalf of foreign nationals other than resident aliens of the United States. Payment for technical and clerical services is required before the certification action can begin. Fees are to be paid by U.S. currency, money order, or check payable to the Federal Aviation Administration.

D. Any mechanic certificate or rating will remain effective unless it is surrendered, suspended, or revoked. Applicants who do not meet the English requirements of FAR § 65.71(a)(2), shall have their certificates endorsed "Valid only outside the United States."

Section 2 Procedures

1. PREREQUISITE AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Part 65

B. *Coordination.* As needed, coordinate through the regional office with the International Civil Aviation Organization (ICAO) or the appropriate Civil Airworthiness Authority.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 65-11, Airframe and Powerplant Mechanics Certification Information, as amended
- Order 8300.10, Vol. II, Ch. 22, Evaluate Airframe and/or Powerplant Mechanic/Added Rating
- Order 8000.16, U.S. Certification or Designation of Foreign National Airmen, Airman Schools, Examiners, and Repair Station Facilities Outside the United States
- Order 8610.4, Aviation Mechanic Examiner Handbook, as amended
- Order 8610.5, Parachute Rigger Examiner Handbook, as amended

B. *Forms*

- FAA Form 8060-7, Airman's Authorization for Written Test
- FAA Form 8610-2, Airman Certificate and/or Rating Application
- AC Form 8060-56, Application for Replacement of Lost or Destroyed Airman Certificate(s)
- AC Form 8080-2, Airman Written Test Report
- AC Form 8080-3, Airman Written Test Application

C. *Job Aids.* None.

5. PROCEDURES

A. *Follow the Guidelines in Volume II, Chapter 22 to Certificate a Foreign Applicant within the United States.* Follow the additional procedures below to certificate a foreign applicant who will exercise the privileges of the certificate outside the United States.

B. *Establish Positive Identification of the Applicant.* Require appropriate legal documentation establishing positive identification.

C. *Require the Applicant to Submit FAA Form 8610-2, Airman Certificate and/or Rating Application, in Triplicate*

D. *Determine the Applicant's Ability to Read, Write, Speak, and Understand the English Language.* To certificate an applicant who is employed outside the United States by a U.S.-certificated air carrier but who does not read, write, speak, and understand English, ensure the following are accomplished:

- The certificated U.S. air carrier has submitted documentation regarding the applicant's employment status and the need for certification
- The written test is accomplished in accordance with Order 8080.1, Administration of Written Tests, as amended, as it relates to applicants who do not read, write, speak, or understand English
- The oral and practical tests are administered by an inspector or examiner in the applicant's language, or through the use of a neutral interpreter selected or accepted by the inspector or examiner

E. *Determine the Applicant's Experience Eligibility.* Ensure foreign applicants provide a signed, dated, detailed statement substantiating the specific type and duration of experience. Ensure the applicant meets the requirements of and follows the procedures detailed in Order 8610.10, Appendix 3.

(1) Determine that these statements come from both an employer, and either the airworthiness authority of the country in which the experience was gained or an airworthiness advisor of the International Civil Aviation Organization. If there is any question about the validity of the statements, contact the regional office.

(2) Do not accept information that cannot be verified or documented. Require each document presented to verify experience to be a signed and dated original, traceable to the originator.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Issue a Certificate/Added Rating*

(1) *Temporary Certificate.* After the applicant has successfully met all requirements for the certificate/rating,

issue FAA Form 8060-4, Temporary Airman Certificate. This form must be either typewritten or filled out in ink.

(a) *Original issuance.* If a social security number is not provided by the applicant, enter the word "pending" in Block III. If a social security number is provided, enter the number without dashes or spaces in Block III as the certificate number.

(b) *Reissuance.* The previously assigned certificate number will continue to be shown in Block III. If a social security number is provided, enter the number without dashes or spaces immediately above the applicant's date of birth. A certificate may be reissued when an airman requests that the certificate number correspond with the social security number.

(2) Fill out FAA Form 8610-2.

(a) When the applicant passes a section, check the "Pass" block and indicate the expiration date. Complete the "FAA Inspector Report" portion of FAA Form 8610-2. Sign the form with the office identifier and date.

(b) Give the applicant the duplicate copy of FAA Form 8610-2 with instructions to retain it until the permanent certificate is issued.

(3) Make and submit to AAC-260 a file with the following:

- A typewritten original, FAA Form 8060-4, signed by the issuing inspector or Designated Mechanic Examiner
- The original copy of FAA Form 8610-2. For retests, also send a duplicate copy.
- AC Form 8080-2, Airman Written Test Report
- A document certifying additional instruction, if the test was retaken within 30 days of the initial test
- AC Form 8060-1, Mechanic Certificate, when adding a rating

(4) Certification files should be sent to AAC-260 as soon as possible to permit the necessary review and processing to take place before the expiration of the temporary certificate.

C. *Deny a Certificate/Added Rating*

(1) *Retest After Failure.* Conduct written retests in accordance with the procedures in Order 8080.1, as amended.

(a) The oral and practical retests must cover all the subject areas in the failed section, as indicated on the application.

(b) If the applicant fails again, complete FAA Form 8610-2 only for the sections included in the retest. The AC Form 8080-2 presented by an unsuccessful applicant for the oral/practical retest will be returned to the applicant with a new duplicate of FAA Form 8610-2.

(3) An applicant's final certification file will include an FAA Form 8610-2 for the original test and each retest.

(2) Investigate all indications or reports of falsification, fraudulent reproduction, or alteration of airman certification documents and applications.

(3) When the applicant fails a section, check the "Fail" block on 8610-2.

(4) When the applicant fails any required section of the oral or practical test or does not complete the test, accomplish the following:

- Complete the "FAA Inspector Report" portion of FAA Form 8610-2
- Present the duplicate copy to the applicant as a record of the sections passed or failed
- Return other documents to the applicant, as appropriate

9. FUTURE ACTIVITIES. Routine surveillance.

CHAPTER 24 CERTIFICATE REPAIRMAN/ADDED PRIVILEGES

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3510

B. *Avionics:* 5510

3. OBJECTIVE. This chapter provides guidance and describes procedures for certificating applicants for repairman certificates and added privileges.

5. GENERAL

A. Applicants for repairman certification are employed by repair stations, commercial operators, or air carriers. Issuance of a repairman certificate is based on practical experience of at least 18 months or formal training appropriate for the position and to the satisfaction of the Administrator. Applicants must be at least 18 years of age and read, write, speak, and understand English.

(1) According to FAR § 145.41(b), applicants must be at or above the level of shop foreman or department head, or must be able to supervise the work performed by employees of the repair station.

(2) An applicant employed by an air carrier or commercial operator may be assigned to a position requiring at least one of the following:

- Responsibility for the work of a shop or department that performs maintenance
- Authorization to sign the airworthiness release or log entry according to the air carrier's manual
- Performance of inspections required by the air carrier's manual

(3) A repairman employed by an air carrier or commercial operator which also holds a repair station certificate may apply for one certificate if the duties are the same in both operations. AVN-460 will issue one certificate with the same privileges listing each operation in the limitations section. If a repairman is employed at either the operator or the repair station and subsequently wishes to be added to the other, certification will be handled as for an added privilege.

(4) A repairman employed and certificated by more than one repair station or by more than one operator, where the employers are distinctly different business entities, will need a separate airman certificate for each repair station or operator.

(5) A repairman employed by a repair station using stations at different locations may serve in any station in that system in accordance with FAR § 145.51.

B. For each certificate/rating requested, an applicant should submit the following:

- One copy of FAA Form 8610-2, Airman Certificate and/or Rating Application, with items I through IV completed. Applicants should check the box for Repairman Certificate and indicate the privileges sought.
- A letter of recommendation from the applicant's employer clearly stating that the applicant meets the requirements of FAR §§ 65.101, 145.39, 145.41, and 145.43. The letter should describe the specialized jobs the applicant will perform or supervise as a repairman.

C. Ratings for an applicant employed by an air carrier or repair station should coincide with the specific job for which the person is employed to perform or supervise.

(1) In no instance should a repairman certificate be issued with an airframe and/or powerplant rating to circumvent the process of obtaining a mechanic certificate. If a repairman certificate has been issued with airframe and/or powerplant ratings, request that the airman surrender the certificate. Issue a repairman certificate with the appropriate privileges and limitations.

(2) Repairman certificates should be reserved for applicants having special skills, such as:

- Airframe argon-heliarc welding
- Powerplant cylinder plating
- Airframe nondestructive testing

- Propeller overhaul
- Airframe electrical system analysis and repair. This type of certificate should be reserved for specific systems only, such as flight guidance databus and power distribution.
- Radio and/or instrument. For these repairman certificates, the applicable privileges may be entered as "radio and instrument" or "radio" or "instrument".

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43, 65 and 145

B. *Coordination.* This task may require coordination between airworthiness maintenance and avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 65-24, Certification of a Repairman (General), as amended

B. *Forms*

- FAA Form 8610-2, Airman Certificate and/or Rating Application
- FAA Form 8060-4, Temporary Airman Certificate

C. *Job Aids*

- Figure 24-1, Temporary Airman Certificate for a Repair Station
- Figure 24-2, Temporary Airman Certificate for an Air Carrier/Commercial Operator

5. PROCEDURES

A. *Verify Eligibility.* Ensure the applicant is at least 18 years of age and reads, writes, speaks, and understands English.

B. *Review the Application and Letter of Recommendation*

(1) *Application.* Ensure the applicant checks the box for Repairman Certificate and indicates the privilege(s) sought on the front of FAA Form 8610-2, Airman Certificate and/or Rating Application. Determine that the applicant meets the requirements of FAR Part 65.

NOTE: AVN-460 no longer requires that the "Applicant Certification," A or B, on the reverse side of Form 8610-2, be filled out for a Repairman Certificate.

(2) Verify that the Letter of Recommendation contains the following elements:

- A certification that the applicant meets the requirements of the privilege(s)/limitation(s) sought
- A statement recommending the applicant for the privilege(s)/limitation(s) sought

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Issue Certificate.* When it has been determined that the applicant meets all the requirements for certification, sign the application as approved and complete FAA Form 8060-4, Temporary Airman Certificate, in duplicate.

(1) Check the Airman Information portion of the National Vitals Information Subsystems to determine whether the applicant already possesses a certificate. An applicant seeking added privileges to a specific certificate must surrender the applicable Airman Certificate, FAA Form 8610-2, held at the time of application approval.

(2) Give the applicant a copy of FAA Form 8060-4. Both the applicant and the inspector must sign this form.

(3) Complete the FAA inspector's report portion on the reverse side of FAA Form 8610-2.

(4) Send the original FAA Form 8610-2, the Letter of Recommendation, Airman Certificate (for an added privilege, as applicable) and the original FAA Form 8060-4 to the Airmen Certification Branch, AVN-460, in Oklahoma City.

C. *Deny Certificate.* If the application is disapproved, return it to the applicant with a letter explaining the denial.

9. FUTURE ACTIVITIES

A. Review repair station and air carrier records to determine if the scope of the applicant's employment is consistent with the job described in the Letter of Recommendation.

B. Send Airman Certificates surrendered in accordance with FAR § 65.15(c) to the Airmen Certification Branch, AVN-460, with a brief statement relating to the circumstances.

FIGURE 24-1, TEMPORARY AIRMAN CERTIFICATE FOR A REPAIR STATION

To issue FAA Form 8060-4, Temporary Airman Certificate, for an applicant to work at a repair station, fill out the form as indicated below:

A. In Item III, type the social security number, or if an exclusive number is requested, type the word "Pending."

B. In Item IX, type the word "Repairman".

C. In Item XII, type the following: Certificate privileges of FAR § 65.103 valid for (applicable privileges) while employed by (name of repair station, city, state).

D. In Item XIII, type the repair station certificate number.

I. UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION -- FEDERAL AVIATION ADMINISTRATION

III. CERTIFICATE NO.

II. **TEMPORARY AIRMAN CERTIFICATE**

THIS CERTIFIES THAT IV.

V.

DATE OF BIRTH	HEIGHT	WEIGHT	HAIR	EYES	SEX	NATIONALITY VI.
	IN.					

IX. **has been found to be properly qualified and is hereby authorized in accordance with the conditions of issuance on the reverse of this certificate to exercise the privileges of**

RATINGS AND LIMITATIONS

XII.

XIII.

THIS IS ☐ AN ORIGINAL ISSUANCE ☐ A REISSUANCE OF THIS GRADE OF CERTIFICATE

DATE OF SUPERSEDED AIRMAN CERTIFICATE

BY DIRECTION OF THE ADMINISTRATOR

EXAMINER'S DESIGNATION NO. OR INSPECTOR'S REG. NO.

X. DATE OF ISSUANCE	X. SIGNATURE OF EXAMINER OR INSPECTOR

DATE DESIGNATION EXPIRES

VII. AIRMAN'S SIGNATURE

FAA Form 8060-4 (8-79) USE PREVIOUS EDITION

FIGURE 24-2, TEMPORARY AIRMAN CERTIFICATE FOR AN AIR CARRIER/COMMERCIAL OPERATOR SINGLY OR COMBINED WITH A REPAIR STATION

To issue FAA Form 8060-4, Temporary Airman Certificate, for an applicant to work for an air carrier or commercial operator alone or combined with a repair station, fill out the form as indicated below:

A. In Item III, type the social security number, or if an exclusive number is requested, type the word "Pending."

B. In Item IX, type the word "Repairman".

C. In Item XII, type the following: Certificate privileges of FAR § 65.103 valid for (applicable privileges) while employed by (air carrier and/or repair station name, city, state).

I. UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION

III. CERTIFICATE NO.

ii. **TEMPORARY AIRMAN CERTIFICATE**

THIS CERTIFIES THAT IV.

V.

DATE OF BIRTH	HEIGHT	WEIGHT	HAIR	EYES	SEX	NATIONALITY VI.
	IN.					

IX. **has been found to be properly qualified and is hereby authorized in accordance with the conditions of issuance on the reverse of this certificate to exercise the privileges of**

RATINGS AND LIMITATIONS

XII.

XIII.

vii. AIRMAN'S SIGNATURE

THIS IS ☐ AN ORIGINAL ISSUANCE ☐ A REISSUANCE OF THIS GRADE OF CERTIFICATE

DATE OF SUPERSEDED AIRMAN CERTIFICATE

BY DIRECTION OF THE ADMINISTRATOR

EXAMINER'S DESIGNATION NO. OR INSPECTOR'S REG. NO.

X. DATE OF ISSUANCE

X. SIGNATURE OF EXAMINER OR INSPECTOR

DATE DESIGNATION EXPIRES

FAA Form 8060-4 (8-79) USE PREVIOUS EDITION

CHAPTER 25 CERTIFICATE REPAIRMAN FOR EXPERIMENTAL AIRCRAFT

Section 1. Background

1. **WPMS ACTIVITY CODES**

A. *Maintenance*: 3510

B. *Avionics*: 5510

3. **OBJECTIVE.** This chapter provides guidance and describes procedures for the issuance of Repairman Experimental Aircraft Builder certificates and the cancellation of surrendered certificates.

5. **GENERAL.** Repairman Experimental Aircraft certificates are issued for individual builders of aircraft certificated under the FAR Part 21 experimental category for the purpose of operating, exhibiting, and/or air racing amateur-built aircraft. These repairmen are in no way associated with repairmen certificated under FAR § 65.101.

A. Only the primary builder of each amateur-built aircraft may be certificated as a repairman. As such, the primary builder is privileged to perform condition inspections of the same scope as Appendix D of FAR Part 43.

B. Aircraft manufacturing companies that produce experimental aircraft are not eligible for repairmen certificates for amateur-built aircraft.

7. **ELIGIBILITY REQUIREMENTS**

A. The applicant must be a U.S. citizen or an individual admitted for permanent residence in the United States. The applicant must also be at least 18 years of age, and the primary builder of the aircraft.

(1) When a club, school, or partnership builds an aircraft, only one individual (such as the class instructor or designated project leader) will be considered for issuance of a repairman certificate for that aircraft.

(2) An individual working alone who applies for a repairman certificate must build the majority (51%) of the aircraft in order to be eligible for the certificate.

B. Applicants will be considered to have the requisite skill to determine whether the aircraft is in a condition for safe operation when at least one of the conditions below is met:

(1) The airworthiness inspector has knowledge that the aircraft was constructed by the individual builder. The inspector may accept information from another airworthiness inspector involved in the original aircraft certification and familiar with the builder's expertise.

NOTE: Advisory Circular 20-27, Certification and Operation of Amateur-Built Aircraft, as amended, notes that amateur builders have adopted the practice of calling upon a person having expertise with aircraft construction techniques, such as Experimental Aircraft Association (EAA) technical counselors, to inspect components and conduct other inspections as necessary. This practice has been highly successful in ensuring construction integrity. Therefore, FAA inspectors may use Experimental Aircraft Association technical counselors as resources in verifying the builder's expertise.

(2) The applicant presents satisfactory evidence, such as the aircraft construction logbook

(3) The applicant proves to the satisfaction of the inspector an ability to perform condition inspections and an ability to determine whether or not the aircraft is in a condition for safe operation

9. **PRIVILEGES AND LIMITATIONS.** The builder of a certificated experimental aircraft who also holds a repairman certificate for that aircraft may perform the condition inspections required by the operating limitations. Condition inspections will be performed in the same scope as in FAR 43, Appendix D. The aircraft will be identified on the repairman certificate by make, model, serial number, and certification date.

A. During the aircraft certification process, the FAA issues operating limitations, as required by FAR § 91.42, to ensure an adequate level of safety.

B. The operating limitations require that the subject aircraft be inspected annually by a repairman, the holder of an FAA mechanic certificate with airframe and powerplant ratings, or an appropriately rated repair station.

11. SURRENDER OF CERTIFICATE. Repairman certificates should be surrendered whenever the aircraft is destroyed. However, if the aircraft is sold, the repairman may elect to retain the certificate in order to perform condition inspections on the aircraft for the new owner. The certificate cannot be transferred to the new owner.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43 and 65

B. *Coordination.* This task may require coordination with other airworthiness inspectors familiar with the applicant's skill and knowledge.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 20-27, Certification and Operation of Amateur-Built Aircraft, as amended
- Advisory Circular 65-23, Certification of Repairman (Experimental Aircraft Builders), as amended

B. *Forms*

- FAA Form 8610-2, Airman Certificate and/or Rating Application
- FAA Form 8060-4, Temporary Airman Certificate

C. *Job Aids.* None.

5. PROCEDURES

A. *Verify the Applicant's Eligibility.* Ensure the applicant is at least 18 years of age and meets the requirements of FAR § 65.104. Ensure the applicant proves to the satisfaction of the inspector an ability to perform condition inspections and an ability to determine whether the aircraft is in a condition of safe operation.

B. *Review Applications.* Ensure the applicant checks the box for Repairman Certificate and indicates the rating sought. Complete the FAA Inspector's Report portion on the reverse side of the FAA Form 8610-2, Airman Certificate and/or Rating Application.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Issue Certificate.* When it has been determined that the applicant meets all the requirements for certification, approve the application by signing it. Complete FAA Form 8060-4, Temporary Airman Certificate, in duplicate.

(1) Give the applicant a copy of FAA Form 8060-4. Both the applicant and the inspector must sign this form.

(2) Send FAA Form 8610-2 and the original of FAA Form 8060-4 to the Airmen Certification Branch, AAC-260.

C. *Deny Certificate.* If the application is disapproved, return it to the applicant with a letter explaining the denial.

9. FUTURE ACTIVITIES. Enforcement action against the repairman may be considered if the aircraft is maintained in a manner contrary to the maintenance requirements contained in its operating limitations.

CHAPTER 26 EVALUATE INSPECTION AUTHORIZATION

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3512

B. *Avionics:* 5512

3. OBJECTIVE. This chapter provides guidance for issuance of an inspection authorization.

5. GENERAL. Advisory Circular 65-19, Inspection Authorization Study Guide, as amended, serves as a reference and study guide for persons interested in obtaining an inspection authorization.

A. There is no limit on the number of inspection authorizations that may be issued by a given field office. No qualified applicant should be refused the opportunity to take the test.

B. Field personnel should urge the holders of an inspection authorization to obtain and subscribe to changes for advisory circulars and other pertinent publications. Inspectors should offer guidance for obtaining the required data, as requested. However, the responsibility for obtaining this material rests with the holder of the inspection authorization.

7. ELIGIBILITY. None of the requirements of FAR § 65.91 shall be waived by field personnel.

A. The applicant must hold a mechanic certificate with airframe and powerplant ratings that is current and has been in effect for at least three years. The applicant must have been actively engaged in maintain-ing civil aircraft for at least the two year period before the date of application.

B. There must be a fixed base of operation at which the applicant can be located in person or by telephone. This base need not be the place where the applicant will exercise the inspection authority.

C. The applicant must have available the equipment, facilities, and inspection data necessary to conduct proper inspection of airframes, powerplants, propellers, or any related part or appliance. This data must be kept current.

D. The applicant must pass a written test on the ability to inspect according to safety standards for approval to return to service an aircraft, related part, or appliance after major repairs, major alterations, annual, and progressive inspections performed under FAR Part 43. There is no practical test required for an inspection authorization.

9. WRITTEN TEST. The person conducting the required test must be thoroughly familiar with current airworthiness regulations, aircraft specifications, type certificate data sheets, airworthiness directives, and inspection requirements.

A. The written test establishes the applicant's ability to read, understand, interpret, and apply the regulations, policies, and procedures set forth in FAA publications. It also provides the opportunity for personal contact with the applicant to discuss the various requirements and procedures associated with exercising the privileges of the inspection authorization.

(1) Applicants should understand the test procedures, including the enforcement of time limitations.

(2) Applicants must take the test in sequence.

(3) Applicants should have available appropriate aircraft specifications, type certificate data sheets, Federal Aviation Regulations, and other material to answer Parts II and III of the test. Prior to the examination, applicants should coordinate with the inspector conducting the examination to determine what materials are appropriate.

(4) Applicants should understand that failure of any part will require a wait of 90 days before retesting is allowed.

B. The test should be scheduled early in the day to allow the applicant time to complete all parts within the working day. However, the applicant may be given the test at one or more sittings, one part at a time, starting with Part I.

(1) The time at which the applicant must surrender the paper should be entered on the test cover or in the space provided.

(2) The examining official must select an aircraft on which the applicant's answers will be based. The aircraft should be a model and serial number eligible for standard airworthiness certification.

(a) While the use of aircraft certificated under FAR Part 25 or CAR 4b is permissible, it is suggested that the aircraft selected be of a type certificated under FAR Part 23 or CAR 3.

(b) To preserve the effectiveness of the test, the examiner should give each applicant a different model aircraft.

C. The minimum passing grade on any part of the written test is 70 percent.

(1) The person conducting the test must use the specific scoring key and guide to grading that comes with the particular inspection authorization written test.

(a) The multiple choice questions in Part I must be graded using the scoring key provided.

(b) The person conducting the test must determine the correct answers for Parts II and III, as many answers will change as specifications are revised and new Airworthiness Directives are issued. All grading of these parts must be indicated by a correct or incorrect answer only.

(c) Variations in serially numbered aircraft of the same make and model may require different answers.

(2) It is not necessary for applicants to quote regulations verbatim or to use the exact words shown in the grading guide.

(3) When an applicant passes all parts of the inspection authorization written test, airworthiness inspectors should discuss any questions the applicant answered incorrectly prior to issuing the authorization. This will ensure that the applicant clearly understands the inspection authorization privileges, limitations, responsibilities, and functions in the aviation community.

11. DURATION OF INSPECTION AUTHORIZATION. An inspection authorization expires March 31 of each year and ceases to be effective whenever either of the following occur:

- The authorization is surrendered, suspended, or revoked. When this occurs, the inspector shall request the holder to return the authorization, FAA Form 8310-5.

- A holder fails to meet the renewal requirements of FAR § 65.91(c)(1) through (5).

13. PRIVILEGES OF AN INSPECTION AUTHORIZATION

A. When exercising the privileges of an inspection authorization, the holder may:

- Inspect and approve for return to service major repairs and major alterations if the work was done according to technical data approved by the Administrator

- Perform an annual inspection

- Perform or supervise a progressive inspection

B. An inspection authorization holder shall not approve for return to service major repairs, major alterations, or inspection on an aircraft maintained according to a continuous airworthiness program under FAR Parts 121/135 and 127.

C. When operating away from the district office having geographic responsibility, the inspection authorization holder should notivy the district office in the area in which the work will be perfromed, prior to exercising the authorization.

D. An inspection authorization holder who changes the fixed base of operation may not exercise the privileges of the authorization prior to notifying the district office or international field office for the area in which the new base is located. This notification must be in writing.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 39, 43, and 65

B. *Coordination.* None.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 65-19, Inspection Authorization Study Guide, as amended
- Order 8300.10, Vol. II, Ch. 27, "Renew Inspection Authorization"

B. *Forms*

- FAA Form 8060-5, Notice of Disapproval of Application
- FAA Form 8310-5, Inspection Authorization
- FAA Form 8610-1, Mechanic's Application for Inspection Authorization

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Application*

(1) If the applicant has previously held or currently holds an airman's certificate, check the Enforcement Information System (EIS) file. Obtain a copy of any suspension/revocation order for review. If the applicant is ineligible for an inspection authorization, return the application.

(2) Ensure documents provide a complete and positive record of meeting the requirements.

B. *Verify That the Applicant Has Met the Requirements for the Authorization as Specified in FAR § 65.91(c)(1) through (4)*

C. *Administer the Test*

(1) Ensure the applicant has the material required to complete the test.

(2) Advise the applicant of the time limitations. Note the time the test started on the cover of the test booklet.

(3) Monitor the applicant's progress.

(4) Grade each section of the test in sequence. Ensure the applicant has successfully completed each part before taking the next part.

(5) Record test results in the booklets. Do not remove or reproduce pages or retain any part of the test booklet in the district office files. Return used booklets to the distribution section, AAC-65C.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Issue Inspection Authorization*

(1) When an applicant successfully completes the test, issue an Inspection Authorization, FAA Form 8310-5, as follows:

- Type all information on the face of FAA Form 8310-5
- Enter the mechanic's full name in the space provided
- Make certain that the mechanic certificate number entered on this form is the same as that appearing on the applicant's mechanic certificate, AC Form 8060-1
- Have the applicant sign FAA Form 8310-5 in ink

(2) Forward the original copy of FAA Form 8610-1 to the Airmen Certification Branch, AVN-460. Retain the duplicate copy for the district office files.

C. *Deny Inspection Authorization.* Issue FAA Form 8060-5, Notice of Disapproval of Application, to applicants who fail to make a grade of 70 percent on any part of the test.

(1) Complete an original and one copy indicating the part or parts failed. Type the following on the reverse side of the form and bring it to the attention of the applicant: "If you present your application for a retest to the district office listed below, you will not be required to retake Part(s) (indicate part(s) successfully completed). (Insert district office name and location)."

(2) Give the original to the applicant. Retain the duplicate for the district office file with the application, Form 8610-1. No further report or record of action is required.

9. FUTURE ACTIVITIES. Inform the Inspection Authorization holder of the requirement to report any change of base of operation. Conduct annual inspection authorization renewal and routine surveillance.

CHAPTER 27 RENEW INSPECTION AUTHORIZATION

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3514

B. *Avionics*: 5514

3. OBJECTIVE. This chapter provides guidance and describes procedures for the renewal of Inspection Authorizations.

5. GENERAL

A. When the base of operation changes for an Inspection Authorization holder, the Flight Standards District Office for the area of the new base must be notified in writing before the holder can again exercise the privileges of the authorization.

B. The Inspection Authorization expires annually on March 31. An Inspection Authorization holder must continue to meet the requirements of FAR § 65.93 in order to retain the authorization.

7. RENEWAL OF INSPECTION AUTHORIZATION

A. Applicants for renewal will be required to complete FAA Form 8610-1, Mechanic's Application for Inspection Authorization, in duplicate.

B. The requirements set forth under FAR § 65.93(a) should not be interpreted to be inclusive. The holder needs only to meet the activity requirements of FAR §§ 65.93(a)(1), (2), (3), (4), or (5).

(1) For the current period of the Inspection Authorization, the applicant must show evidence of having performed one of the following:

- At least one annual inspection per each 90 days the authorization has been held
- Inspections of at least two major repairs or major alterations for each 90 days the authorization has been held
- At least one progressive inspection. The applicant may have supervised and approved the progressive inspection rather than actually having performed it.

NOTE: An inspection program required under FAR § 91.169(e) is not acceptable as activity. Partial inspections such as phases or events on more than one aircraft are not acceptable as activity. A progressive inspection is a complete inspection on one identified aircraft.

(2) As an alternative, the applicant may show evidence of having successfully completed an eight hour refresher course, acceptable to the Administrator, during the 12-month period preceding the renewal application. The applicant may also meet the activity requirement by passing an oral test given by a FAA inspector.

(a) The refresher course must contain subjects directly related to aircraft maintenance, inspection repairs, and alterations. It must not be used to promote a new or existing product.

(b) The instructional requirements of FAR § 65.93(a)(4) may be met by accumulating at least 8 hours of maintenance training. Each course or seminar must be at least one hour long and completed in the 12 month period between April 1 and March 31 prior to inspection authorization renewal.

(c) Each person who intends to use 8 hours of instruction to meet FAR § 65.93(a)(4) must provide proof of attendance for instruction received at the time of renewal. Acceptable proof of attendance consists of a certificate of training or similar document showing the name of the course, a description of the course content, time in hours, the date, location, and course instructor's name and affiliation.

(3) Attendance at the Annual Inspection Authorization Renewal Meeting is not mandatory, but if the applicant does not attend, other arrangements must be made with the appropriate district office.

(4) An Inspection Authorization issued less than 90 days before the expiration date need not comply with FAR § 65.93(a)(1) through (5) for that quarter.

C. If the holder applies for renewal at an office other than the jurisdictional office, the receiving office should hold renewal in abeyance until the holder's activity is verified.

D. When the holder is employed by a repair station, credit for renewal activity can be claimed only for those aircraft that the authorization holder personally inspected. Evidence supporting the activity should be presented in addition to the signed application.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 39, 43, and 65

B. *Coordination.* This task may require coordination with other Flight Standards District Offices.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.10, Vol. II, Ch. 26, Evaluate Inspection Authorization

B. *Forms*

- AC Form 8300-10, Certificate, Authorization/Designation Action Request
- FAA Form 8310-5, Inspection Authorization
- FAA Form 8610-1, Mechanic's Application for Inspection Authorization

C. *Job Aids.* None.

5. PROCEDURES

A. *Ensure Applicant Meets Eligibility Requirements*

B. *Renew Inspection Authorization.* Enter the new expiration date and sign the reverse side of FAA Form 8310-5. Complete Item 14, "record of action" portion of FAA Form 8610-1 and forward the original of the form to AAC-260 in Oklahoma City. Retain the duplicate copy. Issue a new Inspection Authorization, FAA Form 8310-5, if the holder's form is soiled or worn, or the reverse side is completely filled out.

C. *Process Failure to Renew Inspection Authorization.* Submit AC Form 8300-10, Certificate, Authorization, Designation Action Request, to delete the Inspection Authorization from the data bank.

7. TASK OUTCOMES. File WPMS Transmittal Form.

9. FUTURE ACTIVITIES

A. *Process Change of Location.* Upon receipt of written notification, contact the previous supervising office and request the appropriate Inspection Authorization file. Visit the Inspection Authorization holder at the new base as soon as possible.

B. *Process Surrendered Authorization.* When the holder of an Inspection Authorization voluntarily surrenders it, accomplish the following:

- Destroy the Inspection Authorization, FAA Form 8310-5
- Attempt to obtain a statement in writing indicating that the surrender is voluntary
- Submit mailing list information as required

CHAPTER 28 CERTIFICATE PARACHUTE RIGGER/ADDED RATING

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3501/3508

B. *Avionics:* 5501/5508

3. OBJECTIVE. This chapter provides guidelines and describes procedures for advising, evaluating, testing, and certificating applicants for parachute rigger certificates and ratings.

5. GENERAL. FAR Part 65, Subpart F provides for the issuance of senior and master parachute rigger certificates.

A. Ratings for seat, back, chest, and lap may be issued.

B. Any person who applies in the prescribed manner and meets the requirements of FAR Part 65, Subparts A and F is entitled to be issued a parachute rigger certificate with appropriate rating(s).

7. ELIGIBILITY REQUIREMENTS

A. All applicants for parachute rigger certificates must meet the requirements of FAR Part 65, Subpart F.

B. Applicants must be at least 18 years of age and be able to read, write, speak, and understand the English language. Citizens of Puerto Rico or persons employed by a U.S. air carrier outside the United States who do not meet the language requirement may be issued a certificate under the provisions of FAR § 65.113.

9. EXPERIENCE, KNOWLEDGE, SKILLS, AND TEST REQUIREMENTS

A. *Senior Parachute Rigger Requirements.* The applicant must have packed at least 20 parachutes of each type for which a rating is being sought, in accordance with the manufacturer's instructions. These parachutes must have been packed under the supervision of either a certificated parachute rigger holding a rating for the appropriate type or a person holding an appropriate military rating. The applicant must also successfully complete written and oral/practical tests.

B. *Senior Parachute Rigger Requirements, Military Competence.* The applicant must have packed, as a military rated parachute rigger, at least 20 parachutes of each type for which a rating is sought. The applicant must successfully complete a written test on the regulations only. Per FAR § 65.117, no oral/practical test is required.

C. *Master Parachute Rigger Requirements*

(1) The applicant must have at least three years of experience as a parachute rigger and must have packed at least 100 parachutes of each of two types in common use, in accordance with the manufacturer's instructions.

(2) The applicant must have met these requirements under one or more of the following conditions:

- While a Senior Parachute Rigger
- While under the supervision of a certificated and appropriately rated parachute rigger
- While under the supervision of a person holding appropriate military ratings

(3) An applicant for a master certificate who does not hold a senior certificate must successfully complete written and oral/practical tests. An applicant holding a senior parachute rigger certificate is not required to take a written test.

D. In order to substantiate experience, the applicant must submit documentation, such as log books, satisfactory to the Administrator.

11. PRIVILEGES OF PARACHUTE RIGGERS

A. At the time of original certification, each parachute rigger shall be assigned an identification seal symbol and issued a temporary airman certificate.

B. A certificated senior parachute rigger may pack and maintain or supervise the packing of the types of parachute for which the rigger is rated.

C. A certificated master parachute rigger may pack, maintain, or alter the type(s) of parachute for which the rigger is rated. The master parachute rigger may also

supervise other persons in packing, maintaining, or altering any type of parachute for which a rating is held.

D. A certificated parachute rigger, without respect to ratings, may pack, maintain, or alter the main parachute of a dual parachute pack to be used for intentional jumping.

13. RECORD KEEPING REQUIREMENTS

A. A certificated parachute rigger must keep records of the packing, maintenance, and alteration of parachutes, as performed or supervised. The record entries shall include the following information for each parachute:

- Type and make
- Serial number
- Name and address of owner
- Kind and extent of worked performed
- Date when and place where the work was performed
- Results of drop tests

B. Each record must be retained for two years after the date it is made.

C. The record may be kept as consecutive entries in a bound and page-numbered record (log) or in any other form that contains the required information and is retained for the required period, in accordance with FAR § 65.131(c).

15. FACILITIES AND EQUIPMENT

A. Facilities and equipment must be available to the parachute rigger during the exercise of certificate privileges but are not required to be certificated or approved in advance by the FAA.

B. No certificated parachute rigger may exercise the privileges of the certificate unless the following are available:

- A smooth top table at least three feet wide by 40 feet long
- Suitable housing that is adequately heated, lighted, and ventilated for drying and airing parachutes
- Sufficient tools and equipment to pack and maintain the types of parachutes serviced
- Adequate housing facilities to perform duties and to protect tools and equipment

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Part 65

B. *Coordination.* None.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 65-5, Parachute Rigger Senior/Master-Certification Guide, as amended
- Order 8610.5, Parachute Rigger Examiner Handbook, as amended
- Order 8080.1, Conduct of Airman Written Tests, as amended

B. *Forms*

- AC Form 8080-3, Airman Written Test Application
- FAA Form 3318, Parachute Rigger Seal Symbol Assignment Card
- FAA Form 8060-4, Temporary Airman Certificate

- FAA Form 8060-5, Notice of Disapproval of Application
- FAA Form 8060-7, Airman's Authorization for Written Test
- FAA Form 8610-2, Airman Certificate and/or Rating Application

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Application*

(1) If the applicant has previously held or currently holds an airman's certificate, check the Enforcement Information System (EIS) file.

(a) Obtain a copy of any suspension/revocation order for review, if applicable.

(b) If the applicant is ineligible for a certificate/rating, return the application and take any appropriate enforcement action.

(2) Ensure documented information is sufficient to determine the type and number of parachutes packed by the applicant.

(3) Ensure documents provide a complete and positive record of meeting the requirements.

(4) If the applicant is eligible, proceed with the certification.

B. *Ensure the Applicant Meets the Requirements for the Certificate/Rating*

(1) Ensure the applicant has met skills and experience requirements.

(2) Determine that the applicant can read, write, speak, and understand the English language.

(3) Verify that the applicant is at least 18 years old.

C. *Authorize the Applicant for the Written Test.* Ensure tests are conducted in accordance with Order 8080.1.

NOTE: Designated Parachute Rigger Examiners (DPREs) will administer written and oral/practical tests except for military competence written tests, which will be administered by the FAA district office. If there is no Designated Parachute Rigger Examiner to conduct the tests, the FAA district office may administer the tests.

(1) Give applicants instructions for filling out AC Form 8080-3, Airman Written Test Application.

(2) Ensure the applicant reads and understands the Privacy Act statement and other instructions contained on the first page of the test application.

(3) If the written test is to be taken at another time or place, issue FAA Form 8060-7, Airman's Authorization for Written Test.

(4) *Written Test Grades.* Grade only military competence tests in the Flight Standards District Office. Send other tests to AAC-260 in Oklahoma City for grading.

(a) Use key sheets furnished by AAC-65 to grade military competence written tests. Forward the AC Form 8080-3 to AAC-260 with the certification file. If the applicant passes, proceed with certification.

(b) If the applicant fails, issue FAA Form 8060-5, Notice of Disapproval of Application, and send the duplicate copy of this form to AAC-260 along with the AC Form 8080-3.

D. *Ensure Application for Oral and Practical Tests Includes Proof of Successful Completion of Applicable Written Tests.* Review the applicant's FAA Form 8610-2 to ensure that all pertinent information is furnished.

E. *Ensure Oral and Practical Tests Are Administered and Passed.* Ensure these tests are given by only designated parachute rigger examiners or by a FAA airworthiness inspector with applicable parachute experience.

(1) Ensure the test(s) consist of questions and projects directly related to the type of parachute for which a rating is sought.

(2) Ensure that each rating has its own oral/practical test.

(3) Permit the applicant to refer to the manufacturer's instructions.

F. *Evaluate Oral and Practical Test Results*

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Certificate Airman*

(1) Complete FAA Form 8610-2.

(a) When the applicant passes a section of the oral/practical test, check the "Pass" block and indicate the expiration date.

(b) Fill out the "FAA Inspector Report" portion.

(2) Fill Out FAA Form 3318, Parachute Rigger Seal Symbol Assignment Card.

(3) Fill out FAA Form 8060-4, Temporary Airman Certificate, in duplicate, including the seal symbol from FAA Form 3318. FAA Form 8060-4 must be either typewritten or filled out in ink. Both the issuing FAA Airworthiness Inspector and the applicant must sign the applicant's copy of the temporary certificate.

(a) *Original issuance.* Enter the word "pending" in Block III.

(b) *Reissuance.* The previously assigned certificate number will continue to be shown in Block III. If a social security number is provided, enter the number without dashes or spaces immediately above the applicant's date of birth. A certificate may be reissued when an airman requests that the certificate number correspond with the applicant's social security number.

(4) Submit a file to AAC-260, to contain the following:

- Original application, FAA Form 8610-2
- Original typed FAA Form 8060-4
- AC Form 8080-2, written test results from previous certification, if applicable
- AC Form 8080-3, for military competence only
- Seal symbol card, FAA Form 3318
- Duplicate FAA form 8610-2 or 8060-5 to report retest
- If the applicant has been retested within 30 days after failure, the letter certifying the applicant has received further instruction
- AC Form 8060-1 or 8060-4, previously held certificate, for added ratings

C. *Deny a Certificate/Added Rating.* When the applicant cannot show proof of meeting all of the eligibility requirements, fails any required section of the oral or practical test, or does not complete the test, accomplish the following:

- Complete the "FAA Inspector Report" portion of FAA Form 8610-2
- Present the duplicate copy to the applicant as a record of the sections passed or failed. Counsel the applicant as needed.
- Return other documents to the applicant, as appropriate

9. FUTURE ACTIVITIES

A. *Retest after Failure.* Conduct written retests in accordance with the procedures in Order 8080.1.

(1) Normally an applicant must wait 30 days to retake a failed test. In order to take the test sooner, a statement must be presented certifying that the applicant has been given at least 5 hours of additional instruction in each of the subjects failed and is now considered ready for retesting. This statement must be from a certificated and appropriately rated parachute rigger, or a person holding an appropriate military rating.

(2) The oral and practical retests must cover all the subject areas in the failed section, as indicated on the application.

(3) If the applicant fails again, complete FAA Form 8610-2 only for the sections included in the retest. The AC Form 8080-2 presented by an unsuccessful applicant for the oral/practical retest will be returned to the applicant with a new duplicate of FAA Form 8610-2.

B. Routine surveillance.

[CHAPTERS 29 THROUGH 34 RESERVED]

CHAPTER 35 INTRODUCTION TO FAR PART 91 RELATED TASKS

1. FAR PART 91 AUTHORITY. The regulations of FAR Part 91, Subpart C prescribe the maintenance requirements for all U.S.-registered civil aircraft operating within and/or outside the United States.

3. MAINTENANCE RESPONSIBILITY. Technological advancements in general aviation-type aircraft dictate the need for maintenance requirements. Therefore, all aircraft must be maintained in a condition for safe operation and meet their respective type designs. It is essential that the continued airworthiness of aircraft be consistent with the terms of the original airworthiness certificate.

A. The owner or operator of an aircraft is responsible for maintaining the aircraft in an airworthy condition. The actual maintenance of the aircraft must be performed or supervised by certificated persons.

B. The owner/operator must have the aircraft inspected as prescribed in FAR §§ 91.169, 91.171, and 91.172. Between these required inspections, discrepancies must be repaired as prescribed in FAR Part 43.

5. TYPES OF INSPECTION PROGRAMS. Several options for inspection programs are available in FAR Part 91, Subpart C. The inspection program an operator uses is dictated by the size of the aircraft, the type of propulsion, and the type of operation.

[CHAPTER 36 RESERVED]

CHAPTER 37 APPROVE FAR § 91.30 MINIMUM EQUIPMENT LIST/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3418/3419

B. *Avionics:* 5418/5419

3. OBJECTIVE. This chapter describes the process used to evaluate and approve a FAR § 91.30 Minimum Equipment List/Revision.

5. GENERAL

A. Certain kinds of operations, such as night flight, instrument flight rules (IFR), or operation in icing conditions require specific equipment that is not essential under all operating conditions. Other equipment, such as entertainment systems and galley equipment, may be installed for convenience. If some deviation from the type certificated configuration were not permitted, the aircraft could not be flown unless all such equipment were operable.

(1) Most aircraft have some redundancy of systems and equipment to provide schedule reliability and the necessary level of safety.

(2) Certain controlled conditions are allowed to compensate for the failure or deactivation of specific instruments or equipment. These controlled conditions include the following:

- Restrictions for certain flight operations
- Changes to in-flight operational procedures
- Temporary deactivation of components

B. A Minimum Equipment List allows an operator to continue a flight or series of flights, with certain instruments or equipment inoperative, to a place where repairs can be made. For the operator to be able to use the Minimum Equipment List, the procedural requirements for the equipment loss must first be met.

C. The Master Minimum Equipment List serves as a guideline in the development of a Minimum Equipment List. Master Minimum Equipment Lists are developed by Flight Operations Evaluation Boards.

7. AIRCRAFT SYSTEMS. The Master Minimum Equipment List addresses specific aircraft systems to ensure that airworthiness is not degraded. The Minimum Equipment List must provide definitive guidance to the maintenance and operations personnel as to which equipment may be inoperative for a particular operation. The operator's Minimum Equipment List may be more restrictive than the Master Minimum Equipment List. Under no circumstances may the operator's list be less restrictive.

A. The Minimum Equipment List is designed to reflect the actual aircraft operated. Therefore, the operator, in developing the Minimum Equipment List, may leave off items from the Master Minimum Equipment List due to aircraft configuration or personal preference. The operator cannot add items that are not already on the Master Minimum Equipment List.

B. Placards, alternate operating procedures, and instructions for the isolation of malfunctions must be technically correct.

9. PROCEDURAL REQUIREMENTS. Not all FAR Part 91 operators are required to have a maintenance program or any form of operations manual. However, all operators seeking to develop and use a Minimum Equipment List must have some form of instructions and/or procedures stating how the Minimum Equipment List is to be used. These instructions or procedures should include a method for recording a description of the inoperable instruments and equipment.

A. Both the Preamble and the Notes and Definitions from the Master Minimum Equipment List must be incorporated into the Minimum Equipment List.

B. Changes to a Minimum Equipment List may affect the operator's procedures. Any revisions must be approved by the FAA prior to implementation.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 91
- Knowledge of Master Minimum Equipment List Preamble

B. *Coordination.* This task requires close coordination between airworthiness, avionics, and operations inspectors. Coordination may also be required with the Flight Operations Evaluation Board, Flight Operations Policy Board, and regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Master Minimum Equipment List for subject aircraft
- Master Minimum Equipment List Policy Book (Aviation Safety Analysis System)

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Operator's Minimum Equipment List Request.* Provide the operator with a copy of the appropriate Master Minimum Equipment List. Discuss the purpose and function of the Minimum Equipment List with the operator. Advise the operator as to acceptable formats for the specific Minimum Equipment List.

B. *Receive the Operator's Minimum Equipment List.* Coordinate with other inspectors assigned to the task. Ensure that any additional documentation required for the evaluation is provided.

C. *Evaluate Minimum Equipment List*

(1) Ensure the operator's proposed Minimum Equipment List contains only items that are included on the Master Minimum Equipment List.

(2) Ensure that the information in the "Number Installed" column of the Minimum Equipment List represents the number of equipment items actually installed in the aircraft.

(3) Ensure that the "Remarks or Exceptions" column includes the following:

- All restrictions and special provisions of the Master Minimum Equipment List
- All maintenance procedures required (identified by an "M") and all operations procedures (identified by an "O")
- A specific reference to any document containing maintenance procedures

(4) Review all procedures described in the "Remarks and Exceptions" column for completeness.

(5) Ensure that both the Preamble and the Notes and Definitions from the Master Minimum Equipment List are used in their entirety, without modification.

(6) Ensure that all abbreviations and symbols used in the document are defined.

C. *Analyze Results.* If deficiencies are discovered during the review and a meeting is necessary, coordinate with assigned inspectors. Brief the operator on the findings and discuss how to resolve any deficiencies.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. When the operator has met the requirements for a Minimum Equipment List, send an authorization letter along with the list itself. Indicate approval on each page of the Minimum Equipment List by affixing the following:

- The office designator for the Flight Standards District Office
- The date of approval
- The inspector's signature

9. FUTURE ACTIVITIES. Routine surveillance.

CHAPTER 38 EVALUATE FAR PART 91 OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3681

B. *Avionics:* 5681

3. OBJECTIVE. This chapter describes how to determine if a FAR Part 91 owner/operator is keeping maintenance records as required by the Federal Aviation Regulations.

5. GENERAL

A. *Definitions*

(1) *Life-limited part:* A part which has a specified period of time for safe use, as referenced in a Federal Aviation Regulation.

(2) *Approved data:* Drawings, methods, and techniques that are approved by the FAA and are used to accomplish major repairs and major alterations.

(3) *Airworthiness Directives:* A directive developed to track or correct an unsafe condition that exists in a product and is likely to exist or develop in other products of the same type design. Airworthiness directives are published as amendments to FAR Part 39.

(4) *Total time in service:* The accumulation of time in service since the product was first placed in service.

(5) *Current status:* The status of maintenance and inspection of the aircraft in its present condition.

B. *Record Keeping Requirements*

(1) FAR § 91.173 prescribes record keeping responsibilities and requirements for the owner/operator of the aircraft. The owner/operator must keep the required records for the periods of time specified in FAR § 91.173(a)(1) and (2).

(2) FAR §§ 43.9 and 43.11 prescribe record keeping responsibilities and requirements for the person(s) who maintain the aircraft.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Parts 43 and 91
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task will require coordination with the owner/operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 39
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Ch. 36; Vol. III, Chs. 1 and 2
- Advisory Circular 43-9B, Maintenance Records
- Advisory Circular 39-7B, Airworthiness Directives
- Advisory Circular 43.9-1E, Instructions for Completion of FAA Form 337

B. *Forms*

- FAA Form 337, Major Repair and Alteration
- FAA Form 8020-2, Aircraft/Parts Identification and Release

C. *Job Aids.* None.

5. PROCEDURES

A. *Contact the Owner/Operator.* Make arrangements to obtain the aircraft maintenance records under review. If and when custody of the records is to be temporarily transferred to the FAA, provide FAA Form 8020-2, Aircraft/Parts Identification and Release, to the owner/operator as a receipt.

B. *Review the Owner/Operator's Maintenance Records.* Determine whether the record keeping requirements of the Federal Aviation Regulations have been met.

(1) Ensure the entries for maintenance include the following:

- A description of the work performed
- The date of completion
- Signature and certificate number of the person approving the aircraft for return to service

(2) Ensure the entries for inspection include the following:

- Type of inspection
- Brief description of the extent of the inspection
- Date of the inspection
- Total time in service for the aircraft
- Signature, certificate number, and type of certificate held by the person approving or disapproving for return to service
- A statement certifying the airworthiness status of the aircraft

(3) Ensure the owner/operator has records containing the following information:

- Total time in service for the airframe, each engine, and each propeller
- The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance
- Total time since last overhaul for those items installed on the aircraft which are required to be overhauled on a specified time basis
- Current inspection status of the aircraft, including time since last inspection, as required by the program under which the aircraft and its appliances are maintained
- Copies of FAA Form 337, Major Repairs and Alterations, for each major alteration to airframe, engine, rotors, propellers, and appliances

(4) Ensure the owner/operator has records for the current status of each applicable Airworthiness Directive, including the following:

- The method of compliance
- The Airworthiness Directive number and revision date
- The time and date of any recurring actions required by the Airworthiness Directives

C. *Analyze Results.* Bring any discrepancies to the attention of the owner/operator.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Return Records to the Owner/Operator*

9. FUTURE ACTIVITIES. Routine surveillance.

[CHAPTERS 39 THROUGH 59 RESERVED]

CHAPTER 60 INTRODUCTION

Section 1 General

1. PURPOSE. This chapter contains general information pertaining to Part 121 and Part 135 operations. Section 1 describes the types of operations subject to Part 121 and Part 135 requirements. It also outlines Department of Transportation authorities and requirements. Section 2 contains regional office considerations in assigning certification projects and certificate responsibilities.

3. TYPES OF CERTIFICATES. There are four basic types of air operator certificates issued by the FAA, as indicated in the chart below:

TYPE CERTIFICATE	TYPE OPERATOR	SEATING CAPACITY PAYLOAD CAPACITY	CERTIFYING FAR PART	OPERATING FAR PART
AIR CARRIER CERTIFICATE	INTERSTATE COMMON CARRIAGE	AIRPLANES WITH OVER 30 SEATS OVER 7500 LBS PL	SFAR 38	121
		AIRPLANES WITH 30 OR LESS SEATS 7500 LBS PL OR LESS AND ALL HELICOPTERS	SFAR 38	135
OPERATING CERTIFICATE	INTRASTATE COMMON CARRIAGE	AIRPLANES WITH OVER 30 SEATS OVER 7500 LBS PL	SFAR 38	121
		AIRPLANES WITH 30 OR LESS SEATS 7500 LBS PL OR LESS AND ALL HELICOPTERS	SFAR 38	135
	INTERSTATE INTRASTATE PRIVATE CARRIAGE BUSINESS	AIRPLANES WITH 20 OR MORE SEATS 6000 LBS PL OR MORE	125	125
		AIRPLANES WITH LESS THAN 20 SEATS LESS THAN 6000 LBS PL AND ALL HELICOPTERS	SFAR 38	135
AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE	PROVIDE AGRI-CULTURAL SERVICES	NOT SPECIFIED	137	137
ROTORCRAFT EXTERNAL LOAD OPERATOR CERTIFICATE	LIFTING & PLACING EXTERNAL LOADS	NOT SPECIFIED	133	133

5. COMMON CARRIAGE VS. PRIVATE CARRIAGE

A. Common carriage means any operation for compensation or hire where the operator holds itself out as willing to furnish transportation to any member of the public seeking the services offered. The operator openly offers a service (by advertising or any other means) for a fee to members of the public.

B. Private carriage does not involve offering or holding out by the operator through advertising or any other means. Private carriage includes the following:

- Carriage of operator's own employees or property
- Carriage of participating members of a club
- Carriage of persons and property which is only incidental to the operator's primary business
- Carriage of persons or property for compensation or hire under a contractual business arrangement that did not result from the operator's holding out or offering. In this situation, the customer seeks out an operator to perform the desired service and enters into an exclusive mutual agreement; the operator does not seek out the customer.

C. Advisory Circular 120-12A, Private Carriage Versus Common Carriage of Persons or Property, provides guidelines for determining whether a transportation operation is common carriage or private carriage. If an inspector can not clearly determine whether an operation is common or private carriage, the regional Flight Standards Division shall be notified. The Flight Standards Division shall coordinate the matter with Regional Counsel for an appropriate determination.

7. AIR TRANSPORTATION AND AIR CARRIERS. The Federal Aviation Act of 1958, as amended, contains the following definitions. These definitions are the basis for certain Department of Transportation (DOT) and FAA regulations, policies, and procedures.

A. *Air Transportation:* "Interstate, overseas, or foreign air transportation, or the transportation of mail by aircraft."

B. *Interstate air transportation, overseas air transportation, and foreign air transportation:* "Carriage by aircraft of persons or property as a common carrier (common carriage) for compensation or hire or the carriage of mail by aircraft in commerce between. . . ."

C. *Air carrier:* "Any citizen of the United States who undertakes, whether directly or indirectly or by a lease or any other arrangement, to engage in air transportation."

9. ECONOMIC AUTHORITY—DEPARTMENT OF TRANSPORTATION CERTIFICATES AND EXEMPTIONS

A. Section 401 of the Act requires that air operators engaging in common carriage air transportation (air carriers) must have in force a certificate issued by the Department of Transportation. However, Section 416 of the Act and Department of Transportation regulations provide for exemptions to the certificate requirement under certain conditions.

B. Air operators (air carriers) who intend to conduct air transportation with aircraft having a seating capacity of more than 60 seats, or a maximum payload capacity of more than 18,000 pounds, must obtain a Department of Transportation certificate. This certificate is referred to as a Department of Transportation "401 certificate". Department of Transportation regulations prohibit granting exemptions to this requirement. However, Section 418 of the Act and Department of Transportation regulations provide that a different certificate to be issued to air operators conducting "all cargo" air transportation within the contiguous 48 states of the United States, regardless of the size of aircraft. This certificate is referred to as a Department of Transportation "418 certificate". An operator may conduct all-cargo operations under either a 401 certificate or a 418 certificate. The FAA certification process is the same for either type of economic authority.

C. Under Part 298 of the Department of Transportation regulations, an air operator who intends to conduct air transportation with aircraft having a seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less may be granted and exemption from the certificate requirements. These exemptions are referred to as Department of Transportation "298 exemptions". Most operators using aircraft of this smaller size petition for and are granted "298 exemptions". Occasionally, an operator using the smaller aircraft will apply for and obtain a Department of Transportation 401 certificate. Nothing precludes issuing a 401 certificate provided the operator qualifies, even when a small, single-engine aircraft will be used.

D. An air operator applying for a 401 certificate or a 418 certificate must undergo a fitness determination. An operator applying for a 298 exemption who intends to conduct scheduled passenger service is also subject to a fitness determination. When it has reason to believe it necessary, the Department of Transportation may conduct inquiries into an existing operator's continuing fitness. The Department of Transportation uses the following three-part test to determine fitness:

- Does the operator have the managerial skills and technical ability to conduct the proposed operations?

- Does the operator have a plan for financing which, if carried out, will generate resources sufficient to commence operations without undue risk to consumers?
- Will the operator comply with the Act and regulations imposed by Federal agencies?

E. The following actions must be taken to obtain Department of Transportation economic authority:

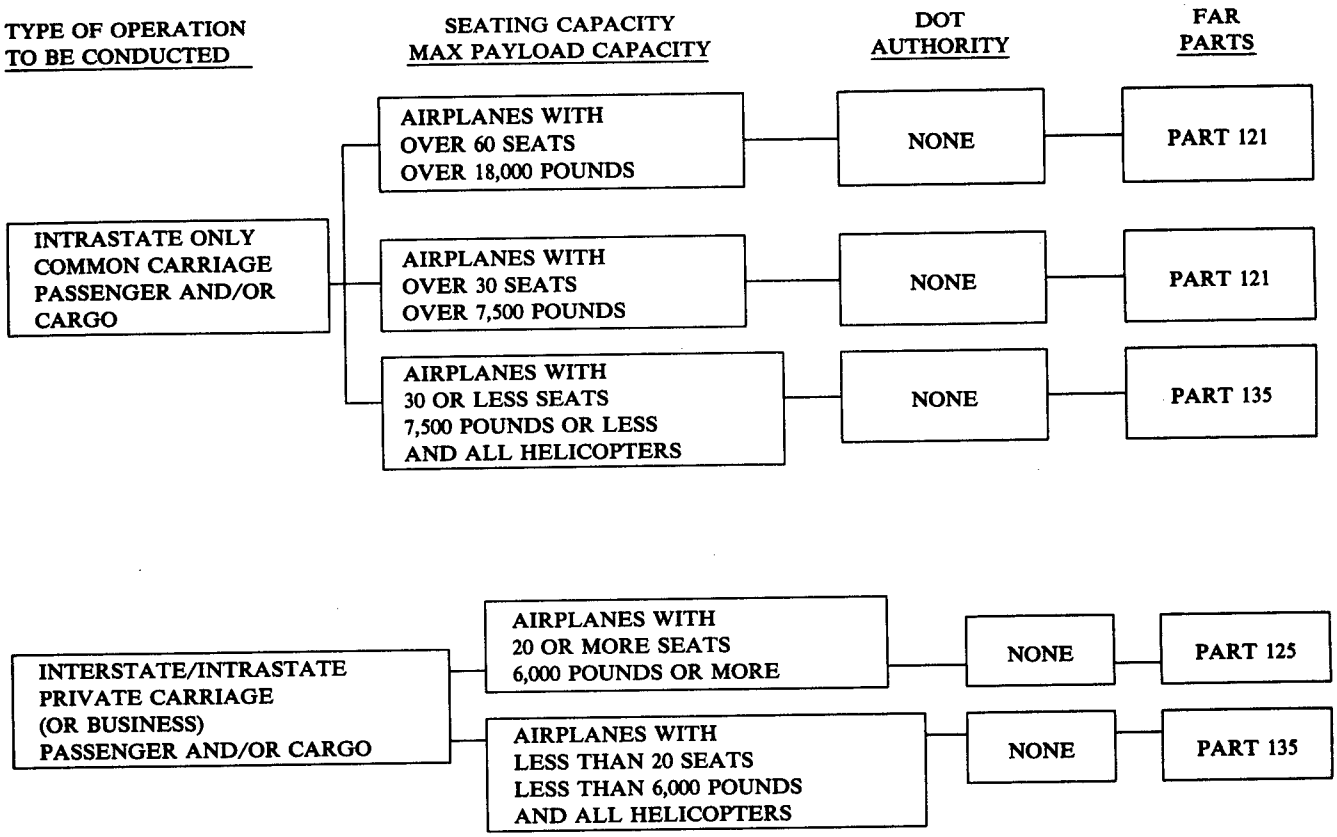
11. REGULATORY REQUIREMENTS. SFAR 38, as amended, specifies the FAA certification requirements for air operators who conduct common carriage or private carriage of persons or property for compensation or hire. The FAA certificates required for the various types of operations conducted, the required Department of Transportation authority, if any, and the applicable FAR Parts are summarized in the following tables:

	TYPE OF DOT ECONOMIC AUTHORITY			
	401 CERTIFICATE	418 CERTIFICATE	298 EXEMPTION SCHEDULED PASSENGER OPERATIONS	298 EXEMPTION NON-SCHEDULED OPERATIONS
OPERATOR	MUST FILE APPLICATION FOR CERTIFICATE	MUST FILE APPLICATION FOR CERTIFICATE	MUST REGISTER WITH DOT AND APPLY FOR FITNESS DETERMINATION	MUST REGISTER WITH DOT
	MUST SUBMIT REQUESTED INFO & PROOF OF INSURANCE	MUST SUBMIT REQUESTED INFO & PROOF OF INSURANCE	MUST SUBMIT REQUESTED INFORMATION & PROOF OF INSURANCE	MUST SHOW PROOF OF INSURANCE
DOT	DOCKETS APPLICATION FOR PUBLIC VIEWING	DOCKETS APPLICATION FOR PUBLIC VIEWING		
	CONDUCTS FITNESS DETERMINATION	CONDUCTS FITNESS DETERMINATION	CONDUCTS FITNESS DETERMINATION	
	ISSUES SHOW CAUSE ORDER TO INVITE INTERESTED PARTIES TO STATE WHY OPERATION SHOULD NOT BE AUTHORIZED		ISSUES SHOW CAUSE ORDER TO INVITE INTERESTED PARTIES TO STATE WHY OPERATION SHOULD NOT BE AUTHORIZED	
	ISSUES FINAL ORDER	ISSUES FINAL ORDER	ISSUES FINAL ORDER	
	ISSUES 401 * CERTIFICATE	ISSUES 418 * CERTIFICATE	* ISSUES REGISTRATION	ISSUES * REGISTRATION
*DOT certificates or registrations are evidence of economic authority				

TABLE 1—AIR CARRIER CERTIFICATE REQUIRED

TYPE OF OPERATION TO BE CONDUCTED	SEATING CAPACITY MAX PAYLOAD CAPACITY	DOT AUTHORITY	FAR PARTS
AIR TRANSPORTATION — INTERSTATE — OVERSEAS — FOREIGN COMMON CARRIAGE PASSENGER, CARGO AND/OR MAIL	AIRPLANES WITH OVER 60 SEATS OVER 18,000 POUNDS	DOT 401/418 CERTIFICATE	PART 121
	AIRPLANES WITH OVER 30 SEATS OVER 7,500 POUNDS	DOT 401/418 CERTIFICATE OR 298 EXEMPTION	PART 121
	AIRPLANES WITH 30 OR LESS SEATS 7,500 POUNDS OR LESS AND ALL HELICOPTERS	DOT 401/418 CERTIFICATE OR 298 EXEMPTION	PART 135

TABLE 2—OPERATING CERTIFICATE REQUIRED



Section 2 Assigning Responsibilities for FAR Part 121 and Part 135 Certificates and Certification Projects

1. GENERAL

A. Certification of a FAR Part 121 or Part 135 air operator shall be given the status of a project. This is because of the complexity of the process, the variety of specific job functions, and the inter-disciplinary coordination required. Activities associated with these operators usually cross district office and regional geographic boundaries. FAR Part 121 and Part 135 operators constantly revise organizational structure and scope of operations. These changes may impact the capabilities of any particular district office. Regional offices are in the best position to know the capabilities of their district offices and assigned personnel. Consequently, regional offices must be responsible for assigning certification projects and certificate-holding responsibilities to district offices.

B. The regional office shall specify which district office will be assigned certification and continuing responsibility for Part 121 and Part 135 operators. The regional office must assess each existing certificate holder periodically to determine that the assigned district office is still the best suited to fulfill responsibilities for that operator.

3. PRINCIPAL BASE OF OPERATIONS

A. The principal base of operations is the primary operating location as designated by the Administrator. A certificate holder must maintain its certificate and a complete set of operations specifications at its principal base of operations. Only one principal base of operations will be designated for a certificate holder. When designating a principal base of operations, the operator's needs and recommendations should be considered carefully.

B. Designating a principal base of operation is essentially a determination of the district office to be as-

signed certificate responsibilities. In most situations, this determination can be based on several predominant factors that clearly indicate a primary operating location and an obvious assignment of a district office. In some situations, however, the factors involved in determining the primary operating location or which district office is best suited for certificate-holding responsibilities are complicated by the proposed or existing operation. Regional offices must consider all factors when designating a principal base of operations. In some situations the decision will have to be based on a consensus of factors. The following are factors that must be considered, in descending order of priority:

(1) Location and accessibility of an applicant's or existing certificate holder's key management personnel and other persons who have authority to make decisions on FAA matters

(2) Location of the main operations base and operations system control center

(3) Location of the main maintenance base and maintenance system control center

(4) Qualification of available district office inspectors with respect to the type of operation and aircraft

(5) Geographic centers of route structures and/or areas of operation

(6) The applicant's or existing certificate holder's corporate headquarters location

(7) Training locations

(8) Employee residence locations

5. ASSIGNING A DISTRICT OFFICE. The office responsible for the geographic area in which the certificate holder/applicant's principal base of operations is located should be assigned the certificate responsibilities. The certificate holder/applicant's principal base of operations and responsibilities for oversight is part of the district office, including staffing considerations. It may be necessary to recruit or transfer inspectors, appropriately qualified for the type of operation, to the district office having geographic responsibility for the area in which the certificate holder/applicant's principal base of operations is located.

7. SPLIT MAIN OPERATIONS AND MAIN MAINTENANCE BASE LOCATIONS

A. Occasionally an operator will locate its main operations base and main maintenance base in different district office or regional geographic areas. Usually, the operator's management personnel (operations and maintenance) are separated. In addition, they maintain offices or are most accessible at the location of the activity for which they are responsible. In these situations, the most practical and efficient arrangement is to locate the Principal Operations Inspector near the main operations base and the Principal Maintenance and Avionics Inspectors near the main maintenance base. Any full-time assistants should be similarly located.

B. Physical separation of principal inspectors, if not carefully managed, can result in serious coordination problems. When main bases are split, the regional office shall decide which district office shall be the Certificate Holding District Office. When two regions are involved, the respective divisions shall coordinate and mutually determine which region is to assume responsibility for the operator and which district office will be assigned certificate responsibilities. If the regions are unable to agree, the issues will be forwarded to AFS-1 for a determination.

C. The assigned district office is responsible for all FAA reporting requirements, technical administration, and regulatory oversight of the operator. The region shall also be responsible for budgeting travel and other funds necessary for inspectors to conduct work programs and fulfill certificate responsibilities.

(1) When an operator is complex and large enough to warrant full-time principal inspectors (responsible solely for one operator), the respective principal inspectors shall be located in district offices responsible for the geographic area where the appropriate main base is located. These inspectors report directly to the Certificate Holding District Office on all functional and technical matters concerning the operator. That office shall have supervisory responsibility over these inspectors. Administrative support shall be provided by the district office in which the inspector is physically located.

(2) When an operator is not complex and large enough to warrant full-time principal inspectors, regional offices will take action as necessary to ensure the following:

(a) Principal inspectors are located in the district office responsible for the geographic area where the appropriate main base is located.

(b) Principal inspectors report to the district office's management on all functional, technical, and reporting aspects concerning the operator.

(c) The district office management where the assigned inspectors are located has supervisory re-

sponsibility and must ensure the certificate responsibilities are adequately supported.

D. If the main operations and maintenance bases are split, regional offices must monitor the activities of the respective district offices to ensure appropriate coordination. Principal inspectors are physically separated and must have the necessary opportunities and tools to effect efficient and timely coordination on technical administration, surveillance, and investigations associated with the operator. This coordination is essential to ensure that a standard and common FAA position is taken with the operator.

9. REGIONAL COORDINATION

A. If it is determined that the certification project should be assigned to a different district office, the regional offices shall ensure the transfer is thoroughly coordinated between offices. This include transferring working files, briefing the applicant's personnel, and inter-district office briefings, as necessary.

B. The Federal Aviation Regulations require a certificate holder to obtain written approval from its district office at least 30 days in advance of any change in the location of its operations or maintenance base. If it is appropriate to reassign certificate responsibilities, the district office manager shall notify the regional office. If the regional office determines that certificate responsibilities need to be reassigned, one of the following actions shall be taken:

(1) When the district offices are in the same region, the regional office shall accomplish the following:

(a) Determine the district office's operator files are complete and current. Open items and/or discrepancies that must be resolved should be identified.

(b) Interview the transferring district office manager and principal inspectors to further identify open items and/or discrepancies that must be resolved

(c) Determine personnel, times, and procedures necessary for resolving the open items and/or discrepancies

(d) Arrange to brief the receiving district office manager and prospective principal inspectors on the certificate holder's operation, key management personnel, and any open items and/or discrepancies that are being transferred for action

(e) Select a date to transfer certificate responsibilities

(f) Brief the certificate holder. Explain the need to reassign certificate responsibilities to another district office. Arrange an introductory meeting between the certificate holder's management personnel and the new district office manager and principal inspectors.

(g) Supervise the transfer of operator files

(2) When district offices are not in the same region, the respective regional offices shall accomplish the following:

(a) Initiate inter-regional coordination and agree on the need to reassign certificate responsibilities. If regions are unable to agree on certificate responsibility, the issues must be forwarded to AFS-1 for final determination.

(b) The transferring regional office shall inspect operator files to ensure they are complete and current. Open items and/or discrepancies which must be resolved must be identified.

(c) The transferring region should interview the district office manager and principal inspectors to further identify open items and/or discrepancies that must be resolved

(d) The transferring region must coordinate with the receiving region and agree on personnel, times, and procedures necessary for resolving open items and/or discrepancies

(e) The receiving region should brief the district office manager and new principal inspectors on the certificate holder's operation, key management personnel, and open items and/or discrepancies being transferred for action

(f) The respective regions shall select a date to transfer certificate responsibilities. The transferring region must notify the operator's management personnel of the decision and explain the need to change the assigned district office.

(g) The receiving region should hold an introductory meeting between the certificate holder's management personnel and the district office manager and principal inspectors

(h) The respective regions shall coordinate and supervise the transfer of operator files

CHAPTER 61 EVALUATE FAR PART 121/135.411(a)(2) OPERATOR

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*

- FAR Part 121: 3202
- FAR Part 135 (10 or more): 3207

B. *Avionics*

- FAR Part 121: 5202
- FAR Part 135 (10 or more): 5207

3. OBJECTIVE. This chapter describes the process used to certificate an applicant for a FAR Part 121 or 135 operator.

5. GENERAL. The certification process provides for interaction between the applicant and the FAA, from initial inquiry to certificate issuance or denial. The process consists of the following five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

7. PREAPPLICATION PHASE

A. *Initial Inquiry.* An initial request for information regarding certification may be verbal or in writing.

B. *Preapplication Statement of Intent (PASI)*

(1) The submission of a Preapplication Statement of Intent shows intent and prompts the district office to allocate resources. A Preapplication Statement of Intent should be submitted only after the applicant has reviewed the appropriate regulations and advisory material.

(2) The Preapplication Statement of Intent is used by the district office manager to evaluate the complexity of the proposed operation. The Preapplication Statement of Intent should also be used as the basis for establishing Work Program Management System (WPMS) files.

C. *The Certification Team.* The district office manager will select a certification team consisting of at least one maintenance inspector, one avionics inspector, and one operations inspector.

(1) The district office manager will designate one team member as a Certification Project Manager (CPM). The Certification Project Manager is the primary spokesperson for the FAA throughout the certification process. The person selected as Certification Project Manager should have previous experience in certificating an air carrier under FAR Part 121 or Part 135.

(a) The Certification Project Manager is the primary contact with the applicant. The Certification Project Manager schedules and conducts meetings and coordinates correspondence with the applicants.

(b) The Certification Project Manager must be sure each certification task is completed in an acceptable and timely manner. Responsibilities include ensuring all certification matters are thoroughly coordinated with each team member.

(c) The Certification Project Manager should schedule periodic meetings with the certification team, unit supervisors, and/or the district office manager to ensure everyone concerned is fully informed of the current status of the certification. The Certification Project Manager must notify the unit supervisors and/or the district office manager of any information that may significantly affect or delay certification or that may attract media or political interest.

(2) Each team member shall respond to requests for assistance made by the Certification Project Manager and keep the Certification Project Manager apprised of the status of the certification. Anything that may delay certification must be brought to the attention of the Certification Project Manager immediately.

NOTE: Inspectors should provide the applicant with guidance. However, it is important that each document, procedure, demonstration, or inspection reflects the applicant's knowledge, skills, and abilities. Inspectors must therefore refrain from providing explicit instructions on how a task should be accomplished.

D. *Preapplication Meeting.* At the preapplication meeting, the following should occur:

(1) The applicant should be briefed in as much detail as necessary to ensure the certification process is understood

(2) The Certification Project Manager should use the certification job aid and the schedule of events (Figures 61-1 and 61-3) to facilitate discussion. These documents will help ensure all elements of the certification process are covered

(3) The applicant should be encouraged to ask questions about any area of the process that is not clearly understood

E. *Formal Application.* At the preapplication meeting, the form, content, and documents required for formal application are discussed. The formal application must be submitted to the assigned district office. The applicant is encouraged to submit the application as far in advance as possible of the intended starting date. The formal application must be in letter format and must contain the following (see Figure 61-4):

(1) The full and official name of the applicant

(2) A statement that the document is a formal application for either an air carrier or an operating certification

(3) The applicant's mailing address and the physical address of the applicant's intended primary operating location

(4) For an air carrier applicant, the full name and address of the agent (designated person who has signature authority) for service as required by Section 1005(b) of the Federal Aviation Act of 1958, as amended

(5) The names of key management personnel, such as the General Manager, Director of Operations, Director of Maintenance, Chief Pilot, and Chief Inspector, as applicable

(6) If a request for deviation from management personnel requirements is anticipated, it should be noted in the formal application letter. The request and justification for the deviation, however, shall be made under separate cover.

(7) The letter must be signed as follows:

- The owner, when applying as an individual
- Each partner, when applying as a partnership
- An authorized officer, when applying as an organization, such as a company or corporation

F. *Formal Application Attachments.* The formal application must be accompanied by the following:

(1) *Schedule of Events.* The Schedule of Events lists documents, activities, and acquisitions required for certification. Each item is accompanied by the applicant's best estimate of the date the item will be submitted, acquired, and/or ready for inspection.

(a) The schedule must provide the FAA a reasonable amount of time for the FAA to review and accept or approve each item or event.

(b) The number and types of events and activities that occur during certification vary according to the operation proposed. The Schedule of Events must list of each document to be submitted, activity to be performed, and item to be inspected.

(c) The Schedule of Events is intended to encourage an applicant to submit material well in advance of the date operations are proposed to begin. If, however, the application is submitted with only the minimum lead time required by the regulation, complete documents (such as maintenance manuals) may be required at the time of formal application.

(d) If the applicant plans to petition for exemption, processing time must also be considered. FAR § 11.25 requires that a petition be submitted to AGC-204 at least 120 days before it is needed.

NOTE: Final certification could be delayed if the applicant fails to accomplish an item or event in a satisfactory manner or in accordance with the Schedule of Events. In addition, delays may be caused by the need to correct deficiencies in documents, such as manuals or maintenance/inspection programs.

(2) *Company manual.* This manual contains information about the applicant's organization, general policies, duties, responsibilities, operational control policy, and procedures. This attachment may be comprised of one or more manuals or sections of manuals.

(a) When the formal application is submitted, the manual must show compliance with the applicable paragraphs of FAR Parts 121 and 135.

(b) Team members must ensure all required material is shown on the Schedule of Events and that adequate time is allowed for review.

(c) The applicant should be encouraged to provide a table of contents.

(3) *Initial company training curriculums*

(a) At the time of formal application, some training program elements may not be fully developed. The projected date of submission for training course curriculums must be in the Schedule of

Events. A draft of the initial company training curriculum, as complete as possible, must be attached to the formal application.

(b) The initial company training curriculum must include at least the following segments:

- Basic indoctrination training
- Emergency training
- Initial aircraft ground training
- Initial aircraft flight training

(c) Curriculums for training maintenance personnel may be included as part of the operator's manual.

(4) *Management resumes.* This attachment includes resumes showing the qualifications, certificates, ratings, and experience of persons selected for the following, or equivalent, positions:

- General Manager (where applicable)
- Director of Operations
- Director of Maintenance
- Chief Pilot
- Chief Inspector (where applicable)

(a) If it appears that a proposed management candidate does not meet the appropriate experience requirements, inform the applicant that a deviation is required to employ that person. If a deviation is requested, the applicant must show equivalent aeronautical experience.

(b) An applicant may request a deviation to use fewer or different personnel. The applicant must prove the ability to perform operations safely under the deviation. The applicant also must show that the proposed personnel can effectively perform the functions associated with the positions in accordance with the Federal Aviation Regulations and the procedures outlined in the proposed manual.

(c) Requests for deviation must be by letter. These requests must be submitted to the district office as soon as possible. Justification for deviations must take into account the size and scope of the operation and the qualifications of the intended personnel. If fewer or different positions are approved, that approval shall be made part of the operations specifications.

(d) Normally, full-time employees are expected for Part 135 operations. However, depending on the size, scope, and complexity of the operation, part-time management personnel may be accepted.

(5) *Documents of purchase, contracts, and/or letters of intent*

(a) These documents and/or letters show the applicant is committed to making arrangements for aircraft and supporting facilities and services necessary for the proposed operation. Proof of formal purchase, lease, or contractual arrangement are acceptable. If formal arrangements have not been completed, letters showing preliminary agreements will suffice until formal contracts are available. However, formal agreements must be finalized in sufficient time for FAA evaluation prior to certification.

(b) If the applicant does not plan to make purchases or develop services until after submitting the formal application, a statement of intent is acceptable. However, such arrangements must be completed sufficiently in advance of certification for FAA evaluation.

(c) The following types of equipment, facilities, and services are to be addressed in these documents, contracts, or letters:

- Aircraft
- Station facilities and services
- Weather and NOTAM-gathering facilities and services (SAWRS stations)
- Communications facilities and services
- Maintenance facilities and services
- Aeronautical charts and related publications
- Airport analysis and obstruction data
- Contract training or facilities

(6) *Initial compliance statement.* The compliance statement ensures all applicable regulatory aspects are appropriately addressed during the certification process. The compliance statement lists each Part 121 or Part 135 regulation pertinent to the proposed operation. The applicant must describe proposed compliance methods alongside each applicable regulation. A brief narrative or a specific reference to a manual or other document is required. Where necessary, the applicant should indicate that the information will be provided in the final compliance statement.

9. FORMAL APPLICATION PHASE

A. *Initial Review Of Formal Application.* The initial review of the formal application takes place before the formal application meeting is scheduled. This review verifies that required documents have been submitted. The review also ensures the material submitted represents a feasible proposal and is of sufficient quality to continue the certification process.

B. *Reviewing the Schedule of Events.* The Schedule of Events sets dates for accomplishing or submitting the listed items. When reviewing the Schedule of Events, the Certification Project Manager/team must carefully consider the feasibility of the proposed schedule with respect to logic of sequence, timeliness of events, completeness of events, and inspector availability.

(1) *Logic of sequence.* The certification job aid should be used to ensure the proposed Schedule of Events has the proper sequence.

(2) Timeliness of events. The Schedule of Events must be reasonable, realistic, and provide sufficient time for the certification team to review various documents, manuals, and proposals.

(3) *Completeness of events.* The team must ensure the Schedule of Events is complete. Each required manual, document, event, and activity must be listed, including the submission date for the final compliance statement.

(4) *Availability of personnel.* The availability of personnel may affect the Schedule of Events. The Certification Project Manager must determine that qualified inspectors will be available to assist the team in conducting the extensive manual review. The Certification Project Manager must also determine the need for and availability of resources other than Flight Standards inspectors.

C. *Initial Determination of Acceptability.* The initial decision to accept or reject the formal application is based primarily on the initial review of the formal application and attachments. Results of informal meetings, reviews, and observations of the applicant's capabilities should supplement the decision-making process.

NOTE: The absence of required information in the application letter and/or the absence of one or more of the required attachments requires automatic rejection of the formal application. If the application is rejected before the meeting, it must be returned with a letter of explanation.

(1) The application should be rejected if:

- It appears the applicant has not made a conscientious attempt to comply with the requirements of a formal application
- Deficiencies and/or omissions are of such a serious nature that they could not be resolved during a meeting

(2) The formal application should be of sufficient quality to ensure that any discrepancy or omission can be resolved during the formal application meeting. During the meeting, minor and even some significant discrepancies or omissions in submitted materials can be resolved.

D. *Final Determination of Acceptability.* After the formal application meeting, the Certification Project Manager and the certification team make a final determination of acceptability. Generally, if the formal application meeting is concluded without significant disagreements, it should be considered successful and result in an acceptable formal application. However, the team may decide there are sufficient reasons to reject the formal application. These reasons should clearly indicate that to proceed with the certification project would not be productive. Such reasons might include inadequate agreements on appropriate courses of action or evidence that the applicant does not understand the regulatory requirements and/or the certification process.

11. DOCUMENT COMPLIANCE PHASE

A. *Document Review.* In the document compliance phase, the applicant's manuals and other documents are reviewed and accepted, approved, or rejected. This phase is accomplished in the district office by the certification team. Each document is reviewed in depth to ensure compliance with applicable regulations and conformity to safe operating practices.

(1) The Schedule of Events determines the priority of items to be reviewed.

(2) The plan for review should ensure that each required manual or document is reviewed according to procedures and criteria outlined in other volumes of this handbook. The initial compliance statement directs the inspector to the location in the applicant's manuals where a compliance procedure is described.

13. DEMONSTRATION AND INSPECTION PHASE

A. *Description.* In this phase the certification team determines the effectiveness of the applicant's proposed procedures and programs and ensures facilities

and equipment are satisfactory. Emphasis is on compliance with regulations and safe operating practices.

B. *Responsibilities.* The Certification Project Manager must ensure each aspect of the applicant's required demonstrations is observed and approved or disapproved.

15. CERTIFICATION PHASE. An applicant is entitled to a certificate when:

(1) The certification process is completed

(2) Each significant unsatisfactory item has been corrected

(3) The applicant has met all regulatory requirements

(4) It has been determined that the applicant is capable of complying with the Federal Aviation Regulations

(5) The applicant's ability to conduct operations in a safe manner has been demonstrated

NOTE: Before issuing the certificate, non-critical items needing further resolution should be discussed with the applicant and corrective action noted in writing.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between maintenance, avionics, and operations inspectors, and region.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 45, 47, 65, and 91
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400-6, Preapplication Statement of Intent
- FAA Form 8400-7, Operations Specifications
- FAA Form 8430-18, Air Carrier Certificate (Figure 61-8)
- FAA Form 8430-21, Operating Certificate (Figures 61-9 and 61-10)

C. *Job Aids*

- Figure 61-1: Instructions for Completing FAA Form 8400-6, Preapplication Statement of Intent
- Figure 61-2: Sample Formal Application Letter
- Figure 61-3: Sample Letter Accepting Formal Application
- Figure 61-4: Sample Letter Rejecting Applicant: Missing Documents
- Figure 61-5: Sample Letter Rejecting Application: Unable to Resolve Discrepancies
- Figure 61-6: Sample Regulation Presentation
- Figure 61-7: Checklist of Required Sections of Certification Report

5. PREAPPLICATION PHASE PROCEDURES

A. *Provide Applicant With Advisory Circular.* Advise the applicant to review the advisory circular before further action can be taken. Avoid lengthy or detailed discussions of the certification process until the applicant has read the advisory circular.

B. *Determine Eligibility.* Determine if the applicant is qualified to apply for certification. Ensure the applicant has proof of U.S. citizenship as defined under the Federal Aviation Act of 1958, as amended.

C. *Provide Preapplication Package.* Provide the applicant with FAA Form 8400-6, Preapplication Statement of Intent. Instruct the applicant to complete the Preapplication Statement of Intent and submit it to the district office.

(1) Advise the applicant that a completed Preapplication Statement of Intent denotes intent by the applicant to continue the certification process.

(2) Recommend that the Preapplication Statement of Intent be submitted only after the applicant has reviewed the appropriate regulations and advisory material.

(3) Advise the applicant that after receiving and processing the Preapplication Statement of Intent, the FAA will arrange a preapplication meeting at which the certification process will be discussed in greater detail.

D. *Review Preapplication Statement of Intent.* Within 5 working days of receipt of a signed Preapplication Statement of Intent, determine the information is complete, accurate, and acceptable. Ensure the proposed operation is consistent with the Federal Aviation Regulations.

(1) If the Preapplication Statement of Intent is unacceptable, note the reasons in Section 2. Notify the applicant in writing of the discrepancies detailed in Section 2. A new Preapplication Statement of Intent is required to resume the certification process.

(2) If the Preapplication Statement of Intent is acceptable, complete Section 2. Check the "Action" box and forward the Preapplication Statement of Intent to the regional office.

E. *Establish Certification Team.* When the district office receives a Preapplication Statement of Intent with a precertification number, the manager shall select a team of at least one maintenance, one avionics, and one operations inspector. Additional inspectors qualified on the type aircraft proposed to be used may be needed. One team member shall be designated as the Certification Project Manager.

F. *Schedule Preapplication Meeting.* Contact the applicant to arrange a preapplication meeting. Advise the applicant that key management personnel, as listed on the Preapplication Statement of Intent, should attend the meeting and be prepared for a discussion of the applicant's proposed operation.

G. *Conduct Preapplication Meeting*

(1) Review the Preapplication Statement of Intent. Verify all information. Any changes should be noted on the Preapplication Statement of Intent by the applicant.

NOTE: If the changes significantly affect the anticipated scope and/or type of operation, forward a copy of the revised Preapplication Statement of Intent to the regional office. If the changes indicate the need to reassign certification responsibilities, notify the regional office without delay.

(2) Ensure the applicant understands which regulations apply to the proposed operation. Advise the applicant to become familiar with the Federal Aviation Regulations and applicable advisory circulars.

(3) Ensure the applicant and key personnel understand the certification process. Use the certification job aid and the sample schedule of events format as discussion guides.

(4) Give the applicant the following:

- A sample Schedule of Events format
- Sample operations specifications
- Any other publication or document considered appropriate

(5) Advise the applicant of the responsibility to obtain appropriate Department of Transportation economic authority. Ensure the applicant understands the FAA requires proof of Department of Transportation economic authority in order to issue a certificate.

(6) Verify the applicant intends to continue the certification process. Encourage the applicant to submit required items in draft form before the formal package is submitted. The Certification Project Manager should be notified immediately of any problems or changes in the proposed operation.

(7) Inform the applicant of any reasons for concern. If necessary, advise the applicant to request another preapplication meeting after more complete preparation. It is appropriate for the Certification Project Manager to recommend to the applicant one or more of the following actions:

- A more thorough review of the applicable regulations
- Changes in proposed key management personnel
- Obtaining the services of a professional aviation consultant
- Ceasing certification efforts

(8) If at any time during the preapplication phase the applicant formally terminates certification efforts or the Certification Project Manager determines that the applicant will not proceed with certification, the Certification Project Manager shall:

(a) Return the Preapplication Statement of Intent to the applicant, stating that the preapplication process is terminated and that a new Preapplication

Statement of Intent is required to resume the certification process

(b) Notify the regional office that the project is terminated

(c) Notify AVN-120 that the certification process is terminated and return the precertification number to the centralized certificate number data file

7. FORMAL APPLICATION PHASE PROCEDURES

A. *Receive Formal Application.* The formal application may be received by mail or delivered in person. Within 5 working days of receipt of a formal application, the team must review it and determine its acceptability.

B. *Review Formal Application.* Determine that each required item has been submitted. If any required item is missing, the entire package must be returned to the applicant within 5 working days of receipt with a letter stating the reasons for rejection (see Figure 61-5). The minimum required items are the following:

(1) The letter requesting certification. The letter must include the information described in Section 1, paragraph 7F.

(2) The required formal application attachments described in Section 1, paragraph 7G, as follows:

(a) *Schedule of Events.* Ensure the Schedule of Events lists all items, activities, programs, aircraft, and facility acquisitions required for certification and the applicant's estimates of the date the item will be acquired or ready for inspection. Carefully consider the feasibility of the proposed schedule with respect to logic of sequence, timeliness of events, completeness of events, and inspector availability.

(b) *Company manual.* Review the company manual(s) and determine that the required information has been submitted. Evaluate the content and scope of the manual. Determine if the applicant is proceeding in an appropriate manner and is in compliance with the regulations. A more comprehensive evaluation will be conducted in the Document Compliance Phase.

(c) *Initial company training curriculum.* Review the company training curriculum attachments and determine that each required segment has been submitted for each applicable crew member or dispatcher position. Determine that each curriculum meets regulatory requirements.

(d) *Management qualifications.* A resume for each required management position is required. Each resume must contain information necessary to determine compliance. Ensure there are no obvious omissions or significant discrepancies.

(e) *Documents of purchase, contracts, leases, and letters of intent.* Review for obvious omissions or significant discrepancies.

(f) *Initial compliance statement.* Determine that the initial compliance statement meets requirement for form and content. Determine if the applicant is proceeding in an appropriate manner.

C. *Schedule Formal Application Meeting.* Contact the applicant and schedule the formal application meeting. Inform the applicant that key management personnel must attend. Before the meeting, identify discrepancies, omissions, or open questions that must be resolved.

D. *Conduct The Formal Application Meeting.* Each member of the certification team, the applicant, and all key management personnel must be present.

(1) Discuss the formal application letter. Resolve any open questions and obtain missing information. Discuss the following:

(a) *Schedule of Events.* Provide clear and reasonable explanations as to why a scheduled item is not feasible. If deficiencies pertaining to the Schedule of Events cannot be resolved, terminate the meeting. Inform the applicant that the formal application is rejected and that it will be returned by letter with an explanation of the reasons for its rejection.

(b) *Initial compliance statement.* Provide recommendations for correction of any deficiencies. Advise the applicant that the final compliance statement must reflect these corrections and that similar omissions or deficiencies must not recur when the final compliance statement is submitted.

(c) *Remaining attachments.* Discuss any omissions and deficiencies found in the attachments. Provide clear explanations of why an item is considered deficient. Mutual agreements regarding corrective action must be reached during the meeting. If mutual agreements cannot be reached:

- Terminate the meeting
- Inform the applicant that the formal application is rejected and will be returned by letter with an explanation of the reasons for its rejection

(d) *Dates shown on the Schedule of Events.* If necessary, adjust these dates.

(2) Encourage the applicant to present any questions concerning the certification process.

(3) Encourage the applicant to obtain and review the appropriate inspector handbooks. Provide the applicant with the address of the Government Printing Office and encourage subscription to these handbooks in order to receive revisions.

(4) Ensure that the applicant clearly understands the following:

(a) Notification of acceptance or rejection of the formal application will be provided in writing within a few days after the meeting

(b) Notification of acceptance of the formal application package does not constitute acceptance or approval of the separate attachments. Each attachment must be reviewed further. The applicant will be expected to take required corrective action.

(c) If the applicant is unable to meet the Schedule of Events, the FAA will need equivalent amounts of time, as agreed upon during the meeting, to complete necessary reviews and inspections. As a result, certification could be delayed. Additionally, unanticipated demands on FAA personnel, such as accident investigations, could delay the certification process.

E. *Accept or Reject the Formal Application Package*

(1) If the formal application meeting is successful, prepare and forward a letter to the applicant not later than 5 working days after the meeting (see Figure 61-3).

(2) If the formal application meeting is unsuccessful, prepare and forward a letter to the applicant stating reasons for rejection. Specific examples which clearly substantiate each reason must be cited (Figure 61-7). Return the formal application and supporting documents to the applicant within 5 working days. Retain documentation on the reasons for rejection.

(3) If it appears that the applicant does not intend to proceed with certification, notify the regional office. The regional office must notify AVN-120 to release the precertification number.

9. DOCUMENT COMPLIANCE PHASE PROCEDURES

A. *Review Submissions.* Review each document submitted by the applicant. Examples of typical submissions during the Document Compliance Phase are listed below.

- Management personnel resumes
- General operation manual
- General maintenance manual
- Weight and balance procedures
- Training program manual
- Approved aircraft flight manual
- Minimum equipment list
- Deviation requests
- Flight attendant manual
- Dispatch/flight following/flight locating procedures
- Maintenance reliability program
- Operations specifications (operations, maintenance, and avionics)
- Continuous analysis and surveillance system
- Proving test plan
- Emergency evacuation demonstration plan
- Final compliance statement
- Any other appropriate

B. *Document Deficiencies*

(1) If deficiencies are found in any document, return it to the applicant with a letter of explanation.

(2) Meet with the applicant if:

- The applicant does not meet the Schedule of Events. Review the deficiencies in detail. Agree to a new, modified schedule and re-enter the Document Compliance Phase at the appropriate point.
- Submissions are not of sufficient quality to warrant further review. If appropriate, advise the applicant that it is not practical to continue the certification process.

NOTE: Team members should remember that it is the applicant's responsibility to develop manuals and procedures which ensure safe operating practices and compliance with the rules. The team can offer suggestions on how to improve the product but should avoid "writing" the document.

11. DEMONSTRATION AND INSPECTION PHASE PROCEDURES

A. *Observe Demonstrations And Conduct Inspections.* The following events may occur in this phase, if applicable:

- Airman training (classroom, simulator, and aircraft training)
- Airman testing and certification (airmen, crew members, and dispatchers, as applicable)
- Station facilities inspected (equipment, procedures, and personnel)
- Recordkeeping procedures inspected (documentation of training, flight and duty times, flight papers, etc.)
- Flight control (dispatch, flight following, or flight locating capabilities)
- Approved maintenance program procedures
- Maintenance activities (facilities, personnel, technical information, spare parts, etc.)
- Aircraft (conformity inspection, aircraft maintenance records, etc.)
- Minimum Equipment Lists and Configuration Deviation Lists (compliance with Airplane Owner's Manual/Airplane Flight Manual maintenance procedures, etc.)
- Weight and balance control (procedures, accuracy, and document control)
- Emergency evacuation demonstration (aborted takeoff and/or ditching demonstrations)
- Aircraft proving tests (ability of applicant to operate independently, safely, and in compliance with the applicable Federal Aviation Regulations)
- Any other event appropriate for the type of operation to be conducted

B. *Document Deficiencies.* If deficiencies are observed during the conduct of activities and events (training, emergency evacuation, etc.) or certain items are found deficient (Minimum Equipment List, records, etc.), recommend appropriate corrective action.

13. CERTIFICATION PHASE PROCEDURES. When the applicant has met all requirements, prepare the appropriate certificate. Use FAA Form 8430-18 for an Air Carrier Certificate (Figure 61-8) and use FAA Form 8430-21 for an Operating Certificate (Figures 61-9 and 61-10). Include the following information on the appropriate form:

(a) *Certificate holder's name.* Enter the certificate holder's full and official name directly below the words "This certifies that. . . ." Other names, such as "doing business as", shall not be shown on a certificate.

(b) *Certificate holder's address.* Enter the physical location of the certificate holder's principal base of operations directly below the name. Do not use a post office box.

(c) *Certification statement of authority.* For the Air Carrier Certificate, do not modify the pre-printed certification statement of authority.

(d) *Certificate number.* Obtain the final certificate number from AVN-120.

(e) *Effective date.* Enter the date of issuance in the space provided. If a new certificate number is issued, the date on the new certificate will be that of original issuance. If an operator's name or certification statement of authority changes, a new certificate number must be issued. The new issuance date of the certificate will be entered in the space provided.

(f) *District office designator.* Enter the four-character, alpha-numeric designator of the certificate-holding district office in the "issued at" space on the form (for example, EA18).

(g) *Signature.* Air Carrier certificates issued to air operators complying with FAR Part 121 or Part 135 commuter rules must be signed by the regional Flight Standards Division manager or designee. All other air operator certificates must be signed by the certificate-holding district office manager.

(h) *Signature, title, and region/office.* Enter the full title of the person signing the certificate in the space provided. If the Flight Standards Division Manager signs the certificate, enter the full name of the region in the "Region/Office" space. If the district office manager signs the certificate, enter the full name of the region, the Flight Standards district office acronym, and the number in the "Region/Office" space.

15. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

(1) Successful certification:

(a) *Issue operations specifications.* Operations specifications must be signed by the applicant and the appropriate principal inspectors (see Vol. II, Ch. 84). Give the original certificate and operations specifications to the new certificate holder.

(b) *Prepare certification report.* After an operator is certificated, a certification report must be assembled. This report establishes the district office file. The report is signed by the Certification Project Manager and includes the name and title of each team member who assisted in the certification project. The report shall consists of the 10 sections listed in 61-13.

(c) *Distribute The Certification Report.* Distribute the report as follows:

- For a Part 135 Commuter Air Carrier or a Part 121 Air Carrier, forward two copies of the report to the regional office for review. The regional office shall forward one copy of the report to AFS-1.
- For all other Part 121 or Part 135 operators, forward one copy of the report to the regional office for review

(2) Unsuccessful certification:

(a) A letter to the applicant indicating the certificate is denied

(b) A letter to the applicant confirming termination of the certification process by the applicant

17. FUTURE ACTIVITIES

A. *Transition.* The district office manager must ensure there is an orderly transition from the certification process to certificate management.

B. *Post-certification surveillance.* Assigned inspectors should carefully observe the operator during the first 90 days of operation. Additional inspections may be necessary to determine operating practices are performed at an adequate level of safety.

(1) Particular attention should be directed to areas that may not have been demonstrated or observed during certification, such as cargo and passenger loading.

(2) The inspector may detect a need for changes in the methods, techniques, operation, inspection, and/or maintenance during this early period of operation.

FIGURE 61-1: INSTRUCTIONS FOR COMPLETING FAA FORM 8400-6, PREAPPLICATION STATEMENT OF INTENT

SECTION 1A. This section must be completed by all applicants.

1. Enter the company's official name and mailing address.

2. This address must be the physical location where primary operating activities are based. It is where the offices of management personnel required by regulation are located. If the address is the same as item 1, enter "same."

3. Enter the estimated date when operations or services will begin.

4. This information will be used to assign a company identification number. You may indicate up to three, three-letter identifiers, such as ABC, XYZ, ETC. If all choices have been assigned to other operators or agencies, a randomly selected number will be assigned.

5. Enter the names, titles, and telephone numbers of required management personnel. Include the General Manager, Directors of Operations and Maintenance, Chief Pilot, Chief Inspector, etc., as applicable.

SECTION 1B. This section must be completed by all air operator applicants.

6. The proposed type of operation must be indicated. Check as many boxes as apply.

SECTION 1C. This section must be completed by all air agency applicants applying under Part 145, Part 147, or Part 149.

7. The proposed type of agency must be indicated. Check as many boxes as apply.

SECTION 1D. This section must be completed by all air operator applicants.

8. Indicate the proposed number and types of aircraft to be operated, as well as the number of passenger seats or, for all-cargo aircraft, payload capacity.

9. Enter the states or geographic areas in which operations are to be conducted. For example, if operations are to be conducted in one or two states, list those states. If operations will be within the 48 contiguous states, indicate "48 contiguous states." For overseas or international operations, enter each area, country, or geographical area, such as Alaska and Canada; Hawaii; Europe; Mexico, Caribbean, and South America.

SECTION 1E. This section must be completed by all applicants.

10. Show any information that would assist FAA personnel in understanding the type and scope of operation or services to be performed by the applicant.

11. The Preapplication Statement of Intent denotes an intent to seek FAA certification as an air operator or air agency. It must be signed as follows:

Type of Organization	*Authorized Signature*
Individual	Owner
Partnership	At least one partner
Company, corporation, association, etc.	At least one authorized officer

SECTION 2. This section must be completed by the Flight Standards district office.

1. Enter the identifier of the office which received the PASI and the date it was received.

2. Indicate the date the PASI was reviewed and forwarded to the region. Show whether regional office action is required or if the PASI is forwarded for information only.

3. Enter any pertinent comments. If certification is proceeding, show the precertification (or certificate number, if applicable) and indicate certification is proceeding. Request any regional support, such as a specific subject matter expert (e.g., B-707-rated pilot; qualified parachute rigger).

SECTION 3. To be completed by the regional office if the "Action" box is checked in Section 2.

1. Enter the date the PASI is received in the regional office and the name of the regional specialist processing it.

2. Show the Precertification number assigned by AVN-120 and the date.

3. Enter the name of the district office assigned to certificate the operator or agency and the date the PASI was forwarded or returned to the assigned office.

4. Enter any pertinent comments. If the district office assigned certification responsibility is not the one where initial inquiry was made, enter a remark and the dates that each district office and the applicant were notified.

FIGURE 61-2: SAMPLE FORMAL APPLICATION LETTER

Federal Aviation Administration
Flight Standards District Office
FAA Building, Room 201
Adams Field
Little Rock, AR 72202

Dear Sir:

This letter serves as a formal application for an Air Carrier Certificate. We intend to operate a scheduled passenger operation based at Little Rock, Arkansas. Our company, to be known as E.Z. Airlines, is located at 601 West Circle Drive, Little Rock, Arkansas 72202.

Key management personnel are as follows:

General Manager—Lester J. Smith
Director of Operations—Lewis Manson
Director of Maintenance—Carl Everett
Chief Pilot—vacant
Chief Inspector—Walter Pepper

We intend to operate two F-28 aircraft on a scheduled basis between Little Rock, AR; Tulsa, OK; Wichita, KA; and Springfield, MO. Our relative small size will allow combining the duties of Director of Operations and Chief Pilot. A request for deviation will follow this letter within in the next week.

We have enlisted the services of Smith and Jones Law Offices, 508 East Main Street, Little Rock, AR, as our agent for service.

Please advise us if you require any additional information.

Sincerely,

Lester J. Smith
President

Enclosures:
Schedule of Events
Initial Compliance Statement
Management Qualification Resumes
Company Initial Training Curriculums
Company General Manuals
Documents of purchase and letters of intent

FIGURE 61-3: SAMPLE LETTER ACCEPTING FORMAL APPLICATION

Mr. Edward Brown, President
XYZ Airlines, Inc.
1234 High Street
Los Angeles, CA 90292

Dear Mr. Smith:

This letter is forwarded to you to acknowledge receipt of your formal application for an Air Carrier Operating Certificate under Part 121 of the Federal Aviation Regulations. As indicated during our meeting on July 20, 1987, the formal application with the required attachments are accepted.

Notification of acceptance of the formal application package does not in any way constitute acceptance or approval of the separate attachments. Each attachment will be reviewed further. Should additional corrective action be required, you will be expected to take such corrective action as well as adjust the Schedule of Events accordingly. Such corrections may delay final certification.

Sincerely,

I.M. Friendly
Certification Project Manager

FIGURE 61-4: SAMPLE LETTER REJECTING APPLICATION: MISSING DOCUMENTS

Mr. Edward Brown, President
XYZ Airline Inc.
1234 High Street
Los Angeles, CA 90292

Dear Mr. Brown:

This letter is to acknowledge receipt of your formal application for an Air Carrier Operating Certificate under Part 121 of the Federal Aviation Regulations. Our initial review indicates that the following necessary items are missing:

- Management Qualification Resumes.
- Documents of purchase, contracts, leases, or letters of intent.
- Initial Compliance Statement.

We regret that we cannot process your application until these items are submitted. We are, therefore, returning your formal application with all attachments for appropriate action.

If we may assist you further, do not hesitate to call.

Sincerely,

I.M. Friendly
Certification Project Manager

FIGURE 61-5: SAMPLE LETTER REJECTING APPLICATION: UNABLE TO RESOLVE DISCREPANCIES

Mr. Edward Brown, President
XYZ Airlines Inc.
1234 High Street
Los Angeles, CA 90292

Dear Mr. Brown:

Please be advised that due to several open questions that could not be resolved during our July 20, 1987, meeting, your formal application for an Air Carrier Operating Certificate is rejected.

As discussed during the meeting, prior FAA commitments make it impossible for several team members to meet the Schedule of Events.

To resolve discrepancies, it will be necessary for you to provide in your manual a more detailed description of the Vice President of Maintenance duties and responsibilities.

We are returning your formal application with all attachments for appropriate action.

If we may assist you further, do not hesitate to call.

Sincerely,

I.M. Friendly
Certification Project Manager

FIGURE 61-6: SAMPLE REGULATION PRESENTATION

The following are samples of how relevant sections of the regulations should be presented.

Illustration 1

Method of compliance not developed at time of formal application (initial compliance statement):

§ *121.97 Airports: Required data.* To be supplied.

Illustration 2

Method of compliance fully developed (initial or final compliance statement)—preferred presentation:

§ *121.563 Reporting mechanical irregularities.* GOM p. 129, para. 243; GMM p. 45, para. 12.5.

§ *121.373. Continuing analysis and surveillance.* Procedures in GMM, Chapter 5.

§ *135.429. Required inspection personnel.* To be supplied. Awaiting contractual arrangements and development of training procedures.

Illustration 3

Method of compliance fully developed (initial or final compliance statement)—acceptable presentation:

§ *121.563 Reporting mechanical irregularities.* The General Operations Manual (GOM) (p. 129, para. 243) instructs the pilot in command (PIC) on requirements for and methods of completing the aircraft discrepancy log. The PIC must review the log before each flight and determine the status of each previous entry. The General Maintenance Manual (GMM) (p. 45, para. 12.5) instructs maintenance personnel on the requirements to record discrepancies discovered during preflight checks and other types of checks.

FIGURE 61-7

Checklist of Required Sections of Certification Report

- The Preapplication Statement of Intent
- The certification job aid
- The formal application letter
- The Schedule of Events
- The final compliance statement
- The proving test evaluation report (if applicable)
- The emergency evacuation demonstration report (if applicable)
- A copy of the operations specifications issued
- A copy of the certificate issued
- A summary of major difficulties encountered during the certification process and their resolution. The report must be organized by phase. Each phase will contain a section on each of the three specialties—maintenance, avionics, and operations.

(1) Preapplication Phase

(2) Formal Application Phase

(3) Document Compliance Phase

(4) Demonstration and Inspection Phase

FIGURE 61-8: AIR CARRIER CERTIFICATE

U.S. Department
of Transportation
**Federal Aviation
Administration**

Air Carrier Certificate

This certifies that

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed thereunder for the issuance of this certificate and is hereby authorized to operate as an air carrier and conduct common carriage operations in accordance with said Act and the rules, regulations, and standards prescribed thereunder and the terms, conditions, and limitations contained in the approved operations specifications.

This certificate is not transferable and, unless sooner surrendered, suspended, or revoked, shall continue in effect indefinitely.

By Direction of the Administrator.

Certificate number: _____

Effective date: _____

Issued at: _____

_____
(Signature)

_____
(Title)

_____
(Region/Office)

FAA Form 8430-18 (6-87)

FIGURE 61-9: OPERATING CERTIFICATE

U.S. Department of Transportation
Federal Aviation Administration

Operating Certificate

This certifies that

VISCOUNT AIR SERVICES, INC.
1000 EAST VALENCIA AVENUE
TUCSON, ARIZONA 85706

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct Part 125 operations.

in accordance with said Act and its rules, regulations, and standards;

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect indefinitely.

By Direction of the Administrator.

Certificate number: WP-01-5-T

Effective date: January 16, 1986
Reissued: May 11, 1988

Issued at: Phoenix, Arizona

Oscar A. Culp
(Signature)

Acting Manager, WP-FSDO-07
(Title)

FAA Form 8430-21 (6-87)

CHAPTER 62 EVALUATE FAR PART 121/135 MANAGEMENT PERSONNEL QUALIFICATIONS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3352

B. *Avionics:* 5352

3. OBJECTIVE. This chapter discusses the regulatory requirements and qualifications for maintenance management personnel of operators conducting operations under FAR Parts 121 and 135.

5. GENERAL. Management personnel and qualification requirements are necessary to ensure an effective maintenance organization. This requires sufficient qualified management and technical personnel to maintain a high degree of safety.

A. Personnel responsible for the inspection and maintenance organizations should possess the qualifications required in FAR § 121.61 (c) and (d).

B. The primary responsibility of the Director of Maintenance in FAR Parts 121 and 135 is to administer the certificate holder's maintenance program.

C. The primary responsibility of the Chief Inspector is to administer a FAR Part 121 certificate holder's inspection program.

D. If an operator elects to contract out all maintenance, the positions defined by Parts 121 and 135 are still required.

E. Consolidated Positions. Management positions may be consolidated with other positions.

(1) When management positions are consolidated, the individual serving in the position must meet the qualifications of both positions.

(2) Before allowing an individual to serve as Director of Maintenance or Chief Inspector, consideration must be given to other duties performed by that person. For example, if that person also plans to serve as a flight crew member, the inspector must ensure those duties will not interfere with the responsibilities as Director of Maintenance or Chief Inspector.

F. *Separation Of Maintenance And Inspection Functions*

(1) A Chief Inspector is required for FAR Part 121 operators but not for Part 135 operators.

(a) FAR § 121.365 requires an operator to have a maintenance organization that ensures separation of maintenance and inspection responsibilities and management personnel.

(b) Domestic and flag operators operating under FAR Part 121 rules are not required by specific regulation to have either of these positions.

(c) If the operator has a contractual agreement with another organization for the performance of its continuous airworthiness maintenance program, the operator may apply for deviation from the Chief Inspector requirement. It must, however, have a Director of Maintenance or equivalent position to schedule maintenance and to ensure proper administration of the continuous airworthiness maintenance program.

(2) For FAR Part 135 operators, a Director of Maintenance (or equivalent) is necessary to ensure separation of inspection and maintenance functions required by FAR § 135.423. The Director of Maintenance serves as administrative controller with overall responsibility for separating inspections and maintenance functions.

G. *Part-time and Full-time Positions*

(1) FAR Part 121 operators are required to have full-time management personnel. FAR Part 135 operators may use part-time personnel. Both full-time and part-time maintenance management personnel must have the necessary prerequisite qualifications to fulfill the responsibilities of the position.

(2) The FAA inspector should determine if the FAR Part 135 operator is using part-time management personnel. Each person employed on a part-time basis must be readily available to fulfill all responsibilities of the position consistent with the certificate holder's operations.

H. *Deviations.* The manager of the Flight Standards Division in the region of the Certificate Holding District Office may authorize a deviation of management personnel. Requests often have inadequate information and do not always include comments from the Certificate Holding District Office. Therefore, a request for deviation should be processed as follows:

(1) The operator's request should be submitted to the FAA Certificate Holding District Office and should contain the following information:

(a) The type and number of aircraft operated and the maintenance program(s) utilized by the certificate holder

(b) A resume of the individual for whom the deviation is requested, including:

- Dates of experience
- Types of aircraft
- Specific areas of experience
- Aeronautical experience
- Types of management positions previously held
- Mechanic's certificate number
- The dates the certificate and each rating were issued

(2) The Principal Maintenance Inspector must review the information.

(a) The individual involved should be interviewed to verify aeronautical experience and qualifications.

(b) The person's certificate should be verified through the Airmen Certification Branch to verify the dates of original issuance and added ratings.

(c) The results of the data review, interview, and the inspector's recommendation or denial will be included in the district office package. The complete package will then be forwarded to the regional office for evaluation.

(3) Regional office maintenance specialists shall review the deviation request and district office report and prepare a reply to the operator from the Flight Standards Division manager.

NOTE: Deviations may be granted from the minimum experience requirements in FAR § 135.39. It is essential, however, that appropriate certificates and ratings be held.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with the Primary Maintenance Inspector (PMI) and the Primary Avionics Inspector (PAI), and may also require coordination with other regions, district offices, and regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Parts 43, 65, 91, and 145
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator/Applicant's Submitted Candidate Data.* Review the following:

(1) Mechanics certificate for appropriate ratings and validity

(2) Enforcement Investigation System (EIS) for previous violation history

(3) Employment history (resume) to ensure:

- The necessary experience requirements are met
- Similar position was not previously held and contributed materially to a certificate revocation in a FAR Part 121, 125, or 135 operation

(4) References to other regions and Flight Standards District Offices indicated by the resume to learn of past performance history

B. *Interview the Candidate.* Determine the candidate's knowledge of the following:

- Maintenance sections of the operator's manual
- Operator's operations specifications

- Relative maintenance provisions of FAR Parts 43, 65, 91, 121, 135, and 145

C. *Determine Eligibility of Candidate.* Base the decision on the data review and the interview.

D. *Debrief Operator/Applicant.* Inform the operator/applicant of the inspection results.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Acceptance of the candidate will result in approval of operations specifications paragraph A6 and one of the following:

- A letter to the operator/applicant indicating acceptance of the candidate
- A letter telling the operator/applicant to request a deviation (through the Certificate Holding District Office) if the candidate does not meet experience requirements or wishes approval of different positions or number of positions. The candidate must have been found acceptable based on the interview.

C. Rejection of the candidate will result in a letter to the operator/applicant listing the reasons for rejection.

D. *Document Task.* File all supporting paperwork in the operator/applicant's file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 63 EVALUATE FAR PART 121/135.411(a)(2) COMPANY MANUAL/REVISION

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3302

B. *Avionics:* 5302

3. OBJECTIVE. This chapter provides guidance for evaluating an operator/applicant's company manual or revision to ensure that policies, procedures, and technical criteria meet regulatory requirements.

5. GENERAL

A. A company manual should enable the operator's maintenance and servicing personnel to carry out their duties at a high level of safety. The complexity of the manual will vary with the complexity of the operation. The manual must cover specific items in accordance with the Federal Aviation Regulations, but may include additional items at the discretion of the applicant. A manual is therefore accepted rather than approved.

B. Manual acceptance can be a cause of delay in the certification process.

(1) If the operator/applicant does not have experienced and qualified personnel to prepare an acceptable manual, the use of a consultant may be appropriate. A consultant can be used in an advisory position only.

(2) After the review, the manual must be returned to the operator/applicant with a list of any discrepancies found. The operator/applicant must be informed that final certification will not be completed until discrepancies are corrected. Inspectors should be concerned primarily with ensuring regulatory compliance.

7. REVIEWING OPERATOR/APPLICANT'S MANUAL

A. The manual is an administrative tool used to control and direct personnel. It should define all aspects of the maintenance operation.

(1) The policies and procedures section should address organizational matters.

(2) The maintenance section should address policies and procedures for administering the inspection and maintenance requirements, test flight requirements, and other subjects, as applicable.

B. The manual should include detailed instructions or specific references for accomplishing inspection and maintenance functions. It should also include forms, instructions, and references for recurring non-routine requirements such as engine changes and inspections following abnormal occurrences (hard landings, lightning strikes, severe turbulence, high brake energy stops, etc.).

C. Manufacturers' technical manuals provide instructions for accomplishing specific tasks. These documents also establish methods, technical standards, measurements, and operational test procedures. The policy and procedures section of the operator's manual must describe areas of application for the pertinent technical documents.

D. The following are examples of manual sections and titles:

- General policy and procedures
- Inspection procedures
- Maintenance procedures
- Training
- Wiring
- Parts
- Overhaul
- Structural repair
- Manufacturers or vendors
- Weight and balance control
- Servicing

E. Manuals must be easy to revise and must show the date of last revision on each page. The manuals must have

a page control system showing the number of pages and including the latest revision. The page control system is usually identified as a list of effective pages.

F. The operator/applicant is responsible for ensuring manuals present adequate guidance to meet all regulatory requirements. The operator/applicant must understand and accept this responsibility early in the certification process.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination String Course

B. *Coordination.* This task requires close coordination with maintenance, avionics, and, in some areas, operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Section 604 of the Federal Aviation Act of 1958, as amended
- FAR Parts 43 and 91
- 49 CFR Part 173

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Brief Operator/Applicant.* Provide the operator/applicant with policies and regulatory requirements. Schedule and conduct a preliminary meeting, if necessary.

B. *Review Schedule of Events.* If this task is to be performed as part of an original certification, review the schedule of events to ensure the task can be accomplished according to the schedule.

C. *Evaluate General Manual Requirements.* Ensure the operator/applicant's policies and procedures manual describes procedures, levels of authority, and information appropriate to FAR Parts 121 or 135, as applicable.

(1) The manual must include a description introducing its philosophy and goals. If it is in more than one volume, the manual must describe the division of contents between the volumes. The manual must also contain a list of effective dates.

(2) Manual revision and distribution procedures to provide current information to all manual holders are required. The manual must include provisions to make it available to maintenance and ground personnel and to furnish a copy to the FAA Certificate Holding District Office.

(3) Significant terms, acronyms or abbreviations unique to the manual must be defined. Common industry terms need not be defined as long as the common meaning is intended. Terms clearly defined in the text need not be included.

(4) The manual must detail requirements for supplemental air carriers and commercial operators to carry the appropriate parts of the manual on the aircraft, if applicable. If manuals are on microfilm, procedures to ensure that readers are aboard the aircraft are required.

D. *Ensure the Manual Contains Required Organizational Elements.* Check for the following:

(1) The names of all management personnel authorized to sign applicable operations specifications and act on behalf of the operator/applicant

(2) Organizational charts. These must include:

- Lines of authority
- Maintenance organization and support structure

(3) Job descriptions for all elements noted above

(4) Procedures for, and a description of, a training program that ensures:

- All personnel, including inspection personnel, are fully informed of procedures and techniques currently in use
- All personnel are competent to perform their duties
- A method of documenting and retaining training records is established

E. *Ensure the Manual Contains Compliance Procedures.* Check for the following:

(1) Procedures to ensure compliance with aircraft weight and balance limitations. These are to include:

- Pre-weighing and weighing requirements
- Necessary equipment
- Standards
- Forms and documents

(2) The operator/applicant's operations specifications, or appropriate extracted information (must retain identity as operations specifications)

(3) Procedures, policies, instructions and controls for the use of the Minimum Equipment List and Configuration Deviation List, if applicable

(4) Procedures, standards, and limits for periodic inspection and calibration of precision tools, measuring devices, and test equipment

F. *Evaluate Manual Contents.* The certificate holder's company manual must describe procedures and provide information appropriate to the applicable Federal Aviation Regulations.

(1) *Manual description.* The inspector must ensure that manual description and procedures meet the requirements of FAR §§ 121.135(a) and 135.23(a).

(2) *Manual revision and distribution procedures.* The certificate holder's manual must describe the revision control procedures and how the distribution of manuals will be controlled (Ref. FAR §§ 121.135(a), (c), and 121.137; §§ 135.21(b) through (g); and 135.23).

(a) Manuals must be easy to revise and have the date of last revision on each page. The manuals must have a page control system that shows the number of pages and ensures the latest revision is included. The page control system is usually identified as a list of effective pages (Ref. FAR §§ 121.135(a) and 135.23).

(b) Manuals must have a distribution system that meets the requirements of FAR §§ 121.137 or 135.21, as appropriate.

(3) *Definitions.* Any terms contained in the manual that are unique to the operator's operation must be defined. (Ref. FAR §§ 121.135(B)(24) and 135.23(r))

(4) *A chart or description of the certificate holder's organization.* The organizational chart must describe, at a minimum, the management personnel and major functions. However, it is recommended that the chart cover the operator's entire organization. (Ref. §§ 121.369(a) and § 135.427(a))

(5) *A list of inspection personnel.* This list must include persons with whom the certificate holder has arranged to perform any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of the work. (Ref. FAR §§ 121.369(a) and 135.427(a))

(6) *An inspection program and a program covering other maintenance, preventive maintenance, and alterations.* The program must ensure the following (Ref. FAR §§ 121.369(b) and 135.427(b)):

(a) Maintenance, preventive maintenance, and alterations are performed in accordance with the certificate holder's manual (Ref. FAR §§ 121.367(a) and 135.425(a))

(b) Competent personnel, adequate facilities, and equipment are provided for accomplishing maintenance, preventive maintenance, and alterations (Ref. FAR §§ 121.367(b) and 135.425(b))

(c) Each aircraft released to service is airworthy and properly maintained (Ref. FAR §§ 121.367(c) and 135.425(c))

(7) The manual must include the duties and responsibilities of appropriate members of the ground organization personnel (Ref. FAR §§ 121.135(b)(2) and 135.23(a)

(8) For supplemental air carriers, FAR Part 135 operators, and commercial operators, the manual must

include the duties and responsibilities of management personnel, including the names and addresses of those required by FAR §§ 121.59(c), 121.135(b)(2), and 135.23(a).

(9) The manual is required to include programs that must be followed while performing maintenance, preventive maintenance, and alterations of the certificate holder's aircraft, including airframes, aircraft engines, propellers, rotors, appliances, and emergency equipment (Ref. FAR §§ 121.369(b) and 135.427(b)). These programs must include at least the following:

(a) A method for performing routine and non-routine maintenance (other than required inspections), preventive maintenance, and alterations (FAR §§ 121.369(b)(1) and 135.427(b)(1))

(b) A designation of items of maintenance and alteration that must be inspected (required inspections). The designations should include at least those items which, if maintenance is not performed properly or if improper parts or materials are used, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft (Ref. FAR §§ 121.369(b)(2) and 135.427(b)(2).

(c) A method of performing required inspections and the occupational title(s) of persons authorized to perform each required inspection (Ref. FAR §§ 121.369(b)(3) and 135.427(b)(3))

(d) Procedures for reinspecting work performed under previous required inspection findings ("buy-back" procedures) (Ref. FAR §§ 121.369(b)(4) and 135.427(b)(4))

(e) Procedures, standards, and limits necessary for required inspections and acceptance or rejection of inspected items (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(f) Procedures, standards, and limits necessary for periodic inspection and calibration of precision tools, measuring devices, and test equipment (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(g) Procedures to ensure that all required inspections are performed (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(h) Instructions to prevent any person who performs work on any item from performing required inspection of that work (Ref. FAR §§ 121.369(b)(7) and 135.427(b)(7))

(i) Per FAR §§ 121.369(b)(8) and 135.427(b)(8), instructions and procedures to prevent any decision of an inspector regarding a required inspection from being rescinded by persons other than those listed below:

- Supervisory personnel of the inspection unit
- A person at a supervisory level of administrative control who has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions

(j) Procedures to ensure that required inspections, maintenance, preventive maintenance, and alterations not completed as a result of employee shift changes or similar work interruptions are properly completed before the aircraft is released to service (Ref. FAR §§ 121.369(b)(9) and 135.427(b)(9))

(k) Instructions and procedures for maintenance, preventive maintenance, and servicing (Ref. FAR §§ 121.135(b)(16) and 135.23(h))

(l) Time limitations or standards for determining time limitations for overhauls, inspections, and checks of airframes, engines, propellers, appliances, and emergency equipment (Ref. FAR §§ 121.135(b)(17) and 135.11(b)(2)(iii)

(m) Procedures for aircraft refueling, elimination of fuel contamination, fire protection (including electrostatic protection), and supervision and protection of passengers during refueling (Ref. FAR §§ 121.135(b)(18) and 135.23(j))

(n) Airworthiness inspections, including instructions covering procedures, standards, responsibilities, and authority of inspection personnel (Ref. FAR §§ 121.369(b)(19) and 121.369(b)(6), (7), and (8); 135.427(b)(6), (7), and (8))

(o) Methods and procedures for maintaining the aircraft's weight and center of gravity within approved limits (Ref. FAR §§ 121.135(b)(20), 121.25(b)(7), 121.45(b)(7), 135.23(b), 135.63(c), and 135.185))

(p) A suitable system, which may include a coded system, providing for preservation and retrieval of information in a manner acceptable to the Administrator and which provides the following (Ref. FAR §§ 121.369(c) and 135.427(c)):

- A description of the work performed or reference to data acceptable to the Administrator

- The name of the person performing the work if the work is performed by a person outside the organization of the certificate holder

- The name or other positive identification of the individual approving the work

(10) References to appropriate Federal Aviation Regulations are required to be in the manual by FAR § 121.135(b)(3). (Not required for Part 135.)

(11) The manual must include training programs to ensure that each person who determines the adequacy of the performance of maintenance and preventive maintenance is competent to perform the necessary duties and is fully informed about procedures, techniques, and new equipment in use. (Ref. §§ 121.375 and 135.433). Applicable training programs should include a training program description, maintenance training requirements, and information about the frequency of training.

(12) Copies of operations specifications, Parts D and E, are normally included in the manual. The operator may decide, however, to insert pertinent excerpts of its operations specifications or reference the operations specifications which must be done in such a manner that they retain their identity as operations specifications (Ref. FAR §§ 121.75(b) and 135.23(c)).

(13) The manual must provide procedures for the reporting and correction of mechanical irregularities. These procedures must address the following:

(a) The recording of actions in the aircraft maintenance log (Ref. FAR §§ 121.563, 121.701, and 135.65)

(b) The method of ensuring the aircraft maintenance log is readily accessible to each flight crewmember (Ref. FAR §§ 121.701 and 135.65)

(c) The Minimum Equipment List (Ref. FAR §§ 121.303(d) and 121.627(b); 135.23(i) and 135.179)

(d) The Minimum Equipment Lists placard system

(e) Deferred maintenance

(f) Airworthiness release procedures, or maintenance record entries in the maintenance section of the manual, that include a certification that:

- Work was performed in accordance with the requirements of the manual

- All items required to be inspected were inspected

- No known condition exists that would make the airplane unairworthy

- So far as the work performed is concerned, the airplane is in condition for safe operation

NOTE: Rather than restate the above requirements each time an airworthiness release is executed, the operator/applicant may provide a statement in the manual that the signature of a properly authorized person constitutes that certification.

(g) The determination of qualifications and authorization of persons to perform airworthiness releases

(h) Definition of when an airworthiness release is required

(i) The form and manner in which an airworthiness release will be documented

(j) Provision of a copy to the pilot in command

(k) A list of required maintenance-related forms and the requirements for preparation

(l) Distribution of required reports and forms (Ref. FAR §§ 121.703, 121.705, and 121.707; 135.415 and 135.417)

(14) The manual must provide procedures to ensure proper parts and materials are used (Ref. FAR §§ 121.369(b), 121.105, 121.123, and 135.427(b)), including:

- Receiving inspection

- Shelf time

- Preservation of parts

- Parts identification system

- Disposition of failed parts

(15) The manual must provide the specifics of the operator's continuing analysis and surveillance program (Ref. FAR §§ 121.373 and 135.431), including:

- Audit system
- Mechanical performance

(16) Test flight requirements and limitations (FAR § 91.167) are required to be in the manual. These include:

- Items requiring test flight
- Procedures for performing test flight

(17) The manual must include ferry flight limitations and procedures

(18) The manual must provide procedures for the following:

- Reporting the occurrence or detection of each failure, malfunction or defect of mechanical reliability (mechanical reliability reports)
- Reporting each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route caused by known or suspected mechanical difficulties (Mechanical Interruption Summary Report)
- Submitting required aircraft and engine utilization reports to the Certificate Holding District Office
- Ensuring all major alteration reports are submitted to the Certificate Holding District Office
- Ensuring reports of major repairs are prepared and retained by the operator (these may be in the form of engineering orders, if the operator/applicant is so structured)

(19) The manual must also contain other procedures, as appropriate (Ref. FAR §§ 121.135(b)(24), 121.369(b)(1), 135.23(r), and 135.427(b)(1)), including:

- Parking aircraft in high winds
- Short-term storage
- Long-term storage
- Seasonal operation
- Removing ice and snow from aircraft
- Towing
- Emergency procedures
- Run-up/taxi personnel authorizations
- Aircraft ground run-up
- Taxiing aircraft
- Ramp signals and procedures
- Jacking, lifting, and hoisting
- Use of landing gear down locks
- Use of external gust locks
- Aircraft cleaning, including materials used for cleaning and flame-proofing materials after dry cleaning (Ref. FAR § 43.13)
- Engine change
- Propeller change
- Cylinder change
- Engine and propeller overspeed
- High oil consumption
- Oil leaks
- Engine and propeller troubleshooting
- Oxygen and nitrogen servicing and storage

(20) The manual must include additional maintenance for Category II or Category III operations, if applicable (See Vol. II, Ch. 3)

G. *Analyze Results.* Upon completion of review,

analyze the results and determine whether the operator/applicant's manual meets all requirements.

H. *Debrief Operator/Applicant.* Discuss discrepancies and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES.

Normal surveillance.

CHAPTER 64 EVALUATE CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3341

B. *Avionics:* 5331

3. OBJECTIVE. This chapter provides information and guidance for evaluating continuous airworthiness maintenance programs developed by operators subject to FAR Part 121 or § 135.411(a)(2).

5. GENERAL. A continuous airworthiness maintenance program combines the maintenance and inspection functions used to fulfill an operator's total maintenance needs. The regulations specify that each operator must have a maintenance program adequate to perform the work and an inspection program adequate to perform required inspections. The two organizations must be separate.

A. *Definitions*

(1) *Airworthiness:* a condition in which the aircraft, airframe, engine, propeller, accessories, and appliances meet their type design and are in a condition for safe operation.

(2) *Inspection:* the routine performance of inspection tasks at prescribed intervals. The inspection must ensure the airworthiness of an aircraft, up to and including its overhaul or life-limits.

(3) *Scheduled (Routine) Maintenance:* the performance of maintenance tasks at prescribed intervals.

(4) *Unscheduled (Non-routine) Maintenance:* the performance of maintenance tasks when mechanical irregularities occur. These irregularities are categorized as to whether or not they occur during flight time.

(5) *Structural Inspection:* a detailed inspection of the airframe structure that may require special inspection techniques to determine the continuous integrity of the airframe and its related parts.

B. *Program Requirements.* Basic requirements of a continuous airworthiness maintenance program include the following:

- Inspection
- Scheduled Maintenance
- Unscheduled Maintenance
- Overhaul and Repair
- Structural Inspection
- Required Inspection Items
- Reliability Program (if appropriate)

C. *Manuals.* Instructions and standards for unscheduled maintenance should be in the operator/applicant's technical manuals. The manuals must contain procedures to be followed when using these manuals and recording scheduled and unscheduled maintenance.

D. *Operations Specifications.* Continuous airworthiness maintenance programs are approved according to the operations specifications. These operations specifications describe the scope of the program and reference manuals and other technical data. Details of the program shall be included in the operator/applicant's manual.

E. *Operator/Applicant's Organization.* The operator/applicant must have an organization adequate to carry out the provisions of the continuous airworthiness maintenance program. If the work is performed outside the operator's organization, the contractor must meet the same requirements. In determining the adequacy of the organization, the following must be considered:

- The complexity of the organization
- The aircraft
- The experience of the personnel
- The numbers of personnel

7. INSPECTIONS

A. *Applicability.* During the original certification process of an operator/applicant, the inspector should ensure the continuous airworthiness maintenance program is applicable to the operation in question. In order to do so, the inspector shall inform the operator/applicant of the pertinent policies, procedures, and requirements of the Federal Aviation Regulations.

B. *Scheduling.* The operator/applicant and the inspector should develop a plan to determine a schedule for the submission of required documents.

(1) *Scheduled maintenance.* Maintenance tasks performed at prescribed intervals are considered scheduled maintenance. Some of these tasks are performed concurrently with inspection tasks and may be included on the same work form. Work forms that include maintenance instructions must be provided for a record of the accomplishment of these tasks.

(a) Scheduled tasks include replacement of life-limited items and components requiring periodic overhaul, special nondestructive inspections (such as X-rays), checks or tests for on-condition items, lubrications, and weighing aircraft.

(b) Prime factors considered for inspection intervals are aircraft utilization, environmental conditions, and the type of operation. Examples include changes in temperature, frequency of landings and takeoffs, operation in areas of high industrial pollutants, and passenger or cargo operations.

(c) To ensure proper maintenance, each inspection interval must be stated in terms of calendar times, cycles, and hours, as required.

(2) *Unscheduled maintenance.* Unscheduled maintenance takes place when mechanical irregularities occur.

(a) *Mechanical irregularities occurring during flight time (block to block).* These include operational failures and malfunctions and abnormal flight operations, such as hard or overweight landings. The aircraft maintenance record, required by FAR §§ 121.563, 121.701, and 135.65, must be used to record each irregularity and its corrective action.

(b) *Mechanical irregularities not occurring during flight time.* These include all other failures, malfunctions and discrepancies, including, but not limited to, inspection findings. A discrepancy form or equivalent system must be used to record each irregularity and its corrective action.

C. *Types of Maintenance*

(1) *Overhaul and repair (airframe, engine, propeller, and appliance).* Maintenance for these items, whether scheduled or unscheduled, may be independent from maintenance performed on the aircraft. The operator must provide instructions and standards for repair and overhaul, along with a method of approving and recording the work. Appropriate life-limited parts replacement requirements should be included in this portion of a continuous airworthiness maintenance program.

(2) *Structural inspection*

(a) Each level of inspection must be clearly defined in the operator's continuous airworthiness maintenance program. For example, a specific area of the aircraft may require only a visual inspection during pre-flight, A, and B checks, but will require a detailed, x-ray, or Zyglo inspection in the same area for a C or D check.

(b) Some aircraft are subject to a supplemental structural inspection document, which requires additional age-related structural inspections to be incorporated into the maintenance program.

D. *Requirements.* If a certificated operator proposes changes to the continuous airworthiness maintenance program, the inspector must determine the impact of the revision on the program. Because continuous airworthiness maintenance programs vary depending on the operator/applicant's complexity of operation, the inspector must become familiar with all of the pertinent technical and regulatory aspects of the program.

E. *Return to Service.* Through the provisions of FAR Parts 43, 121, and 135 operators utilizing a continuous airworthiness maintenance program are considered maintenance organizations. As such, they are authorized to approve aircraft and/or equipment for return to service.

F. *FAR Part 135 (9 or Less) Operators.* An operation with an approved continuous airworthiness maintenance program must maintain its aircraft according to that program. This includes aircraft of 9 or less passengers maintained under an operator's continuous airworthiness maintenance program in accordance with FAR § 135.411(b).

G. *Maintenance Performed for Other Operators.* An operator with an approved continuous airworthiness maintenance program under FAR Parts 121 or 135 may also perform maintenance for another certificate holder under the same FAR Part. Such maintenance must be performed in accordance with that certificate holder's approved program, including aircraft of 9-or-less passenger seats. However, an operator under FAR Part 135 is not authorized to perform maintenance for an operator under FAR Part 121, and vice versa.

9. MAINTENANCE PROGRAM

A. The maintenance program incorporates a plan of procedures to ensure the following:

- Maintenance, preventive maintenance, and alterations are performed according to the operator's manual

- Competent personnel and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations
- Each aircraft released to service is airworthy

B. This plan also covers airworthiness inspections and Required Inspection Items (RII).

C. *Airworthiness Inspections.* FAR § 121.135(b)(19) and similar provisions of FAR Part 135 stipulate that each operator's manual must discuss airworthiness inspections, including instructions covering procedures, standards, responsibilities, and authority of inspection personnel. The methods and procedures established by the operator's manual must be followed as prescribed by FAR §§ 121.367 and 135.427. Items not designated as Required Inspection Items will also be inspected according to the manual's instructions.

D. *Required Inspection Items.* FAR §§ 121.369(b)(2) and 135.427(b)(2) discuss the designation of maintenance and alteration work that must be inspected (Required Inspection Items).

(1) The manual must contain a designation of the items of maintenance and alteration that must be inspected (Required Inspection Items). These will include, at a minimum, those items that could result in failure, malfunction, or defect endangering the safe operation of the aircraft if maintenance is not performed properly or if improper parts or materials are used. Each operator must evaluate its work program to identify Required Inspection Items. Such items may be identified with the abbreviation "RII," an asterisk, or any similar method.

(2) In determining the work items which are to be categorized as Required Inspection Items, the operator should consider the importance of the following:

- Installation, rigging, and adjustments of flight control
- Installation and repair of major structural components
- Installation of aircraft engines, propellers, and rotors
- Overhaul, calibration, or rigging of components such as engines, propellers, transmissions, gear boxes, or navigation equipment

11. INSPECTION ORGANIZATION. Each operator must have an organization adequate to perform required inspections. The performance of required inspections shall be organized so as to separate the required inspection functions from other maintenance, preventive maintenance, and alteration functions.

A. *Personnel Considerations.* The operator/applicant must maintain a current listing of persons qualified to inspect its Required Inspection Items. Where such maintenance is performed by other organizations, the operator must determine that the contractor maintains such a list. Each individual must be identified by name, occupational title, and the Required Inspection Items that individual is authorized to inspect.

(1) To comply with these requirements, the operator's personnel roster (or the contractor's roster) may be used. This roster should include a method for positive identification of those who are trained, qualified, authorized, certificated, and current.

(2) Authorized individuals may be informed by letter or by a list showing the extent of their responsibilities, authorities, and inspection limitations. If a list is used, it should be signed by each authorized individual to confirm that the authorized person is fully aware of any inspection limitations.

B. *Maintenance and Inspections.* The separation of the operator maintenance organization from the inspection organization does not apply to the accomplishment of airworthiness inspections.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task must be coordinated between maintenance inspectors, avionics inspectors, operations inspectors, and regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Maintenance Review Board Document

- Section 604 of the Federal Aviation Act of 1958, as amended
- FAR Parts 43, 65, 91, and 145
- 49 CFR Part 173
- Advisory Circulars 43-9, 43-12, 43-13. 1A and 2A, 91-56, 120-16, 120-27, 121-1, 121-16
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- Operations Specifications, FAA Forms 8400-8 and 8400-8A

C. *Job Aids.* None.

5. PROCEDURES

A. *Brief Operator/Applicant.* Provide operator/applicant with policies and regulatory requirements.

B. *Review Schedule of Events.* If this task is performed as a part of an original certification, review the Schedule of Events to ensure this task can be accomplished according to the schedule.

C. *Evaluate Organization Documentation.* The continuous airworthiness maintenance program must contain the following:

(1) A complete description of the operator's organization as it relates to the program, including the duties and responsibilities of the relevant individuals

(2) A list of persons with whom the operator/applicant has arranged for the performance of any work, and a general description of that work

(3) Proper separation of maintenance and inspection functions for the performance of required inspections

D. *Evaluate Inspection and Maintenance Programs.* The continuous airworthiness maintenance program must contain an inspection and maintenance program for the performance of maintenance, preventive maintenance, and alterations. This program must, at a minimum, include the following:

(1) The method of performing routine and nonroutine maintenance, preventive maintenance, and alterations

(2) A list of designated items that must be inspected (Required Inspection Items)

(3) The method for performing required inspections

(4) The method of designating personnel performing required inspections by occupational title, name, and authorization

(5) Procedures for the reinspection of work performed as a result of previous required inspection findings (buy-back procedures)

(6) Procedures, standards, and limits necessary for required inspections, including identifying Required Inspection Items within work forms or job cards

(7) Procedures for the periodic inspection and calibration of precision tools, measuring devices, and test equipment

(8) Procedures for maintaining records and control of the inspections and calibrations

(9) Procedures to ensure that all required inspections are performed

(10) Instructions to prevent any person who has performed any item of work from performing any required inspection of that work

(11) Instructions and procedures to prevent any decision of an inspector regarding any required inspection from being countermanded. Only supervisory personnel of the inspection unit or an administrative person with overall responsibility for both the required inspection and other maintenance and alteration functions can override an inspector's decision

(12) Procedures to ensure that required inspections, maintenance, and alterations that are left incomplete as a result of a work interruption are properly completed before the aircraft is released to service

(13) Work forms, job cards, and detailed procedures for performing inspections and other maintenance

E. *Evaluate Records.* The continuous airworthiness maintenance program must contain a maintenance recordkeeping system. The operator/applicant must meet the requirements of FAR §§ 121.380 and 135.439. In addition, the operator must have a system for the retention and retrieval of maintenance records to provide the following:

- A description of the work performed
- The name of the person performing the work and/or the name of the organization if other than the operator/applicant's
- The name of the person approving the work

F. *Evaluate Personnel.* The continuous airworthiness maintenance program must contain the following:

(1) Procedures to determine qualifications of personnel, including management and supervisory personnel

(2) Procedures to ensure that only persons appropriately certificated, properly trained, authorized, qualified, and current, perform required inspections

(3) Instructions to ensure those persons performing required inspections are under the control of the inspection unit

(4) Instructions to relieve any person performing maintenance for a period of at least 24 hours per 7 day period, or the equivalent thereof, within any calendar month

G. *Evaluate Structural Inspection Procedures.* This part of the continuous airworthiness maintenance program must include the following:

- Corrosion control procedures
- A detailed inspection of areas where maintenance is being performed to detect cracks, distortion, and corrosion, to examine attachment of parts, and to determine the condition of the area
- Maintenance Review Board/manufacturer's routine structural inspection requirements

H. *Analyze Findings.* Evaluate all deficiencies to determine what corrections will be required.

I. *Debrief Operator/Applicant.* If there are deficiencies in the continuous airworthiness maintenance program, schedule a meeting to discuss needed program changes and deficiency resolutions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in the following:

- When all requirements for approval of the program have been met, approve operations specifications in accordance with Vol. II, Ch. 84
- Provide the operator/applicant with the original continuous airworthiness maintenance program, with instructions to provide a copy of the program to the Certificate Holding District Office.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 65 EVALUATE CONTINUING ANALYSIS AND SURVEILLANCE PROGRAM/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3333 (New); 3334 (Revision)

B. *Avionics:* 5333 (New); 5334 (Revision)

3. OBJECTIVE. This chapter provides guidance for ensuring an operator/applicant's continuous analysis and surveillance program meets the necessary requirements for certification or revision.

5. GENERAL

A. The continuing analysis and surveillance system is usually included in the operator's maintenance manual. The system ensures the adequacy of an operator's maintenance program and confirms that the program is properly followed and controlled. FAR §§ 121.373 and 135.431 allow the FAA to require revisions to an operator's maintenance program based on deficiencies or irregularities revealed by the continuing analysis and surveillance system.

B. *Continuing Analysis and Surveillance Program Functions*

(1) A continuing analysis and surveillance system has two functions:

- Examining the administrative and supervisory aspects of the operator's program (including work done outside of the operator's basic organization)
- Monitoring the performance of affected aircraft systems, including aircraft engines and components

(2) This normally includes a system of data collection and analysis which may or may not be part of a reliability program.

C. The continuing analysis and surveillance system also addresses operational matters, such as maintenance scheduling, control and accountability of work forms, conformity to technical instruction, and compliance with procedural requirements. Additionally, it examines the adequacy of equipment and facilities, parts protection and inventory, mechanic competency, and shop orderliness.

7. REVIEWING OPERATOR'S PROGRAM

A. For maximum effectiveness, the analysis and surveillance should be separated from other maintenance functions. Some operators establish a separate quality assurance organization for this purpose. Others assign this function to their inspection/quality control organization. When analysis and surveillance responsibility is assigned to an organizational unit that has other duties, these functions should be performed independently of the other duties.

B. Mechanical performance analysis may be performed as part of a reliability program or as an independent data collection and analysis system (See Advisory Circular 120-17, Maintenance Control by Reliability Methods). The system should include charting or other appropriate methods for recording and accounting of pertinent data at specified intervals. This will ensure continuous program operation. Data collection and analysis are essential elements for supporting the condition-monitoring process.

C. The use of contract agencies tends to complicate an operator's continuous analysis and surveillance system. When a contractor fails to provide the operator with essential information (such as failure characteristics, service times, etc.), gaps are created in the operator's data collection. This obstructs the continuous analysis and surveillance system. Therefore, the continuing analysis and surveillance program must include procedures for transmitting essential information back to the operator.

D. When aircraft fleets are grouped for purposes involving data collection, the data from the total of the fleets may provide a valid comparison for behavior of one of the fleets. However, data generated by a single airplane or a small fleet can be obscured by a larger fleet of the group.

NOTE: Unacceptable performance of a small fleet may not contribute a significant statistical impact unless data from the smaller fleet is individually reviewed.

E. When an operator uses a contractor for total maintenance support, the operator is responsible for the continuing analysis and surveillance requirement. The operator must have enough personnel and resources to accomplish both the audit and performance analysis functions.

F. The complexity and sophistication of the continuous analysis and surveillance system should relate to the certificate holder's operation. A small operator

should not be expected to have a complex system similar to a large airline. However, small operators must have a system with continuous data collection which includes specified analysis points and repetitive examinations.

G. A data collection and analysis program can use a manufacturer as a collection and analysis center if the Maintenance Review Board Report authorizes it to do so. The operator is still responsible for the development and implementation of corrective actions and the overall effectiveness of the program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of either the General Aviation or Airworthiness Inspectors Indoctrination Course
- Suggested completion of the FAA Reliability Training Course # 21813

B. *Coordination.* This task requires coordination between the Principal Operations Inspector and the Principle Avionics Inspector.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 43
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Brief Applicant On Acceptable Program and Procedures.* When an operator/applicant inquires about continuing analysis and surveillance programs, brief the operator/applicant about program requirements. Inform the operator/applicant that an acceptable program must have a continuous internal audit and analysis system that accomplishes the following:

- Evaluates the organization's performance
- Identifies the performance deficiencies
- Determines and implements corrective actions
- Determines effectiveness of corrective actions

B. *Review the Operator/Applicant's Program.* When the operator/applicant presents the complete continuing analysis and surveillance program, ensure the program audits and analyzes the following:

- Aircraft inspections
- Scheduled maintenance
- Unscheduled maintenance
- Aircraft, engine, prop and appliance repair and overhaul
- Maintenance manuals
- Mechanical Reliability Reports (MRRs)
- Mechanical Interruption Summary Reports (MISRs)
- Vendor facilities and capabilities
- Maintenance organization staffing
- Required Inspection Item Program (RII's)

C. *Review Operator's Manual.* Ensure the manual contains the following:

(1) An organizational chart that defines the lines of authority

(2) Definitions of responsibilities and duties

(3) The means by which the information will flow within the operator/applicant's organization and between contractor/vendors and the operator/applicant

(4) Examples of forms or reports that are used

(5) Procedures that include a record review covering the following items:

- Accountability for all inspection requirements
- Routine and non-routine maintenance records
- Overhaul records
- Methods of airworthiness directives compliance
- Service bulletin compliance
- Major repairs and alterations approval data.

D. *Evaluate Available Staffing.* Ensure that the staffing described in the manual is available and appropriate for the complexity of the operator/applicant's operation.

E. *Analyze Results.* Upon completion of review, analyze the results and determine whether the operator/applicant's program meets all requirements.

F. *Meet With Operator/Applicant To Discuss Deficiencies.* Discuss discrepancies and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in acceptance of the continuous analysis and surveillance program or revision.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 66 APPROVE RELIABILITY PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3331 (New); 3332 (Revision)

B. *Avionics:* 5331 (New); 5332 (Revision)

3. OBJECTIVE. This chapter provides guidance to inspectors approving reliability programs for FAR Parts 121 and 135 operator/applicants.

5. GENERAL. This task is performed by maintenance and avionics inspectors assigned to the operator/applicant. Approving a reliability program is one of the most complex duties of an airworthiness inspector. Special attention must be given to evaluate each element of a proposed program.

A. Reliability programs have been adopted by many operators. These programs are essentially a set of rules and practices for managing maintenance processes.

B. Reliability programs establish time limitations or standards for determining intervals between overhauls, inspections and checks of airframes, engines, propellers, appliances and emergency equipment. Guidance on the program elements is listed in Advisory Circular 120-17, Maintenance Control by Reliability Methods, as amended, and in the "Airline/Manufacturer Maintenance Program Planning Document", MSG-3.

C. The first generation of formal air carrier maintenance programs was based on the belief that each functional part of an aircraft needed periodic disassembly inspection. Time limitations were established for service, checks, and inspections. Periodically, the entire aircraft was disassembled, overhauled, and reassembled to maintain the highest level of safety. This was the origin of the first primary maintenance process referred to as "hard-time".

D. As the industry grew and adopted more complex aircraft, literal application of the hard-time primary maintenance process became obsolete. Each component and part no longer required scheduled overhaul on a fixed-time basis. A second primary maintenance process evolved, known as "on-condition". This process is assigned to components on which continued airworthiness can be determined by visual inspection, measurements, tests, or other means without disassembly, inspection, or overhaul.

E. The FAA controlled these programs by approving hard-time or on-condition check periods individually for the aircraft, engines, and components. The method of reliability control is oriented toward mechanical performance rather than predicting failure points.

F. In the 1960's, the FAA published Advisory Circular 120-17 and approved the initial reliability program. This allowed air carriers to explore the relationship between age and reliability and establish primary maintenance processes and time limitations. After AC 120-17 was issued, the aviation industry's 747 steering group and an AFS-300 747 advisory group developed a new technique for designing initial maintenance programs, called "decision tree analysis". This resulted in a third primary maintenance process called "condition-monitoring". Condition monitoring applies to aircraft systems and equipment that have design characteristics for which hard-time or on-condition checks are not effective.

G. In the 1970's, the aviation industry and the FAA developed a new concept, MSG-3. MSG-3 adjusted the decision logic flow paths to provide a more rational procedure for task definition and a more straightforward and linear progression through the decision logic. MSG-3 logic takes a "from-the-top-down" or "consequence-of-failure" approach. At the outset, the functional failure is assessed for consequence of failure and is assigned one of two basic categories—safety or economics. MSG-3 logic is task-oriented, not process-oriented like MSG-2.

H. The three primary maintenance processes have no order of importance. Each has its own place in an effective maintenance program. The correct process is determined by using the "decision tree", which considers the design of the systems and equipment, its use in the aircraft, and the user's economic decisions (Ref. AC 120-17).

7. PRIMARY MAINTENANCE PROCESSES

A. *Hard-Time (HT): Overhaul Time Limit or Part Life Limit.* This is a preventive primary maintenance process. Hard-time requires that a system, component, or appliance be either overhauled periodically (time limits) or removed from service (life limit). Time limits may only be adjusted based on operating experience or tests, in accordance with procedures in the operator's approved reliability program.

B. *On-Condition (OC).* This is also a preventive primary maintenance process. It requires that a

system, component or appliance be periodically inspected or checked against some appropriate physical standard to determine if it can continue in service. The standard ensures the unit is removed from service before failure during normal operation. These standards may be adjusted based on operating experience or tests, as appropriate, in accordance with a carrier's approved reliability program or maintenance manual.

C. *Condition Monitoring (CM).* This process is for systems, components, or appliances that have neither hard-time nor on-condition maintenance as their primary maintenance process. It is accomplished by appropriate means available to an operator for finding and solving problem areas. The user must control the reliability of systems or equipment based on knowledge gained by analysis of failures or other indications of deteriorations.

9. NEW AIRCRAFT. The lack of real experience with new aircraft requires careful, detailed study of their characteristics to determine which components or systems would probably benefit from scheduled maintenance (hard-time or on-condition).

A. The initial maintenance programs for the B-747, DC-10, and L-1011 aircraft were developed by special teams of industry and FAA personnel. Using the decision tree, these teams identified potential tasks and determined which maintenance tasks must be performed to ensure operating safety or determine essential hidden function protection. The remaining tasks were evaluated to determine if they were economically useful.

B. This evaluation provided a systematic review of the aircraft design so that, in the absence of real experience, the best maintenance process can be employed for each component or system. The B-747, DC-10, and L-1011 aircraft operating experience confirmed the effectiveness of these procedures.

11. APPLYING THE CONDITION MONITORING PROCESS TO EXISTING FLEETS. The condition monitoring process may be applied to existing fleets if the operator has a suitable program to manage condition monitored items. The determination of components or items eligible for condition monitoring must be made on an individual basis by the operator in accordance with Advisory Circular 120-17. The determination will be based upon actual operating experience and relevant information from the operator's reliability or equivalent data collection and analysis system.

13. TRANSFERRING ON-CONDITION ITEMS TO CONDITION-MONITORING. Items that have been on-condition may be changed to the condition-monitored category. The applicant must substantiate the change based on periodic checks and tests of the item. For example, an operator may have scheduled condition checks for an originally forecast failure that did not materialize in operational use. An analysis of wear patterns, failure modes and effects, and hidden function factors would be made in accordance with the "Airline/Manufacturer Maintenance Program Planning Document," MSG-2/3, and/or the operator's reliability program.

15. DATA COLLECTION SYSTEM

A. Typical sources of data collection include the following:

- Unscheduled removals
- Confirmed failures
- Pilot reports
- Sampling inspections
- Shop findings
- Functional checks
- Bench checks
- Service difficulty reports
- Mechanical Interruption Summaries
- Other sources the operator considers appropriate

B. Not all of these sources may necessarily be covered in each and every program. However, the availability of additional information provides the operator with a span of invaluable operating history for determining success or failure in meeting program goals.

C. Data collected must be accurate and factual to support a high degree of confidence in any derived conclusion. It must be obtained from units functioning under operational conditions and must relate directly to the established levels of performance.

17. DATA ANALYSIS AND APPLICATION TO MAINTENANCE CONTROLS. The objective of data analysis is to recognize the need for corrective action, establish what corrective action is needed, and determine the effectiveness of that action.

A. *Data Analysis System.* Data analysis is the process of evaluating mechanical performance data to identify characteristics indicating a need for program adjustment, revising maintenance practices, improving (modifying) hardware, etc. The first step in analysis is

to compare data to a standard which represents acceptable performance. The standard may be a running average, tabulation of removal rates for past periods, graphs, charts, or any other means of depicting a "norm".

B. *Programs Incorporating Statistical Performance Standards ("Alert" Programs)*

(1) Reliability programs developed under AC 120–17, as amended, and earlier criteria use parameters for reliability analysis such as delays per 100 departures for an aircraft system. They incorporate performance standards as described in paragraph 19 of this section. These standards define acceptable performance.

(2) System performance data usually is reinforced by component removal or confirmed failure data. The condition-monitored process can readily be accommodated by this type of program.

C. *Programs Using Other Analysis Standards ("Non-alert" Programs).* Data compiled to assist in the day-to-day operation of the maintenance program may be used effectively as a basis for continuous mechanical performance analysis.

(1) Mechanical interruption summaries, flight log review, engine monitoring reports, incident reports, and engine and component analysis reports are examples of the types of information suitable for this monitoring method. The number and range of inputs must be sufficient to provide a basis for analysis equivalent to the statistical standard programs.

(2) Actuarial analysis should be conducted periodically to ensure current process classifications are correct.

19. PERFORMANCE STANDARDS

A. The following factors are acceptable for establishing or revising a reliability program's performance standards:

(1) Past and present individual operator and industry experience. If industry experience is used, the program must include a provision for reviewing the standard after the operator has gained 1 year of operating experience.

(2) Performance analyses of similar equipment currently in service

(3) Aircraft or equipment manufacturers' reliability engineering analyses

(4) History of experience where reliability standards were acceptable to the airline industry

B. If the program does not incorporate statistical performance standards or significantly deviates from the instructions in Advisory Circular 120–17, the program, together with appropriate comments, shall be forwarded to the Manager, Aircraft Maintenance Division, AFS–300, through the regional Flight Standards Division.

21. EVALUATING PROGRAM DISPLAYS AND STATUS OF CORRECTIVE ACTION PROGRAMS AND REPORTING

A. *Corrective Action System.* Corrective action should be positive enough to effectively restore performance to an acceptable level within a reasonable time. The corrective action system must include provisions for the following:

(1) Notifying the organization responsible for taking the action

(2) Obtaining periodic feedback until performance reaches an acceptable level

(3) Encompassing methods that have been established for the overall maintenance program, such as work orders, special inspections procedures, engineering orders, and technical standards

(4) Critical failures in which loss of function or the secondary effects of failure could affect the airworthiness of the aircraft

B. *Statistical Performance Standards System*

(1) A performance measurement expressed numerically in terms of system or component failure, pilot report, delay, etc. (bracketed by hours of aircraft operation, number of landing, operating cycles, or other exposure measurement) serves as the basis for the standard. Control limits or alert values are usually based on accepted statistical methods, such as standard deviations or the poisson distribution.

(2) Some applications use an average or base line method. The standard should be adjustable and should reflect the operator's experience during seasonal and environmental condition changes and variations.

(3) The program should include procedures for periodic review and adjusting the program as appropriate.

(4) The program should include procedures for monitoring new aircraft until sufficient operating experience is available to compute performance standards.

C. *Data Display and Reporting System*

(1) Operators with programs incorporating statistical performance standards (alert programs) should develop a monthly report, with appropriate data displays, summarizing the previous month's activity. This report should include the following:

(a) All aircraft systems controlled by the program in sufficient depth to enable the FAA and other recipients to evaluate the effectiveness of the total maintenance program

(b) Systems that exceeded the established performance standards and discussion of what action has been taken or planned

(c) An explanation of changes that have been made or are planned in the aircraft maintenance program, including changes in maintenance and inspection intervals and changes from one maintenance process to another

(d) A discussion of continuing over-alert conditions carried forward from previous reports

(e) The progress of corrective action programs

(2) Programs using other analytical standards (non-alert programs) should consolidate or summarize significant reports used in controlling their program to provide for evaluating program effectiveness. These reports may be computer printouts, summaries, or other forms. A typical program of this type reports the following information:

- Mechanical Interruption Summary (MIS)
- Mechanical Reliability Reports (MRR)
- Maintenance process and interval assignments (master specification)
- Weekly update to the maintenance process and interval assignments
- Daily repetitive item listing by aircraft
- Monthly component premature removal report, including removal rate
- Monthly engine shutdown and removal report
- Quarterly engine reliability analysis report
- Engine threshold adjustment report
- Worksheets for maintenance process and interval changes (not provided to FAA but FAA approves process changes)

23. INTERVAL ADJUSTMENTS AND PROCESS CHANGES

A. *Maintenance Intervals.* Reliability programs provide an operator with a method of adjusting maintenance, inspection, and overhaul intervals without prior FAA approval. This does not relieve the operator or the FAA of their responsibilities regarding the effects of the program on safety.

B. *Procedures.* Procedures for adjusting maintenance intervals must be included in the program. Maintenance interval adjustments should not interfere with ongoing corrective action. There should be special procedures for escalating systems or components whose current performance exceeds control limits.

(1) Typical considerations for adjusting hard-time or on-condition intervals include, but are not limited to, the following:

- Sampling
- Actuarial studies
- Unit performance
- Inspector or maintenance findings
- Pilot reports

(2) Methods for adjusting aircraft/engine check intervals should be included if the program controls these intervals. Sampling criteria should be specified.

C. *Classifying Maintenance Processes.* The system should include procedures for initial classification of maintenance processes (hard time, on-condition, condition monitoring) and for changing from one process to another. It also should include authority and procedures for changing maintenance specifications and related documents to reflect the interval adjustment or primary process change.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135

- Successful completion of the FAA Aircraft Maintenance Reliability Program Course #21813
- Previous experience with the type of equipment the operator/applicant proposes to include in the program

B. *Coordination.* This task requires coordination between maintenance, avionics, Region and headquarters.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 120–17, as amended
- MSG–3

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Meet With Operator/Applicant.* When related program information is requested, provide Advisory Circular 120–17, as amended. Advise operator/applicant of the following program requirements:

- Program application
- Organizational structure
- Data Collection system
- Methods of data analysis and application to maintenance control
- Procedures for establishing and revising performance standards
- Definition of significant terms
- Program displays and status of corrective action programs
- Procedures for program revision
- Procedures for maintenance control changes

B. *Evaluate Program Application Procedures.* When the applicant submits a formal program, determine the program document defines the following:

(1) Components, systems, or complete aircraft controlled by the program. Individual systems and/or components are identified by Air Transportation Association Specification 100. A list of all components controlled by the program must be included as an appendix to the program document.

(2) The portion of the maintenance program controlled by the reliability program (overhaul and/or inspection, check periods, etc.).

C. *Evaluate Organizational Structure.* The structure must be adequately described and address committee membership, if appropriate, and meeting frequency.

(1) Ensure that the reliability program includes an organizational chart that shows the following:

(a) The relationships among organizational elements responsible for administering the program

(b) The two organizational elements responsible for approving changes to maintenance controls and specifying the duties and responsibilities for initiating maintenance program revisions

NOTE: One of the two organizations must have inspection or quality control responsibility or have overall program responsibility.

D. *Evaluate Organizational Responsibilities*

(1) Determine if the reliability program document addresses the following:

(a) The method of exchanging information among organizational elements. This may be displayed in a diagram.

(b) Activities and responsibilities of each organizational element and/or reliability control committee for enforcing policy and ensuring corrective action

(2) Ensure authority is delegated to each organizational element to enforce policy.

E. *Evaluate Data Collection System* (see Section 1, paragraph 15).

(1) Ensure the reliability document fully describes the data collection system for the aircraft, component, and/or systems to be controlled. The following must be addressed:

- Flow of information
- Identification of sources of information
- Steps of data development from source to analysis
- Organizational responsibilities for each step of data development

(2) Ensure the document includes samples of data to be collected, such as powerplant disassembly and inspection reports, component condition reports, mechanical delay and cancellation reports, flight log reports, premature removal reports, in-flight shutdowns, confirmed failure reports, internal leakage reports and engine shutdown reports.

(3) Ensure the reliability document includes a graphic portrayal of program operations. It must be a closed loop and show source data, data collection, and analysis.

F. *Evaluate Methods of Data Analysis and Application to Maintenance Controls.* Ensure the data analysis system includes the following:

(1) One or more of the types of action appropriate to the trend or level of reliability experienced, including:

- Actuarial or engineering studies employed to determine a need for maintenance program changes
- Maintenance program changes involving inspection frequency and content, functional checks, overhaul procedures, and time limits
- Aircraft, aircraft system, or component modification or repair
- Changes in operating procedures and techniques

(2) Effects on maintenance controls such as overhaul time, inspection and check periods, and overhaul and/or inspection procedures

(3) Procedures for evaluating critical failures as they occur

(4) Documentation used to support and initiate changes to the maintenance program, including modifications, special inspections, or fleet campaigns. The program must reference the operator's manual procedures for handling these documents.

(5) A corrective action program that shows the results of corrective actions in a reasonable period of time. Depending on the effect on safety, a "reasonable" period of time can vary from immediate to an overhaul cycle period. Each corrective action plan or program must be made a matter of record and include a planned completion date. Samples of forms used to implement these actions must be included in the program document.

(6) A description of statistical techniques used to determine operating reliability levels

G. *Evaluate Procedures For Establishing and Revising Performance Standards*

(1) Ensure each program includes one of the following for each aircraft system and/or component controlled by the program:

- Initial performance standards defining the area of acceptable reliability
- Methods, data, and a schedule to establish the performance standard

(2) Ensure the performance standard is responsive and sensitive to the level of reliability experienced and is stable without being fixed. The standard should not be so high that abnormal variations would not cause an alert or so low that it is constantly exceeded in spite of the best known corrective action measures.

(3) Ensure the procedures specify the organizational elements responsible for monitoring and revising the performance standard, as well as when and how to revise the standard.

H. *Evaluate Definitions.* Verify that each program clearly defines all significant terms used in the program. Definitions must reflect their intended use in the program and will therefore vary from program to program. Acronyms and abbreviations unique to the program also must be defined.

I. *Evaluate Program Displays and Status of Corrective Action Programs and Reporting*

(1) Ensure the program describes reports, charts, and graphs used to document operating experience. Responsibilities for these reports must be established and the reporting elements must be clearly identified and described.

(2) Ensure the program displays containing the essential information for each aircraft, aircraft system, and component controlled by the program are addressed. Each system and component must be identified by the appropriate Air Transportation Association Specification 100 system code number.

(3) Ensure the program includes displays showing:

- Performance trends
- The current month's performance.
- A minimum of 12 months' experience

- Reliability performance standards (alert values)

(4) The program must include the status of corrective action programs. This includes all corrective action programs implemented since the last reporting period.

J. *Evaluate Procedures For Interval Adjustments and Process Changes*

K. *Evaluate Procedures For Program Revisions.* The reliability document must accomplish the following:

(1) Identify and isolate areas which require FAA approval for program revision, including the following:

- Reliability measurement
- Changes involving performance standards, including instructions relating to the development of these standards
- Data collection system
- Data analysis methods and application to maintenance program
- Primary maintenance process changes
- Adding or deleting components/systems
- Adding or deleting aircraft types
- Any procedural or organizational change concerning program administration

(2) If the operator proposes that all revisions to the program document be approved by the FAA, isolation of those areas requiring FAA approval is not required. However, the document must recognize each of the above requirements and must contain procedures for adequately administering and implementing changes required by these actions.

(3) Identify the organizational element responsible for approving amendments to the program

(4) Provide a periodic review to determine that the established performance standard is still realistic

(5) Provide procedures for distributing approved revisions

(6) Reference the operator's manual and provide the overhaul and inspection periods, work content, and other maintenance program activities controlled by the program

L. *Evaluate Procedures For Maintenance Control Changes.* Ensure the reliability program document addresses the following:

(1) Procedures for maintenance control changes to the reliability program

(2) The organizational elements responsible for preparing substantiation reports to justify maintenance control changes. At least two separate organizational elements are required, one of which exercises inspection or quality control responsibility for the operator.

(3) Processes used to determine maintenance control changes are specified (for example, sampling, functional checks, bench checks, decision tree analysis, and unscheduled removal)

(4) Procedures covering all maintenance program activities controlled by the program

(5) Procedures for amending operations specifications, as required

(6) Procedures to ensure maintenance interval adjustments will not interfere with ongoing corrective actions

(7) Critical failures and procedures for taking corrective action

(8) Procedures for notifying the Certificate Holding District Office when increased time limit adjustments or other program adjustments occur are addressed

M. *Informal Reliability Program Review.* Upon completion, record all deficiencies noted. Determine appropriate corrective action(s) to be taken.

N. *Meet With Operator/Applicant to Discuss Deficiencies.* Deficiencies noted in the program must be given to the operator/applicant in writing.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in approval of the operator's reliability program and operations specifications in accordance with Vol. II, Ch. 84.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 67 APPROVE CONTRACT RELIABILITY PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3331 (New); 3332 (Revision)

B. *Avionics:* 5331 (New); 5332 (Revision)

3. OBJECTIVE. This chapter provides guidance to inspectors approving contract reliability programs for FAR Part 121 and § 135.411(a)(2) operators.

5. GENERAL

A. *Definitions*

(1) *Contractor:* A FAR Part 121 or § 135.411(a)(2) operator performing maintenance in accordance with its approved continuous airworthiness maintenance program on another FAR Part 121 or § 135.411(a)(2) operator's aircraft, aircraft engines, propellers, appliances, and/or components.

(2) *Operator:* A FAR Part 121 or § 135.411(a)(2) operator arranging with a contractor for maintenance of its aircraft, aircraft engines, propellers, appliances, and/or components in accordance with the contractor's program.

B. *Responsibility.* This task is performed by maintenance and avionics inspectors assigned to the operator/applicant. Special attention must be given to evaluate each element of a proposed program.

7. CONTRACTUAL MAINTENANCE AGREEMENTS

A. Contractual maintenance agreements are used by operators for various reasons, including:

- The impracticality of staffing and equipping maintenance facilities
- Lacking a technical support staff to develop effective maintenance programs
- Insufficient reliability control due to a lack of statistical data

B. Under contractual maintenance agreements, an operator's aircraft are treated as part of a contractor's operating fleet. The operator is not required to develop its own reliability program for this arrangement. The operator must, however, have a continuing analysis and surveillance system (FAR §§ 121.373 and 135.431) and must participate in the contractual arrangement as necessary to uphold its airworthiness responsibilities.

C. An operator must provide the Principal Airworthiness Inspector with information and data needed to show the effectiveness of this agreement.

D. Traditionally, an aircraft maintenance program is based on:

- Integrity of the system, component, or installation
- The capability of the facility performing the maintenance
- The types of operation and environmental conditions in which the equipment is used

E. Equipment similarities and operating characteristics, such as utilization, flight cycle length, and environment must be considered when evaluating a contractual arrangement. Program approval and the need to adjust inspection intervals, overhaul periods, etc., must be based on the suitability of the program.

9. OPERATOR AND CONTRACTOR COMPATIBILITY. When evaluating a contractual arrangement for a reliability program, the following must be considered:

A. *Equipment.* When model, configuration, or previous maintenance programs vary between the operator's equipment and the contractor's equipment, the program must identify the maintenance tasks required to include the operator's equipment in the contractor's program. The program also must show additional tasks required to address specific differences in equipment.

B. *Utilization.* If the operator's projected annual utilization differs significantly from the contractor's, consideration should be given to imposing calendar limits for inspection intervals in place of or in addition to flight hours.

C. *Flight Cycle Length.* If the operator's ratio of flight hours per cycle differs significantly from the contractor's ratio, the operator's maintenance program may need adjustment to compensate for the differences.

D. *Environment.* The operator's maintenance program may also need to be adjusted if the operating environments of the operator and contractor differ significantly. The operator may need to change exist-

ing maintenance tasks, adjust intervals, and/or add new maintenance tasks.

11. RELIABILITY PROGRAM DOCUMENT. When an air carrier develops reliability programs for use by other air carriers, the reliability program document must define the responsibilities of the participating air carriers and include procedures for interface between the two. The document must be based on the premise that the operator adopts appropriate portions of the contractor's approved aircraft maintenance program. The reliability program must meet the requirements of Vol. II, Ch. 66.

13. DATA ANALYSIS. The contractor's reliability program must describe the data analysis system. The contractor should consolidate all data collected, analyze the data, and return it to the operator in a usable form. This analysis should compare the mechanical performance of the operator's aircraft to acceptable levels and to the performance of the contractor's fleet.

15. PROGRAM DISPLAYS AND STATUS OF CORRECTIVE ACTION PROGRAMS. Displays and reports highlight systems that have exceeded the established performance standard. Over alert conditions should be carried over from previous reports and a status of ongoing corrective action should be provided.

A. The contractor's program must describe the reports, charts, and graphs used to document operating experience. Responsibilities for these reports must be established and the reporting elements must be clearly identified and described.

B. Program display containing the essential information for each aircraft, aircraft system, and component controlled by the program must be described. Each system and component must be identified by the appropriate Air Transportation Association Specification 100 system code number.

C. The following must be displayed:

- Performance trends
- The current month's performance (graphical or tabular presentations may be used)
- A minimum of 12 months' experience
- The reliability performance standards (alert values)

D. The status of corrective action programs must include all corrective action programs implemented since the last reporting period.

E. The contractor must have manual procedures or a contractual requirement to provide the operator with reports that reflect performance experience and status of corrective action.

17. CONTRACTUAL AGREEMENT. The requirements imposed on the contractor by the operator's maintenance program, reliability program, and operations specifications must be supported by the contractual agreement. The operations specifications issued to the operator are not binding on the contractor. It is the operator's responsibility to ensure that all requirements of the specifications, program, and manual are met.

19. APPROVAL. The FAA Principal Airworthiness Inspectors assigned to the operator approve the use of the reliability program by issuing operations specifications. Changes must be approved by the Principal Airworthiness Inspectors assigned to the operator either on an individual basis or by procedures approved as part of the reliability program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Previous experience with the type of equipment the operator/applicant proposes to include in the program

B. *Coordination*

- This task requires coordination between maintenance, avionics, the regional office, and headquarters.
- This task must be coordinated with the contractor's Certificate Holding District Office.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 120–17, as amended

- MSG-3
- The operator's maintenance program
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Provide Applicant With Appropriate Information*

(1) Upon request for reliability program information, provide Advisory Circular 120-17.

(2) Advise the applicant that the application for authorization to use a contractor's reliability program consists of at least the following documents:

- Contractor's approved reliability program
- Operator's manual procedures to support the reliability program
- Operations specifications checklist/ worksheet
- The contractual agreement between the applicant and the contractor

(3) Advise the applicant that the reliability program must include the following:

(a) *Applicant and contractor:*

- Adequate organizational structure
- Data collection and analysis
- Program revisions
- Details of contractual arrangements

(b) *Contractor only:*

- Adjustment of time limits and process changes
- Definition of significant terms
- Procedures for revising performance standards

(c) Provisions for compatibility between the applicant and contractor regarding types of equipment, operational environment, flight length, and aircraft utilization.

B. *After Receiving the Application, Contact the Contractor's Certificate Holding District Office.* Determine the following:

(1) The contractor has a valid certificate, an approved continuous airworthiness maintenance program, and an approved reliability program (if applicable) for the type equipment operated by the operator

(2) The content of the contractor's reliability program (if applicable)

(3) The types of equipment the operator has in operation

C. *Determine That the Operator's and the Contractor's Equipment, Utilization, Flight Cycle Length, and Environment Are Compatible*

D. *Evaluate Program Application Procedures.* Ensure that the contractor's reliability program includes the following:

(1) Components, systems, or complete aircraft controlled by the program. Individual systems and/or components are identified by Air Transportation Association Specification 100. A list of all components controlled by the program must be included.

(2) A complete aircraft inspection program, including the portion of the maintenance program controlled by the reliability program (overhaul and/or inspection, check periods, etc.)

(3) Evaluation of conditions and trends found during the inspection of the aircraft that will result in corrective action

E. *Evaluate the Operator's and the Contractor's Organizational Structures.* The organizational charts must show the following:

(1) The relationship between the participants responsible for administering the program

(2) The authority delegated to each organizational element

F. *Evaluate Organizational Responsibilities*

(1) Ensure the contractor's reliability program document and the operator's procedures describe how information is exchanged between organizational elements. This may be displayed in a diagram.

(2) Ensure the reliability program document and the operator's procedures define the activities and responsibilities of each organizational element (Engineering, Quality Control, Flight Operations, etc.)

and/or reliability control committee for enforcing policy and ensuring corrective action.

(3) Compare the operator's organizational structure and personnel duties and responsibilities with the requirements in the contractual agreement and the reliability program.

G. *Evaluate Data Collection System*

(1) Ensure the contractor's program fully describes the data collection system as it relates to the aircraft, components, and/or systems to be controlled. The program must:

- Address flow of information
- Identify sources of information
- Specify steps of data development from source to analysis
- Describe organizational responsibilities for each step of data development

(2) Ensure the program includes samples of data to be collected, such as reports for the following:

- Powerplant disassembly and inspection
- Component condition
- Mechanical delay and cancellation
- Flight log
- Premature removal
- In-flight
- Confirmed failure
- Internal leakage
- Engine shutdown

(3) Verify that the operator's manual includes procedures for collecting the required data and sending it to the contractor in accordance with the contractual arrangement. The required data should include corrective actions as well as shop repair records for work performed away from the contractor's facility.

H. *Evaluate Methods of Data Analysis and Application to Maintenance Controls.* Ensure the data analysis system includes the following:

(1) One or more of the types of action appropriate to the trend or level of reliability experienced, such as:

- Actuarial or engineering studies employed to determine a need for maintenance program changes
- Maintenance program changes involving inspection frequency and content, functional checks, overhaul procedures, and time limits
- Aircraft, aircraft system, or component modification or repair
- Changes in operating procedures and techniques

(2) Effects on maintenance controls, such as overhaul time, inspection and check periods, and overhaul and/or inspection procedures

(3) Procedures for evaluating critical failures as they occur

(4) Documentation required for maintenance program changes, modifications, special inspections, or fleet campaigns. The contractor's manual must provide procedures for retaining these documents.

(5) A corrective action program that shows the results of corrective actions in a reasonable period of time. Depending on the effect on safety, a "reasonable" period of time can vary from immediate to the time period of an overhaul cycle.

(6) A description of statistical techniques used to determine operating reliability levels

(7) Procedures to inform the operator of changes to maintenance controls

(8) Data analysis that considers the past experience of both the contractor and the operator

(9) An adequate, timely flow of information between the contractor and the operator

I. *Evaluate Operator's Manual.* Ensure the operator has manual procedures to accomplish the following:

(1) Performing corrective action through the person responsible

(2) Notifying persons responsible for taking corrective action

(3) Informing the contractor when corrective action changes were made and the extent of those changes

(4) Follow-up to ensure corrective actions taken are effective

NOTE: A corrective action is effective if the out-of-limit condition is brought back to an acceptable level of performance.

J. *Evaluate Procedures For Revising the Reliability Program.* Ensure there are procedures for the contractor to obtain FAA approval before changing any of the following elements of the reliability program:

- Performance standards
- Data collection
- Data analysis system
- Process/task
- Procedures/organization concerning program administration
- Changes from alert-type programs to non-alert-type programs or vice versa
- Adding or deleting aircraft, components, or systems

NOTE: Changes to these aspects of the reliability program must be coordinated between the FAA Principal Airworthiness Inspectors assigned to the operator and the contractor.

K. *Evaluate Procedures For Revising Performance Standards*

(1) Ensure the contractor's procedures specify the organizational elements responsible for monitoring and revising the performance standard and the content of those revisions. Performance standards should be revised when they are not responsive or sensitive enough to reflect changes in actual performance.

(2) If the operator submits a program which does not incorporate statistical performance standards or which deviates significantly from Advisory Circular 120-17, contact the contractor's assigned Principal Airworthiness Inspector.

(a) Examine the basis for the deviations and the integrity of the program and determine if any restrictions apply.

(b) If unresolved issues about the contractor's program remain, contact the regional office for guidance.

L. *Evaluate Definitions.* Verify that the reliability program clearly defines unique terms, acronyms, and abbreviations as applied to the program.

M. *Evaluate Program Displays and Status of Corrective Action Programs.* Ensure that the contractual agreement or the contractor's manual requires the contractor to provide the operator with reports that reflect performance experience and corrective action status.

N. *Evaluate Procedures For Maintenance Control Changes.* Verify that the contractor's reliability program document:

(1) Describes the procedures for maintenance control changes to the reliability program

(2) Identifies the organizational elements responsible for preparing reports that justify maintenance control changes. At least two separate organizational elements are required, one of which exercises inspection or quality control responsibility for the operator.

(3) Specifies the processes used to determine maintenance control changes, such as sampling, functional checks, bench checks, decision tree analysis, and unscheduled removal

(4) Provides procedures to cover all maintenance program activities controlled by the program

(5) Recognizes critical failures and contains procedures for taking corrective actions

(6) Provides procedures to ensure that any maintenance interval adjustments will not interfere with ongoing corrective actions

(7) Contains procedures for notifying the Certificate Holding District Office when time limitations adjustments or other program changes occur

O. *Review Contractual Arrangement.* Ensure the contract:

(1) Identifies participating parties

(2) Identifies applicable equipment

(3) Defines responsibilities of contracting parties

(4) Supports the responsibilities of the contractor specified in the reliability program

P. *Inspect Contract Maintenance Facility.* Determine if the contractor is capable of meeting its contractual obligations. Provide the district office with information necessary to perform the inspections, such as the contractual arrangement and operator's manual procedures.

Q. *Analyze Findings*

(1) Record all deficiencies noted.

NOTE: If discrepancies are found in the approved reliability program, contact the contractor's Principal Airworthiness Inspector to resolve the discrepancies.

(2) Determine appropriate corrective action(s) to be taken.

(3) Advise applicant of discrepancies. Agree on corrective action to be taken.

R. *Approve Reliability Program.* After discrepancies are resolved, authorize the use of the reliability program by issuing operation specifications (See Vol. II, Ch. 66 and 84).

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task results in one of the following:

- Issued operations specifications authorizing the use of the contractor's reliability program
- A letter to the applicant denying the authorization

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 68 EVALUATE FAR PART 135 (9 OR LESS) OPERATOR

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3204/3206

B. *Avionics:* 5204/5206

3. OBJECTIVE. The purpose of this task is to evaluate the aircraft, facilities, maintenance programs, and records for certification of a FAR Part 135 (9 or less) operator.

5. GENERAL. The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance or denial. The process consists of the following five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

A. *Inspection/Maintenance Programs.* Applicants for certification under Part 135, nine-or-less passenger seats, must comply with the requirements of FAR § 135.411(a)(1). This regulation gives them the option of inspecting or maintaining their aircraft under one of the following programs:

(1) A 100 hour/annual as designed by the manufacturer or in accordance with FAR § 91.169(d) or appendix D of FAR Part 43.

(2) An approved aircraft inspection program, in accordance with FAR § 135.419

(3) A continuous airworthiness maintenance program. If such a program is to be used, it must be approved in accordance with Vol. II, Ch. 64.

(4) For large and multiengined turbine powered airplanes, the requirements of FAR §§ 91.169 (e) and (f). These applicants also may choose to operate under an approved aircraft inspection program as provided for in FAR § 135.419.

B. *Cargo Operations, FAR Part 135 (9 or less).* The requirements of FAR § 91.169(b) only apply to aircraft carrying revenue passengers. The 100 hour inspection for aircraft carrying cargo only is not required.

C. An applicant for operations of aircraft under Part 135 (9 or less) must comply with the additional maintenance requirements of FAR § 135.421 for engines, propellers, rotors, and emergency equipment. An applicant may use either the manufacturer's recommended maintenance requirements or a program approved by the administrator.

D. *Carry-on Oxygen Equipment for Medical Purposes.* The oxygen equipment must be of an approved type and must be under an approved maintenance program if owned by the applicant. The program will be approved for use on operations specifications as an item of emergency equipment.

7. PREAPPLICATION PHASE

A. *Initial Inquiry.* An initial inquiry or request for information regarding certification as a 135 operator (9 or less) may be verbal or in writing.

B. *Preapplication Statement of Intent (PASI).* A Preapplication Statement of Intent should be submitted only after the applicant has reviewed the appropriate regulations and advisory material. The submission of a completed Preapplication Statement of Intent shows intent and prompts the district office to allocate resources.

C. *Certification Team.* The district office will select a certification team, consisting of at least one maintenance inspector, one avionics inspector, and one operations inspector. One of these will be designated as a Certification Project Manager (CPM). The Certification Project Manager will be the primary contact and FAA spokesperson for the certification project.

D. *Preapplication Meeting.* This meeting is an opportunity to discuss with the applicant the next step in the process. Before discussing procedures for continuing the certification process, the team should ensure the applicant understands the regulations and advisory materials. The

applicant should be encouraged to ask questions and to clarify anything not fully understood.

9. FORMAL APPLICATION PHASE

A. *Task.* During the Formal Application Phase, the team conducts a cursory review of the application and attachments to determine that all documents have been submitted and are complete. In-depth reviews are conducted during the Document Compliance Phase.

B. *Review Results.* Based on the results of the cursory review of the application and any meetings with the applicant, the Certification Project Manager must accept or reject the application for processing and advise the applicant. In the case of rejection, the Certification Project Manager must return the application and attachments with an explanation as to why the application was found unacceptable.

11. DOCUMENT COMPLIANCE. During this phase, the formal application and other documents supplied by the applicant will be reviewed. The application will be accompanied by the following documents:

- General operating manual (if applicable)
- Initial compliance statement
- Proving flight plan (if applicable)
- Any other document appropriate for the particular type of operation to be conducted

13. DEMONSTRATION AND INSPECTION PHASE. In this phase, the certification team determines the effectiveness of the applicant's proposed procedures and programs. The team ensures facilities and equipment are satisfactory and emphasizes compliance with regulations and safe operating practices. Throughout this phase, the Certification Project Manager must ensure that each aspect of the required demonstration is observed and either accepted or denied.

15. CERTIFICATION PHASE. An applicant is entitled to a certificate when:

- The certification process in completed
- Each significant unsatisfactory item has been corrected
- The applicant has met all regulatory requirements
- It has been determined the applicant is capable of complying with the Federal Aviation Regulations
- The applicant's ability to conduct operations in a safe manner has been demonstrated

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Successful completion of the Airworthiness Inspectors Indoctrination String Course
- Previous experience with Part 135 (9 or less) certifiction and surveillance

B. *Coordination.* This task requires coordination between Maintenance, Avionics, and Operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, and 91
- AC 20-42, Hand Fire Extinguishers for Use in Aircraft, as amended
- AC 39-7, Airworthiness Directives for General Aviation Aircraft, as amended
- AC 43.9, Maintenance Records, as amended
- AC 120-27, Weight and Balance Programs, as amended

- AC 135-3, Air Taxi Certification, as amended
- AC 135-10, Approved Aircraft Inspection Program, as amended

B. *Forms*

- FAA Form 8400-6, Preapplication Statement of Intent
- FAA Form 8400-8, Operations Specifications
- FAA Form 8430-18, Air Carrier Certificate
- FAA Form 8430-21, Operating Certificate

C. *Job Aids.* None.

5. PROCEDURES

A. *Advise The Applicant of the Process for Certification of an Air Carrier (9 or less) and of Federal Aviation Regulation Requirements.* Provide the following:

- A Preapplication Statement of Intent
- Advisory Circular 135.3, Air Taxi Certification, as amended

B. *Review the Preapplication Statement of Intent For Content, Completeness, and Acceptability*

(1) If the Preapplication Statement of Intent is unacceptable, inform the applicant of the discrepancies in writing. A new Preapplication Statement of Intent will be required to continue the certification process.

(2) If the Preapplication Statement of Intent is acceptable, check the action box and forward a copy to the regional office.

(3) The district office assigned to the project should contact AVN-120 to acquire a precertification number.

C. *Schedule a Precertification Meeting With the Applicant.* Assure that key personnel from the applicant's organization and all certification team members will be in attendance.

D. *Conduct the Precertification Meeting*

(1) Review the Preapplication Statement of Intent with the applicant to ensure that the information is current. If necessary, instruct the applicant to resubmit the Preapplication Statement of Intent.

(2) Ensure the applicant understands the applicable regulations. Advise the applicant to become familiar with the Federal Aviation Regulations and pertinent advisory circulars.

(3) Ensure the applicant and key personnel understand the certification process.

(4) Advise the applicant that the FAA will not issue a certificate until proof of Department of Transportation economic authority or DOT 298 exemption is provided.

NOTE: If at any time during the preapplication phase the applicant formally terminates certification efforts, return the Preapplication Statement of Intent to the applicant and notify the regional office and AVN-120.

E. *Receive the Formal Application and Accompanying Documentation.* These may include the following:

- A manual (as required)
- An initial compliance statement
- Operations specifications
- Schedule for proving flights (as required)
- Training curriculum
- Minimum Equipment List (MEL) (as required)
- Any other documents required by the certification team

F. *Schedule and Conduct the Formal Application Meeting*

(1) The certification team will review the application form, the initial compliance statement, and the schedule for proving flights with the applicant and key personnel from the organization.

(2) Resolve any open questions and obtain missing information.

(3) If the applicant cannot meet the regulatory requirements, the formal application and accompanying documents reject and return them to the applicant. A letter must accompany this package listing the reasons for the rejection.

G. *Review Documents Submitted By the Applicant.* Ensure each document complies with regulations. If deficiencies are found in any of the documents, send the applicant a letter outlining the deficient areas.

NOTE: The team members should remember that it is the responsibility of the applicant to develop manuals and procedures. The team can offer suggestions on how to improve the product but should avoid "writing" the document.

H. *Observe Demonstrations and Conduct Inspections*

(1) Ensure the following are acceptable:

- Station facilities (equipment, procedures, and personnel), if applicable
- Recordkeeping procedures (documentation of training, flight and duty times, flight papers, etc.), as required
- Flight control (dispatch, flight following, or flight locating capabilities)
- Inspection and maintenance program procedures
- Maintenance activities (facilities, personnel, technical information, spare parts, etc.), as required
- Weight and balance control (procedures, accuracy, and document control)
- Aircraft (conformity, maintenance records, etc.)
- Minimum Equipment List
- Aircraft proving tests (ability of applicant to operate independently, safely, and in compliance with the applicable Federal Aviation Regulations), if required
- Any other documents, procedures, facilities, and/or events appropriate for the type of operation to be conducted

(2) Inform the applicant of any deficiencies noted. Advise the applicant that corrective action will be required to continue the certification process.

I. *Prepare the Certificate.* When the applicant has met all certification requirements, fill out the certificate with the following information:

- Certificate holder's name
- Certificate holder's address (post office box not acceptable)
- Certificate number (obtain from AVN-120)
- Effective date
- District office designator
- Signature and title of district office manager

J. *Issue Operations Specifications, as Appropriate.* Operations specifications must be signed by the applicant or authorized member of the organization and the appropriate principle inspector. Give the original certificate and the operations specifications to the certificate holder.

K. *Establish the Certificate Holding District Office (CHDO) File For the Certificate Holder*

(1) Include the following information in the file:

- The Preapplication Statement of Intent
- The completed application form
- Final compliance statement
- Proving test evaluation report (if required)
- A copy of operations specifications
- A copy of the certificate
- A report by each team member, summarizing evaluations and observations from each phase of the certification process

(2) Forward one copy of the report to the regional office for review.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task results in one of the following:

- Issuance of a certificate and operations specifications (See Vol. II, Ch. 84)
- A letter to the applicant indicating denial of the certificate
- A letter to the applicant confirming termination of the certification process by the applicant

9. FUTURE ACTIVITIES

A. *Transition.* The district office manager must ensure an orderly transition from the certification process to certificate management.

B. *Post-Certification Surveillance.* Assigned inspectors should carefully observe the operator during the first 90 days of operation. Additional inspections may be necessary to determine that operating practices are performed as required.

(1) Particular attention should be directed to areas that may not have been demonstrated or observed during certification, such as cargo and passenger loading.

(2) The inspector may detect a need for changes in the methods, techniques, operation, inspection, and/or maintenance during this early period of operation.

CHAPTER 69 EVALUATE FAR PART 121/135 MAINTENANCE CONTRACTUAL ARRANGEMENT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3364

B. *Avionics:* 5364

3. OBJECTIVE. This chapter describes how to evaluate a maintenance contractual arrangement for a FAR Part 121 and § 135.411(a)(2) operator that operates its aircraft under a continuous airworthiness maintenance program.

5. GENERAL

A. *Definitions*

(1) *Contractor:* A certificate holder under FAR Part 121 or § 135.411(a)(2) that operates like equipment and performs maintenance on aircraft, engines, propellers, appliances, components, and parts in accordance with its approved continuous airworthiness maintenance program.

(2) *Operator:* A FAR Part 121 or § 135.411(a)(2) operator that arranges with a contractor for maintenance to its aircraft, aircraft engines, propellers, appliances, components, and parts in accordance with its continuous airworthiness maintenance program or the contractor's continuous airworthiness maintenance program.

B. A contractual arrangement extends the maintenance facilities and capabilities of an operator for accomplishing elements of the approved maintenance program. An operator contracting to have maintenance performed by another certificate holder may be authorized by operations specifications to adopt all or part of the contractor's maintenance program, including involvement in that contractor's reliability program.

(1) The operator retains primary airworthiness responsibility regardless of the terms of any contractual arrangement. It is the operator's responsibility to verify the suitability of the arrangement.

(2) A contractor must have the capabilities and facilities to perform the contracted work.

(3) The publications of a contractor may be adopted in part or in total by the operator as methods, techniques, and standards. The operator's manual must describe the applicability and authority of the affected publication.

(4) The maintenance manual of the operator must describe the policies and procedures for administering the contractual arrangement.

(a) FAR §§ 121.369 and 135.427 require an operator to list in its manual the persons with whom it contracts for maintenance and include a description of the contracted work.

(b) The operator should develop appropriate procedures for administering such arrangements and include these procedures in its maintenance manual.

(c) The related procedures should apply to the arrangement as a whole and should not require FAA notification or approval for each action under the authorization.

D. *Contractual Categories, Related Provisions, and Restrictions.* The following paragraphs describe general categories of contract maintenance:

(1) Category A: Operator arranges for the performance of maintenance. This category includes contracts with repair stations, certificated mechanics, or other certificated operators to repair, inspect, or overhaul engines, structures, airframes, and/or appliances. Work is accomplished in accordance with the operator's approved program. The operator's manual must list the names of these organizations and the scope of the work contracted. This type of contractual arrangement is not required to be authorized by operations specifications.

(2) Category B: Operator contracts for an all-encompassing maintenance program.

(a) In this category, all maintenance is performed in accordance with the contractor's programs, methods, procedures, and standards. The operator's equipment is considered part of the contractor's fleet for purposes of maintenance program content and maintenance intervals, including reliability control. Reliability data generated by the operator's equipment must be accounted for in the contractor's reliability program, unless data generated by the contractor's fleet is adequate and appropriate to the operator's fleet. Data generated by the operator's fleet should be compared periodically to data from the contractor's fleet. The contractor must account for all inconsistencies. This type of contractual arrangement must be

authorized by operations specifications (See Vol. II, Ch. 84)

(b) Maintenance program content changes and interval adjustments may not require approval by the Principal Airworthiness Inspector(s). If approval is required, the operator is obligated to provide the Principle Airworthiness Inspector(s) with supporting data on which such changes are based.

(c) The operator generally is approved for the contractor's existing maintenance intervals. Special requirements may be needed to compensate for configuration differences, operational and environmental conditions (geographic areas, etc.), or other variables (hours per cycle vs. cycles per hour). The maintenance time limitations section of the operations specifications must identify any special requirements, either specifically or by reference to another document approved by the Administrator.

(d) All maintenance, whether performed by the contractor or by other persons, shall be performed in accordance with the contractor's methods, standards, and procedures.

(3) Category C: Operator contract specific functions using the contractor's approved maintenance program. This category is similar to Category B except that the contract covers specific functions rather than an all-encompassing program. For example, the contract may cover heavy maintenance on engines under the contractor's approved maintenance program. These contracts shall be approved for use by operations specifications (see Vol. II, Ch. 84).

(4) Category D: Operator contracts to participate in the contractor's FAA-approved reliability program. In this category, the operator does not use the contractor's maintenance program, but participates in the contractor's FAA-approved reliability program. This type of contractual arrangement may encompass the entire aircraft, or engines, and must be included in the contractor's fleet for reliability purposes. This arrangement must be approved for use by operations specifications (see Vol. II, Ch. 84).

E. *Operations Specifications*

(1) Operations specifications must provide sufficient detail to control the contractual arrangement, including data transactions and records. The contract and details of the obligations/commitments of each participant must be referenced on operations specifications. The operations specification provides for cancellation.

(2) Programs outline in FAR §§ 121.367 and 135.425 and authorized by operations specifications become an integral part of the operator's continuous airworthiness maintenance program. Volume II, Ch. 84 contains the guidance and instructions for preparing and issuing operations specifications.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Previous experience with FAR Part 121 or 135 air carriers

B. *Coordination.* This task requires coordination with the Principal Maintenance Inspector and Principal Avionics Inspector and may also require coordination with the Certificate Holding District Office having responsibility for the contracted operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 43
- Operator/Contractor/Manufacturer's manuals
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Review Data Submitted by the Operator*

(1) Ensure the following are present:

- A copy of the contract, and referenced documents if applicable

- Contractor's operations specifications
- Contractor's maintenance manual and revisions to the operator's manual

B. *Ensure Contract/Referenced Documents Describe the Following:*

- The work scope and methods of compliance
- Responsibilities of all participants
- Location of contracted work
- Duration of the contract, if applicable

C. *Ensure the Operator's Manual Includes the Following:*

(1) A list of all contracted persons, including:

- Certificate number
- Ratings and limitations
- Description of work scope authorized

(2) Procedures to ensure:

- Proper transfer of all required documents and reports between contractor and operator as required by FAR § 121.380 or 135.439.
- Work is accomplished by the contractor
- Periodic evaluations of the contractor's facilities are accomplished as required by FAR § 121.373 or 135.431
- Contracted personnel are appropriately certificated, trained, qualified, and authorized to perform maintenance, inspections, and the operator's Required Inspection Items (RII)
- The contractor's maintenance manuals or portions thereof that are to be used for the contract maintenance are accepted in the operator's manual

D. *Determine Capabilities of Contractor*

(1) If the contractor is located in the same district as the operator, the operator's Principal Maintenance Inspector/Principal Avionics Inspector must inspect the facilities. The Principal Maintenance Inspector/Principal Avionics Inspector should determine the contractor's authorizations and capabilities.

(2) If the contractor is located outside of the Certificate Holding District Office's geographic area of responsibility, the operator's Principal Maintenance Inspector/Principal Avionics Inspector should request the assistance of the contractor's Certificate Holding District Office to determine the contractor's authorizations and capabilities.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- If operator's manual and contracted agency are determined to be satisfactory, accept the manual and approve the operations specifications per Vol. II, Ch. 84
- If operator's manual is determined to be unsatisfactory, return the manual for corrections
- If the contractor is determined to be unsatisfactory, deny the operator the use of that contractor

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 70 EVALUATE FAR PART 121/135.411(a)(2) MAINTENANCE TRAINING PROGRAM/RECORD

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3305

B. *Avionics:* 5305

3. OBJECTIVE. This chapter describes the process used to evaluate and accept an operator/applicant's maintenance/inspection training program.

5. GENERAL. Effective training is the basis for a successful maintenance/inspection program. Although many procedures for maintaining and inspecting aircraft may be similar, the equipment, procedures, and task documentation used may all be unique to the operator/applicant's specific programs.

A. FAR Parts 121, 135, and 145 require that maintenance/inspections be performed in accordance with the operator/applicant's manual.

B. Maintenance/inspection training programs are the most efficient manner in which to ensure that personnel are informed of the requirements of the operator/applicant's program.

7. COORDINATION REQUIREMENTS AND SCHEDULING. Inspectors should encourage applicants to discuss pending maintenance/inspection training program development with the certification team before the program is submitted for final acceptance. It is especially important that programs be reviewed for conformity with appropriate regulatory requirements. This may reduce the need for an operator to make major changes after a program has been printed and distributed.

9. SCHEDULING MAINTENANCE TRAINING PROGRAMS. Delays in program acceptance results in delays in the certification process. To facilitate the evaluation of the training programs, the applicant should be encouraged to schedule a classroom training session in a timely manner.

11. CONTENT OF MAINTENANCE/INSPECTION TRAINING PROGRAMS. The operator/applicant's training program should include company indoctrination and technical training (formal and on-the-job training). The program should contain a list of tasks to be taught and a method for recording the training. Completion of training must be entered in the individual's training record.

A. *Company Indoctrination.* Each maintenance/inspection employee should receive instruction in the use of the operator/applicant's manuals, policies, procedures, and forms.

B. *Maintenance/Inspection Technical Training*

(1) Training may consist of a combination of formal (classroom) instruction and on-the-job training. The operator/applicant may give training credit to individuals for experience gained while employed by other operators.

(2) Procedures unique to the operator/applicant should be taught. Training records should indicate the amount of formal training, on-the-job training, and experience each individual receives.

(3) Technical training may be contracted to another operator, manufacturer, or, in the case of a specialized process, to a person knowledgeable in that specialized process. The operator/applicant is responsible for the content and quality of such training.

(4) The FAA does not establish a fixed amount of time for indoctrination or technical training courses. A minimum time proportional to the operator/applicant's complexity should be used.

C. *Category II/III Maintenance Personnel Training.* Each applicant for Category II/III must establish an initial and recurrent training program. This program must be acceptable to the Administrator and cover all personnel performing maintenance work on Category II/III airborne systems and equipment. Training records for such personnel are to be kept current and made available to the FAA for inspection.

D. *Recurrent Training.* The operator/applicant's training program should ensure that deficiencies discovered through continuous analysis and surveillance and/or reliability programs are corrected during recurrent training. Additionally, recurrent training should include at least the following:

- Review, reinforcement, and upgrade of all training given in both indoctrination and technical subjects
- Input into maintenance bulletins and/or maintenance newsletters

- Critical tasks, such as run-up/taxi, Required Inspection Items (RII), and Non-destructive Testing (NDT)

E. *Training Records.* Training records must be retained by the operator/applicant to document that personnel are adequately trained. Training records should be maintained at a central location, but they may be maintained at other locations provided these locations are listed in the operator/applicant's manual.

F. *Special Emphasis Training.* Special maintenance/inspection training programs are required when new or different types of aircraft and/or equipment are introduced.

13. ACCEPTING THE MAINTENANCE/INSPECTION TRAINING PROGRAM. The task of acceptance differs from approval in that no specific procedure or vehicle is used to accept a training program. The acceptance of the program is documented by letter only; the program itself is not stamped. The letter informs the operator that the proposed training program has been determined to meet the requirements of the Federal Aviation Regulations.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being evaluated

B. *Coordination.* This task requires coordination with maintenance, avionics, and regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 65 and 145
- 49 CFR Part 173
- Advisory Circular 145-3
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator File*

B. *Review Schedule of Events.* If this task is performed as a part of an original certification, review the Schedule of Events to ensure this task can be accomplished in accordance with the schedule.

C. *Review Maintenance/Required Inspection Item Training Programs.* The program should include the following elements in both the Maintenance Training Program and the Required Inspection Item Training Program:

(1) The name of the person responsible for the overall administration of the maintenance/Required Inspection Item training program

(2) The name(s) of the person(s) responsible for other processes within the maintenance/Required Inspection Item training program (e.g., recordkeeping, revisions to training programs, and security of the program)

(3) Designated maintenance/Required Inspection Item training instructors

(4) A description of how instructors are determined to be qualified

(5) Procedures used to authorize instructors

(6) A file on the instructors consisting of qualifications, authorizations, and other documents pertaining to instructor assignments

(7) A list describing what type of training is required for new employees or Required Inspection Item candidates (Indoctrination, on-the-job training, etc.)

(8) Procedures for evaluating, crediting, and documenting a new employee's previous training

(9) Procedures for determining what additional training is required for a new employee

(10) A schedule for recurrent training, a description of recurrent training, and procedures for determining requirements for other training

(11) Recordkeeping procedures, including records of the following:

- Training dates
- Who performed the training (instructor should indicate by signing)
- The number of hours of training performed
- The content of the training performed

(12) Criteria for determining the quality of the training program (training standards)

(13) Evaluation of the need to revise training programs

(14) A training syllabus that describes the following:

- Content of each training course
- Format of training (classroom, on-the-job training)
- Duration of training courses
- Standards for grading students
- Training aids

(15) Criteria to determine acceptability of contract training, to include:

- Qualifications of instructors
- Criteria to establish appropriateness of reference material being taught
- Reporting procedures to inform operator of student progress
- Criteria to determine adequacy of facilities
- Criteria to evaluate contractor's training syllabus

D. *Review Required Inspection Item Training.* The operator/applicant must provide Required Inspection Item original and recurrent training, including:

(1) A statement that Required Inspection Item students are appropriately certificated, qualified, trained, authorized, and current as airframe and powerplant mechanics

(2) A method for notifying the Required Inspection Item candidate of the successful completion of the course

(3) A method for receiving confirmation by the candidate of acceptance of Required Inspection Item authorizations and responsibilities.

E. *Observe Operator/Applicant Performing Training.* This observation is performed regardless of whether the operator performs the training or contracts with another company.

(1) Ensure facilities are adequate, including classrooms, training aids, and reference materials.

(2) Evaluate the instructor's presentation and knowledge.

(3) Ensure course content and instruction is in accordance with the training syllabus.

(4) Ensure that training recordkeeping is performed in accordance with maintenance/Required Inspection Item inspection program.

F. *Analyze Findings.* Evaluate all deficiencies to determine what changes will be required.

G. *Debrief the Operator/Applicant*

(1) If deficiencies are discovered during the review, return the program to the operator/applicant with a letter describing the problem areas, if necessary. If this review is being performed as a part of a certification, inform the operator/applicant that issuance of the certificate will be withheld until deficiencies are corrected.

(2) Schedule a meeting with the operator/applicant to discuss the problem areas if it may be helpful in resolving deficiencies. Discuss how to resolve deficiencies.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- A letter to the operator/applicant indicating acceptance of the program
- The original accepted program sent to the operator/applicant along with instructions to provide a copy of the program to the Certificate Holding District Office

C. *Document Task.* File all supporting paperwork in the operator/applicant's file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 71 EVALUATE FAR PART 121 OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3634

B. *Avionics:* 5634

3. OBJECTIVE. The chapter describes the process used to evaluate an applicant's procedures for utilizing, preserving, and retrieving the maintenance records required by FAR Part 121.

5. GENERAL. To comply with the maintenance recording requirements of the Federal Aviation Regulations, the applicant's maintenance manual must identify and contain procedures to complete all applicable documents used by the applicant.

A. *Current Airworthiness Directive Status.* The applicant must keep a record showing the current status of applicable Airworthiness Directives, including the method of compliance.

(1) This record shall include the following:

- A list of Airworthiness Directives applicable to the aircraft
- The date and time in service or cycles, as applicable
- The method of compliance
- The time in service or cycles and/or date when the next action is required (if it is a recurring Airworthiness Directive)

(2) An acceptable method of compliance should include a reference to one of the following:

- A specific portion of the Airworthiness Directive
- A manufacturer's service bulletin, if the bulletin is referenced in the Airworthiness Directive
- Another document generated by the applicant that shows compliance with the Airworthiness Directive, such as an Engineering Order (EO) or Engineering Authorization (EA)

(3) When an Engineering Order/Engineering Authorization is used, the details must be retained by the applicant. If the Engineering Order/Engineering Authorization also contains the accomplishment instructions and sign-off, it must be retained indefinitely.

(4) An applicant may apply for an alternate method of compliance for accomplishing Airworthiness Directives. Alternate methods of compliance must be approved by the appropriate FAA Engineering Directorate and will apply only to the applicant making the application.

(5) The applicant's manual must have procedures to ensure compliance with new and emergency Airworthiness Directives within given time limits. The procedures must ensure that the individuals responsible for implementation during other than routine duty hours are notified, as necessary.

(6) The document that contains the current status of Airworthiness Directives/method of compliance may be the same as the record of Airworthiness Directive accomplishment, although the retention requirements are different.

(a) The record of Airworthiness Directive accomplishment must be retained with the aircraft indefinitely

(b) The Airworthiness Directive method of compliance record will only be retained until the work is superseded/repeated or until one year after the work is performed

B. *Total Time in Service Records*

(1) Although FAR Part 121 does not specifically call for total time in service records of engines, propellers and rotors, it does require a record of life limited parts for these components. The only way to accomplish this is by keeping records for total time in service.

(2) Total time in service records may consist of aircraft maintenance record pages, separate component cards or

pages, a computer list, or other methods as described in the applicant's manual.

C. *Life Limited Parts Status Records.* FAR Part 121 requires records for components of the airframe, engine, propellers, rotors, and appliances that are identified to be removed from service when the life limit has been reached.

(1) The current life limited status of the part is a record indicating the operating time limits, total number of hours or accumulated cycles, or the number of hours or cycles remaining before the required retirement time of the component is reached. This record must include any modification of the part in accordance with Airworthiness Directives, service bulletins, or product improvements by the manufacturer or applicant.

(2) The following are not considered a current life limited status record:

- Work orders
- Maintenance installation records
- Purchase requests
- Sales receipts
- Manufacturers documentation of original certification
- Other historical data

(3) Whenever the current status of life limited parts records cannot be established or has not been maintained (e.g., a break in current status) and the historical records are not available, the airworthiness of that product cannot be determined and therefore it must be removed from service.

D. *Airworthiness Releases*

(1) When maintenance, preventive maintenance, or alterations on an aircraft are performed, an airworthiness release or log entry must be completed prior to operating the aircraft. Using the procedures described in the manual, the applicant must be able to retain all of the records necessary to show that all requirements for the issuance of an airworthiness release have been met.

(2) The applicant must identify those persons authorized to sign airworthiness releases. This includes any personnel outside of the applicant's organization who perform contract maintenance. Personnel authorized to sign must be appropriately certificated as required by FAR § 121.709.

E. *Overhaul List.* The applicant is required to develop manual procedures for recording the time since the last overhaul of all items installed on the aircraft that are required to be overhauled on a specified time basis. The items requiring overhaul are listed either on the operations specifications or in a document referenced in the operations specifications.

(1) The overhaul list includes the actual time or cycles in service since the last overhaul of all items installed on the aircraft. If continuity cannot be established between overhaul periods, the last overhaul records must be reviewed to reestablish the currency of the overhaul list.

(2) The overhaul list refers to the time since last overhaul of an item and must not be confused with an overhaul record, which requires a description of the work and identification of the person who performed and/or approved the work.

F. *Overhaul Records*

(1) A record must be made whenever an item of aircraft equipment is overhauled and must include the following:

- A description of the work performed or reference to data acceptable to the Administrator
- The name of the person performing the work if the work is performed by a person outside of the applicant's organization
- The name or other positive identification of the individual approving the work

NOTE: A return to service tag does not constitute an overhaul record.

(2) The applicant must retain the record and be able to make it available to the Administrator upon demand. The overhaul records shall be retained until the work is superseded by work of equal scope and detail.

G. *Current Aircraft Inspection Status.* The applicant is required to retain a record identifying the current inspection status of each aircraft.

(1) This record shall show the time in service since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

(2) Inspection work packages or routine and nonroutine items generated while performing any part of the inspection program must be retained as follows:

- For one year after the work is performed
- Until the work is repeated or superseded by other work

H. *Major Alteration and Major Repair.* Applicants are required to retain records of current major repairs and major alterations that are accomplished on the following:

- Airframe
- Engine
- Propeller
- Rotor
- Appliance

(1) Major alterations must be listed with the date of alteration and a brief description of the work accomplished. The manual must have procedures for the following:

- Extracting the information required for the list from the actual alteration record of accomplishment
- For transmitting an alteration report to the local FAA office

(2) The manual must contain procedures for retaining a report of each major repair and making it available for inspection by the FAA.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 121
- Working experience with operator record keeping systems
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires regional coordination.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 43
- Applicant's Maintenance Procedures Manual
- Order 2150, Enforcement Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Applicant's Maintenance Manual*

(1) Ensure that the necessary procedures exist in the applicant's manual to ensure a suitable system for creating, preserving and retrieving required records.

(2) Ensure that all records will contain the following information, as applicable:

- Description of the work performed (or reference to data acceptable to the Administrator)
- Name of the person(s) performing the work when the personnel are not employed by the applicant's organization
- Name or other positive identification of the individual approving the work

B. *Review the Applicant's Manual's Procedures.* Review the applicant's record keeping procedures to ensure that the requirements of FAR Part 121 are met for the following:

(1) *Airworthiness Release Records. Ensure the following:*

(a) Airworthiness release records will be retained for one year after the work is performed or until the work is repeated or superseded

(b) The applicant's manual identifies the person(s) authorized to sign an airworthiness release

(2) *Flight Maintenance Records.* Ensure that procedures provide for the following entries:

- Flight discrepancies to be entered at the end of each flight
- Corrective actions and sign-off, per manual procedures
- Sign-offs for Required Inspection Items (RII), according to manual procedures by authorized personnel
- Minimum Equipment List (MEL) deferment per the manual procedures

(3) *Total Time In Service Records*

(a) Evaluate the method of recording total time-in-service of airframes. This record must show the current time in service in hours.

(b) Ensure that procedures are in place to retain the records until the aircraft is sold and that the records will then be transferred with the aircraft.

(4) *Life Limited Parts Status*

(a) Ensure that the applicant has procedures for tracking the current status of life limited parts for each airframe, engine, propeller, rotor, and appliance, to include the following information:

- Total operating hours (including calendar time)/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(b) Ensure that procedures are in place to retain the records until the aircraft is sold and are then transferred with the aircraft.

(5) *Time Since Last Overhaul Records.* Ensure that the manual includes a method/procedure for updating this document from the overhaul records and ensuring that this document accompanies the aircraft upon sale.

(6) *Overhaul Records*

(a) Ensure that the manual describes how the applicant will document the last complete overhaul of each airframe, engine, propeller, rotor and appliance. The overhaul record should include the following information:

- Disassembly data
- Dimensional check data
- Replacement parts list
- Repair data
- Reassembly/test data
- Reference to data including overhaul specifications

(b) Ensure that these records will be retained until the work is superseded by work of equivalent scope and detail.

(7) *Current Aircraft Inspection Status*

(a) Evaluate the method the applicant will use to record the time in service since the last inspection.

(b) Determine if procedures ensure these records are retained until the aircraft is sold and are then transferred with the aircraft.

(8) *Airworthiness Directive Compliance.* Evaluate how the applicant will comply with the record keeping requirements of the Airworthiness Directives, including emergency Airworthiness Directives. The procedures must generate a record that contains the following data:

(a) *Current status.* Ensure that the current status data will include the following:

- A list of all Airworthiness Directives applicable to the aircraft
- The date and time of compliance
- The time and/or date of the next required action (if a recurring Airworthiness Directive)

(b) *Method of compliance.* Ensure that this data will include either a record of the work performed or a reference to the applicable section of the Airworthiness Directive.

NOTE: This data must be retained until the aircraft is sold and transferred with the aircraft.

(9) *Major Alteration Records*

(a) Evaluate the manual procedures to ensure that the applicant prepares and maintains a list of current major alterations to each airframe, engine, propeller, rotor, and appliance.

(b) Ensure that the list includes the following information:

- The date of the alteration
- A brief description of the alteration

(10) *Major Repair Records.* Evaluate the manual procedures to ensure that the applicant prepares and maintains a report of all major repairs to each airframe, engine, propeller, rotor, and appliance.

C. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in the following:

- A letter to the applicant confirming the results of inspection
- Continuation of the certification process

C. *Document the Task.* File all supporting paperwork in the applicant's office file.

9. FUTURE ACTIVITIES. Schedule follow-up inspections as required.

CHAPTER 72 EVALUATE AIRCRAFT LEASE/INTERCHANGE AGREEMENT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3359

B. *Avionics:* 5359

3. OBJECTIVE. This chapter describes the process used to evaluate aircraft leases and interchange agreements for U.S. certificated operators.

5. GENERAL

A. *Definitions*

(1) *Lease:* Any agreement by a person (the lessor) to furnish an aircraft to another person (the lessee) to be used for compensation or hire purposes. This does not include an agreement for the sale of an aircraft or a contract of conditional sale under Section 101 of the Federal Aviation Act.

(2) *Dry Lease:* Any agreement in which a lessor, (which could be an air carrier, bank, or leasing company) leases an aircraft without flight crewmembers to an air carrier (the lessee), and in which the lessee maintains operational control.

(3) *Wet Lease:* Any agreement in which a U.S. air carrier (lessor) leases an aircraft, with at least one pilot flight crewmember, to either a U.S. air carrier, foreign air carrier, or a foreign person (the lessee).

(4) *Certificate Holder (As used in FAR Part 121/135):* A U.S. operator authorized to operate aircraft for compensation or hire, either private or public, under FAR Parts 121 and 135.

(5) *Interchange Agreement:* Any agreement between operators (U.S. and foreign) in which the operational control of an aircraft is transferred for short periods of time from one operator to another. With this type agreement, the latter operator assumes responsibility for the operational control of the aircraft at the time of transfer.

(6) *Operational Control:* Operation of aircraft as defined in Section 101(31) of the Federal Aviation Act; also, "operate" as defined in FAR § 1.1.

(7) *Lessee:* The party using the aircraft under the provisions of a lease.

(8) *Lessor:* The party furnishing the aircraft under a lease.

B. *Determining Operational Control of a Dry-Leased Aircraft.* Normally, operational control of any dry-leased aircraft rests with the lessee. In most dry lease agreements, the lessor is either a bank or a leasing or holding company. In neither case will the lessor have the operational expertise, the facilities, nor the desire to assume responsibility and liability for controlling the day-to-day operations of the aircraft.

C. *Determining Operational Control of Wet-Leased Aircraft.* The fact that the Department of Transportation (DOT) characterizes a lease as a wet lease does not necessarily make the lessor responsible for operational control. When Regional Counsel determines who has operational control, the Certificate Holding District Office (CHDO) must be advised by letter. The Certificate Holding District Office must make this letter a matter of record in the operator's office file.

D. *Other Factors in Determining Operational Control of Leased Aircraft*

(1) FAR Parts 121 and 135 provide that the FAA shall determine that a person has operational control if that person exercised authority and responsibility for a specified number of operational functions. This could scheduling flights and crewmembers, initiating flights, and terminating flights.

(2) In cases where there is doubt or controversy over who exercises operational control, the Regional Counsel may consider additional factors, such as who is responsible for maintenance, servicing, and crewmember training.

7. INTERCHANGE AGREEMENTS

A. An interchange agreement is a form of dry lease agreement. It allows an air carrier to dry lease aircraft to another air carrier for short periods of time. FAR Parts 121 and 135 prohibit listing an aircraft on both private carriage operations specifications and common carriage operations specifications.

B. Occasionally, important details may be overlooked unless interchange conditions are closely monitored. Equipment variances can be potentially dangerous unless effective training or corrective action is taken before operations begin. For example, life rafts or an emergency radio might be improperly stowed during over-water flights on aircraft that have no pro-

visions for their stowage, thus creating a hazardous condition in turbulent weather.

9. FAA RESPONSIBILITIES

A. *Determine District Office Responsibility.* Approval of the operations specifications is the responsibility of the district office assigned to the operator exercising operational control of the aircraft. This determination must be made by reviewing the specific assignment of operational control listed on the lease/interchange agreement by the FAA regional counsel.

B. *Review the Lease.* An aircraft lease/interchange agreement is reviewed to determine if all of the responsibilities of the lessor/lessee are described. The inspector must ensure that the lease/interchange contains all effective dates and provisions required by regulation. Those items not required by regulation must be reviewed to determine their applicability and compatibility with the regulatory requirements.

C. *The Lessor's Operator's Manual.* The lessor's manual must be reviewed for the following:

(1) The continuous airworthiness maintenance program, for the aircraft, engines, propellers (if applicable), and appliances

(2) The maintenance reliability program, if applicable

(3) A training program for the maintenance personnel on the aircraft

(4) Fueling procedures for the aircraft

(5) Provision for use of an approved Minimum Equipment List (MEL)

(6) Provisions for leasing the aircraft to the lessee

D. *The Lessee's Operator's Manual.* The lessee's manual must be reviewed for the following:

(1) To determine if the manuals provide adequate procedures and guidance for leasing aircraft into its operating system

(2) Procedures for the use of the lessor's continuous airworthiness maintenance program, for the aircraft, engines, propellers (if applicable), and appliances

(3) Procedures for the use of the maintenance reliability program, if applicable

(4) Procedures in the maintenance training program that are adequate to provide for configuration differences, if the aircraft is maintained under the lessor's maintenance program

(5) Fueling procedures for the aircraft

(6) Provisions for use of an approved Minimum Equipment List

E. *Aircraft Maintenance Records.* The lessor will maintain the aircraft maintenance record and ensure the items required to be inspected, repaired, or overhauled are addressed in those records.

F. *Aircraft Conformity Inspections.* Aircraft conformity inspections are conducted to ensure that:

(1) Differences between aircraft already in a lessee's fleet and aircraft being leased are noted. These differences must be addressed with:

- Amendments to the lessee's operations specifications
- Revisions to the lessee's maintenance manual

(2) Configuration of the aircraft meets the regulatory requirements of the intended operation (see Vol. II, Ch. 4, "Conduct Aircraft Conformity Inspection").

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 91, 121, 125, 129, and 135
- Successful completion of General Aviation/Air Carrier Airworthiness Indoctrination Course

B. *Coordination.* This task requires coordination among maintenance, avionics, and operations inspectors. Regional coordination will also be required.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Figure 72-1: Aircraft Lease Evaluation Flow Chart
- Automated operations specifications checklists and worksheets

5. PROCEDURES FOR LEASE AGREEMENTS

A. *Determine That Lease Agreement Has Occurred.* Request a copy of the lease or lease memorandum.

(1) Determine which district office(s) should be involved in the evaluation of the lease agreements.

(2) Determine which district office, if more than one district office must be involved, will be responsible for approving the operations and maintenance portions of the operations specifications.

B. *Review the Lease.* Ensure that:

(1) The lessor and lessee are properly identified on the lease

(2) The lease is signed by the appropriate personnel of the lessor and lessee

(3) All strikeovers, erasures, and corrections are initialed by both the lessor and the lessee

(4) The aircraft subject to the lease agreement are identified by aircraft make and model, registration number, and serial number

(5) The effective dates of the lease are identified

(6) Operational control is specifically designated

(7) Responsibilities for performing maintenance are specifically designated

(8) Responsibilities for keeping aircraft maintenance records are specifically designated

(9) Maintenance programs (lessee's or lessor's) that will be utilized are designated

C. *Review Lessee's Manuals.* The inspector must ensure that the manual includes the following:

(1) Procedures adequate to incorporate the leased aircraft into his operating system, i.e., aircraft acceptance checks, etc.

(2) Provisions in the maintenance training program to account for differences in the configuration of the leased aircraft from the existing fleet

(3) A program that is adequate to provide for configuration differences if the aircraft is to be maintained under the lessee's maintenance program

(4) A Minimum Equipment List that is applicable to the leased aircraft. (For FAR Part 121 operators, see Vol. II, Ch. 85; for FAR Part 135 operators, see Vol. II, Ch. 86)

D. *Review Operations Specifications.* Determine if the lessor will be required to submit an amendment to the operations specifications.

E. *Review Aircraft Maintenance Records.* (See Vol. II, Ch. 71)

F. *Conduct Aircraft Conformity Inspection.* (See Vol. II, Ch. 5)

7. PROCEDURES FOR INTERCHANGE AGREEMENTS

A. *Review the Agreement.* The inspector must ensure that:

(1) The operator submits a written agreement or memorandum of the interchange agreement

(2) The aircraft subject to the interchange agreement are identified by aircraft make and model, registration number, and serial number

(3) The effective dates/times of the interchange are identified

(4) Operational control is specifically designated

(5) Responsibilities for performing maintenance are specifically designated

(6) Responsibilities for keeping aircraft maintenance records are specifically designated

(7) The maintenance program to be utilized is designated

(8) All strikeovers, erasures, and corrections are initialed by both parties to the agreement

(9) The interchange agreement or memorandum provides for all differences in aircraft configuration due to the operating or maintenance requirements of both operators

B. *Review Operations Specifications.* Review the operator's submitted application/amendment for operations specifications to operate under the provisions of an interchange agreement.

C. *Review the Lessor's Operator's Manual.* Review for the following:

(1) The continuous airworthiness maintenance program, for the aircraft, engines, propellers (if applicable), and appliances

(2) The maintenance reliability program, if applicable

(3) A training program for the maintenance personnel on the aircraft

(4) Fueling procedures for the aircraft

(5) Provision for use of an approved Minimum Equipment List

(6) Provisions for leasing the aircraft to the lessee

D. *Review the Lessee's Operator's Manual.* Review for the following:

(1) To determine if the manuals provide adequate procedures and guidance for leasing aircraft into its operating system

(2) Procedures for the use of the lessor's continuous airworthiness maintenance program, for the aircraft, engines, propellers (if applicable), and appliances

(3) Procedures for the use of the maintenance reliability program, if applicable

(4) Procedures in the maintenance training program that are adequate to provide for configuration differences, if the aircraft is maintained under the lessor's maintenance program

(5) Fueling procedures for the aircraft

(6) Provisions for use of an approved Minimum Equipment List

E. *Analyze Findings.* Evaluate all deficiencies to determine what corrections will be required.

F. *Schedule Meeting.* If deficiencies are discovered during the evaluation, advise the operator/applicant. Schedule a meeting with the operator/applicant to discuss the problem areas, if necessary.

9. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- A letter to the operator indicating acceptance of the agreement and approval of operations specifications in accordance with Vol. II, Ch. 84
- A letter to the operator listing the reasons for rejection of the agreement

C. *Document Task.* File all supporting paperwork in the operator's office file.

11. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 73 EVALUATE FAR PART 121/135.411(a)(2) LEASED MAINTENANCE PROGRAM AUTHORIZATION: U.S. REGISTERED AIRCRAFT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3365

B. *Avionics:* 5365

3. OBJECTIVE. This chapter provides guidance for authorizing an operator (lessee) to maintain a leased aircraft in accordance with the previous operator's (lessor's) current and approved maintenance program for that type aircraft.

5. GENERAL

A. FAR Part 121/135.411(a)(2) operators have leased aircraft from other air carriers with the understanding that the aircraft will be returned to the previous operator upon termination of the lease. It may be to the lessor's advantage to have the aircraft maintained under the maintenance program rather than the lessee's program so that it can be readily integrated back into the fleet when the lease expires. This arrangement eliminates the need for special inspections, component changes, etc., to convert that type aircraft into the lessee's maintenance program.

B. The key factor in this type of arrangement is the lessee's capability of accomplishing the program to the lessor's standards. The lessee's responsibility for the effectiveness of the adopted program is the same as for any other maintenance program approved for the lessee's use.

7. ACCOMPLISHING THE TASK. An operator intending to maintain a leased aircraft in accordance with the lessor's program must substantiate that:

(1) The lessor's program, as carried out by the lessee, will result in a level of airworthiness equivalent to that of the aircraft maintained by the lessee

(2) The lessee is capable of accomplishing the lessor's program with regard to facilities, equipment, personnel, training, etc.

(3) The lessee arranges for the maintenance of equipment or installations not covered by lessor's program, such as life vests, life rafts, emergency locators, pressure cylinders, etc.

(4) The lessee takes adequate steps to ensure maintenance programs for the leased aircraft and any owned aircraft are kept separate and are applied to their respective aircraft

(5) The lessee receives and maintains the records required by FAR §§ 121.380 or 135.439 or has arranged with the lessor to gain access to these records. The lessee must have and maintain adequate records to determine the status of applicable airworthiness directives, life limited parts, time controlled items, and inspections.

(6) The lessee has the necessary records to schedule maintenance tasks at the intervals specified by the lessor's program or has arranged with the lessor for this service

(7) The lessee has adequate manuals and technical material to accomplish the lessor's maintenance program

(8) The lessee amends its weight and balance program as necessary to accommodate the leased aircraft. This may require coordination with the Principal Operations Inspector.

(9) The lessee has procedures for reporting maintenance activities and data to the lessor (e.g., component replacements, scheduled inspections, Airworthiness Directive notes, engine trend monitoring data, and major repairs)

9. APPROVAL. Adopted maintenance programs for aircraft on lease shall be approved by operations specifications (Paragraph D80). Provisions for additional maintenance requirements and maintenance of equipment that is not included in the lessor's program shall be listed in a supplemental paragraph in those operations specifications (Paragraph D80–1).

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination*

- This task requires coordination with the Principal Maintenance Inspector (PMI), Principal Avionics Inspector (PAI) and the Principal Operations Inspector (POI)
- This task may also require contact with the lessor's Certificate Holding District Office (CHDO) and/or Aircraft Evaluation Group (AEG)

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 23, 25, and 43
- Airworthiness Directive notes
- Manufacturer's manuals

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Schedule and Conduct an Informal Meeting.* The operator/applicant must indicate its intention to utilize aircraft under a short term lease arrangement and use the lessor's maintenance program. Advise the operator of the following requirements:

(1) Aircraft must conform with all applicable requirements of FAR Part 121/135

(2) Lessee must have capability to support and maintain aircraft in accordance with the lessor's program to include:

- Personnel
- Training
- Facilities
- Equipment
- Manuals

(3) Lessee must have current records to determine the status of the following:

- Scheduled inspections
- Airworthiness Directives
- Life limited items
- Time controlled components

(4) Lessee must have current weight and balance data for the leased aircraft

(5) Lessee must provide a copy of the contract between the lessor and lessee to the Certificate Holding District Office

(6) Lessee must initiate procedures for transfer of aircraft maintenance and performance data to lessor

(7) Lessee must have procedures that ensure maintenance programs for the leased aircraft and the lessee's own are kept separate and are applied to the respective aircraft

B. *Conduct Formal Meeting.* The operator should state that aircraft, records, and facilities are ready for inspection and must present required data and proposed operations specifications.

C. *Review the Contract.* Examine the following:

- Length of contract
- Maintenance responsibilities and requirements
- Data reporting requirements

D. *Review Lessor's Maintenance Program and Operations Specifications*

E. *Review Lessee's Technical Data.* Ensure lessee has all appropriate technical data to support the aircraft (See Vol. II, Ch. 64). This includes such items as maintenance manuals, wiring manuals, etc.

F. *Ensure Lessee Has Adequate Personnel To Support the Aircraft* (See Vol. II, Ch. 64 and 71)

G. *Determine That Differences in Equipment and Installations Have Been Addressed and Personnel Have Been Trained Accordingly*

H. *Ensure Facilities Are Sufficient To Support Additional Aircraft* (See Vol. II, Ch. 223). This includes special tooling, test equipment, spare parts, and equipment.

I. *Determine That Adequate Procedures Are in Place To Ensure Separation of Maintenance Programs for Leased Aircraft.* Ensure these procedures are applied to the respective aircraft.

J. *Review Weight and Balance Data For Leased Aircraft.* Ensure data is compatible with lessee's program. If data is not compatible, ensure that procedures have been developed and are in place.

K. *Review Aircraft Records* (See Vol. II, Ch. 71)

L. *Inspect Aircraft, if necessary* (See Vol. III, Ch. 2)

M. *Review Operations Specifications Parts D and E* (See Vol. II, Ch. 84).

N. *Analyze Results.* Determine whether the operator/applicant meets all necessary requirements.

O. *Meet With Operator/Applicant To Discuss Deficiencies.* Advise the operator/applicant on which areas require corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in issuance of approved operations specifications.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 74 EVALUATE FAR PARTS 121 AND 135 (10 OR MORE AND TURBINE POWERED AIRCRAFT) OPERATOR'S WEIGHT AND BALANCE CONTROL PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

- Maintenance: 3328/3329

3. OBJECTIVE. This chapter describes the process used to evaluate an operator/applicant's weight and balance control program.

5. GENERAL

A. Approved weight and balance control procedures are the only means for an operator/applicant to authorize the use of other than known weights for crew, passengers, baggage, or cargo. The weight and balance control program, including loading schedules and charts, are approved on operations specifications by the Principal Maintenance Inspector. This program must be included in the operator/applicant's Policies and Procedures Manual.

B. The operator/applicant may develop and submit for approval any method or procedure by which it can show that an aircraft:

- Is properly loaded according to approved configuration (loading schedules or charts)
- Will not exceed authorized weight and balance limitations during all ground and flight operations
- Will be periodically reweighed and its data re-evaluated
- Will have its data recalculated, if changes necessitate

C. The operator/applicant's weight and balance control procedures may either be an independently controlled document which includes all the instructions and procedures for maintenance, operations, and baggage/cargo control, or it may be included in the manual.

7. ESTABLISHED WEIGHT AND CENTER OF GRAVITY (CG) LIMITS

A. During type certification, the aircraft manufacturer must flight test weight and balance under all conditions and establish center of gravity limits. These limits are approved by the FAA. Type certificate data sheets contain information needed to determine weight and balance limits.

B. If an operator/applicant proposes an unusual or complex weight and balance program, or a program substantially different from the Approved Aircraft Flight Manual or Pilot Operating Handbook, regional assistance should be requested.

9. LOADING PROCEDURES

A. *Use of Average Passenger Weights.* For aircraft operated under FAR Parts 121 and 135, average passenger and baggage weights may be authorized.

(1) Average weights may be determined by actually weighing passengers and baggage and documenting the weights. Average weights must be based on acceptable data collected during actual operations.

(2) Generally, average weights for operations in warm climates are lighter than those in colder climates. In establishing average passenger and baggage weights, operating environment must be considered. For example, clothing worn or carried in colder climates may affect the established weight.

NOTE: The average passenger and baggage weights in Advisory Circular 120-27, as amended, do not comprise a regulatory requirement or authorization. The information is guidance only and must be evaluated for applicability to individual operators.

B. *Non-Standard Weight Groups.* Average weights are not suitable for groups that tend to be heavier or lighter than the average. The operator/applicant must use actual weights for loading non-standard weight groups and their baggage (such as athletic squads, military personnel, and children's groups).

C. *Carry-on Baggage.* Procedures must be provided for controlling carry-on baggage.

(1) Carry-on baggage must be limited to articles that may be placed in overhead compartments or under seats. No article may be placed in an overhead compartment that causes the weight limit of the compartment to be exceeded.

(2) Carry-on baggage weight must either be accounted for in the same manner as checked baggage or be added to the passenger weight.

(3) Operators using average weights for computing weight and balance should re-evaluate carry-on baggage weight at least once per year.

11. AIRCRAFT WEIGHTS

A. *Weighing of Aircraft*

(1) Aircraft operated under FAR Part 135 are required to be weighed at least once every 36 calendar months. Both the operator/applicant's operations specifications and manual must reflect this requirement.

(2) Aircraft operated under FAR Part 121 are required to be weighed at intervals approved by the Principal Maintenance Inspector.

B. *Use of Fleet Weights.* A fleet generally is considered to be three or more aircraft of the same model and configuration. This allows realistic averages to be determined.

(1) Aircraft operating under fleet weights must be weighed in accordance with the operator/applicant's instructions. The operating weights and center of gravity position must be within established limits. The use of fleet weights is authorized by operations specifications.

(2) An operator's empty fleet weight is determined by averaging aircraft weights as follows:

Fleet Size	*Weighing Policy*
3 aircraft	Weigh all aircraft
4 to 9 aircraft	Weigh 3 aircraft plus at least 50 percent of the number over 3
Over 9 aircraft	Weigh 6 aircraft plus at least 10 percent of the number over 9

C. Scales used to weigh passengers, aircraft, cargo, and baggage must be calibrated and traceable to a national standard. Calibration must be performed in accordance with the civil authority for weights and measures having jurisdiction over the area in which the scales are used. The frequency of testing depends on use and handling.

13. CONTRACTORS. An operator/applicant may use a contractor to weigh items required to be weighed. However, the operator/applicant is responsible for ensuring the contractor complies with the operator/applicant's approved weight and balance control program. This includes ensuring scales are calibrated and tested in accordance with the operator/applicant's Policies and Procedures Manual.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Inspector performing this task must be a maintenance inspector
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Previous experience with FAR Part 121, 125, or 135 weight and balance programs

B. *Coordination.* This task requires close coordination between maintenance and operation inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 43, and 91
- Advisory Circulars 120-27 and 91-23
- Approved Flight Manuals
- Approved Weight and Balance Manuals
- Type Data Sheets and Aircraft Specifications
- Supplemental Type Certificates
- Aircraft Equipment Lists
- Aircraft Maintenance Records (Weight and Balance Records)
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400-8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Coordinate With Operator/Applicant.* Operator/applicant must submit the following for review:

- Manual or revision
- Weight and Balance Program document (if not part of manual)
- Operations specifications Part E
- Pertinent company procedures
- Instructions for completing forms used in aircraft weight control and aircraft loading
- Mathematical justification for loading provisions or schedules

B. *Review the Operator/Applicant's Manual/Program Document.* The manual must include procedures, levels of authority, and information appropriate to FAR Part 121 or 135. In addition, the following must be included:

(1) Manual introduction, to include:

- Description of the philosophy and the goals of the manual
- Description of the division of contents between volumes, if more than one volume
- List of effective pages, including dates

(2) Manual revision and distribution procedures, to ensure:

- Current information is provided to all manual holders
- Manuals are available to maintenance, operations and ground personnel and are furnished to the Certificate Holding District Office

(3) Definitions of all significant terms used in the program. The definitions must reflect their intended use. Acronyms or abbreviations unique to the manual must also be defined.

(4) Description of the organizational unit responsible for the control and maintenance of the weight and balance program, to include:

- Definitions of lines of authority
- Description of the support structure

(5) Job descriptions for all elements

(6) Training programs that include the following:

- Maintenance personnel
- Operations and dispatch personnel
- Ground handling personnel

(7) A means of documenting and retaining individual training records

(8) Procedures for:

- Determining standards and schedules for calibration of aircraft scales
- Pre-weighing instructions and requirements
- Determining which aircraft are to be weighed
- Establishing and maintaining equipment lists for each aircraft
- Recording type and serial number of scale used, airplane weight, residual fluids, and scale tare weights
- Initial weighing of aircraft
- Monitoring and adjusting individual aircraft or fleet, empty weight and center of gravity
- Periodic reweighing of aircraft
- Ensuring aircraft are configured in accordance with approved data

(9) A loading schedule consisting of graphs/tables or a special loading schedule for a calculator or computerized program. These schedules must ensure pertinent data is available concerning all probable weight and balance conditions of the aircraft

(10) A load manifest on which all required loading information shall be entered by personnel responsible for weight and balance control, including procedures for:

- Completing the load manifest
- Ensuring load manifest is carried on the aircraft
- Retaining the load manifest for the time periods specified in the Federal Aviation Regulations (FAR)
- Distribution of the load manifest in accordance with FAR §§ 121.695 and/or 121.697 (as applicable), and 135.63(c)

(11) Procedures to be used by crew members, cargo handlers, and other personnel concerned with aircraft loading, for the following:

- Distribution of passengers
- Distribution of fuel
- Distribution of cargo
- Verification and acceptance of actual cargo weights as listed on a bill of lading
- Restriction of passenger movement during flight, if applicable
- Hazardous material requirements, if applicable

(12) A drawing of each cargo and/or passenger configuration to include emergency equipment locations

(13) Mathematical justification for loading provisions or schedules. This may be included under separate cover and not as part of the company manual.

(14) An alternate procedure for allowing manual computations, if a computerized weight and balance program is utilized

(15) Procedures used for determining passenger, crew, and baggage weights for domestic and/or international flights

(16) Procedures for a weight range system, if applicable, that ensures:

(a) The range is typical of passengers carried on similar operations

(b) Computations for critical load considerations support the ranges

(c) Personnel responsible for loading the aircraft are required to prepare appropriate loading records

(d) The system includes methods for loading passengers whose weights are outside the range

(e) Loading records indicate the number of passengers within the stated range and account for passengers that do not fall within the range

(17) A system for loading nonstandard weight groups, such as athletic squads or military groups and their baggage, which must utilize actual weights for both passengers and baggage

(18) Procedures to verify actual weight of cargo

(19) Standards and schedules for calibration of commercial scales used to determine baggage/cargo weights

(20) Procedures to ensure that carry on baggage is limited to articles which may be placed in overhead compartments or under seats. Carry-on baggage weight must be accounted for in the same manner as checked baggage or added to the average passenger weight.

C. *Review Operator/Applicant's Operations Specifications.* Ensure that the operations specifications reference the following:

(1) Aircraft make/model/series

(2) Type of loading schedule

(3) Loading schedule instructions for:

- Passenger and crew (average or actual weight)
- Baggage (average or actual weight) and cargo (actual)
- Nonstandard weight groups

(4) Periodic weighing schedule and procedures

(5) Weight and balance control procedures

NOTE: The above items must be referenced by indicating the locations of the same items in the operator/applicant's manuals, e.g., chapter, section, page.

D. *Analyze the Results.* Upon completion of review, analyze the results and determine whether the operator/applicant's manual and operations specifications meet all requirements.

E. *Meet With Operator/Applicant.* Discuss discrepancies with the operator/applicant and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Approve operations specifications in accordance with Vol. II, Ch. 84

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 75 EVALUATE FAR PART 135 (9 OR LESS) WEIGHT AND BALANCE CONTROL PROCEDURES

Section 1 Background

1. WPMS ACTIVITY CODES

- *Maintenance:* 3328

3. OBJECTIVE. The purpose of this chapter is to provide guidance and instructions for accepting or approving weight and balance control procedures.

5. GENERAL

A. FAR § 35.23(b) (9 or less) requires operator/applicants to develop their own weight and balance procedures. The operator/applicant has the option of using the procedures developed by the manufacturer. These procedures are available in the approved Aircraft Flight Manual or Pilot Operating Handbook. Under these circumstances, the inspector's responsibilities are to ensure the aircraft continue to be operated in accordance with these procedures.

B. It is the operator/applicant's privilege to revise these procedures or develop procedures tailored to the specific needs of the operation. Under these circumstances, it is the inspector's responsibility to evaluate the procedures to ensure regulatory compliance and suitability to the operation.

7. MANUFACTURER-DEVELOPED PROGRAM

A. If an operator/applicant decides to use the manufacturer's weight and balance program, it is the operator/applicant's responsibility to ensure that the program will meet the needs of the proposed/current operation.

B. To ensure an operator/applicant's compliance with a manufacturer's weight and balance program, an inspector will have to verify that the operation or proposed operation will not conflict with the program.

9. OPERATOR/APPLICANT-DEVELOPED PROGRAM

A. The operator/applicant can submit any method or procedure by which it can show that all aircraft are properly loaded and will not exceed authorized weight and balance limitations during all operations.

(1) These procedures can be provided in the operator's manual or they may be an independently controlled document that includes all instructions and procedures for maintenance, operations, and baggage handling personnel.

(2) The weight and balance document must include company procedures and instructions for completing forms used in aircraft weight control and aircraft loading. Mathematical justification for loading provisions or schedules should be included in the submitted information.

B. *Program Acceptance.* The weight and balance procedures, including loading schedules and charts, are accepted by the Principal Maintenance Inspector.

C. *Unusual or Complex Programs.* If the operator/applicant proposes an unusual or complex weight and balance program, or that program is substantially different from the Approved Airplane Flight Manual or Pilot Operating Handbook, assistance from regional specialists should be requested.

NOTE: The use of actual weights is mandatory for FAR Part 135 reciprocating powered aircraft of nine or less passengers seats. Average weights for passengers and baggage may be approved for use on turbine powered aircraft (see Vol. II, Ch. 74). (Ref. FAR § 135.63(c)(5))

D. *Load Schedules.* The load schedule must include a manageable system for aircraft loading under all loading situations, including alternate procedures for nonstandard weight persons or groups. The operator's procedures must provide all necessary information (charts, graphs, tables, etc.), with related instructions for the loading.

E. *Approval Requirements.* There may be instances when an operator/applicant requests approval to operate an aircraft with an increase in gross weight and/or change in center of gravity range. This constitutes a major design change, and requires the approval of FAA engineering, per FAR § 21.113.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Inspector performing this task must be a Maintenance Inspector
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Previous experience with FAR Part 135 (9 or less) weight and balance procedures

B. *Coordination.* This task requires close coordination between maintenance and operation inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 23, 43, and 91
- CAR Part 3
- Advisory Circulars 91-23 and 43.13-1
- Approved Flight Manuals
- Pilot Operating Handbook or Weight and Balance Manuals
- Type Data Sheets and Aircraft Specifications
- Supplemental Type Certificates
- Aircraft Equipment Lists
- Aircraft Weight and Balance Records
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator/Applicant's Data.* Review the following:

(1) Type of equipment

(2) Multiengine aircraft weighed within the preceding 36 calendar months (Ref. FAR § 135.185)

(3) Operator/applicant's proposed/current method of recordkeeping

(4) Specific weight and balance information pertaining to operator's/applicant's aircraft to include:

(a) Type certificate data sheets for basic weight and balance data for individual aircraft

(b) Existing alteration records (FAA Form 337) that could affect the accuracy of approved weight and balance data

(c) Equipment list, to confirm that list matches installed equipment. Verify that list correlates with actual location on aircraft.

(d) Past records in sufficient detail to determine the validity of current weight and balance information, if applicable

NOTE: If aircraft weight and balance records are unavailable or inaccurate, the only acceptable method of determining the actual weight and balance is to weigh the aircraft.

(5) Previous inspection reports, correspondence, and other documents in the office files to determine if there are any open items or if any areas were identified that require special attention

B. *Review Manufacturer's Program*

(1) Verify that the weight and balance information in the Aircraft Flight Manual/Rotorcraft Flight Manual includes current weight and balance information such as:

- Empty weight and center of gravity
- Loading graphs
- Center of gravity envelopes
- Loading schedules
- Index tables

NOTE: The manual may refer to a weight and balance plotter. If so, ensure that this device is available.

(2) Ensure that the manufacturer's procedures cover all aspects of the operator/applicant's intended operation.

(3) Review load manifest requirements for multiengine aircraft (Ref. FAR § 135.63(c)).

C. *Review Weight and Balance Revisions*

(1) Determine who is responsible for updating weight and balance information.

NOTE: The operator/applicant is ultimately responsible for the current status of weight and balance after any major repair or alteration, or equipment change.

(2) Ensure that revised weight and balance information has been entered in the aircraft flight manual/Rotorcraft Flight Manual, or applicable aircraft weight and balance record, following any major change that may affect the weight and balance.

D. *Inspect Equipment and Facilities*

(1) If the operator/applicant has aircraft weighing equipment available, inspect calibration records to ensure that scale(s) calibration is traceable to the National Bureau of Standards.

(2) Ensure that operator/applicant has a draft free area or hangar in which the aircraft can be weighed.

(3) Ensure that loaded aircraft are still within manufacturer specified center of gravity limits.

E. *Evaluate Weight and Balance Training.* Ensure that operator/applicant's flight training curriculum reflects the basic weight and balance procedures. The curriculum must also include any special weight and balance considerations for special use aircraft, e.g., all cargo.

F. *Analyze Results.* Upon completion of the evaluation, analyze the results and determine whether the aircraft and/or program meet all requirements.

G. *Meet With Operator/Applicant.* Discuss discrepancies with the operator/applicant and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in accepting the weight and balance manual procedures or revision.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 76 CONDUCT FAR PART 121/135 PROVING/VALIDATION TESTS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3318

B. *Avionics:* 5318

3. OBJECTIVE. This chapter provides guidance for conducting proving tests, as required by FAR §§ 121.163 and 135.145, and for evaluating an operator/applicant's compliance through the use of validation tests per FAR Part 121, Subparts E and F, and FAR § 135.13.

5. GENERAL

A. *Definitions*

(1) *Proving Tests:* Tests conducted by an operator/applicant to demonstrate the ability to operate according to proposed procedures and regulatory requirements for original certification or introduction of equipment new to the operator.

(2) *Provisionally Certificated Aircraft:* Aircraft in the process of receiving a type certificate or an amendment to an existing type certificate.

(3) *Validation Tests:* Tests conducted by an operator/applicant to demonstrate the ability to operate according to procedures and regulatory requirements for specific operational authorizations.

B. *Test Differences.* Proving and validation tests differ with respect to regulatory source and application. Both tests provide a method for evaluating an operator's demonstrated operational ability. Both the testing methods and the results of the tests must be acceptable to the Administrator.

C. *FAA Inspection Team Requirements.* The district office manager shall organize the inspection team and assign a principal inspector as team leader.

(1) The team leader will be responsible for the conduct, coordination, and evaluation of the test plan. In addition, the team leader will be the spokesperson for the Administrator on all matters pertaining to the test.

(2) The inspection team should have the following personnel, as required:

- An Aviation Safety Inspector (operations) type-rated on the equipment
- Aviation Safety Inspectors (maintenance and avionics) trained on the equipment and experienced in either FAR Parts 121 or 135 operations, as applicable

(3) All members should be familiar with the pertinent parts of the operator's manual and program

NOTE: If qualified inspectors are not available within the district office, the district office must request assistance from the region.

7. PROVING TESTS. Proving tests are conducted to ensure that an operator's organization and maintenance program can support a proposed operation effectively and safely. The operator/applicant must demonstrate the ability to conduct line operation functions with a specific aircraft in compliance with regulations and safe operating practices. FAR Parts 121 and 135 require aircraft proving tests when the following occurs:

- Initial certification of an applicant
- An operator submits a proposal to add to its operations specifications an aircraft type that the operator has not operated previously
- An operator submits a proposal to use materially altered aircraft

A. *Proving Test Plan.* The operator/applicant must develop and submit a proving test plan at least 10 days prior

to any in-flight demonstration the operator desires to have credited toward proving test requirements. This includes training or ferry flights. Any deviations to this plan must be coordinated with the Certificate Holding District Office.

B. During the FAA planning stage, the team leader shall assign responsibility for different sections of the proving test report to specific members of the team.

(1) Each team member's responsibility includes project participation until the final report is ready for submission.

(2) Team leader responsibilities include the following:

- Notifying the region of proving test dates, times, and locations. The region shall notify other regions affected by the impending proving tests and any resulting scheduled operations proposed by the operator.
- Assigning appropriate sections of the test plan to maintenance, avionics, and operations inspectors for their review and comment
- Coordinating with the office of aviation security, as necessary, to obtain security inspector assistance for evaluating specific areas such as hazardous materials and passenger screening

NOTE: Figure 76-1 provides guidance to the team leader in the planning and coordination phase.

C. *Personnel Participation.* Regulations limit the participants in the in-flight portion of the proving tests to those required by the operator to conduct the tests and those designated by the Administrator. The number of persons on board in excess of the crew and the FAA proving test team must be kept to a minimum. Personnel in this category will be limited to the following:

- Operator/applicant's supervisory personnel
- Designated FAA representatives from regional and/or Washington headquarters
- Representatives of the aircraft/engine/accessories manufacturer(s)

D. *Provisional Airworthiness Certificates.* In rare situations, an operator/applicant may propose to use a provisionally certificated aircraft during proving tests under FAR Part 121.

(1) The issuance of a Provisional Airworthiness Certificate, per Subpart I of FAR Part 21, is the responsibility of the Manufacturing Inspection District Office.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

(2) To obtain FAA approval, the operator must show that no feature, characteristic, or condition of the aircraft would make it unsafe when operated in accordance with FAR §§ 91.317, {91.41}, and 121.207.

NOTE: FAR Part 135 does not permit the use of provisionally certificated aircraft for proving tests.

9. VALIDATION TESTS. Validation tests provide the operator with an opportunity to demonstrate to the Administrator that specific line operations, such as two-engine, extended-range, long-range navigation, and Category II and III operations, can be conducted safely. Validation tests, like proving tests, are operator-oriented but are usually more limited in scope. Validation tests and proving tests may be conducted jointly.

11. THE PROVING AND VALIDATION TEST PROCESS

A. *Phase I.* During Phase I, the team leader must ensure that the operator/applicant is aware of the specific proving or validation test requirements and the requirement for submitting the plan to the Administrator.

(1) Phase I of the proving test process begins when one of the following occurs:

- An applicant for a certificate establishes the Schedule of Events

- An operator advises the Certificate Holding District Office of an intent to acquire a new aircraft type

(2) For validation tests, this phase begins when one of the following occurs:

- An operator proposes to operate over routes requiring a special navigation authorization

- An operator acquires new equipment that requires special performance or operational authorization

B. *Phase II.* Phase II begins when the operator/-applicant submits the test plan to the FAA for evaluation. During this phase, the team leader must ensure the plan, as submitted, is complete and the format is acceptable for a thorough review and analysis to be conducted.

C. *Phase III.* Phase III consists of the inspectors thoroughly reviewing the submitted plan.

(1) The review should ensure compliance with regulatory requirements and the logical sequencing of events.

(2) During this phase, close coordination must be maintained between the Administrator and the operator/applicant. The operator/applicant should be advised by letter of the results of the review. This review should take place within five days of the plan's submittal.

D. *Phase IV.* Phase IV is the demonstration phase.

(1) For proving tests, the operator/applicant conducts both en route and non-en route segments of the test for FAA observation.

(2) For validation tests, the operator conducts specific operations to accomplish one of the following:

- Collect verification data

- Provide a flight/operation for FAA observation

E. *Phase V.* After successfully completing a proving/-validation test, the Certificate Holding District Office approves the operations specifications and completes the appropriate test report.

13. PROVING TEST REQUIREMENTS

A. For proving tests to be acceptable, the operator/-applicant must demonstrate the ability to operate according to the operating and maintenance regulatory requirements that would apply if the operator were fully certificated and held the necessary authorizations. Only the following types of flights can be credited toward proving tests:

(1) Representative en route flights conducted under the provisions of FAR Parts 121 or 135, applicable sections of FAR Part 91, and other applicable rules

(2) Training flights observed by an FAA inspector, if the aircraft is maintained according to the proposed maintenance/inspection programs

B. The minimum time requirements for proving tests under Part 121 are as follows:

(1) *Newly Manufactured Aircraft.* FAR § 121.163(a) requires a minimum 100 hours of proving tests to include 10 hours of night flight, in addition to the aircraft certification tests. This applies to new aircraft manufactured in the U.S. or any foreign-manufactured aircraft not previously operated by a U.S.-certificated operator.

(2) *Aircraft New to the Operator.* FAR § 121.163(a)(1) requires at least 50 hours of proving tests by an operator/-applicant proposing to use a type of aircraft that has been proven previously by another FAR Part 121 operator.

(3) *Materially-Altered Aircraft.* FAR § 121.163(a) requires an operator/applicant to conduct at least 50 hours of proving tests when the type of aircraft to be used has been materially altered in design. Examples of materially altering an aircraft design include the following:

- Installation of engines that differ in type from those originally installed on the aircraft for type certification

- Any design alterations that significantly affect flight characteristics, e.g., wing or fuselage extensions

C. Proving tests under FAR Part 135 are required only when those operations are conducted with turbojet aircraft or aircraft requiring two pilots for operations under Visual Flight Rules.

(1) At least 25 hours of proving tests must be flown when an operator has not previously operated that aircraft or an aircraft of the same make and similar design in any operations under Part 135.

(2) At least 25 hours of proving tests must be flown when an aircraft used by the operator has been significantly altered in design. Significant alterations in the design of an aircraft include the following:

- Installation of engines that differ in type from those originally installed on the aircraft for type certification

- Any design alteration that significantly affects flight characteristics, e.g., short take-off and landing modifications

D. *Airport Operations.* An operator must conduct a representative number of proving tests into airports that the operator plans to serve in operation specifications-approved scheduled/unscheduled operations. If an operator plans to provide service to airports in more than one area (domestic and overseas), the operator must conduct proving tests into a representative number of those areas. The Administrator will determine what constitutes a representative airport or area of en route operation.

E. *Carriage of Passengers/Cargo.* The carriage of revenue passengers on a proving test is strictly prohibited. The carriage of mail, express, or other revenue cargo is permitted when the operator/applicant has the appropriate Department Of Transportation (DOT) economic authority.

F. *Deviations.* The only deviations authorized by regulations are to the required number of proving test flight hours.

G. *Predemonstration Meetings*

(1) The proving team shall conduct predemonstration test meetings to accomplish the following:

(a) Provide members with assignments, schedules for flight times and locations, and inspection and reporting requirements

(b) Determine the means of testing the operator/-applicant's ability to deal with simulated and/or actual operational contingencies within the limits of the proposed program. Scenarios must be clearly understood by and coordinated with each member of the team in terms of individual roles and responsibilities. The proving test team leader must ensure:

- That the operator is not encumbered with so many simulated situations that a realistic evaluation of the proposed operation is hindered

- That emergency or other simulated situations, when appropriate, are well-coordinated with other agencies such as Air Traffic Control or airport authorities, as required

NOTE: All simulated scenarios must be terminated immediately if an actual emergency occurs.

(2) The following are examples of typical scenarios that may be used in evaluating the operator's capabilities:

(a) Diversion to alternative airports for reasons such as weather or maintenance. This would test the company's communications, maintenance, and other operational capabilities.

(b) Minimum Equipment List (MEL) or Configuration Deviation List (CDL) situations that test the operator/-applicant's operations and maintenance procedures, e.g., a simulated inoperative generator

(c) Problems that will demonstrate the operator/-applicant's competency and knowledge of areas such as aircraft performance, airport analysis programs, and alternative company procedures, e.g., simulating an inoperative anti-skid or thrust reverser while operating on a runways contaminated with ice, slush, or snow.

(d) Maintenance problems that will demonstrate:

- The availability of spare parts, special tools and equipment, and sufficient competent, trained personnel, if applicable

- The effectiveness of maintenance procedures

- The availability of contracted support agencies, if required, e.g., fueling, deicing, and non-routine maintenance

(e) Problems that will cause the operator/-applicant to use alternative weight and balance procedures, if the normal system is a computer-based system

(f) Problems that will demonstrate the operator/applicant's ability to function according to established company procedures and FAA regulations for security and hazardous cargo situations

(g) Operational situations that exercise dispatch, flight following, or flight locating centers to test communications, weather information dissemination, and other flight information distribution abilities

(h) Simulated aircraft emergencies, such as engine failure or landing gear retraction/extension problems

NOTE: Under no circumstances shall an inspector require an actual engine shutdown.

(i) Specific simulated emergencies, if applicable:

- Incapacitated passengers in need of immediate medical assistance

- Lavatory or cargo fires

- Loss of pressurization

- Unruly passenger who interferes with a crewmember

11. VALIDATION TEST REQUIREMENTS

A. Validation tests shall be conducted for the following reasons:

- When directed by AFS-1 or the principal inspector

- When FAR Part 121, Subparts E and F, and § 135.13 require an operator to demonstrate that it can satisfactorily conduct the operations for which it is seeking FAA authorization

B. After the operator has successfully demonstrated the ability to meet all requirements, the FAA approves the specific authorizations. FAR Parts 121 and 135 require these specific authorizations to be included in the operations specifications.

(1) The requirements for validation tests are derived from different regulations than the requirements for proving tests. However, validation tests are often conducted in conjunction with proving tests.

(2) The validation tests must be specifically designed and tailored to the individual situation(s) of the operator.

C. Validation tests may consist of a single flight operation or a series of flight operations. As regulations do not specify a required number of hours or flights, this is determined by the Administrator. Depending on the type of validation test, it may be necessary for an inspector to observe each flight or require the operator to keep records of a series of flight operations for FAA evaluation.

D. In certain situations, the FAA may grant an interim authorization, such as an authorization to conduct Category II operations with higher minimums. This interim authorization allows:

- FAA observation and evaluation of the proposed line operation

- Data collection by the operator for FAA evaluation

E. Successful completion of all validation tests is required before a final authorization is granted.

F. Operational situations that require a special navigation authorization and normally require validation tests include the following:

(1) A situation where an operator proposes to operate a specific aircraft for the first time into an area requiring the use of special navigation equipment and/or procedures. These situations can include the following:

- Operations in remote and extensive land areas with questionable or degraded surface or space-based navigation facilities
- Operations over extended overwater areas that do not have adequate surface or space-based navigation facilities
- Operations in extensive areas of magnetic unreliability
- Operations in North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace. See Advisory Circulars 91-49, General Aviation Procedures for Flight in North Atlantic Minimum Navigation Performance Specifications Airspace, as amended, and 120-33, Operational Approval of Airborne Long-Range Navigation Systems for Flight Within the North Atlantic Minimum Navigation Performance Specifications Airspace, as amended, and the Minimum Navigation Performance Specifications Operations manual.
- Operations in North Pacific (NOPAC) airspace. See North Pacific Operations manual.
- Operations in Arctic Ocean and Antarctica airspace
- Low-level aircraft off-shore operations that do not have adequate surface or space-based navigation facilities

(2) An operator who proposes to use the following special navigation equipment in a specific aircraft when that operator has not previously used the equipment in that aircraft:

- Area navigation systems certified according to Advisory Circular 90-45, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, as amended
- LORAN-C navigation systems. See Advisory Circular 20-121, Airworthiness Approval of Airborne Loran-C Systems for Use in the U.S. National Airspace System, as amended
- OMEGA/VLF navigation systems. See Advisory Circular 20-101, Omega and Omega/VLF navigation Systems Approvals for Use in the Conterminous United States and Alaska, as amended
- Inertial navigation systems. See Advisory Circulars 25-4, Inertial Navigation Systems (INS), as amended, and 121-13, Self-Contained Navigation Systems (Long Range), as amended
- Doppler navigation systems
- Global Positioning Satellite navigational systems
- Any combination of the preceding systems

G. The following situations require validation tests, and may require additional maintenance tasks, procedures and limitations (Minimum Equipment List and maintenance) for each type of aircraft to be used by an operator:

- Extended-range operations with two-engine airplanes under FAR Part 121 over routes containing a point further than 1-hour flying time from an adequate airport. See Advisory Circular 120-42, Extended Range Operation With Two-Engine Airplanes, as amended, and Order 8300.10, Vol. 2, Ch. 82, Extended Range Operation With Two-Engine Airplanes.
- Unimproved runway operations

H. The following situations require special equipment and special operational authorization:

- Category II and III instrument approach and landing systems. See Advisory Circulars 120-29, Criteria for Approving Category I and Category II Landing Minima for FAR 121 Operators, as amended and 120-28, Criteria for Approval of Category III Landing Weather Minima, as amended

- Use of automatic landing systems for landing operations. See Advisory Circular 20-57, Automatic Landing Systems, as amended

- Use of manually flown flight control guidance systems approved for landing operations (heads-up or heads-down flight control systems)

- Use of airborne radar approach systems (ARA). See Advisory Circular 90-80, Approval of Airborne Radar Approach (ARA) Procedures for Helicopters to Offshore Platforms, as amended.

- Use of area navigation systems for approach and landing operations. See Advisory Circular 90-45, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, as amended.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

(1) The inspector must have a thorough knowledge of the regulatory requirements of FAR Parts 121 or 135, as applicable.

(2) The inspector's training and/or experience level must meet one of the following:

- Successful completion of the Airworthiness Inspectors Indoctrination String Course and the Airworthiness Inspectors En Route Course

- For inspectors hired prior to the development of the String Course concept, satisfactory performance at a journeyman's level

(3) The inspector must have experience with FAR Part 121 and/or 135 operations.

(4) The inspector must be familiar with the operator/applicant's maintenance program.

(5) The inspector must have experience or training on the type of equipment being used.

B. *Coordination.* This task requires close coordination among avionics, maintenance, and operations inspectors and with the regional office.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43 and 91

- FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended

- Advisory Circular 20-57, Automatic Landing Systems, as amended

- Advisory Circular 20-101, Omega and Omega/VLF navigation Systems Approvals for Use in the Conterminous United States and Alaska, as amended

- Advisory Circular 20-121, Airworthiness Approval of Airborne Loran-C Systems for Use in the U.S. National Airspace System, as amended

- Advisory Circular 25-4, Inertial Navigation Systems (INS), as amended

- Advisory Circular 90-45, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, as amended

- Advisory Circular 90-76, Flight Operations in Oceanic Airspace, as amended
- Advisory Circular 90-79, Recommended Practices and Procedures for the Use of Electronic Long-Range Navigation Equipment, as amended
- Advisory Circular 90-80, Approval of Airborne Radar Approach (ARA) Procedures for Helicopters to Offshore Platforms, as amended
- Advisory Circular 91-16, Category II Operations - General Aviation, as amended
- Advisory Circular 91-49, General Aviation Procedures for Flight in North Atlantic Minimum Navigation Performance Specifications Airspace, as amended
- Advisory Circular 120-28, Criteria for Approval of Category III Landing Weather Minima, as amended
- Advisory Circular 120-29, Criteria for Approving Category I and Category II Landing Minima for FAR 121 Operators, as amended
- Advisory Circular 120-31, Operational and Airworthiness Approval of Airborne Omega Radio Navigation Systems as a Means of Updating Self-Contained Navigation Systems, as amended
- Advisory Circular 120-33, Operational Approval of Airborne Long-Range Navigation Systems for Flight Within the North Atlantic Minimum Navigation Performance Specifications Airspace, as amended
- Advisory Circular 120-37, Operational and Airworthiness Approval of Airborne Omega Radio Navigational Systems as a Sole Means of Long Range Navigation Outside the United States, as amended
- Advisory Circular 120-42, Extended Range Operation With Two-Engine Airplanes, as amended
- Advisory Circular 121-13, Self-Contained Navigation Systems (Long Range), as amended
- North Atlantic Minimum Navigation Performance Specifications Air Space operations manual
- North Pacific (NOPAC) operations manual
- Operator's maintenance program
- Operator's submitted test plan

B. *Forms.* None.

C. *Job Aids*

- Figure 76-1, Proving/Validation Test Job Aid

5. PROVING TEST PROCEDURES

A. *Review the Operator/Applicant's Submitted Test Plan*

(1) The plan must contain at least the following information:

- The operator/applicant's point of contact
- A detailed schedule of events including the dates, times, and airports to be used
- The names and positions of all the operator/-applicant's participants for the proposed test schedule
- The names and affiliations of personnel, other than the operator/applicant's employees, whom the operator/applicant wants to participate in the test
- Other information that the Administrator may require

(2) After a complete review by all team members, the team leader will notify the operator/applicant of acceptance or required revisions.

B. *Conduct FAA Team Meetings.* The team leader will provide all participants with the following:

- Individual assignments and responsibilities
- A detailed schedule of events

(1) As a team, formulate and schedule a plan that will test the operator/applicant's capabilities and reactions.

(2) Ensure that the plan includes an inspection of the following:

- The operator/applicant's aircraft (see Vol. 3, Ch. 2, Conduct Spot Inspection of Operator's Aircraft)
- Line stations, both operator/applicant and contractor (see Vol. 2, Ch. 223, Conduct Evaluation of Operator/Applicant's Line Station)
- Servicing facilities - fueling and deicing (see Vol. 2, Ch. 227, Evaluate Operator's Refueling Procedures)

(3) Ensure that the plan includes surveillance of the operator/applicant's routine and non-routine maintenance procedures/performances, to confirm the following:

- The availability of parts, special tools, and adequately trained personnel
- The availability and effective utilization of company manuals (operations, maintenance, Minimum Equipment List/-Configuration Deviation List)
- The effectiveness of maintenance procedures

(4) Ensure that the plan includes the use of simulated problems, such as:

- Weather diversions
- Equipment failures/malfunctions
- Inflight/ground emergencies

C. *Conduct Meeting with Operator/Applicant.* Introduce team members and discuss the procedures to be followed during the test.

D. *Conduct Proving Test.* Accomplish the proving test flight per formulated plan (see Figure 76-1). Advise the operator/applicant of any discrepancies on the day that they occur. When a serious deficiency occurs that may be cause for rescheduling or terminating the proposed flights, advise the operator/applicant immediately.

NOTE: All simulated scenarios must be terminated immediately if an actual emergency occurs.

E. *Analyze Findings.* As a team, compare and evaluate individual and group findings to determine if discrepancies and/or deficiencies exist.

F. *Conduct Debriefing.* Conduct a meeting with the operator/applicant to discuss findings and necessary corrective actions. Notify the operator/applicant by letter of all deficiencies discussed.

7. TASK OUTCOMES FOR PROVING TESTS

A. *File PTRS Transmittal Form*

B. *Approve Operations Specifications Amendment.* When all deficiencies are resolved, approve/amend the operator's operations specifications (see Vol. 2, Ch. 84, FAR Part 121/135 Operations Specifications).

C. *Complete The Report*

(1) The inspection team must complete a report that explains how the operator/applicant demonstrated compliance with the applicable subparts of the regulations. The report must include:

- Records of all discussions and agreements made with the operator/applicant concerning actions taken to correct deficiencies

- The basis for FAA determinations of satisfactory corrective action

(2) The Certificate Holding District Office will forward one copy of the report within 30 days (through channels according to regional instructions) to the Aircraft Maintenance Division, AFS-300.

9. FUTURE ACTIVITIES FOR PROVING TESTS. None.

11. VALIDATION TEST PROCEDURES

A. *Review the Operator's Submitted Test Plan*

(1) The plan must contain at least the following information:

- The operator's point of contact
- A general schedule of events that may include flights, airports to be used, and dates
- Other information the Administrator may require

(2) After a complete review, the operator will be notified of acceptance or required revisions.

B. *Conduct FAA Team Meetings (As Required).* The team leader will provide all participants with the following:

- Individual assignments and responsibilities
- A detailed schedule of events

(1) Formulate and schedule a plan that will test the operator's capabilities and reactions.

(2) Ensure that the plan includes an inspection of the following:

- The operator's aircraft (See Vol. 3, Ch. 2)
- Line stations of both the operator and any contractors (see Vol. 2, Ch. 223)
- Servicing facilities - fueling and deicing, if applicable (see Vol. 2, Ch. 227)

(3) Ensure that the plan includes surveillance of the operator's routine and non-routine maintenance procedures and performances, to ensure:

- Availability of parts, special tools, and adequately trained personnel
- Availability and effective utilization of company manuals (operations, maintenance, Minimum Equipment List/Configuration Deviation List)
- Effectiveness of maintenance procedures

(4) Ensure that the plan includes the use of simulated problems, if applicable, such as:

- Weather diversions
- Equipment failures/malfunctions
- Inflight/ground emergencies

NOTE: All simulated scenarios must be immediately terminated if an actual emergency occurs.

C. *Conduct Meeting With Operator.* Introduce team member(s) and discuss the procedures to be followed during the test.

D. *Conduct Validation Flight(s).* Accomplish validation test flight(s) per formulated plan. Advise the operator as soon as possible of serious deficiencies that may be cause for rescheduling or terminating the proposed flights. FAA participation during these flights may not be required.

E. *Analyze Findings.* Evaluate the findings to determine if discrepancies or deficiencies exist.

F. *Conduct Debriefing.* Conduct a meeting with the operator to discuss findings and necessary corrective actions. The operator will be notified by letter of all deficiencies discussed.

13. TASK OUTCOMES FOR VALIDATION TESTS

A. *File PTRS Transmittal Form*

B. *Approve Operations Specifications.* When all deficiencies are resolved, approve/amend the operator's operations specifications (See Vol. 2, Ch. 84, FAR Part 121/135 Operations Specifications).

C. *Complete the Report*

(1) The inspector must complete a report that includes:

- An explanation of how the operator demonstrated compliance with the corresponding subparts of the regulations
- Records of all discussions and agreements with the operator concerning actions taken to correct deficiencies
- The basis for FAA determinations of satisfactory corrective action

(2) The Certificate Holding District Office will forward one copy of the report within 30 days (through channels according to regional instructions) to the appropriate Division.

15. FUTURE ACTIVITIES FOR VALIDATION TESTS. None.

FIGURE 76-1 PROVING/VALIDATION TEST JOB AID

NOTE: Figure 76-1 should be used as an aid in gathering information prior to the test flight. Check the applicable spaces and fill in any required information.

I. OPERATOR/APPLICANT INFORMATION

A. FAR Part 121 Operator ____

1. New applicant ____

2. Existing operator ____

B. FAR Part 135 Operator ____

1. New applicant ____

2. Existing operator ____

C. Type of Airworthiness Certificate

1. Standard ____

2. Provisional ____

II. OPERATOR/APPLICANT'S FLIGHT PLAN INFORMATION

A. Company Coordinator (name) _____

B. Proving test schedule (attach itinerary)

1. Validation test included ____

2. Non-en route segment (50% maximum)

- Ferry flight hours to be credited ____
- Training flight hours to be credited ____

3. En route segment (at least 50% of total hours)

- Flight hours to be credited ____
- Representative airports (attach list)
- Representative areas of operation (attach list)

B. Regulatory hours required (check one of the four)

1. FAR Part 121 Aircraft not previously proved ____

2. FAR Part 121 aircraft previously proved ____

3. FAR Part 135 aircraft ____

4. 10 hours of night flight ____

C. Requested Deviations

1. Total proposed reduced hours ____

2. Total approved reduced hours ____

3. Total non-en route hours ____

4. Total en route hours ____

5. Total night hours ____

D. Involved Personnel

1. Names and positions of flight crewmembers (attach list)

2. Names and titles of company nonflight crewmembers (attach list)

3. Names and positions of other operator/applicant participants (attach list)

4. Names, titles, and affiliation of noncompany participants, such as engine and aircraft representatives (attach list)

CHAPTER 77 EVALUATE FAR PART 121 EMERGENCY EVACUATION/ DITCHING PROCEDURES/DEMONSTRATIONS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3308 121

B. *Avionics:* 5308 121

3. OBJECTIVE. This chapter provides direction and guidance to inspectors conducting FAR Part 121 emergency evacuation and ditching demonstrations.

5. GENERAL

A. *Definitions*

(1) *Dark of Night:* A level of illumination approximating the natural level of light that occurs 90 minutes after official sunset under clear sky conditions.

(2) *Extended Over-Water Operations:* Flights conducted at a horizontal distance of more than 50 nautical miles from the nearest shoreline.

(3) *Passengers:* Participants in the demonstrations who represent aircraft passengers. These individuals may not be crewmembers, mechanics, or training personnel.

B. *FAR Part 121 Demonstrations*

(1) FAR Part 121 operators must conduct an emergency evacuation demonstration for any aircraft having a seating configuration of more than 44 passenger seats.

(2) A ditching demonstration must be conducted for any land aircraft intended for extended over-water operations.

(3) The need to conduct full-scale or partial demonstrations depends primarily upon whether a full-scale demonstration has been conducted previously by another FAR Part 121 operator or a manufacturer.

(4) The demonstrations test the following:

- The operator's emergency training program
- Crewmember competency
- The operator's emergency evacuation and ditching procedures
- The reliability and capability of the emergency equipment on the aircraft

C. *Manufacturer Demonstrations*

(1) Aircraft manufacturers must conduct emergency evacuation demonstrations to obtain type certification. These demonstrations are the responsibility of the FAA Aircraft Certification Office (ACO).

(2) The demonstrations test the following:

- The basic aircraft design
- The efficiency with which passengers can be safely evacuated from the aircraft
- The aircraft's emergency evacuation systems
- The manufacturer's FAA-approved emergency evacuation procedures

D. *Regulatory Requirements.* FAR §§ 121.291, 25.803, and Part 121, Appendix D specify four types of evacuation demonstrations:

- Full-scale emergency evacuation
- Partial emergency evacuation
- Full-scale ditching
- Partial ditching

E. *Maximum Demonstrated Seating Capacities.* To determine whether full-scale or partial emergency evacuation demonstrations are required, the inspector must know the maximum number of passenger seats for specific air transport category aircraft used in FAR Part 121 operations. This information, along with data regarding interior configurations and other relevant factors, can be obtained through the following offices:

- The Seattle Aircraft Evaluation Group (ANM) for large aircraft
- The Central Aircraft Evaluation Group (ACE) for small aircraft
- The Southwest Aircraft Evaluation Group (ASW) for helicopters

7. FULL-SCALE EMERGENCY EVACUATION DEMONSTRATION. A full-scale emergency evacuation demonstration simulates an aborted takeoff. The operator must show that the aircraft, emergency equipment, and emergency procedures allow the evacuation of the aircraft at full seating capacity, including crewmembers, in 90 seconds or less.

A. An operator must conduct a full-scale emergency evacuation demonstration when there has been no previous demonstration of the aircraft type and model by another FAR Part 121 operator or by a manufacturer during type certification.

B. A demonstration is required if an operator proposes to increase seating capacity for a type and model of aircraft beyond that which has been previously demonstrated.

C. Under certain circumstances described in FAR § 25.803, the Aircraft Certification Office may designate installed passenger seats to be unoccupied for a manufacturer's demonstration. However, the number of passengers a FAR Part 121 operator may carry is the total number of passengers occupying seats during a full-scale evacuation demonstration and not the number of installed passenger seats.

9. PARTIAL EMERGENCY EVACUATION DEMONSTRATION. The partial demonstration simulates an aborted takeoff and requires that the flight attendants occupy their normal takeoff positions before the demonstration begins.

A. After the initiation signal, the aircraft's emergency evacuation equipment and 50 percent of the required emergency exits and slides must be ready for use in 15 seconds or less. No passengers are used in a partial demonstration.

B. A partial demonstration is required when an operator intends to add to the operation a type and model of aircraft for which either a FAR Part 121 operator or an aircraft manufacturer has conducted a full-scale emergency evacuation demonstration.

(1) *Number.* A partial demonstration is required if:

- A change in seating configuration requires the addition of a flight attendant
- Changes in seating capacity result in fewer or the same number of flight attendants, but the flight attendant duties and procedures change significantly

(2) *Location.* If an operator changes a flight attendant seating assignment, the inspector must determine if the flight attendant's duties and responsibilities change significantly. A significant change requires a partial demonstration.

(3) *Duties and Procedures.* If an operator makes significant changes in emergency evacuation duties or procedures, the inspector may determine a partial demonstration to be necessary. If the changes are minor or can be addressed in the operator's training program, a demonstration may not be required.

(4) *Determining "Significant Change".* The inspector must consider the following in determining the degree and significance of changes:

- Flight attendant knowledge and experience
- The operator's training program
- The increase in complexity of flight attendant duties in terms of additional exits, seats, or briefing responsibilities

C. The need for a demonstration must be coordinated with the appropriate Aircraft Certification Office and AFS-1 when the operator changes the following:

- The number, location, and/or type of emergency exits
- The type of opening mechanisms on the emergency exits

11. FULL-SCALE DITCHING DEMONSTRATION. The ditching demonstration simulates a planned water landing and evaluates the operator's ability to safely prepare passengers, aircraft, and ditching equipment.

A. During the demonstration the following areas are evaluated:

- The emergency training program
- Ditching procedures
- Crewmember competency
- Equipment reliability and capability

B. FAR § 121.291(d) requires an operator who intends to operate an aircraft in extended overwater operations to conduct a ditching demonstration. A full-scale ditching demonstration is necessary if no Part 121 certificate holder has performed one for the proposed type and model of aircraft.

C. Passengers are used in ditching demonstrations only when required by an operator's procedures to assist in removing and launching liferafts. Passengers

shall receive no instructions before the demonstration except for those contained in the operator's manual.

D. It is FAA policy to use an aircraft for all ditching demonstrations. An operator proposing to use a life-size mockup or a floating device to conduct the demonstration must first have the approval of AFS-1.

E. Stands must be in place at each emergency exit and wing. During type certification, ditching emergency exits must be above the calculated waterline which would exist were the aircraft at rest in the water. The operator should obtain waterline and ditching exit information from the manufacturer. The tops of the stands must be positioned at the calculated waterline.

F. Regulations do not specify a maximum time limit for the demonstration. However, six minutes is considered the maximum time acceptable to prepare for ditching, from the ditching announcement to the simulated water landing.

13. PARTIAL DITCHING DEMONSTRATION. FAR § 121.291(e) allows an operator to conduct a partial ditching demonstration if a full-scale ditching demonstration for the proposed type and model of aircraft has been conducted by another FAR Part 121 operator.

15. MANUFACTURER-CONDUCTED DEMONSTRATION. Manufacturers of transport category aircraft having more than 44 passenger seats must conduct a full-scale demonstration in order to be issued a type certificate. The manufacturer's demonstration must be conducted according to the requirements of FAR § 25.803.

A. The Aircraft Certification Office has primary responsibility for planning, conducting, and evaluating manufacturer emergency evacuation demonstrations.

B. The requirements of FAR § 25.803 were upgraded to be equivalent to those required by Part 121. This was done so that one demonstration would suffice for both the issuance of an aircraft type certificate and compliance with the operational requirements of FAR § 121.291. Coordination with Flight Standards personnel is necessary to ensure compliance with operational requirements.

(1) If the manufacturer wants the demonstration to serve both the certification requirements of FAR § 25.803(c) and the operational requirements of § 121.291(a), the demonstration shall be conducted according to Part 121, Appendix D.

(2) AFS-200 and the Aircraft Certification Office must concur on the acceptability of the manufacturer's plan.

(3) Flight Standards personnel must participate in the actual demonstration.

(4) In the absence of U.S. purchasers for an aircraft, crewmembers used in a manufacturer's evacuation demonstration must be trained in a program similar to the emergency evacuation portion of training programs approved under FAR Part 121. This ensures that the full-scale evacuation demonstration will also meet the requirements of FAR § 121.291.

17. INCREASING SEATING CAPACITY BY ANALYSES AND TESTS, FAR § 25.803(d)

A. *Use of Analysis and Test Data.* A combination of analyses and tests may be used to show that an aircraft can be evacuated within 90 seconds under the conditions specified in FAR § 25.803(c). The analysis and test data must show that the emergency evacuation capability is equivalent to that which would be obtained by actual demonstration. If the Administrator accepts the data, a demonstration need not be conducted.

B. *Limitations of Test Data.* FAA policy prohibits the use of analyses and tests to increase seating capacity more than five percent above that established by a full-scale evacuation demonstration.

C. *Approval of Test Data.* A five percent increase in seating capacity cannot be approved without the analyses and test data being evaluated by the Aircraft Certification Office. AFS-1 will forward any request to increase up to five percent through the analysis and test method to the appropriate Aircraft Certification Office.

D. *Restrictions.* The operator is not allowed, under any circumstances, to increase passenger capacity beyond the maximum exit capacity of the aircraft.

19. PARTICIPANTS

A. *Passengers.* For a full-scale emergency evacuation demonstration, the operator must assemble a representative passenger complement. The operator must ensure passengers meet the criteria in Job Aid 77-1. If passengers do not meet these criteria, the operator must repeat the demonstration.

(1) Passengers must be representative of a normal passenger complement as outlined in Job Aid 77-1.

(2) The life-sized dolls must be carried by passengers to simulate infants 2-years-old or younger.

(3) No employee of a certificate holder or manufacturer may be seated next to an exit.

(4) In some locations, child labor laws prohibit participation by children between the ages of 3 and 11. In these situations, a proportional mix of the overall passenger complement may be substituted.

(5) No passenger may have taken part in this type of demonstration within the preceding six months.

(6) The operator may not practice, rehearse, or describe the demonstration for the passengers.

B. *Company Officials.* Company officials, such as Directors of Operations and Maintenance, must be available at the site of the demonstration.

(1) The company officials present must have the authority to modify the demonstration plan on site.

(2) They must be able to respond to FAA requirements for specific corrective actions for deficiencies that occur during the demonstration.

(3) Company personnel may observe the demonstration, but the company must ensure that these persons do not pose a distraction or affect the demonstration's outcome.

C. *Safety Personnel.* The company should provide safety personnel at strategic locations around the aircraft to protect passengers. Safety personnel may not assist crewmembers or otherwise participate in the evacuation. Safety personnel are used only to prevent passenger injury.

D. *Non-Company Personnel.* Non-company individuals who are not FAA employees must have specific reasons to observe the demonstration. Usually, these individuals will be representatives of the aircraft manufacturer, manufacturers of equipment used during the demonstration, or other organizations with a direct interest in aviation safety. The operator is responsible for all non-FAA personnel observing the demonstration.

E. *Crewmembers*

(1) *Flight Deck.* The flight crew must be qualified in the aircraft to be used. However, they need not need have completed the initial operating experience requirement.

(2) *Flight Attendants.* Flight attendants must have completed an FAA-approved training program and passed a written or practical examination on the type of aircraft, emergency equipment, and procedures. Flight attendants may not be provided additional emergency training or become familiarized with equipment before the demonstration.

F. *FAA Personnel.* FAA observers should be limited to the following:

- FAA inspectors from other offices whose operators will be acquiring the same or similar type aircraft as the one being demonstrated
- Regional or Headquarters officials or designees
- FAA personnel from the Certification Directorate, the Flight Operations Engineering Board, the Aircraft Evaluation Group, or any other FAA office concerned with technical or engineering components of the aircraft

21. SELECTING EXITS

A. *Calculating the Number of Usable Exits*

(1) In aircraft with an even number of exits, no more than 50 percent of the total number of exits and slides may be opened and deployed.

(2) If an aircraft has an odd number of emergency exits, subtract one; 50 percent of the remaining number of exits shall be used in the demonstration.

(3) All other exits must be blocked.

B. Any emergency exit assigned to flight attendants as part of their evacuation duties may be selected for use during the demonstration, provided they are designated as primary exits in the company's evacuation procedures.

C. Ventral (stairs) and tail cone exits should not be used unless they are paired with another exit. If there is any doubt as to which exits are paired, consult the Aircraft Certification Office responsible for the type certificate of the aircraft make and model.

D. One from each pair of exits should be selected. Exit pairs should be identified by the operator in the interior configuration diagram.

E. *Partial Demonstrations.* Only the flight attendants' primary exits, as designated by the operator's manual, may be used during partial demonstrations.

(1) FAR § 121.291(c)(1) requires that during a partial emergency evacuation demonstration, 50 per-

cent of the floor level and 50 percent of the non-floor level exits be opened.

(2) A secondary door or exit that could not possibly be opened and ready for use in 15 seconds should not be selected.

23. METHODS OF BLOCKING EXITS. The following are examples of acceptable methods of blocking exits:

A. Position inspectors inside the aircraft at each door or window exit before starting the demonstration. When the evacuation is initiated, inspectors positioned in front of exits to be opened shall move away from their positions as quickly as possible. Inspectors positioned in front of blocked exits shall raise their hands and state, "This exit is blocked." This is the most effective method for blocking overwing exits.

B. Cover each door window and window exit with a swatch of red cloth. Secure a line to the cloth long enough to reach the ramp or hangar floor. At the initiation signal, designated inspectors will pull the lines to uncover the door windows and window exits that are to be used. Doors and windows that are not to be used will remain covered.

C. On the outside of the aircraft, rig red lights in front of the door windows and window exits. When illuminated, these simulate a fire at blocked exits. The lights must be illuminated simultaneously.

25. INITIATION SIGNAL. All team members must be aware of the initiation signal. The initiation signal should be the same both inside and outside of the aircraft.

A. The preferred method of initiation is for a company employee to interrupt the aircraft's normal source of power by one of the following actions:

- Disconnecting or turning off an external source of power or a ground power unit
- Disconnecting or turning off the auxiliary power unit

B. These actions provide a clear initiation signal in the following ways:

(1) Inside the aircraft, the flight attendants and FAA team members will observe the normal cabin lighting extinguish and the emergency lighting system illuminate. This is their signal to begin the evacuation demonstration.

(2) Outside the aircraft, FAA observers and the team leader will observe the external lights extinguish. This signal initiates the timing and other necessary observation actions of the FAA team.

27. UNSATISFACTORY DEMONSTRATIONS. The severity and basic cause of the deficiency must be considered. Minor deficiencies usually can be resolved by responsible company personnel without having to declare the demonstration unsatisfactory.

A. A demonstration is unsatisfactory if the operator fails to meet the specified time limit.

B. Crewmember ineffectiveness or equipment malfunctions may be grounds for declaring a demonstration to be unsatisfactory.

C. If a relatively severe deficiency occurs due to improper company training, procedures, or maintenance, the demonstration should be declared unsatisfactory.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the regulatory requirements of FAR §§ 25.803(c), 121.291, and Part 121, Appendix D.

B. *Coordination.* This task requires coordination with operations inspectors and the Regional Office. It may require coordination with the appropriate Aircraft Certification Office, and with AFS-1.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 121-24, Passenger Safety Information Briefing and Briefing Cards
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8430-1 Revised

C. *Job Aids*

- Figure 77-1, Passenger Participant Mix

- Figure 77-2, Instructions for Completing FAA Form 8430-1

5. PROCEDURES FOR EMERGENCY EVACUATION DEMONSTRATION

A. *Determine the Need for an Emergency Evacuation Demonstration.* The principal inspector or Certification Project Manager must determine if a demonstration is required.

(1) An emergency evacuation demonstration is required when an operator proposes operating a specific aircraft type and model when:

- Entering an aircraft into service for the first time (for a new or existing operator)
- A significant change occurs in the number of flight attendants, their seating locations, their evacuation duties or emergency procedures
- There is a change in the number, location, or type of emergency exits, or type of opening mechanism on the emergency exits

NOTE: If an operator proposes to operate an aircraft configured with less than 44 seats, even though the aircraft may have been previously type certificated with more than 44 seats, no demonstration is required.

(2) A full-scale demonstration is required when:

- The aircraft type, model, and proposed seating capacity have not been previously demonstrated either by a manufacturer or by another U.S. operator
- The aircraft has undergone a change in its exit configuration and/or design (as determined by AFS-1)

(3) A partial demonstration is required when:

- An aircraft new to the operator has had a full-scale demonstration conducted by a FAR Part 121 operator or manufacturer for the maximum seating configuration proposed by the operator acquiring the aircraft
- The operator is undergoing original certification
- The principal inspector determines a significant change has occurred in the number of flight attendants, their locations, or their duties and procedures
- AFS-1 determines a change has occurred in seating configuration, exits, or the aircraft's design that would require a partial demonstration

B. *Notify the Operator of Requirement.* Advise the operator in writing that an Emergency Evacuation Demonstration is required. The operator must submit a plan for conducting the demonstration.

(1) The operator should submit the plan at least 30 working days in advance of a full-scale demonstration and 15 working days in advance of a partial demonstration.

(2) The operator's plan shall contain a letter of request which states the following:

- The applicable regulation which requires that a full-scale or partial emergency evacuation demonstration be conducted
- The aircraft type and model, specifying the full seating capacity (including crewmembers) to be demonstrated
- The number of flight attendants to be used during the demonstration
- The proposed date, time, and location of the evacuation demonstration
- The name and telephone number of the company's evacuation demonstration coordinator
- A statement that the representative passenger complement meets the requirements in FAR Part 121, Appendix D(a)(7)
- A description of how the operator proposes to initiate the demonstration
- A description of the timing signal
- A description of how the operator intends to block exits

(3) A diagram shall be included in the plan, representing the aircraft to be demonstrated. The diagram must show the following:

(a) The location and designation of all exits by type and the designated exit pairs

(b) The assigned seating location of each required crewmember during takeoff

(c) The interior cabin configuration, showing the location of individual passenger seats, galleys,

aisles, lavatories, and passenger compartment partitions and bulkheads

(d) The location and type of emergency equipment on the aircraft, including:

- Fire extinguishers
- Portable oxygen bottles/masks
- Megaphones
- Crash axes
- Emergency ropes/tapes
- Liferafts/sliderafts
- Individual flotation devices or life preservers
- First aid and medical kits

(4) The plan must contain copies of the following documents:

- The appropriate crewmember manual pages describing emergency evacuation duties and responsibilities
- A copy of the passenger information card to be used on the aircraft during revenue operations

(5) The operator's plan must include the following additional information:

- A description of the emergency equipment installed on the aircraft, including the type and model of each item, as applicable
- A list of crewmembers qualified to participate in the demonstration
- A description of how the operator will ensure the demonstration is conducted in the dark of the night or in conditions simulating the dark of the night
- A description of how the operator will ensure the aircraft is positioned in a location, either indoors or outdoors, which will allow the unobstructed deployment of all emergency evacuation slides or sliderafts, as applicable

C. *Evaluate Operator's Plan and Letter of Request.* Ensure that all necessary information is included in the submission. Respond to the operator's plan in a timely manner.

(1) Resolve minor omissions or deficiencies by contacting the company's evacuation demonstration coordinator.

(2) If the operator's plan has a significant number of required items or documents missing, return the entire submission to the operator with a written explanation as to why it is unacceptable. Advise the operator that the FAA will take no further action until an acceptable plan is submitted.

(3) Once all required elements have been submitted, analyze and evaluate the operator's plan. Ensure the information is acceptable and consistent with the proposed type of demonstration.

(4) The principal inspector should ensure that:

(a) The operator's emergency training program has been approved by the FAA

(b) Evacuation procedures in the operator's manuals, including crewmember assignments, are realistic, practical, and in compliance with FAR § 121.397

(c) The passenger information card is understandable and consistent with the type and model of aircraft to be demonstrated

(d) The emergency equipment is acceptable for the type of operation proposed

(5) *Conduct Necessary On-Site Evaluation(s).* Certain items in the proposal may require on-site evaluation. Determine that the operator is making provisions for participant safety, including the use of safety observers, stands, padding, mats, and other appropriate measures.

(6) *Document Deficiencies.* Resolve deficiencies with the company's evacuation demonstration coordinator.

(a) If major discrepancies are found, or if the FAA and the operator are unable to resolve significant issues, return the operator's plan with a letter of explanation. Inform the operator that the discrepancies outlined in the letter must be corrected and a plan resubmitted before the FAA takes further action.

(b) If the submission is acceptable, inform the operator that the plan has been accepted by the FAA.

D. *Assemble FAA Team Members*

(1) *Team Leader.* For an initial certification, the Certification Project Manager (CPM) serves as the demonstration team leader. For an existing operator, the district office manager will assign one of the oper-

ator's principal inspectors to serve as demonstration team leader.

(2) *Additional Team Members.* Remaining FAA team members will be assigned as needed. The team should include operations, maintenance, and avionics inspectors familiar with FAR Part 121 operations and requirements.

E. *Conduct Predemonstration Meeting with Operator.* Meet with the operator's evacuation demonstration coordinator.

(1) Review the demonstration plan and ensure the operator is thoroughly familiar with the criteria to be used during the demonstration.

(2) Review the training methods, the timing criteria, and the method and signals for initiating the demonstration.

(3) With the operator, determine the signal to be used to terminate the demonstration, such as an air horn or other clear and distinguishable audible signal. Agree upon a suitable device and test it to ensure its adequacy.

NOTE: Previous experience has shown that a whistle blast may not be adequate.

(4) Resolve any open questions or issues the operator may have before conducting the demonstration.

F. *Conduct the FAA Team Meeting*

(1) Provide specific team member assignments for the demonstration. Include the following:

- Timekeeping
- Position (inside or outside the aircraft)
- Inspecting the aircraft, emergency equipment, and any applicable documents

(2) Distribute an aircraft diagram to each inspector showing assigned locations for the demonstration.

(3) Determine which emergency exits shall be opened. Review the operator's proposal for blocking the remaining exits.

(4) Select typical crewmembers to be used in the demonstration from the list provided by the operator. Do not select the following:

- Persons used in previous demonstrations
- Emergency procedures instructors
- Supervisors
- Check airmen
- Union safety representatives
- Others who may have an above average level of competency or experience

(5) Review regulatory requirements and demonstration criteria.

G. *Select Exits and Approve Blocking Method*

(1) Carefully review the operator's emergency evacuation procedures. Determine the number of usable exits.

(2) One from each pair of exits should be selected.

(3) After selecting exits to be used, the team must ensure the operator does not obtain that information.

(4) Once a method of blocking exits has been determined, notify the company's project coordinator of FAA concurrence with the method.

H. *Approve Initiation Signal.* Ensure that all team members are aware of the initiation signal.

I. *Perform Predemonstration Inspection*

(1) Ensure the aircraft is configured and equipped for takeoff according to the operator's manuals and procedures.

(a) The aircraft must include the proposed full passenger seating configuration.

(b) All appropriate emergency equipment must be installed.

(2) Inspect each of the following items to ensure regulatory compliance with FAR Part 121:

- Hand-held fire extinguishers for crew, passenger, and cargo compartments
- Protective breathing equipment
- First aid equipment
- Crash axe
- Megaphones
- Interior emergency exit markings
- Flotation devices or life preservers
- Lighting for interior emergency exit markings

- Emergency light operation
- Emergency exit operating handles
- Emergency exit access
- Exterior exit markings
- Exterior emergency lighting and escape route
- Floor level exits
- Additional emergency exits
- Ventral or tail cone exits
- Portable lights
- Seats, safety belts, and shoulder harnesses
- Emergency Equipment required for extended overwater operations
- Public address system
- Passenger information signs/placards
- Aircraft fire detection and protection system (operational test)
- Passenger information cards
- Cockpit escape system
- Slides and sliderafts

(3) For partial emergency evacuation demonstrations, the slides may be beyond scheduled inspection criteria. The operator must request this option in the demonstration plan. The plan must state that the operator accepts full responsibility for any failure of the demonstration due to a malfunction of the slides. The FAA team leader must either accept or deny this proposal.

(4) In a full-scale demonstration, stands or ramps must be appropriately placed for use by evacuees to descend from the wing to the ground. If stands or ramps are to be used, they must be placed at both overwing exits to ensure the operator does not learn which exits will be used.

(a) Inspect the stands and ramps for structural integrity and security.

(b) Inspect any other safety equipment, such as mats, placed on the ground to protect participants.

(c) Equipment which is not part of the aircraft's emergency evacuation system may not be used to aid participants in reaching the ground.

(5) Ensure dark of night conditions exist in order to properly evaluate the following:

- The aircraft's emergency lighting system
- Passenger and crewmember performance in darkened conditions

(6) Ensure the operator has present at the demonstration the following:

- Appropriate safety personnel to prevent passenger injury
- Company personnel with the authority to direct demonstration modifications as required by the FAA
- The minimum number of flight attendants the operator proposes to use on the aircraft during FAR Part 121 operations. In no case shall this number be less than that specified in FAR § 121.391.
- For full-scale demonstrations, passengers meeting the criteria of FAR Part 121, Appendix D, (a)(7). See Job Aid 77-1.

J. *Attend Predemonstration Briefings*

(1) *Attend Crewmember Briefing.* Ensure the company's evacuation demonstration coordinator provides crewmembers with specific information regarding the demonstration.

(a) The FAA team leader must attend this briefing to resolve any questions and ensure the following items are discussed:

- The purpose of the demonstration
- The initiation signal which begins the demonstration
- The significance of the 90-second time limit for full-scale evacuations or the 15-second time limit for partial evacuations
- The signal to be used for stopping the demonstration
- The importance of safety during the demonstration, including crewmember responsibilities and safety observer duties and limitations

(b) Ensure the crewmembers understand that any evacuation activity in progress must immediately cease with a "stop" signal.

(2) *Attend Operator Passenger Briefing.* Ensure that prior to the demonstration the company's evacuation demonstration coordinator tells the passengers the following:

(a) The purpose of the demonstration is to evaluate how quickly the aircraft can be safely evacuated

(b) Passengers must pay attention to the flight attendants' instructions

(c) Individual safety is not to be compromised at any time during the demonstration

(3) *Brief FAA Team Members.* Remind FAA team members not to discuss the results of observations with persons other than the team leader. Review the following items before conducting the demonstration:

- The objectives of the demonstration
- The initiation signal
- Observer assignments with regard to exits to be used or blocked
- The signal to stop the demonstration

K. *Conduct the Demonstration*

(1) Advise the operator to board the passengers as routinely as possible and prepare for departure. No passenger may be assigned a specific seat unless the FAA team determines such assignments are in accordance with the operator's normal boarding procedures.

(2) For both full-scale and partial demonstrations, ensure the flight attendants accomplish the following:

- Prepare for a normal departure according to the operator's procedures, including closing and securing all exits and galleys, and arming the emergency evacuation system for takeoff
- Conduct a passenger briefing in accordance with FAR § 121.571 and company procedures
- Sit at their assigned positions with restraint systems fastened

(3) Distribute a reasonable amount of carry-on baggage, blankets, pillows, and clothing in the aisles and emergency exit access ways to create minor obstructions.

(a) Carry-on luggage that will fit under a passenger seat, such as small suitcases, gym bags, aircraft flight bags, and briefcases, should be filled with clothes or newspapers and placed in the main aisles.

(b) There must be one bag per seat row for each aisle.

(c) Some bags should be placed in the aisles and passageways.

(d) Pillows and blankets should be scattered in the main aisles.

(4) Ensure each external door and exit and each internal door or curtain is in position for a normal takeoff.

(5) Ensure that the flight crew accomplishes all tasks on appropriate checklists and configures the aircraft for a normal takeoff before the initiation signal is given. Ensure that the flight crewmembers are seated in their normal positions with restraint systems fastened.

(6) Before a full-scale evacuation demonstration, ensure that the aircraft's wing flaps are fully extended if required by the operator's emergency evacuation procedures.

(a) Stands or ramps (if used) should be positioned accordingly.

(b) Wing flaps shall not be repositioned until after the demonstration.

(7) Ensure that after completing all required pre-takeoff actions, the captain informs the FAA team leader (positioned forward of the nose of the aircraft) by ground interphone that the aircraft is ready for takeoff.

(8) Ensure that all FAA team members and company safety observers (if used) are ready and in position.

(9) Issue a warning signal, which should precede the initiation signal by approximately 30 seconds.

(10) Instruct the company evacuation demonstration coordinator to initiate the demonstration.

(11) Begin timing with two stopwatches (a primary and a backup) when the external aircraft lights extinguish.

(12) For a full scale demonstration, each FAA observer assigned to an opened exit will count the passengers as they exit. After the termination signal, each observer will determine that no passenger or crewmember remains on the aircraft or uses the exits. Should any passenger or crewmember remain on

board or use an exit after the termination signal, the demonstration will be declared unsatisfactory.

(13) For a partial demonstration, each FAA observer assigned to an exit to be used will determine that the assigned exit was opened and each slide or slideraft was ready for use before the termination signal. Should any exit, slide, or slideraft remain not ready for use after the termination signal, the demonstration will be declared unsatisfactory.

(14) Team members assigned to the cabin must ensure that all required equipment worked properly during the demonstration.

(15) At the end of the appropriate time period, issue a clear, audible signal terminating the demonstration.

7. PROCEDURES FOR DITCHING DEMONSTRATION

A. *Determine the Need for a Ditching Demonstration*

(1) A full-scale ditching demonstration is required when the operator proposes to operate a specific aircraft type and model under the following circumstances:

- When no ditching demonstration has been performed for the proposed type and model of aircraft by another FAR Part 121 certificate holder
- When planning to initiate flights into extended over-water areas for the first time with an aircraft the operator has previously operated over land areas

(2) A partial ditching demonstration is required when the proposed type and model has been previously demonstrated by another FAR Part 121 operator.

B. *Notify the Operator of Requirement.* Advise the operator in writing that a ditching demonstration is required. The operator must submit a plan for conducting the demonstration. FAA inspectors must ensure the operator understands which information and documents are required for the plan to be accepted for evaluation.

(1) If the operator plans to conduct the ditching demonstration in conjunction with an emergency evacuation demonstration, the operator's demonstration plan must include the following additional information:

- Type of ditching demonstration (full-scale or partial)
- Copies of the operator's manual relating to crewmembers' ditching duties and responsibilities
- A description of applicable emergency equipment used for ditching, including the type and model

(2) If the ditching demonstration is not conducted in conjunction with an emergency evacuation demonstration, the plan must be submitted at least 15 working days before the actual demonstration. The plan must include the information listed above and the following additional information:

- The aircraft model and type
- A list of all crewmembers who will participate in the demonstration
- The proposed date, time, and location of the demonstration
- The name and telephone number of the company's ditching demonstration coordinator

(3) A diagram shall be included in the plan, representing the aircraft to be demonstrated. The diagram must show the following:

(a) The location and designation of all exits by type and the designated exit pairs

(b) The location of emergency ditching equipment, including:

- Liferafts and/or sliderafts
- Survival radios
- Pyrotechnic signaling devices
- Passenger/crewmember life preservers or individual flotation devices

C. *Evaluate the Operator's Plan.* Review the proposal to ensure the following:

- The proposed demonstration will meet the criteria of FAR Part 121
- The emergency training program and ditching procedures in the operator's manual have been approved and accepted

- The operator's training program and ditching procedures provide for safe operating practices

D. *Assemble FAA Team*

(1) If the ditching demonstration is conducted in conjunction with an emergency evacuation demonstration, the same team will observe and evaluate both demonstrations.

(2) If the ditching demonstration is conducted alone, the district office manager will appoint a Federal Aviation Administration ditching demonstration team and team leader.

E. *Perform Predemonstration Inspection.* Before the ditching demonstration begins, the team must inspect each item of emergency ditching equipment for compliance with appropriate airworthiness and other directives. Stands must be placed at each emergency exit and wing.

F. *Conduct the Demonstration.* The demonstration must be conducted during daylight hours or in a lighted hangar.

(1) Ensure inspectors, crewmembers, and passengers, if required, are at their assigned positions. All required crewmembers must be available and used during the demonstration.

(2) Instruct the captain to commence the demonstration. The captain will initiate the demonstration by ordering the crewmembers to prepare for ditching.

(3) Begin timing when the captain announces to prepare for ditching.

(4) Observe crewmembers' preparation activities. Within six minutes of the ditching announcement, crewmembers must accomplish the following:

- Correctly put on life preservers
- Brief passengers
- Secure the cabin
- Complete all required checklists
- Be prepared to evacuate

(5) At the end of six minutes, advise the captain to announce that the aircraft is in the water. At this time the crew must be prepared for a simulated water landing.

(6) Observe the deployment of the rafts. Ensure all liferafts are removed from stowage within a reasonable period of time.

(a) For full-scale demonstrations, each liferaft and slideraft must be launched and inflated. All required emergency equipment must be placed in the rafts.

(b) For a partial ditching demonstration, one liferaft (or slideraft), designated by the FAA team leader, must be launched and inflated. On aircraft configured with sliderafts, it is not necessary to detach each slideraft from its door mounting. Any liferafts stowed inside the aircraft must be removed from stowage and placed on the cabin floor for inspection.

(7) Inspect each slideraft for airworthiness.

(8) Ensure that each evacuee enters a liferaft or slideraft.

(9) Ensure crewmembers adequately locate and describe the use of each piece of emergency equipment in their assigned rafts.

(10) Question crewmembers about actual launch procedures.

9. EVALUATING EMERGENCY EVACUATION AND DITCHING DEMONSTRATIONS

A. *Evaluate the Demonstration.* After the demonstration, confer with FAA team members. Reach agreement on the results before discussing the demonstration with the operator.

(1) Evaluate the following areas of the demonstration:

- Crewmember compliance and effectiveness in performing assigned duties and responsibilities
- Flight crew effectiveness in exercising command responsibilities
- The coordination and communication between the flight crew and flight attendants
- The operation and airworthiness of emergency equipment. Note any deficiencies or delays caused by the emergency equipment.

(2) Ensure that each designated exit and slide was opened, deployed, and ready for use within appropriate time criteria.

(3) Ensure that the following occurred:

(a) For full-scale emergency evacuation demonstrations, designated exits and slides were properly

operated and, if applicable, all passengers and crewmembers evacuated within 90 seconds

(b) For a partial emergency evacuation demonstration, designated exits were opened and slides ready for use within 15 seconds

(c) For ditching demonstrations, the cabin, passenger, and flight attendants were ready for a water landing within 6 minutes. Liferafts were efficiently removed from stowage. Each designated life vest, liferaft, and slideraft was properly inflated.

B. *Determine if Demonstration Was Unsatisfactory*

(1) A demonstration must be declared unsatisfactory if the operator fails to meet the specified time limit.

(2) A demonstration may be declared unsatisfactory for the following reasons:

- Crewmember ineffectiveness or equipment malfunctions
- The occurrence of a relatively severe deficiency due to improper company training, procedures, or maintenance

(3) If the inspection is unsatisfactory, determine if the problem can be corrected immediately.

(a) If the problem cannot be corrected immediately, reschedule the demonstration.

(b) If the problem can be corrected immediately, ensure corrective action is taken.

C. *Advise the Operator of the Results of the Demonstration.* Once an agreement on the demonstration results has been reached, advise the applicant or operator of the results.

(1) If the results are unsatisfactory, issue a letter of disapproval to the operator or applicant.

(2) If the results are satisfactory, issue a letter of approval to the operator or applicant.

D. *Complete Emergency Evacuation Demonstration Report.* The team leader is responsible for preparation and distribution of the demonstration report. The report must include the following:

- FAA Form 8430–1, Emergency Evacuation Demonstration Report (see Job Aid 78–2). One form is required for each demonstration attempt.
- The passenger information briefing card
- A diagram of the aircraft, including emergency equipment, exits, exits used, the number of approved passenger seats, and the location of seats which were used by flight attendants

E. *Distribute the Report.* Forward a copy of the report to the regional Flight Standards Division. Retain the original package in the district office file.

11. TASK OUTCOMES

A. *File WPMS Transmittal Form.*

B. Completion of this task will result in one of the following:

- A letter of demonstration approval
- A letter of demonstration disapproval

C. *Document Task.* File all supporting paperwork in the operator's office file.

13. FUTURE ACTIVITIES

A. If the demonstration was satisfactory, the operator's aircraft will be added to its operations specifications.

B. If the demonstration was unsatisfactory, the operator must begin the process again.

FIGURE 77-1

PASSENGER PARTICIPANT MIX

Passengers	Age	Percentage of Full Seating Capacity
Adult Females	12–60	30% minimum
Adult Males	12–60	50% to 60%
Adult Males and Females (proportionate mix)	over 60	5% minimum
Children (prorated by age)	3–11	5% to 10%
Life-sized dolls	—	3%

FIGURE 77-2

INSTRUCTIONS FOR COMPLETING FAA FORM 8430-1

Complete FAA Form 8430-1 in accordance with the following instructions:

BLOCK NUMBER	DEMONSTRATION
1	Date and time of the demonstration (Use 24-hour time)
2	Results of the demonstration (Sat or Unsat)
3	Full and proper name of the airline and its four-letter designator
4	Complete aircraft make, model, series, and N number, for example: MD-9-80 (N 23AA)
5	Names and titles of FAA team members
6	Check the appropriate block for the type of demonstration. Both an emergency evacuation and ditching demonstration block may be checked, if applicable.
7	Check the reason(s) for conducting the demonstration.
8	Enter the total number of flight crew, flight attendants, and passengers aboard the aircraft.
9	Check the applicable regulations.
10	List each exit used and the number of persons who evacuated from that exit (Example: LF3/46).
11	Check the appropriate block for the type of slide used.
12	Enter the total elapsed time in the appropriate block.
13	Check the appropriate box which describes the aircraft location.
14-20	Check the appropriate box (Sat or Unsat).
21	Briefly describe how exits were blocked (example: exits were blocked with red lights).
22	Briefly describe how the demonstration was initiated (example: deactivated aircraft's normal source of power).
23	Remarks must reference the appropriate block number. More than one line may be used for one item. Comments must be listed for each unsatisfactory item.
24	The team leader signs this report and the district office manager initials it. A regional specialist shall review the report, sign and date Block 25, and forward a complete copy of the report to AFS-1

CHAPTER 78 PROCESS FAR PART 121/135.411(a)(2) OPERATOR AIRCRAFT/ENGINE UTILIZATION REPORT

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3321

B. *Avionics:* 5321

3. OBJECTIVE. This chapter describes the procedures necessary to process an operator's monthly engine utilization report as required by FAR §§ 121.705 and 135.417.

5. GENERAL

A. The monthly engine utilization report provides the Operational Systems Branch, AVN-120, with a record of certain statistics on carriers operating under FAR Parts 121 and 135. These records are used in planning, directing, controlling, and evaluating assigned programs.

(1) The responsibility for completing and submitting the report rests with the assigned inspector. The inspector must obtain the needed data under the authority contained in FAR §§ 121.81, 121.705, 135.73, and 135.417.

(2) AVN-120 must receive this report by the 15th of each month. To ensure processing requirements are met, the data should be received from the operator by the 7th of each month.

B. AVN-120 reviews the reports received from district offices to ensure the data is properly prepared for Automatic Data Processing (ADP). AVN-120 will review all computer-prepared reports to assure they are complete and accurate.

C. AVN-120 issues the "Aircraft Utilization and Propulsion Reliability Report." Distribution of the report shall be according to the established mailing list it contains.

D. *Utilization Report Improvements.* Correspondence concerning the improvement of the utilization report system and significant problems found in using this system should be addressed to the Operational Systems Branch, AVN-120.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the inspector and the operator to ensure timely submission of data.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References.* None.

B. *Forms*

- AC Form 8320-1, Air Carrier Aircraft Engine Utilization Report

C. *Job Aids*

- Figure 78-1, Daily Utilization Calculations

5. PROCEDURES

A. *Prepare Report.* Each month the assigned inspector shall obtain from the air carrier(s) the information to complete the monthly engine utilization report. The report is to be typewritten and submitted on AC Form 8320-1, Air Carrier Aircraft Engine Utilization Report. The following information must be completed:

(1) Operator Designation: Enter the operator's four-character maintenance designator in this block

(2) Month/Year

(3) Operator name

(4) Operator's certificate number

(5) Inspector's name

(6) Region/district office

(7) Aircraft manufacturer: The one to two number designator for the manufacturer (code contained on back of Form 8320-1)

(8) Aircraft Model: See type certificate data sheets for model designation

(9) Number of aircraft: Those authorized for revenue service by approved operations specifications/aircraft listing

(10) Engine manufacturer: A one to four character abbreviation for the engine manufacturer, Ref. Order 8010.2, (code contained on back of Form 8320-1)

(11) Engine model: See type certificate data sheets for model designation

(12) Number of engine shutdowns: The number of engine shutdowns for cause, not to include training, demonstrations, or flight check purposes

(13) Number of engine removals: Engines removed prematurely due to mechanical malfunctions, not to include engines removed for company convenience

(14) Time between overhauls (TBO)

(15) Hot section inspection time

NOTE: If times are controlled by maintenance program, enter type of program, i.e. Condition Monitoring (CON MON), Logical Information Based on Reliability (LIBRA), etc.

(16) Type of operation. Use the following:

- A - Domestic and/or Flag
- B - Supplemental/Scheduled cargo
- C - Scheduled intrastate
- G - Commuter

(17) Aircraft total hours: Fleet flight hours for each model to the nearest whole hour

(18) Hours per Day

(a) To calculate daily utilization, divide total aircraft fleet hours by the number that results from multiplying the total number of aircraft by the total number of days in the month. See Figure 78-1, Daily Utilization Calculations.

(b) If aircraft are added or deleted from the fleet during the reporting month, count only the days that the aircraft were on the operations specifications or aircraft listing. See Figure 78-1.

NOTE: Enter the Aircraft Total Hours to the nearest whole hour.

(19) Engine total hours: Number of engines per aircraft times Aircraft Total Hours

(20) Remarks: Inspector's remarks and comments, e.g., type of engine program and revisions, TBO/Hot Section Inspection Time revisions, deletion and addition of aircraft to operations specifications, including date and N-number, etc.

B. *Submit Report.* Submit the original report to the Aviation Standards National Field Office, Operational Systems Branch, AVN-120, Federal Aviation Administration, P.O. Box 25082, Oklahoma City, OK 73125.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Document Task.* File a copy in the Certificate Holding District Office file.

9. FUTURE ACTIVITIES. Normal surveillance.

FIGURE 78-1
DAILY UTILIZATION CALCULATIONS

(a) To calculate daily utilization, divide total aircraft fleet hours by the number that results from multiplying the total number of aircraft by the total number of days in the month.

No. AC	Days in Month	AC Total Hours	Daily Utilization
10	31	1615	5.2

10 X 31 = 310 AC days

1615/310 = 5.2 Daily Utilization

(b) If aircraft are added or deleted from the fleet during the reporting month, count only the days that the aircraft were on the operations specifications or aircraft listing.

No AC	Days in Month	AC Total Hours	Daily Utilization
10	31	1615	5.2
1	15 (On op/sp)	75	

10 X 31 = 310 + 15 = 325 AC days

1615 + 75 = 1690 AC Total Hours

1690/325 = 5.2 Daily Utilization

CHAPTER 79 REVIEW FAR PART 121/135.411(a)(2) ENGINEERING CHANGE AUTHORIZATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3346

B. *Avionics:* 5346

3. OBJECTIVE. This chapter describes the process required to evaluate an engineering change authorization/order (EA/EO).

5. GENERAL

A. An engineering change authorization/order provides an air carrier with a format for:

(1) Documenting major repairs and alterations to equipment the operator uses

(2) Recording FAA approved data and procedures for accomplishing alterations and repairs to aircraft, propellers, powerplants, accessories, and components. If no previously approved data exists, the operator must obtain approval through an FAA engineering office, a designated engineering representative (DER), or "FAA field approval."

NOTE: If an operator has SFAR 36 authorization, the operator may develop and approve its own data.

(3) Developing procedures and data used to comply with and provide verification of Airworthiness Directives (ADs)

B. In evaluating an engineering change authorization, an inspector must approach this task in the same manner as reviewing/approving a major repair or alteration. This is done by using the procedures contained in Vol. II, Ch. 1.

NOTE: If an inspector is not completely familiar with equipment involved in the engineering change authorization, FAA Engineering should be contacted for assistance prior to issuing a field approval.

C. In reviewing an engineering change authorization, the inspector should be aware that the authorization serves not only as a maintenance record but also as a planning document for the operator. The authorization will normally contain material and personnel requirements, diagrams (blueprints, schematics, etc.), detailed procedures, and signoffs. The inspector should ensure that all data is correct, complete, and does not conflict with existing authorizations or maintenance procedures.

D. If the engineering change authorization concerns new or modified equipment, maintenance procedures may have to be revised or developed. Coordination with the Principal Operations Inspector may be required to ensure the operations manual and/or Approved Flight Manual (AFM) contain the revised or new procedures.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 135, and SFAR 36
- Knowledge of the equipment involved in the engineering change authorization
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- For engineering change authorizations requiring field approvals for major alterations, the inspector must be authorized by the Regional Flight Standards Division or Branch to grant field approvals

B. *Coordination.* This task requires coordination between the Principal Avionics Inspector, Principal Maintenance Inspector, Principal Operations Inspector, FAA Engineering, regional office, the manufacturer, and the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAA approved data (Maintenance/ manufacturer's manuals, Supplemental Type Certificates, Airworthiness Directives, etc.)
- Order 8300.10, Airworthiness Inspector's Handbook
- FAR Part 43

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator's Submitted Engineering Change Authorization.* Ensure the following:

(1) Operator's classification (minor/major) is correct

(2) If classified as major, that data has previous FAA approval (if not, see Vol. II, Ch. 1)

(3) Diagrams and procedures are clear, precise, and complete

(4) Proper materials are listed and employed

(5) Individual maintenance and inspection task signoffs are provided for and are adequate to ensure authorization compliance

(6) The authorization does not affect existing systems and/or procedures

(7) Maintenance/operating manuals and procedures are revised to include new or revised procedures that may be required as a result of the authorization

B. *Analyze Findings*

(1) If discrepancies are noted, contact the operator and request corrective action.

(2) *If no discrepancies are noted, accomplish the following:*

(a) For a minor engineering change authorization, discard office copy

(b) For a major engineering change authorization with previously approved or field approved data, file in Certificate Holding District Office's operator file

(c) For a major engineering change authorization without previously approved data, the inspector must do one of the following:

- Field approve the authorization

NOTE: Inspectors are not required to give a field approval. This is done at the inspector's discretion. Knowledge of the equipment involved should be taken into consideration.

- Send the authorization to FAA Engineering for further evaluation and/or approval
- Return the authorization to the operator to obtain the necessary approvals through designated engineering representatives, etc.
- When data is approved, e.g., field or engineering, inform the operator of the findings and return the signed original to the operator

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 80 EVALUATE SHORT-TERM ESCALATION PROCEDURES

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*

- With Reliability Program: 3332
- Without Reliability Program: 3316

B. *Avionics*

- With Reliability Program: 5332
- Without Reliability Program: 5316

3. OBJECTIVE. This chapter provides the inspector with guidelines for approving short-term escalation procedures based on operations specifications.

5. GENERAL. Time-limitations are maintenance intervals established by the provisions of an approved reliability program or by an operator-established maintenance monitoring program. They are based on continuing analysis and surveillance of a fleet's operating performance. Since operators try to avoid delays due to units being operated to the point of failure, the time limitations used are a conservative average. An operator may therefore need to adjust these intervals for an individual component, engine, or aircraft.

A. *Use of a Short-term Escalation*

(1) Under controlled conditions, an operator may use a short-term escalation for an individual component, engine, or aircraft without affecting safety. These procedures require close monitoring to ensure that they do not conceal unsound maintenance practices, maintenance program deficiencies, or poor management decisions.

(2) Short-term escalations for operators not under a reliability program must be approved by the FAA on operations specifications.

(3) Operators do not require prior approval before using an escalation. The operator must, however, inform the Certificate Holding District Office of an escalation as soon as possible after the escalation is put into effect.

(4) A short-term escalation should only be used after carefully analyzing the history of the aircraft and its components. A review of the proposed escalation should include:

- Previous inspections results
- Supplemental/additional inspections that may be needed to ensure continued airworthiness during the escalation
- Items not covered by the escalation. The escalation must not cause these items to exceed their maintenance intervals.

(5) Maximum short-term escalation intervals may be a percentage of an existing interval for a particular inspection, or may be designated in hours of service, in cycles, or in other increments. Except under certain conditions, maximum time for an escalation is 500 hours time-in-service or its equivalent.

B. *Extension of Short-Term Escalations.* The 500 hr. maximum time limit for an escalation is usually sufficient for an operator to position and/or repair the affected item. Occasionally, an operator cannot effectively accomplish the task within this time limit. After an in-depth review of this situation, an individual item may be extended beyond the 500 hr. limit. In order to do this, an operator must submit justification to the Principal Airworthiness Inspector prior to approval. This extension remains in effect for a prescribed time limit unless the component or inspection is accomplished prior to the time limit.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the inspector and the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Review the Applicant's Short-Term Escalation Procedures.* The inspector must ensure that the procedures accomplish the following:

(1) List the operator's management personnel with escalation approval authority. These personnel must have at least the equivalent authority for approving:

- An operations specifications time increase
- A maintenance interval adjustment controlled by a reliability program

(2) Define the maximum limitations for a short-term escalation

(3) Contain criteria that defines the type of data acceptable for justifying a short-term escalation

(4) Correspond with the overall maintenance program. The procedures must ensure that an escalation will not create an unsafe condition.

(5) Restrict the occurrence of repetitive short-term escalations that indicate a need for a change in the maintenance program

(6) Provide a method for recording all escalations, with provisions for submitting/reporting each request/use of an escalation to the Certificate Holding District Office

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- A letter to the operator indicating disapproval of the short-term escalation authorization
- An amendment to the operator's operation specifications, if applicable, approving short-term escalation authorization

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Close monitoring of the operation may be required to ensure the following:

- The authorization is not being abused
- The manual procedures are being followed

CHAPTER 81 EVALUATE FOREIGN-REGISTERED AIRCRAFT OPERATED BY FAR PART 121/135.411(a)(2) OPERATORS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3337

B. *Avionics:* 5337

3. OBJECTIVE. This task provides instructions for ensuring that foreign-registered aircraft intended for use by U.S. air carriers meet FAR Parts 121 and 135 (10 or more) requirements.

5. GENERAL. A U.S. air carrier may operate a foreign-registered civil aircraft in common carriage and for carriage of mail. An aircraft must be leased or chartered without crew. The country of aircraft registry must be a member country of the convention of the International Civil Aviation Organization (ICAO).

7. FOREIGN AIRWORTHINESS CERTIFICATES

A. The airworthiness requirements of foreign countries differ from U.S. requirements. Aircraft changes may have to be made before a U.S. operator can use a foreign aircraft. Such changes may invalidate the certificate. In such cases, an exemption may be required from the foreign airworthiness authority.

B. To maintain the validity of the foreign airworthiness certificate, the U.S. operator may have to perform more extensive inspections or tests than those required by its FAA-approved continuous airworthiness maintenance program and/or the Federal Aviation Regulations.

9. DIFFERENCES AND/OR EXCEPTIONS OF MAINTENANCE TASKS. The following maintenance tasks may be different from the foreign operator's maintenance program and will be exceptions to the foreign program. These exceptions shall be performed according to the certificate holder's maintenance program. Examples of differences are as follows:

- Inspection/maintenance of required emergency equipment
- Inspection/maintenance of encoding altimeters and transponders
- Inspection/maintenance of fire extinguishers, air and oxygen bottles, and hydrostatic tests and life limits. These tasks shall be accomplished according to 49 CFR Part 173.

NOTE: These differences and/or exceptions must be evaluated to ensure that the requirements to keep the foreign certificate of airworthiness current are retained.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the Principal Maintenance Inspector and Principal Avionics Inspector, the operator, and the regional flight standards division.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 45 and 129
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Inspect Airworthiness Certificate.* Ensure the certificate was issued by the country of registry and meets the registration and identification requirements of that country.

B. *Inspect The Aircraft.* The inspector must ensure that:

(1) The aircraft meets requirements for issuance of a U.S. standard airworthiness certificate

(2) The aircraft conforms to its type design approved under a U.S. type certificate

(3) The aircraft complies with applicable maintenance, operating, and equipment rules

(4) The aircraft complies with U.S. Airworthiness Directives

(5) The aircraft complies with life-limited parts requirements

(6) The aircraft complies with the noise, fuel venting, and engine emission requirements of SFAR §§ 36.1(d) and 36.7. Any further noise and/or emission requirements adopted or amended by the FAA for U.S.-registered aircraft shall apply equally to foreign-registered aircraft.

C. *Inspect The Foreign Maintenance Program (If Adopted)*

(1) Ensure the program meets levels of safety equivalent to the certificate holder's existing program. If the certificate holder does not have a program for the aircraft listed, the lessor's foreign program must be submitted to the FAA and be justified as an acceptable initial maintenance program. (See operations specifications paragraph D87.)

(2) List all program differences and exemptions on the operations specifications supplemental paragraph D87–1.

D. *Ensure the Certificate Holder Has Filed a Lease or Charter Agreement With the FAA.* This agreement must be sent to the FAA Aircraft Registry at Oklahoma City, Oklahoma. It must satisfy the foreign country's requirements, including any special documentation required by that country to be carried on the aircraft.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- Approval of the operations specifications
- A letter to the operator listing the reasons for rejection

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 82 EVALUATE FAR PART 121 EXTENDED-RANGE OPERATIONS WITH TWO-ENGINE AIRCRAFT (ETOPS)

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3319

B. *Avionics:* 5319

3. OBJECTIVE. This chapter describes the process of evaluating a FAR Part 121 operator for a deviation under FAR § 121.161(a) for extended-range operations with two-engine airplanes.

5. GENERAL

A. *Definition:*

- *Extended-Range Operation With Two-Engine Airplanes (ETOPS):* Operations conducted over a route containing a point further than one hour flying time at the normal one-engine inoperative cruise speed (in still air) from an adequate airport

B. An ETOPS authorization requires an approval from the Director, Flight Standards Service, for a deviation to the operating rule of FAR § 121.161. To meet the requirements of this deviation the operator must be able to:

(1) Substantiate that the type design reliability and the performance of the proposed airplane/engine combination have been evaluated per the guidance in Advisory Circular 120-42, Extended-Range Operation With Two-Engine Airplanes, as amended, and found suitable for extended range operations

(2) Submit an application package that includes supplemental maintenance requirements and programs that allow for safe operations under an ETOPS authorization.

C. *Application Package.* The application package must include the following programs:

(1) *Supplemental maintenance program.* This program must include the basic maintenance program with additional ETOPS requirements for the airplane being considered. These requirements should include maintenance procedures that prevent actions such as changing oil filters, chip detectors, fuel controls, etc., from being done simultaneously on both engines.

(2) *Verification program.* This program must have procedures that would preclude an airplane from being dispatched for extended range operation unless appropriate corrective actions have been taken and verified, after any of the following situations:

- A propulsion system shutdown
- A primary system failure
- Any significant adverse trends/repeat problems from a previous flight

(3) *Airframe/Engine condition monitoring program.* Condition monitoring should provide a system for data collection that ensures the timely analysis and correction of engine problems. This program should accomplish the following:

- Prevent in-flight shutdowns of powerplant systems through detection of early stage deterioration
- Ensure that engine limit margins are maintained so that a prolonged single-engine diversion may be conducted without exceeding approved engine limits (i.e., rotor speeds, exhaust gas temperature, etc.) at all approved power levels and expected environmental conditions

(4) *Reliability program.* This must be an event-oriented reliability program designed primarily to identify and prevent problems. This program must incorporate reporting criteria for use by the carrier and the FAA as a measure of extended range reliability. The ETOPS reliability program can be a supplement to an existing reliability program if the existing program is event-oriented.

(5) *Engine/APU oil consumption monitoring program.* This program must monitor oil consumption on a flight-by-flight basis. This monitoring must take into account the amount of oil added at the departing ETOPS stations with a reference to the running average consumption. Additionally, prior to each extended range leg, the program must verify the oil system integrity.

(6) *Extended range parts control program.* This program should ensure that distinct ETOPS parts, as required by the type design criteria, are utilized to maintain the integrity of systems unique to ETOPS. This program must consider verification of parts placed on the aircraft through parts borrowing and pooling agreements. For further information see Vol. 2, Ch. 87, Approve Parts/Parts Pool/Parts Borrowing.

(7) *Maintenance training program.* The training program should focus on extended range awareness for all personnel involved in the extended range maintenance program. It may be included in the normal maintenance training but should emphasize the special nature of extended range maintenance requirements.

(8) *Continuing analysis and surveillance program.* The air carrier's normal continuing analysis and surveillance program should be supplemented to require regular surveillance of the extended range program. This supplemented program must ensure the continued integrity of the ETOPS maintenance programs while allowing for program adjustments, as required.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 121
- Knowledge of Advisory Circular 120-42, Extended-Range Operation With Two-Engine Airplanes, as amended
- Successful completion of the Air Carrier Airworthiness Inspectors Indoctrination String Course
- Successful completion of the Aircraft Maintenance Reliability Program Course, as available
- Successful completion of the Aircraft Systems Training Course, as available

B. *Coordination*

(1) This task requires coordination among maintenance inspectors, avionics inspectors, Regional offices, AFS-400, and AFS-300, as required.

(2) For questions regarding an ETOPS authorization, contact the following, as required:

- AFS-330, Maintenance Division
- Aircraft Evaluation Group (AEG)
- Aircraft/Engine Certification Directorate

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operator's manuals
- Operations Specifications

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids.* None.

5. PROCEDURES

A. *Verify the Compliance of the Aircraft With the Configuration, Maintenance, and Procedures Document.* Verify compliance through coordination with the Aircraft Maintenance Division and the Aircraft Evaluation Group.

B. *Evaluate the Operator's Current Maintenance Program.* Request and evaluate the following information for ETOPS suitability:

(1) The date of type design and the review of each engine/airframe combination

(2) The in-service experience for each engine/airframe combination, to include the following:

(a) The number of months/years of operational experience with each specific engine/airframe combination

(b) The total number of ETOPS and/or domestic operations conducted with the specific engine/airframe

(c) The engine/airframe hours and cycles, to include both total and high time engines

(d) The in-flight shutdown rate (all causes), including the 12-month and 6-month rolling average for both the ETOPS and the world fleet

(e) The unscheduled engine removal rate for both the world fleet and the operator

(f) The mean time between failure (MTBF) for major components

(g) The record of APU start and run reliability

(h) The records of delays and cancellations, with the causes, by the specific aircraft systems

(i) The records of significant operator events, including the phase of flight where the event occurred, such as:

- Uncommanded power changes (surge or rollback)
- Inability to control engine or obtain desired power
- In-flight shutdown events

C. *Review the Operator's Manual.* The inspector must ensure that the following programs and procedures have been included as part of the operator's supplemental maintenance program:

(1) Verification program, to include:

- A list of primary systems
- Conditions that require verification flights
- Procedures for initiating verification actions
- Procedures that monitor and evaluate corrective actions
- Procedures that verify the implementation of corrective action
- Procedures that preclude repeat items from occurring
- Procedures that identify and reverse the adverse trends

(2) Engine condition monitoring program, to include:

- Scope of program, e.g., data collection and analysis
- Notification procedures for deterioration
- Deterioration monitoring limits for internal engine parts

(3) Reliability program, to include:

- Reporting criteria
- Procedures to ensure reporting of significant individual events (engine shutdowns, flight diversions, etc.)

(4) Engine/APU oil consumption monitoring program, to include:

- Established limits of consumption
- Procedures for use and verification prior to the start of each extended range leg

(5) Extended range parts control, to include:

- Methods of verification of proper parts
- Control procedures during parts pooling and borrowing

(6) Maintenance training program, to ensure:

- Personnel are aware that an ETOPS authorization is in place

- Personnel, including contract personnel, are adequately trained on the special programs required by an ETOPS authorization

(7) Continuing analysis and surveillance program, to include:

- Ensuring the continued integrity of the ETOPS maintenance programs
- Ensuring that adjustments are made, as required, to the ETOPS programs

(8) Procedures that accomplish the following:

- Preclude simultaneous actions from being applied to multiple similar elements in any ETOPS-critical system
- Identify ETOPS-related tasks on routine work forms and related instructions
- Develop an ETOPS over-water service check to verify the status of the airplane and ensures certain critical items are acceptable

D. *Analyze Results*

(1) If problems are found, return the material to the operator.

(2) If the submitted material is acceptable, forward the material to the Region for submittal. The Region will forward the material to AFS-300 for concurrence and to AFS-1 for final deviation approval.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Successful completion of this task will result in the following:

- An Extended-Range Operation With Two-Engine Airplanes Authorization
- Amendment to the Operations Specifications, paragraphs D86 and D86-1
- Notification sent to AEU of the deviation. The notification must include the operator's locations of dispatch.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 83 EVALUATE FAR PART 135 (9 OR LESS) APPROVED AIRCRAFT INSPECTION PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3343/3344

B. *Avionics:* 5343/5344

3. OBJECTIVE. This chapter describes how to evaluate and approve an FAR Part 135 (9 or less) operator's Approved Aircraft Inspection Program (AAIP). It ensures that programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

5. GENERAL

A. Inspectors should become thoroughly familiar with the operator/applicant's operation. Special attention should be given to:

- Areas of operation
- Type of equipment
- Operating history
- Maintenance/inspection organization, as applicable

B. An Approved Aircraft Inspection Program is authorized for use on operations specifications. Therefore, it cannot be transferred.

7. CHANGES TO APPROVED TIME INTERVALS

A. *Operator-Initiated Changes*

(1) The operator may request approval to amend inspection or overhaul intervals.

(a) The operator must justify the request using the following:

- Past operating experience
- Environmental conditions
- Inspection program provisions
- At least two overhaul tear-down reports
- Any other data necessary to substantiate changes

(b) Operator-initiated time changes require revisions to both the Approved Aircraft Inspection Program and operations specifications (see Vol. II, Ch. 84).

(2) Amendments or extensions are not allowed for life-limited items and/or those designated by airworthiness directives unless authorized in FAA-approved revisions.

B. *Manufacturer Escalations*

(1) If a manufacturer extends the recommended inspection or overhaul interval, the operator may request approval to use the extension by submitting a revision to the Approved Aircraft Inspection Program. The request must be accompanied by the manufacturer's recommendation.

(2) Inspectors should not automatically approve a time escalation recommended by the manufacturer. The individual operator's aircraft use and experience must be considered. The inspectors should ensure that the escalation will not compromise safety.

9. POLICIES AND PROCEDURES MANUAL. The Approved Aircraft Inspection Program must be included in the operator's policies and procedures manual. The operator should request a manual revision (in accordance with manual revision procedures) at the same time the Approved Aircraft Inspection Program/revision is submitted for approval. This allows the FAA to approve the Approved Aircraft Inspection Program/revision and accept the manual concurrently, while advancing implementation of the program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Previous experience with complex maintenance/inspection programs

B. *Coordination.* This task is performed by both maintenance and avionics inspectors. It may require coordination with operations inspectors and/or regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, 45, 47, 65, and 125
- 49 CFR Part 173
- Advisory Circular 135.3
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400-8, Operations Specifications

C. *Job Aids*

- Automated operations specification checklists and worksheets

5. PROCEDURES

A. *Schedule and Conduct Preliminary Meeting, As Needed*

(1) Advise applicant of regulatory requirements and policies.

(2) Remind the operator that the Approved Aircraft Inspection Program/revision must be included in the policies and procedures manual.

B. *Plan and Coordinate Task*

(1) Determine that the aircraft meets eligibility requirements.

(2) Review operator file to identify any information concerning the Approved Aircraft Inspection Program/revision. Determine its effect on the operator's other programs or procedures.

(3) If this task is performed as part of an original certification, review the Schedule of Events to ensure the evaluation can be accomplished according to the schedule.

C. *Evaluate the Proposed Program/Revision*

(1) Evaluate instructions, procedures, and standards for conducting inspections.

(a) The program must include:

- Airframe
- Aircraft engines
- Propellers
- Appliances
- Survival and emergency equipment
- Component parts for the above items

(b) All required tests and checks recommended by the aircraft or equipment manufacturer must be addressed.

(c) Persons responsible for performing the work must be identified.

(d) The instructions, procedures, and standards must be clear and easily understood. They must identify the scope of each task and provide a detailed outline of each step that must be accomplished to perform the inspection and ensure established standards are met.

(2) Evaluate the procedures for controlling life-limited parts. The program must contain provisions to ensure records are current. Life-limits must be expressed in one of the following measures:

- Length of time in service
- Number of cycles
- Number of landings
- Calendar time
- A combination of the above measures

(3) Evaluate procedures for scheduling inspections.

(a) The program must list inspection intervals and describe personnel responsibilities for scheduling and performing inspections.

(b) Procedures must ensure that inspections are performed by properly certificated, qualified, trained, current, and authorized personnel. The program must identify, by title, the person responsible for ensuring inspection personnel meet FAA requirements.

(4) Ensure engine overhaul periods correspond to the recommended overhaul intervals in the engine manufacturer's manuals and/or service bulletins.

(5) Evaluate procedures for reporting and correcting mechanical irregularities. The program must include detailed instructions, procedures, and the necessary forms and documents for the recording and repair of mechanical irregularities. These instructions, procedures, and forms may appear elsewhere in the

company manual, but their location must be referenced in the Approved Aircraft Inspection Program.

(6) Ensure the Approved Aircraft Inspection Program includes instructions on its use.

D. *Analyze Findings.* Determine if program changes are required. Before meeting with the operator/applicant, discuss initial findings with appropriate FAA personnel to determine content of the briefing. Depending on the findings, it may be necessary to coordinate with the certification team, principal inspectors, regional specialists, or other FAA personnel.

E. *Debrief Operator/Applicant.* Discuss results of the evaluation, including any deficiencies noted during inspection.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

(1) If the Approved Aircraft Inspection Program/revision is not acceptable, advise the operator/applicant by letter that the program is rejected. Give the reasons for the rejection. Return the program proposal and documentation to the operator/applicant.

(a) If this review is performed as a part of a certification, inform the applicant in the letter that the certificate will not be issued until deficiencies are corrected. If necessary, advise the applicant to revise the schedule of events.

(b) The letter must also accomplish the following:

- Confirm all agreements made during the debriefing
- Identify the date the Approved Aircraft Inspection Program/revision was submitted
- Show the revision number and date
- Identify and describe all deficiencies by chapter, section, page, etc.
- Reference each deficiency to the appropriate regulation
- Request a revised schedule of events, if necessary
- If a revision, remind operator not to implement revision

(2) If the program or revision meets all regulatory requirements, accomplish the following:

(a) Ensure the Approved Aircraft Inspection Program or revision has been fully coordinated between maintenance, avionics, and any other appropriate person

(b) For a new or totally revised program, indicate "Approved and authorized for use on operations specifications dated ————" on the first page identifying the program. The approving principal maintenance inspector shall sign and date the document. The date of the document approval must be the same as the date the Approved Aircraft Inspection Program operations specifications are approved.

(c) Initial and date each page of the Approved Aircraft Inspection Program or revision, unless another control is used

(d) In the case of a revision to an approved program, issue amended operations specifications (see Vol. II, Ch. 84). The reverse side of the amendment must identify and justify the changes to the program.

(e) Send the operator a letter accepting the Approved Aircraft Inspection Program. The letter must accomplish the following:

- Request that the operator acknowledge receipt of the operations specifications by signing and dating the original and copy, and forward the copy to the district office
- Confirm all information given during the debriefing
- Indicate the date the Approved Aircraft Inspection Program/revision was submitted
- Show the revision number and date
- If a revision, indicate the number of approved pages
- Advise the operator that the revision may be implemented
- If a manual revision was submitted and is acceptable, advise the operator of acceptance
- If a manual revision was not submitted, remind the operator to revise the manual to incorporate the program/revision. Advise the operator to submit the manual change for acceptance.

- Enclose the stamped, dated, and initialed original Approved Aircraft Inspection Program
- Enclose the original and one copy of the approved operations specifications
- Enclose the accepted manual revision, if appropriate

(f) Send two copies of the new or amended operations specifications to the regional Airworthiness Branch

9. FUTURE ACTIVITIES

A. *Schedule of Events.* In the case of original certification, review the schedule of events to determine if a revised schedule of events is necessary.

B. *Procedures and Policies Manual.* Ensure the Procedures and Policies Manual includes the Approved Aircraft Inspection Program/revision.

CHAPTER 84 RESERVED

CHAPTER 85 RESERVED

CHAPTER 86 RESERVED

CHAPTER 87 APPROVE PARTS/PARTS POOL/PARTS BORROWING

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3316

B. *Avionics:* 5316

3. OBJECTIVE. This chapter provides guidance in evaluating and approving aircraft parts, a FAR Part 121 parts pool, and a FAR Part 121 and 135 (10 or more) parts borrowing authorization.

5. GENERAL

A. *Definitions*

(1) *Articles:* Materials, parts, or appliances.

(2) *Operator Manufactured Parts:* Parts manufactured and documented by the operator for use only on that operator's aircraft. The parts must comply with the original type design and cannot be part of a pool or borrowing agreement.

(3) *Parts:* Any engine, propeller, component, accessory, material, or hardware used on an air carrier aircraft.

(4) *Parts Manufacturer Approval (PMA):* PMA parts are parts produced by manufacturers other than the type certificate holder. These parts must be identical to parts covered under a type certificate, and they must be marked as such. FAA manufacturing inspectors or a manufacturer with parts manufacturer approval authority may approve these parts for use.

(5) *Supplemental Type Certificate (STC):* When a major change in type design does not require a new application for a type certificate, a supplemental type certificate is issued. Parts manufactured under a supplemental type certificate are approved under the supplemental type certificate.

(6) *Technical Standard Order (TSO):* A technical standard order is a minimum performance standard for specified articles used on civil aircraft, and is issued by FAA Engineering. These articles may be used on a variety of equipment items.

(7) *Type Certificate (TC):* As defined by FAR § 21.41, a type certificate includes the type design, operating limitations, type certificate data sheet, applicable regulations, and any other conditions or limitations prescribed by the Administrator.

B. An operator must ensure that all replacement parts meet or exceed original certification standards. Standard hardware and materials can be used and exchanged without special procedures. When special requirements must be met, accurate documentation must be maintained. Purchase, use, and exchange of parts require special procedures that must be part of the operator's manual, and in certain circumstances, part of the operator's operations specifications.

7. PARTS POOL AGREEMENT AUTHORIZATIONS. These authorizations apply only to FAR Part 121 operators operating outside the U.S.

A. When operating under this authorization, all other provisions of FAR Part 121 remain applicable. In addition, FAR § 121.361(b) requires surveillance of the foreign facilities and their procedures to ensure that all work on pooled parts is performed according to the operator's manuals.

B. These authorizations are approved by issuance of operations specifications. The operations specifications are required only to list those participants (and their locations) inspected by the operator and acceptable to the FAA.

(1) In instances where several U.S. certificated operators use a foreign facility, the FAA does not object to a participating operator accepting another participating operator's initial or biennial inspection report, provided the operator's manual reflects the arrangement.

(2) When a U.S. parts pool participant's operations specifications are amended to reflect a new participant or location, all U.S. participants in the pool must amend their operations specifications to reflect the change.

(3) FAR § 121.361 permits deviation allowing the return to service and use of airframe components, powerplants, appliances, and spare parts thereof that have been maintained, altered, or inspected by persons employed outside the United States who do not hold U.S. airman certificates.

The operator's operations specifications authorize this deviation.

C. *Foreign Facility Inspections*

(1) The Certificate Holding District Office (CHDO) with geographical responsibility for the foreign facility conducts the parts pool inspection. Foreign facilities that do not have an appropriate repair station rating should be inspected annually.

(2) The operator must have in its manual procedures to inspect the parts pooling facilities. The manual also must include procedures to ensure the maintenance of parts according to the operator's maintenance manuals.

9. PARTS BORROWING AUTHORIZATION

A. A certificate holder operating under FAR Part 121 or § 135.411(a)(2) may be issued operations specifications to allow it to borrow a part with a higher time since overhaul than authorized, subject to certain conditions and limitations. Since no regulations govern this activity, the operations specifications must specify that the operator can borrow a part from another operator when the time in service of the available part exceeds the operator's approved overhaul time limit. The parts, however, cannot exceed the lender's approved time limits.

B. If the number of landings controls the part's service or overhaul time limit, an operator may borrow and use a part for a maximum of 100 hours or 50 landings when the time in service of the part exceeds the borrower's approved time limits. The following limitations must be met:

(1) The part must have a minimum time of 200 hours or 100 landings (if approved time is controlled by landings) remaining before service or overhaul in the lender's program

(2) If the part is life limited, the part may not be operated beyond its approved life limit

11. PARTS APPROVAL

A. Under present regulations, the FAA does not have the authority to prevent the sale or use of aircraft parts of questionable serviceability. Although it is the operator's responsibility to be aware of the possible consequences of using questionable parts on certificated aircraft, the inspector should offer guidance to help prevent possible problems. An operator using a part of unknown quality, condition, or origin must be able to prove conclusively that such parts conform to the provisions of FAR § 43.13.

B. The operator is responsible for maintaining parts in a condition that ensures the parts continue to meet the original type design. Procedures to ensure this proper maintenance must be part of the operator's manual.

C. The FAA has a parts manufacturing approval system in effect that allows the FAA to control the sale of reproduction parts. Parts manufactured under this system must display evidence of FAA approval, verifying the origin and serviceability.

D. Repair stations or air carriers may manufacture replacement parts as part of their maintenance program. These parts are acceptable, provided they are manufactured according to acceptable FAA approved data.

E. Parts, appliances, and components from aircraft that have been involved in accidents or crashes are available to the industry as replacements. FAR § 43.13 requires that serviceability is assured before use.

F. Ex-military aircraft now under civilian type certificates create parts problems, particularly when the original manufacturer has ceased production. Certain parts of original manufacture are available for a given aircraft for a number of years after its departure from military status. If original manufacturer fabrication can be substantiated for such parts, they are acceptable providing they comply with all applicable airworthiness directives.

G. Certain parts for ex-military or currently manufactured aircraft are and have been scarce. Occasionally, parties other than the original or approved manufacturer produce these parts illegally and offer them for sale. These illegal parts constitute a hazard to flight safety.

H. Parts manufactured in foreign countries and supplied to U.S. certificated operators for use on their aircraft must be imported according to FAR § 21.502.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the involved airworthiness inspectors and the operator. Regional coordination may be necessary.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR §§ 21.301 thru 21.305, 43.13, 121.379, 121.361(b), and 135.411(a)(2)
- Advisory Circular 20-62, Eligibility, Quality, and Identification of Approved Aeronautical Replacement Parts, as amended
- Advisory Circular 43.13-1, Acceptable Methods, Techniques and Practices -- Aircraft Inspection and Repair, as amended

B. *Forms*

- FAA Form 8400-8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Review Operator's Manual For Parts Pool Authorization.* Ensure the manual includes:

(1) Procedures to ensure qualified personnel of the operator's organization perform an initial inspection of the involved foreign facilities. This inspection should ensure that facilities meet the certificate holder's manual requirements, have properly qualified and trained personnel, and can furnish the parts intended.

(2) Procedures to provide for biennial inspections of the foreign facilities to ensure continued conformity to the operator's manual in supplying the required parts

(3) Inclusion of, or reference to, the foreign facilities' maintenance programs in the operator's manual, if applicable

B. *Inspect the Parts Pool Authorization Facility.* The inspector from the CHDO with geographic responsibility must inspect the facility according to Vol. II, Ch. 221.

C. *Review Operator's Manual For Parts Borrowing Authorization Procedures*

(1) Ensure the manual includes the following procedures:

(a) Procedures that restrict the overhaul time limits to those authorized by operations specifications

(b) Procedures that restrict a remaining minimum time to overhaul to that authorized by operations specifications

(2) Ensure the operator has an approved list of authorized vendors, repair stations, and air carriers from which it may borrow parts.

D. *Analyze Results.* Advise the operator of any deficiencies discovered during the inspection. Schedule a meeting with the operator to discuss and/or resolve the problem area(s).

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Successful completion of this task will result in issuance of the following operations specifications:

- Parts Pooling Authorization, Operation Specifications Paragraph D81

- Parts Borrowing Authorization, Operations Specifications Paragraph D83

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. **FUTURE ACTIVITIES.** Normal surveillance.

CHAPTER 88 PRORATED TIME AUTHORIZATIONS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3316

B. *Avionics:* 5316

3. OBJECTIVE. This chapter provides guidance in determining the prorated time for an item.

5. GENERAL

A. Proration is a procedure to determine the time consumed under one maintenance system and to establish the remaining time under a new system.

B. Operators often sell or lease their equipment to other operators. This "used" equipment will have accumulated a certain amount of time in service. This time is transferred to the new operator and may be phased in or prorated to the new operator's approved time limitations.

C. When an operator's approved time limitations are not the same as those of the previous operator(s), the buyer has two options: direct inclusion or proration.

(1) When the operator chooses direct inclusion, the difference between the operator's approved time limit and the previous operator's actual time will determine the time limitation.

(2) When the previous operator's approved time limitations are different than that of the current operator, proration may be used to adjust the time limitations.

D. *Scope and Limitations*

(1) Proration in no way lessens an operator's responsibility to maintain the aircraft in an airworthy condition.

(2) Proration is optional.

(3) Life limited components may not be prorated.

(4) Proration may not be applied to times specified in Airworthiness Directives.

(5) Operators who have been operating equipment under FAR Parts 121 and 135 may use proration.

(6) Both adjusted and actual times must be shown on the proration document and the aircraft records.

(7) When an item is inspected or overhauled as appropriate, the applicable prorated time limits will be canceled. Thereafter, the item will be handled according to the operator's approved program.

(8) Partial proration is not acceptable. An operator electing proration must prorate the airframe and all of its installed powerplants, propellers, and appliances. Spare engines and propellers acquired at the time of sale or at a later date with "time in service" may be prorated.

(9) If an increase in a time limitation is approved for a certificate holder operating on prorated times, that increase will be credited to the prorated item(s).

(10) Amendments to a certificate holder's operations specifications that increase time limits are applicable to all aircraft of the same type and model operated by a carrier. Such time increases apply to aircraft operating on a prorated time basis, as well as to the other aircraft in the fleet.

E. *Foreign Air Carrier Aircraft.* Foreign air carrier aircraft for which there is a U.S. type certificate may be phased into a U.S. air carrier's program via proration. However, the U.S. operator must first present satisfactory evidence that the program under which the aircraft was maintained is at least equivalent to the new operator's program for a similar type of aircraft.

7. DATA AND COMPUTATION

A. Prorated time remaining can be determined by using the following mathematical procedures:

(1) Divide the actual time used by the previous operator's approved time limit under which the aircraft has been operated. The result, carried to three places, will represent the percentage of approved time already used.

(2) Multiply the new operator's time limit by the percentage of time used. This will result in the prorated time to be used under the new program.

(3) Subtract the prorated time from the time limit approved in the new program. The result will represent the number of hours remaining under the new program. (See Figure 88-1.)

B. *Block/Pattern Time Limitation*

(1) When block/pattern time is to be prorated, each block/pattern shall be treated as though a complete aircraft were being prorated.

(2) When the previous operator used a block/pattern system, a document must be submitted showing the following:

- Time limitation for each block or pattern, together with a list of items that are part of the block or pattern
- Time since accomplishment for each individual item on the aircraft

(3) For more information on block/pattern time limitations, see Advisory Circular 121-1, Standard Operations Specifications, as amended.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135

B. *Coordination.* This task requires coordination between the inspector and the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 120-17, Maintenance Control by Reliability Methods as amended
- Advisory Circular 121-1, Standard Operations Specifications, as amended
- Operator's documentation, including operations specifications, for previous and new operator

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Figure 88-1: Proration Formula Example
- Advisory Circular 121-1, Appendix 1, Figures 1 through 12
- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Receive Data from Applicant.* The operator must submit required information to the district office in which the operator's principle base of operation is located.

(1) The operator must submit all operations specifications containing the time limits utilized for the particular aircraft by the previous operator.

(a) If the operations specifications do not show hours, the operator must submit other documentation that will establish the time limits.

(b) If conversion to hours is necessary, the computations used for the conversion should be included.

(2) The operator must provide operations specifications pertinent to the particular aircraft.

(3) The operator must submit documents itemizing the following:

- Engines, propellers, and appliances that have different time limitations than the previous operator and are to be prorated. These will be listed by Air Transportation Association chapter numbering system, showing the name, part number, serial number, and position.
- The approved time under which the aircraft has been operated

- The actual time since last accomplishment
- Percent of time used by previous operator
- The approved time limitation for the new operator

(4) When the previous operator used a block/pattern system, a document must be submitted showing the following:

- Time limitation for each block or pattern, together with a list of items that are part of the block or pattern
- Time since accomplishment for each individual item on the aircraft

B. *Determine That the Aircraft and/or Components Are Eligible for Proration*

C. *Check the Prorated Time Computation.* Times obtained via proration may be rounded to the nearest 10-hour figure. (See Figure 88-1.)

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Approve Operations Specifications*

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

FIGURE 88-1
PRORATION FORMULA EXAMPLE

The example below demonstrates the simple steps involved in determining a buyer's time remaining to overhaul.

Known

Previous operator's approved overhaul time limit = 8,000 hours

Previous operator's time since overhaul (TSO) = 2,000 hours

Buyer's approved overhaul time limit = 12,000 hours

Step One

Divide the previous operator's TSO figure by the previous operator's approved overhaul time limit. Carry this out to three places. The result represents the percentage of approved overhaul time already used.

```
      .250
8,000/2,000.000
```

In this example, 25 percent is the result.

Step Two

Multiply the buyer's approved overhaul time limit figure by the decimal arrived at in Step One. The result is the prorated TSO to be used by the buyer.

```
 12,000
x .250
  3,000
```

In this example, 3,000 is the prorated TSO to be used by the buyer.

Step Three

Subtract the prorated TSO arrived at in Step Two from the buyer's approved overhaul time limit. The resulting figure will be the number of hours remaining to overhaul for the buyer.

```
 12,000
-3,000
  9,000
```

In this example, the buyer's prorated time remaining to overhaul is 9,000 hours.

CHAPTER 89 SPECIAL FLIGHT PERMIT WITH CONTINUING AUTHORIZATION TO CONDUCT FERRY FLIGHTS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3404

B. *Avionics:* 5404

3. OBJECTIVE. This chapter provides guidance for evaluating an application to amend operations specifications for a special flight permit to conduct ferry flights.

5. GENERAL

A. *Definition:* Damaged aircraft—An aircraft that has sustained physical damage or has inoperative/malfunctioning equipment.

B. *Issuance.* The authorizing statute, FAR § 21.197(c), does not mandate the issuance of permits to all eligible operators. Operations specifications are used to ensure that operators will administer permits responsibly.

C. *Eligibility*

(1) The special flight permit is issued only to operators subject to the following:

- Subpart L of FAR Part 121
- Subpart I of FAR Part 127
- The sections of Subpart J of FAR Part 135 specified by § 135.411 (a)(2) or (b)

NOTE: Operators subject to FAR § 135.411(a)(1) are not eligible.

(2) Aircraft involved in an accident or incident may not be ferried prior to notifying the FAA accident coordinator.

(3) An Airworthiness Directive (AD) may dictate that safety demands further limitations. The Airworthiness Directive may limit ferry flights under FAR § 21.197 to those specifically approved by the FAA.

(4) FAR § 39.3 provides that no person may operate an aircraft to which an Airworthiness Directive applies except in accordance with the requirements of that Airworthiness Directive. Therefore, if an Airworthiness Directive requires compliance before further flight and does not have a provision for the issuance of special flight permits, the operation of an aircraft to which the Airworthiness Directive applies would not be permitted.

D. *Manual Review*

(1) The operator may consider certain conditions and limitations necessary to facilitate the inspection and operation of an aircraft. These conditions should be included in the operator's manual.

(2) When reviewing manual materials, the inspector should consider the following items:

(a) Technical data

(b) Operational equipment necessary for safe operation of the aircraft

(c) Aircraft weight limits

(d) Fuel distribution limits

(e) Center of gravity limits

(f) Maneuvers to which the aircraft is limited

(g) Limits on usage of flight equipment, e.g. autopilot, etc.

(h) Airspeed limits

(i) Meteorological limits, including:

- Conditions to be avoided
- Inspections required should these conditions be encountered inadvertently
- Weather minimums

E. *Authorization For Ferry Flights With One Engine Inoperative.* FAR Part 121/135.411(a)(2) operators may conduct a ferry flight of a four-engine airplane or a turbine engine-powered airplane equipped with three engines, with one engine inoperative, to a base for the purpose of repairing that engine. The following restrictions apply:

(1) The particular airplane model has had a test-flight conducted with an engine inoperative in accordance with performance data contained in the applicable airplane flight manual

(2) The approved airplane flight manual contains the performance data, in accordance with FAR § 91.45(a)(2)

(3) The operator's manual contains operating procedures for the safe operation of the airplane, including specific requirements listed in FAR § 91.45(a)(3)

(4) The operator may not depart an airport where the initial climb-out is in thickly-populated areas or the weather conditions at the takeoff or destination airport are less than those required for Visual Flight Rules (VFR) flight

(5) Only required flight crewmembers shall be carried aboard during this ferry flight

(6) The required flight crewmembers must be thoroughly familiar with the company's operating procedures and airplane Approved Flight Manual for one engine-inoperative ferry flights

7. APPLICATIONS INVOLVING FOREIGN AIR TRANSPORTATION. A certificate holder engaged in foreign air transportation is not required to obtain permission to fly over, into, or out of foreign countries when exercising the provision of a special flight permit with continuing authorization to conduct ferry flights.

A. Special Airworthiness Certificate, FAA Form 8130–7, prohibits an aircraft "over any foreign country without the special permission of that country". This requirement was placed on FAA Form 8130–7 because the form is used under FAR § 21.197 (a) and (b) for other purposes including flight to a base for repairs. When issued for one of these purposes, the United States is obligated under the Chicago Convention to ensure U.S.-registered aircraft have standard airworthiness certificates. Therefore, the aircraft cannot be flown over any foreign country without the special permission of that country.

B. The only exception recognized in ICAO Annex 8 is the temporary loss of airworthiness due to damage to the aircraft. In this case, damaged aircraft refers to inoperative or malfunctioning equipment as well as physical damage to the aircraft. In such an event, Part II, Section 6.2.2, recognizes that the country of registry may allow the aircraft to be ferried to a place where it can be restored to an airworthy condition.

C. Since Annex 8 provides for this particular flight situation without a standard certificate of airworthiness, there is no need to require the operator with continuing authorization to obtain permission for the flight from the foreign country. This authorization, however, does not extend to situations specified in FAR § 21.197, which involve flying an aircraft that was not damaged to a base where alterations will be performed.

9. DISPLAY OF PERMIT. The operator must display in the aircraft the current airworthiness certificate, including a special flight permit or authorization. The operator must carry either the operations specifications or portions of the certificate holder manual containing a restatement of the permit with those conditions and limitations imposed by the Administrator.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 21, 39, 91, 121, and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the assigned principal inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR §§ 21.197, 21.199, 39.3, 91.27, 91.45, and 135.411(a)(2)
- International Civil Aviation Organization Annex 8

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Verify Operator's Application.* Ensure that the operator has applied for an operations specifications amendment with the district office in charge of inspecting its overall operation.

B. *Verify That the Aircraft is Capable of Safe Flight.* The aircraft does not have to meet all airworthiness requirements.

C. *Review the Operator's Manual*

(1) Ensure that the manual has the following procedures for ferry flights:

(a) Provisions for conveying the authorization to ferry to the operating crew

(b) A system for recording each flight conducted under this authorization

(c) Procedures to determine that the proposed special flight complies with the Federal Aviation Regulations and is not prohibited by Airworthiness Directives

(d) Procedures to allow additional crewmembers and other authorized persons to be carried aboard the aircraft during ferry flights when the aircraft flight characteristics have not been appreciably changed or its operation in flight substantially affected

(e) Procedures to ensure the current airworthiness certificate and any special flight permit or authorization is displayed

(f) Procedures to ensure that the following items are reviewed prior to releasing the ferry flight:

- Technical data to which the aircraft must perform
- Operational equipment necessary for safe operation of the aircraft
- Aircraft weight limits
- Fuel distribution limits
- Center of gravity limits
- Maneuvers to which the aircraft is limited
- Limits on usage of flight equipment, e.g., autopilot
- Airspeed limits
- Meteorological limits, including conditions to be avoided, inspections required should these conditions be encountered inadvertently, and weather minimums

(3) For one engine-inoperative ferry flights, ensure the following:

(a) The operator has a four-engine airplane or a turbine engine-powered airplane equipped with three engines

(b) The applicable airplane has been previously test-flown with one engine inoperative in accordance with its approved Airplane Flight Manual. The approved Airplane Flight Manual must contain the following data:

- Maximum weight
- Configuration of the inoperative propeller, if applicable
- Runway length for takeoff, including temperature accountability
- Altitude range
- Certificate limitations
- Ranges of operational limits
- Performance information
- Operating procedures

(4) The operator's manual must include the following:

- A limitation that the operating weight on any ferry flight must be the minimum necessary with necessary reserve fuel load
- A limitation that takeoffs must be made from dry runways unless, based on a showing of actual runway operating takeoff techniques on wet runways with one engine inoperative, takeoffs with full controllability from wet runways have been approved for the specific model aircraft and included in the approved Airplane Flight Manual
- Procedures for operations from airports in which the runways may require a takeoff or approach over populated areas
- Inspection procedures for determining the operating conditions of the operative engines
- A restriction that no person may take off from an airport in which the initial climb is over thickly-populated areas or weather conditions at the takeoff and destination airport are less than those required for Visual Flight Rules flight
- Procedures that ensure only essential flight crewmembers are carried aboard the airplane during the ferry flight

- Procedures that ensure flight crewmembers are thoroughly familiar with the operator's operating procedures and the approved Airplane Flight Manual for one engine-inoperative ferry flights

D. *Notify the FAA Accident Coordinator Prior To Any Authorization of an Aircraft Involved in an Accident or Incident*

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in issuance of operations specifications paragraph D84.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 90 SUBMIT FAR PART 121/135 AIRCRAFT LISTING

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3316

B. *Avionics:* 5316

3. OBJECTIVE. This task is a means of evaluating an operator's List of Air Carrier Aircraft.

5. GENERAL. The instructions in this task apply to certificate holders conducting domestic, flag, supplemental, commuter operations (including aircraft of nine passenger seats or less), and on-demand operations using aircraft subject to continuous airworthiness maintenance programs. These certificate holders are required to list all such aircraft according to the operations specifications instructions contained in Vol. II, Ch. 84.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Experience with the operator submitting the listing
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the inspector and operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operations specifications
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Prepare A Quarterly Report*

(1) This report should contain a listing of all aircraft maintained by an operator under a continuous airworthiness maintenance program.

(2) The list must contain the following information for each aircraft:

- Make
- Model
- Serial Number
- Registration Number

(3) If no changes were made during a quarter, the quarterly report will be submitted with a statement that indicates "No Changes In Aircraft Listing".

B. *Distribute The List*

(1) The report must be distributed no later than the tenth day of January, April, July, and October of each year.

(2) Send the report to the Aircraft Maintenance Division, AFS-300, 800 Independence Avenue SW., Washington, DC 20591.

(3) Send copies of the report to the Mike Monroney Aeronautical Center, National Safety Data Branch AVN-120, P.O. Box 25082, Oklahoma City, OK, 73125.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the distribution of the List of Air Carrier Aircraft.

9. FUTURE ACTIVITIES. Continue issuing and verifying quarterly reports.

CHAPTER 91 EVALUATE FAR § 135.411(a)(1) INSPECTION AND MAINTENANCE REQUIREMENTS

Section 1 Background

1. WPMS ACTIVITY CODES

- Maintenance: 3341
- Avionics: 5341

3. OBJECTIVE. This chapter provides guidance and information on evaluating aircraft inspection and additional maintenance requirements for operator/applicants operating aircraft that are type certificated for nine passengers or less as provided for in FAR § 135.411(a)(1). It also provides methods for approving and administering those programs.

5. GENERAL

A. The aircraft's type certificated passenger capacity is the passenger seating capacity as indicated on the type certificate (TC) or supplemental type certificate (STC). Manufacturer (type certificate holder) may have several approved passenger seating configurations; therefore the type certificated capacity may be reconfigured by converting from one to another. A cabin configuration approved by supplemental type certificate may also be reconfigured. It is not the intent of FAR § 135.411(a)(1) to allow operators to remove or block passenger seats in order to circumvent maintenance requirements. Removing passenger seats does not constitute a change in type certificated capacity unless the resulting cabin configuration conforms to a supplemental type certificate or approved data.

B. Except as discussed in subparagraph C, aircraft type certificated for nine or less passengers seats must meet the inspection requirements of FAR § 91.169 or an approved aircraft inspection program (AAIP) in accordance with FAR § 135.419. The additional maintenance requirements in FAR § 135.421 must be met in either case.

C. A Part 135 operator (9 or less passenger seats) may elect to maintain its aircraft under a continuous airworthiness maintenance program. If the operator elects to use such a program, it should be approved in accordance with the guidance in Vol. II, Ch. 64.

7. ANNUAL AND 100-HOUR INSPECTION REQUIREMENTS. Annual and 100-hour inspection requirements are defined in FAR Part 43, Appendix D. The certificate holder may request additional work or special emphasis on certain tasks; however, there is no formal method of including these items on a continuing basis in succeeding inspections. These inspections are suitable for, and should be limited to, aircraft that the operator schedules for inspections but has no particular input for the work to be accomplished (Ref. FAR § 91.169 (a) and (b)).

9. PROGRESSIVE INSPECTIONS

A. Each operator wanting to use a progressive inspection must submit a written request to the district office having jurisdiction over the area in which the applicant is located. The applicant must have the following (Ref. FAR § 91.169(d)):

(1) A certificated mechanic holding an inspection authorization; a certificated airframe repair station, or the aircraft manufacturer to supervise or conduct the inspection.

(2) A current inspection procedures manual that meets the requirements of FAR § 91.169(d)(2).

(3) Enough housing and equipment for necessary disassembly and proper inspection of the aircraft.

(4) Appropriate current technical information for the aircraft.

11. PROGRESSIVE INSPECTION INTERVALS

A. A progressive inspection program must provide for a complete inspection of the aircraft within each 12 calendar month period and be consistent with the manufacturer's recommendations, field service experience, and the kind of operation in which the aircraft is engaged. The inspection schedule must ensure the aircraft is, at all times, airworthy and conforms to all applicable FAA aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data.

B. Inspection intervals should be based on manufacturer's recommendations, field service experience, malfunction and defect history, and the type of operation in which the aircraft is engaged.

(1) If the owner or operator requires assistance in establishing inspection intervals, the inspector should provide assistance based upon experience and knowledge of the particular aircraft.

(2) When adequate knowledge of service problems is lacking for a particular aircraft, the owner or

operator should be advised to establish reasonable initial routine and detailed inspection intervals and plan to adjust intervals based on service experience. The operator should be made aware of the responsibility for initiating an inspection frequency. This will result in a complete inspection of the aircraft.

C. *Requirements*

(1) Before an aircraft can be placed on a progressive inspection program, it must undergo an inspection at least equal to a 100-hour inspection. After this initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule.

(2) Routine inspections consist of visual examination or check of the aircraft, appliances, and components and systems insofar as practicable without disassembly.

(3) Detailed inspections consist of a thorough examination of these items with such disassembly as necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered to be a detailed inspection.

(4) Before an aircraft can be removed from a progressive inspection program and returned to an annual/100 hour inspection program, the remaining portions of the progressive inspection must be completed.

13. ADDITIONAL MAINTENANCE REQUIREMENTS (FAR § 135.421)

A. Each certificate holder maintaining aircraft under FAR § 135.411(a)(1) must comply with the additional maintenance requirements of FAR § 135.421. These requirements ensure major maintenance tasks (overhaul, hot section inspections, etc.) are performed on engines, propellers, rotors, and emergency equipment. It also includes carry-on oxygen for medical purposes. These requirements do not apply to the airframe and are not intended to impose a continuous airworthiness maintenance program or otherwise augment the aircraft inspection program.

B. Engine requirements apply to the engine itself, including turbo-superchargers, appurtenances, and accessories necessary to its function. It does not include aircraft provisions such as mounts or cowling or accessories such as generators or starters. Part 1 defines a propeller as including controls supplied by the manufacturer. Most propeller type certificate data sheets specify the applicable control unit which should be considered part of the propeller.

C. The certificate holder may use either the manufacturer's recommended maintenance requirements or develop a program that includes equivalent requirements.

D. In meeting requirements of FAR § 135.421, a certificate holder may use applicable portions of an aircraft manufacturer's recommended maintenance requirements for the engine, propeller, rotor, and emergency equipment; the programs of the manufacturer's for individual items; or a combination of both. Manufacturer's requirements, such as pilot preflight or other inspection items within the scope of the inspections required by FAR § 135.411(a)(1) should not be included as additional maintenance requirements.

NOTE: The aircraft manufacturer's maintenance program does not include the avionics equipment installed in the aircraft. It may be necessary to require the certificate holder to develop an inspection and maintenance program that includes the inspection and maintenance of the avionics equipment.

E. FAR § 135.421(b) defines a manufacturer's maintenance program as one which is in the manufacturer's maintenance manual or instructions. It does not include individual authorizations or recommendations by a repair facility or manufacturer to a particular operator.

(1) These manuals and instructions generally include service bulletins, service letters, and other maintenance publications.

(2) Service bulletins and service letters concerning repairs, alterations, or other items beyond the meaning of the term "maintenance" do not fall within the scope of FAR § 135.421 and compliance is not required unless it is made mandatory by an airworthiness directive. The certificate holder may include these items in the additional maintenance program to support higher maintenance intervals or other inspection variables.

F. An operator may adopt a manufacturer's entire maintenance program. The program must apply to the specific make, model, configuration, etc., and meet the requirements of FAR § 135.421.

(1) If the aircraft manufacturer's program does not include engine overhaul (or comparable heavy maintenance) and the engine manufacturer's program does, the operator must incorporate the engine manufacturer's program to the degree necessary to encompass the engine overhaul requirement. It may be necessary to designate service bulletins, other manufacturer's maintenance instructions, and a manufacturer's maintenance manual to ensure an adequate program.

(2) Program limitations must be shown on operations specifications (see Vol. II, Ch. 84).

G. FAR § 135.421 allows an operator to develop its own maintenance program. An operator-developed program requires FAA approval and the operator must substantiate the program. In most cases, these programs are derived from a manufacturer's maintenance program, although they may contain variations such as a higher engine overhaul period. In evaluating the operator's program, the inspector should consider industry experience in using the manufacturer's program.

(1) Each change to an operator-developed program requires FAA approval. Changes to a manufacturer's program should be considered but shall not be incorporated into an operator-developed program without specific approval.

(2) An operator-developed program shall be approved for use by automated operations specifications (see Vol. II, Ch. 84).

15. MAINTENANCE PROGRAM APPROVAL FOR CARRY-ON OXYGEN EQUIPMENT USED FOR MEDICAL PURPOSES

A. FAR § 135.91(a)(1)(ii) requires that equipment used for storage, generation, or dispensing of oxygen and carried aboard an aircraft must be maintained in accordance with certificate holder's approved maintenance program. FAR Part 135 does not have specific rules for maintaining and testing pressure cylinders. However, procedures in Department of Transportation (DOT) regulations are considered acceptable for controlling hydrostatic and life-limits of pressure cylinders. Standards that pressure cylinders must meet to be eligible for transportation purposes are established by the Research and Special Programs Administration and are contained in 49 CFR, Chapter 1, Parts 100–199.

B. The schedule for performing inspections and maintenance, whether by time in service, calendar time, system cycles, or combination, must comply with 49 CFR Part 173. Instructions and procedures for conducting the maintenance program, including the necessary checks and test, must be in sufficient detail for maintenance personnel to correctly perform the maintenance without further guidance.

C. 49 CFR § 173.301(c), Retest of Container, states that a container for which prescribed periodic retest has become due must not be charged and shipped until it has been properly retested. Pressure cylinders used as aircraft equipment that remain charged or partially charged on the date hydrostatic test is due may remain in service beyond the test date provided the cylinder is tested before its next full or partial refilling.

D. The maintenance program for carry-on oxygen equipment for medical purposes is approved for use on operations specifications paragraph D71 as an item of emergency equipment (see Vol. II, Ch. 84).

17. REVISING TIME LIMITATIONS

A. Revisions to inspection and overhaul time limitations for powerplants, propellers, rotors, and emergency equipment normally are based on service experience. The operator may request authorization for a time increase by submitting justification to support the requested increase. The data must indicate that the increase will not adversely affect the airworthiness of the aircraft. If service records indicate that any item consistently requires repair, adjustment, or other maintenance within the current time limitations due to damage, wear, or deterioration, the operator must take corrective action.

B. Time limitations may be established in terms of hours of operation, cycles, or calendar time. Time limitations for items on which deterioration is not necessarily a function of hours of operation (such as electronic units and emergency flotation equipment) should be established in terms of calender time.

C. Increases in engine overhaul intervals may be approved in increments mutually agreed upon by the operator and the principal maintenance inspector. Increases should be based on satisfactory service experience and/or a teardown examination of at least one exhibit engine. The engine chosen for exhibit should have operated to within 5 percent of the currently approved time interval.

D. The current operator must justify an inspection time interval increase by providing sampling documentation that supports the proposed increase. The inspector must ensure that the part or engine sampled represents the total sample population and that it has not been given special treatment or been subjected to early inspections by the operator. A substantial portion of the time in service should have been accrued by the current operator. Industry experience and manufacturer's recommendations for similar equipment can be used as supporting justification, but should not be the sole source.

E. Time extensions shall not exceed 200 hours on reciprocating engine or 10 percent on turbine-powered engines.

F. Time limitation extensions are approved and authorized for use by amending operations specifications (see Vol. II, Ch. 84).

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 91, and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination between the Principal Maintenance Inspector and the Principal Avionics Inspector.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operator/applicant's manual
- 49 CFR Part 173
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400-8, Operations Specifications

C. *Job Aids*

- Automated operations specifications checklists and worksheets

5. PROCEDURES

A. *Brief Operator/Applicant.* Provide the operator/applicant with policies and regulatory requirements. Schedule and conduct a preliminary meeting, if necessary.

B. *Review Schedule of Events.* If this task is to be performed as part of an original certification, review the Schedule of Events to ensure the task can be accomplished according to the schedule.

C. *Evaluate General Manual Requirements.* Ensure the operator/applicant's policies and procedures manual describes procedures, levels of authority, and information appropriate to the inspection and maintenance requirements of FAR § 135.411(a)(1).

D. *Evaluate Inspection and Maintenance Requirements.* Accomplish the following:

(1) Determine that the aircraft meets the 9 or less passenger seat requirements of FAR § 135.411(a)(1).

(2) Verify with the operator/applicant the type of program with which the aircraft is to be inspected.

(a) If the operator/applicant would prefer to be on a progressive inspection, ensure that the requirements of FAR § 135.169(d) are met.

(b) If the operator/applicant would prefer to be on an Approved Aircraft Inspection Program (AAIP), ensure that the requirements of FAR § 135.419 and Vol. II, Ch. 83 are met.

(c) If the operator/applicant would prefer to be on a 100 hour/annual inspection, ensure that the requirements of FAR § 91.169(a) and (b) are met.

NOTE: If the operator/applicant intends to haul cargo only, ensure the requirements of FAR § 91.169(a) are met.

(3) Determine if the operator/applicant meets the additional maintenance requirements of FAR § 135.421 for engines, propellers and rotors (as applicable), and emergency equipment

(a) Determine if the operator/applicant intends to use the manufacturer's maintenance program or develop one of its own.

(b) Determine the time in service intervals for which the operator/applicant intends to apply. If the times are found to be acceptable, complete the automated operations specifications worksheet in accordance with Vol. II, Ch. 84.

E. *Analyze Findings*

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. When all requirements for acceptance and approval of the inspection and maintenance programs have been met, approve operations specifications in accordance with Vol. II, Ch. 84.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 92 EVALUATE FAR SECTION 135.411(a)(1) OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3634

B. *Avionics:* 5634

3. OBJECTIVE. The performance of this task determines if the operator/applicant has procedures for creating, preserving, and retrieving the maintenance records required by the Federal Aviation Regulations and ensures that these procedures are being followed.

5. GENERAL

A. *Definitions*

(1) *Life-limited part:* A part that has an established safe life limit established by FAA Engineering and the Manufacturer. The part must be removed from service at its specified time or cycles in service. Life limits are always listed or referenced on the type certificate data sheets and can be adjusted only by FAA engineering.

(2) *Approved data:* Drawings, methods, techniques, and materials used to accomplish major repair or alterations that are approved by the FAA Administrator (Airworthiness Inspectors, FAA Engineering and Manufacturing, or Designated Engineering Representatives (DERs)).

B. To comply with the maintenance recording requirements of the Federal Aviation Regulations, the operator/applicant's maintenance manual must identify and contain procedures to complete all applicable documents used by the operator/applicant.

C. FAR § 91.173 has maintenance record keeping requirements for the following:

(1) *Airworthiness Directives (ADs).* FAR Part 91 requires the current status of applicable Airworthiness Directives, including the date and method of compliance, recurring Airworthiness Directive actions, and the time and date when the next action is required.

(2) *Total Time in Service.* FAR Part 91 has requirements to maintain total time in service records for airframe, engines, propellers, and rotors.

D. The manual should contain procedures for the record keeping system. The procedures should address the following requirements of the regulations:

(1) *Total Time in Service.* This record may consist of aircraft maintenance record pages, separate cards or pages, a computer list, or other methods described in the operator/applicant's manual. (Ref. FAR § 91.173(a)(2)(i))

(2) *Status of Life Limited Parts.* Life limited parts, e.g., components of the airframe, engine, propellers, rotors, and appliances, are identified to be removed from service when a specific time limit or number of cycles has been reached. (Ref. FAR § 91.173(a)(2)(ii))

(a) The current status of the part is a record indicating the operating time limits, total number of hours or accumulated cycles, and the number of hours or cycles remaining before the required retirement time of the component is reached. This record also must include any modification of the part in accordance with Airworthiness Directives, service bulletins, or product improvements by the manufacturer or operator/applicant.

(b) The following are not considered a current status record:

- Work orders
- Maintenance installation records
- Purchase requests
- Sales receipts
- Manufacturers documentation of original certification
- Other historical data

(c) Whenever the current status of life limited parts records cannot be established or has not been maintained (e.g., a break in current status) and the historical records are not available, the airworthiness of that product cannot be determined and it must be removed from service.

(d) Serious problems have surfaced during national inspections and routine inspections when the current status of the life limited parts record was not complete and there was no historical record to reestablish the current status.

(3) *Overhaul List.* The operator/applicant is required to develop manual procedures complying with

FAR § 91.173(a)(2)(iii) for recording the time since last overhaul of all items installed on the aircraft required to be overhauled on a specified time basis. The items requiring overhaul are either listed on operations specifications or listed in a document referenced in the operations specifications.

(a) The overhaul list includes the actual time or cycles in service since the last overhaul of all items installed on the aircraft. If continuity cannot be established between overhaul periods, the last overhaul records must be reviewed to reestablish currency of the overhaul list.

(b) The overhaul list refers to the time since last overhaul of an item and must not be confused with an overhaul record, which requires a description of the work and identification of the person who performed and/or approved the work.

(4) A record must be made whenever an item of aircraft equipment is overhauled. This overhaul record must describe the work performed. The inspector must be cautioned that a return to service tag does not constitute an overhaul record. If a tag is used for approval for return to service, it must reference the overhaul. The operator/applicant must have this record or be able to make it available to the Administrator. The overhaul records shall be retained until the work is superseded by work of equal scope and detail.

(5) *Current Aircraft Inspection Status.* The operator/applicant is required by FAR § 91.173(a)(2)(iv) to retain a record identifying the current inspection status of each aircraft.

(a) The record shall show the time in service since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

(b) Inspection work packages or routine and non-routine items generated while performing any part of the inspection program must be retained for one year after the work is performed or until the work is repeated or superseded by other work.

(6) *Current Airworthiness Directive Status.* The operator/applicant is required by FAR § 91.173(a)(2)(v) to keep a record showing the current status of applicable Airworthiness Directives, including the method of compliance. This record shall include the following:

- List of Airworthiness Directives applicable to the aircraft
- The date and time in service or cycles, as applicable
- Method of compliance
- The time in service or cycles and/or date when the next action is required (if it is a recurring Airworthiness Directive)

(a) An acceptable method of compliance may be one of the following:

- Reference to a particular portion of the Airworthiness Directive
- Reference to manufacturer's service bulletin, if the bulletin is referenced in the Airworthiness Directive
- Reference to any other document generated by the operator/applicant that shows compliance with the Airworthiness Directive, such as an Engineering Order (EO) or Engineering Authorization (EA)

(b) When an Engineering Order/Engineering Authorization is used, the details must be retained by the operator/applicant. If the Engineering Order/Engineering Authorization also contains the accomplishment instructions and sign-off, it must be retained indefinitely.

(c) An operator/applicant may apply for alternate methods of compliance for accomplishing Airworthiness Directives. Alternate methods of compliance must be approved by the appropriate FAA Engineering Directorate and apply only to the operator/applicant making the application. If an aircraft is transferred to another owner, the alternate method of compliance continues to apply to that aircraft.

(d) The operator/applicant's manual must have procedures to comply with new and emergency Airworthiness Directives to ensure the action is completed within the given time limits. This must include procedures for notifying the responsible individuals to implement the required action during other than routine duty hours.

(e) In most cases, the document that contains the current status of Airworthiness Directives and method of compliance is different from the record of Airworthiness Directive accomplishment.

- The document is a permanent, ongoing historical record of all Airworthiness Directive accomplishment and must be retained with the aircraft indefinitely

- The record of accomplishment of an Airworthiness Directive must be retained until the work is superseded or repeated or for one year after the work is performed

(f) Serious problems have surfaced during national and routine inspections when the applicable Airworthiness Directive current status and method of compliance was not complete and there was no historical record to reestablish them. When current status and method of Airworthiness Directive compliance cannot be determined from the document, the operator/applicant must verify this compliance.

(7) *Major Alteration and Major Repair.* FAR § 91.173(a)(2)(vi) operator/applicants are required to retain records of each major alteration to the following:

- Airframe
- Engine
- Propeller
- Rotor
- Appliance

(a) *Major Alterations.* Major alterations should be on a list and have the date of alteration and a brief description of that alteration.

(b) *Major Repairs.* The FAR § 91.173(a)(1) major repair list should have the date and brief description of the repair.

(c) All major repairs and major alterations must be accomplished by using FAA approved data. Previous inspections have identified lack of approved data to support major repairs and major alterations.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Parts 91 and 135
- Working experience with operator recordkeeping systems
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires local, regional, and/or headquarters coordination, depending on severity of possible noncompliance.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 43
- Order 8300.10, Airworthiness Inspector's Handbook
- Operator Maintenance Records
- Order 2150, Enforcement Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Office Files.* Review the historical data of the operator's record keeping system. This includes the WPMS history of past inspections, Enforcement Information System (EIS), and other office files.

B. *Review The Operator's Maintenance Records.* Analyze the operator/applicant's record keeping system. Determine if the Federal Aviation Regulations record keeping requirements are met. The record keeping should provide an acceptable method for creating, preserving and retrieving required records. All records must contain the following:

- Description of the work performed (or reference to data acceptable to the Administrator)
- The date of completion of the work performed
- The signature and certificate number of the person approving the aircraft for return to service

(1) *Airworthiness Records.* Ensure that the records are retained for one year after the work is performed or until repeated or superseded by other work.

(2) *Total Time In Service*

(a) Determine the method of recording total time-in-service of the airframe, engine, propeller, and rotor. This record must show the current time in service in hours.

(b) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

(3) *Status of Life Limited Parts*

(a) Ensure that the operator is tracking the current status of life limited parts for each airframe, engine, propeller, rotor, and appliance.

(b) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

(4) *Time since last overhaul of all items required to be overhauled.* This document must accompany the aircraft when transferred.

(5) *Overhaul Records.* Ensure that the manual describes how the operator documents the last complete overhaul of each engine, propeller, and rotor. These records must be retained until the work is superceded by work of equivalent scope and detail. The overhaul record may include:

- Disassembly data
- Dimensional check data
- Replacement parts list
- Repair data
- Reassembly/test data
- Reference to data including overhaul specifications

(6) *Current Aircraft Inspection Status*

(a) Determine how the operator records the time in service since the last inspection.

(b) Determine if procedures ensure this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

(7) *Airworthiness Directive Compliance.* Determine how the operator complies with record keeping requirements of the Airworthiness Directives, including emergency Airworthiness Directives. Ensure that there is a record containing the following items:

(a) *Current Status*

- A list of all Airworthiness Directives applicable to the aircraft
- Date and time of compliance
- Time and/or date of next required action (if recurring Airworthiness Directive)

(b) *Method of Compliance.* This includes either a record of the work performed or reference to the applicable section of the Airworthiness Directive.

(c) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

(8) *Major Alteration Records.* Determine how the operator prepares and maintains a list of current major alterations to each airframe, engine, propeller, rotor, and appliance. The list should include:

- Date of alteration
- Brief description of the alteration

(9) *Major Repair Records*

(a) Determine how the operator prepares and maintains a list of current major repairs to each airframe, engine, propeller, rotor, and appliance. The list should include:

- Date of repair
- Brief description of the repair

(b) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

C. *Inspect the Operator Record System*

(1) Identify the documents/forms that are used for ensuring that the following are accomplished:

- Total time in service
- Status of life limited parts
- Time since last overhaul document
- Overhaul records
- Current aircraft inspection status
- Current status of applicable Airworthiness Directives
- Major alteration and repair records

(2) Inspect the records. During the inspection, document and photocopy any confusing areas, obvious omissions or apparent discrepancies.

(a) Compare the records with the actual accomplishment of the maintenance.

(b) Obtain and review the maintenance logs to determine the scheduled inspections and non-routine maintenance.

(c) Review maintenance records to ensure that:

- Flight discrepancies were entered at the end of each flight
- Corrective action was related to the discrepancy
- Corrective action and sign-off are entered into the maintenance record
- Repetitive discrepancies are handled properly
- Deferred maintenance as authorized by the Minimum Equipment List (MEL) is deferred according to the operator's Minimum Equipment List and instructions

(3) Select or obtain work packages for scheduled inspections and ensure that scheduled inspections are properly signed off.

(a) Ensure that non-routine items generated were properly signed off.

(b) Determine if repairs were categorized correctly (major or minor) and if approved data was used for major repairs.

(4) Compare the actual record of accomplishment with the total time/cycles in service record for the airframe, engine, propeller and rotor.

(5) Select and obtain a total time/cycles in-service record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.

(6) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.

(7) If the operator maintains a hand-written maintenance record for engines, compare the record entries to the aircraft flight log entries for accuracy and to detect transposition of flight time/cycles in service, numbers, etc.

(8) Compare the manual procedures for life limited parts with the actual recording of the current status of life limited parts.

(9) Select a random sample of records and ensure that:

(a) All life limited parts described on type certificate data sheets or a manual referenced in the type certificate data sheets are noted.

(b) Current status of each part is provided, to include:

- Total operating hours (including calendar time)/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(c) Ensure that:

- Time/cycles limits on the operator list are the same as those on the type certificate data sheets
- Life limits have not been exceeded

(d) Select a sample of life limited items that have been installed within the last 12 months and review records to ensure that life limited time was carried forward from the previous service record.

(e) If overhauled, ensure overhaul record is available.

(f) Ensure that the life limit of an item has not been changed as a result of the overhaul.

(10) Compare the overhaul list with the actual record.

(11) Identify items in the operator maintenance program that have overhaul requirements, if applicable.

(12) Ensure that all items identified are on the current list.

(13) Ensure that the overhaul list contains the time/cycles since last overhaul.

(14) Ensure that the items on the list have not exceeded their specified overhaul time/cycle limits.

(15) Select a random sample of items from the overhaul list to:

(a) Determine if overhaul records are available for those items selected.

(b) Ensure that the records contain a description of the overhaul, and that the item was overhauled according to the overhaul specifications by a qualified and authorized person.

(c) Ensure the component was approved for return to service by an authorized person.

(16) Review the removal/installation records of overhauled components to determine if the overhaul was accomplished within the authorized time limits. Current regulations require that these records be maintained for only one year.

(a) Compare the current aircraft inspection status with the record available.

(b) Determine that daily flight hours/cycles are recorded to obtain the current inspection status.

(c) Take a random sample of aircraft inspection records and review the last two "C" checks (or equivalent) to ensure that scheduled inspections times/cycles were not exceeded (overflown).

(17) Compare the compliance with Airworthiness Directives with the current status of Airworthiness Directive document.

(a) Contact the operator responsible for Airworthiness Directive records and request a random sample of aircraft Airworthiness Directive compliance record.

(b) Ensure that the document contains all applicable Airworthiness Directives for the sampled aircraft.

(c) Ensure that the Airworthiness Directive requirements were accomplished within the effective times of the Airworthiness Directive, with special emphasis on recurring Airworthiness Directives.

(d) Ensure that the Airworthiness Directive document contains current status and method of compliance. The current status must include these three items:

- A list of all Airworthiness Directives applicable to the aircraft
- Date and time of compliance
- Time and/or date of next required action (if recurring Airworthiness Directive)

(e) Ensure that the list is being retained indefinitely.

(f) Identify those Airworthiness Directives with alternate methods of compliance, and ensure the operator has obtained prior approval for that alternate method.

(g) Select from the current Airworthiness Directive compliance document a number of Airworthiness Directives accomplished within the last 12 months and ensure appropriate accomplishment records are available. Review the accomplishment record to ensure the following:

- The method of compliance is as specified in the Airworthiness Directive
- The date of compliance is identical to the date on the current status list
- The mechanic is certificated to accomplish the work
- The accomplishment was properly signed off

(18) Compare the major alteration and repair records with the actual records.

(a) *Major Alterations*

- Request a list of all major alterations for a random sample of aircraft
- Ensure that the list contains the date of accomplishment and a brief description of the alteration
- Select a random sample of major alterations accomplished within the last 12 months and ensure the respective maintenance records show that alterations were accomplished according to approved data

(b) *Major Repairs*

- Request several records of major repairs
- Ensure that the records contain the date of accomplishment and a brief description of the repair
- Select a random sample of major repairs accomplished within the last 12 months and ensure the respective maintenance records show that repairs were accomplished according to approved data
- When major repairs or alterations are identified and are not recorded, request the actual maintenance accomplishment record from the operator/applicant

D. *Analyze the Inspection Results*

(1) Determine the effectiveness of the maintenance record keeping system. Ineffective record keeping systems may be the result of:

- Inadequate/nonexistent procedures
- Not following manual procedures

- Ineffective organization
- Lack of qualified personnel
- Poor scheduling of Airworthiness Directive compliance, overhaul requirements, inspections, etc.
- Improper training

(2) *Compile Deficiencies*

(a) Compile all findings that are contrary to the regulations.

(b) Compile all findings that are in noncompliance with the Federal Aviation Regulations but are producing satisfactory results.

(3) After compiling all findings and before the operator debriefing, consult with the appropriate FAA supervisory personnel to determine which (if any) findings require enforcement actions.

(4) If no findings are made, no further action is required.

E. *Meet With the Operator*

(1) Discuss the following items:

- All discrepancies discovered during the inspection
- Possible corrective action
- Possible enforcement actions

(2) Inform the operator that official written notification of findings may follow.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- Formal letter to operator confirming results of inspection
- Enforcement action according to Order 2150.3, if applicable

C. *Document Task.* File record of inspection in operator's file in district office according to office procedures.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 93 EVALUATE FAR SECTION 135.411(a)(1) COMPANY MANUAL/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3302

B. *Avionics:* 5302

3. OBJECTIVE. This chapter provides guidance for evaluating an operator/applicant's company manual or revision to ensure that policies, procedures, and technical criteria meet regulatory requirements.

5. GENERAL

A. A company manual should enable the operator's maintenance and servicing personnel to carry out their duties at a high level of safety. The complexity of the manual will vary with the complexity of the operation. The manual must cover specific items in accordance with the Federal Aviation Regulations, but may include additional items at the discretion of the applicant. A manual is therefore accepted rather than approved.

B. Manual acceptance can be a cause of delay in the certification process. If the operator/applicant does not have experienced and qualified personnel to prepare an acceptable manual, the use of a consultant may be appropriate. A consultant can be used in an advisory position only. After the review, the manual must be returned to the operator/applicant with a list of any discrepancies found. The operator/applicant must be informed that final certification will not be completed until discrepancies are corrected. Inspectors should be concerned primarily with ensuring regulatory compliance.

7. REVIEWING OPERATOR/APPLICANT'S MANUAL

A. The manual is an administrative tool used to control and direct personnel. It should define all aspects of the maintenance operation.

(1) The policies and procedures section should address organizational matters.

(2) The maintenance section should address policies and procedures for administering the inspection and maintenance requirements, test flight requirements, and other subjects as applicable.

B. The manual should include detailed instructions or specific references for accomplishing inspection and maintenance functions. It should also include forms, instructions, and references for recurring nonroutine requirements such as engine changes and inspections following abnormal occurrences (hard landings, lightning strikes, severe turbulence, high brake energy stops, etc.).

C. Manufacturers' technical manuals provide instructions for accomplishing specific tasks. These documents also establish methods, technical standards, measurements, and operational test procedures. The policy and procedures section of the operator's manual must describe areas of application for the pertinent technical documents.

D. The following is a list of examples of manual sections and titles:

- General policy and procedures
- Inspection procedures
- Maintenance procedures
- Training
- Wiring
- Parts
- Overhaul
- Structural repair
- Manufacturers or vendors
- Weight and balance control
- Servicing

E. Manuals must be easy to revise and show the date of last revision on each page. The manuals must have a page control system showing the number of pages and including the latest revision. The page control system is usually identified as a list of effective pages.

F. The operator/applicant is responsible for ensuring manuals present adequate guidance to meet all regulatory requirements. The operator/applicant must understand and accept this responsibility early in the certification process.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires close coordination with maintenance, avionics, and, in some areas, operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Section 604 of the Federal Aviation Act of 1958, as amended
- FAR Parts 43 and 91
- 49 CFR Part 173
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Brief Operator/Applicant.* Provide the operator/applicant with policies and regulatory requirements. Schedule and conduct a preliminary meeting, if necessary.

B. *Review Schedule of Events.* If this task is to be performed as part of an original certification, review the schedule of events to ensure the task can be accomplished according to the schedule.

C. *Evaluate General Manual Requirements.* Ensure the operator/applicant's policies and procedures manual describes procedures, levels of authority, and information appropriate to FAR Part 135.

(1) The manual must include a description introducing its philosophy and goals. If it is in more than one volume, the manual must describe the division of contents between the volumes. The manual must also contain a list of effective dates.

(2) Manual revision and distribution procedures to provide current information to all manual holders are required. The manual must include provisions to make it available to maintenance and ground personnel and to furnish a copy to the FAA Certificate Holding District Office.

(3) Significant terms, acronyms or abbreviations unique to the manual must be defined. Common industry terms need not be defined as long as the common meaning is intended. Terms clearly defined in the text need not be included.

(4) The manual must detail requirements to carry the appropriate parts of the manual on the aircraft, if applicable.

D. *Ensure the Manual Contains Required Organizational Elements.* Check for the following:

(1) The names of all management personnel authorized to sign applicable operations specifications and act on behalf of the operator/applicant

(2) Organizational charts for:

- Lines of authority
- Maintenance organization and support structure

(3) Job descriptions for all elements noted above

(4) Procedures for, and a description of, a training program that ensures:

- All personnel, including inspection personnel, are fully informed of procedures and techniques currently in use
- All personnel are competent to perform their duties
- A method of documenting and retaining training records is established

E. *Ensure the Manual Contains Compliance Procedures.* Check for the following:

(1) Procedures to ensure compliance with aircraft weight and balance limitations.

(2) The operator/applicant's operations specifications, or appropriate extracted information (must retain identity as operations specifications)

(3) Procedures, policies, instructions and controls for the use of the Minimum Equipment List and Configuration Deviation List, if applicable

F. *Evaluate Manual Contents.* The certificate holder's company manual must describe procedures and

provide information appropriate to the applicable operating Federal Aviation Regulations. The following are required to be in the manual:

(1) *Manual description.* The inspector must ensure that procedures for the following are clearly stated and meet the requirements of FAR § 135.23(a):

- The person's assigned area of responsibility
- The person's duties
- The person's responsibility
- The person's authority
- Name and title of person authorized to exercise operational control

(2) *Manual revision and distribution procedures.* The certificate holder's manual must describe the revision control procedures and how the distribution of manuals will be controlled. (Ref. FAR §§ 135.21(b) through (g) and 135.23)

(a) Manuals must be easy to revise and have the date of last revision on each page. The manuals must have a page control system that shows the number of pages and ensures the latest revision is included. The page control system is usually identified as a list of effective pages. (Ref. FAR § 135.23)

(b) Manuals must have a distribution system that meets the requirements of FAR § 135.21, as appropriate

(3) *Definitions.* Any terms contained in the manual that are unique to the operator's operation must be defined. (Ref. FAR § 135.23(r))

(4) Duties and responsibilities of appropriate members of the ground organization personnel (Ref. FAR § 135.23(a))

(5) For FAR 135 operators, duties and responsibilities of management personnel, including the names and addresses of those required by FAR § 135.23(a)

(6) Instructions and procedures for maintenance, preventive maintenance, and servicing (Ref. FAR § 135.23(h))

(7) Time limitations or standards for determining time limitations for overhauls, inspections, and checks of airframes, engines, propellers, appliances, and emergency equipment (Ref. FAR §§ 121.135(b)(17) and 135.11(b)(2)(iii)

(8) Procedures for aircraft refueling, eliminating fuel contamination, fire protection (including electrostatic protection), and supervising and protecting passengers during refueling (Ref. FAR §§ 121.135(b)(18) and 135.23(j))

(9) Methods and procedures for maintaining the aircraft's weight and center of gravity within approved limits (Ref. FAR §§ 135.23(b), 135.63(c), and 135.185)

(10) Copies of operations specifications, Parts D and E, if appropriate, normally included in the manual. The operator may decide, however, to insert pertinent excerpts of its operations specifications or reference the operations specifications in such a manner that they retain their identity. (Ref. FAR § 135.23(c))

(11) Procedures for reporting and correction of mechanical irregularities which address the following:

(a) Recording actions in the aircraft maintenance log (Ref. FAR _ 135.65)

(b) Ensuring the aircraft maintenance log is readily accessible to each flight crewmember (Ref. FAR _ 135.65)

(c) Minimum Equipment List (Ref. FAR __ 135.23(i) and 135.179)

(d) Minimum Equipment Lists placard system

(e) Deferred maintenance

(f) Maintenance record entry requirements in the maintenance section of the manual

(g) Providing a copy to the pilot in command

(h) A list of required maintenance-related forms and the requirements for preparation

(i) Distributing required reports and forms (Ref. FAR §§ 135.415 and 135.417)

(12) Test flight requirements and limitations (Ref. FAR § 91.167), including:

- Items requiring test flight
- Procedures for performing test flight

(13) Ferry flight procedures, as appropriate

(14) Procedures for the following:

- Reporting the occurrence or detection of each failure, malfunction or defect of mechanical reliability (mechanical reliability reports)

- Reporting each interruption to a flight, unscheduled change of aircraft in route, or unscheduled stop or diversion from a route caused by known or suspected mechanical difficulties (Mechanical Interruption Summary Report)
- Submitting required aircraft and engine utilization reports to the Certificate Holding District Office, if required
- Ensuring all major alteration reports are submitted to the Certificate Holding District Office
- Ensuring reports of major repairs are prepared and retained by the operator

(15) Other procedures, as appropriate (Ref. FAR § 135.23(r):

- Parking aircraft in high winds
- Short-term storage
- Long-term storage
- Seasonal operation
- Removing ice and snow from aircraft
- Towing
- Emergency procedures
- Runup/taxi personnel authorizations
- Aircraft ground runup
- Taxiing aircraft
- Ramp signals and procedures
- Jacking, lifting, and hoisting
- Use of landing gear down locks
- Use of external gust locks
- Aircraft cleaning, including materials used for cleaning and flame-proofing materials after dry cleaning (Ref. FAR § 43.13)
- Engine change
- Propeller change
- Cylinder change
- Engine and propeller overspeed
- High oil consumption
- Oil leaks
- Engine and propeller troubleshooting
- Oxygen and nitrogen servicing and storage

G. *Analyze Results.* Upon completion of review, analyze the results and determine whether the operator/applicant's manual meets all requirements.

H. *Debrief Operator/Applicant.* Discuss discrepancies and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 94 EVALUATE FAR SECTION 135.411(a)(2) MAINTENANCE RECORDS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3634

B. *Avionics:* 5634

3. **OBJECTIVE.** This chapter describes the process used to evaluate an applicant's procedures for utilizing, preserving, and retrieving the maintenance records required by FAR § 135.411(a)(2).

5. **GENERAL.** To comply with the maintenance recording requirements of the Federal Aviation Regulations, the applicant's maintenance manual must identify and contain procedures to complete all applicable documents used by the applicant.

A. *Current Airworthiness Directive Status.* The applicant is required to keep a record showing the current status of applicable Airworthiness Directives, including the method of compliance.

(1) This record shall include the following:

- A list of Airworthiness Directives applicable to the aircraft
- The date and time in service or cycles, as applicable
- The date and method of compliance
- The time in service or cycles and/or date when the next action is required (if it is a recurring Airworthiness Directive)

(2) An acceptable method of compliance should include a reference to one of the following:

- A specific portion of the Airworthiness Directive
- A manufacturer's service bulletin, if the bulletin is referenced in the Airworthiness Directive
- Another document generated by the applicant that shows compliance with the Airworthiness Directive, such as an Engineering Order (EO) or Engineering Authorization (EA).

(3) When an Engineering Order/Engineering Authorization is used, the details must be retained by the applicant. If the Engineering Order/Engineering Authorization also contains the accomplishment instructions and sign-off, it must be retained indefinitely.

(4) An applicant may apply for an alternate method of compliance for accomplishing Airworthiness Directives. Alternate methods of compliance must be approved by the appropriate FAA Engineering Directorate and apply only to the applicant making the application.

(5) The applicant's manual must have procedures to ensure compliance with new and emergency Airworthiness Directives within given time limits.

(6) The document that contains the current status of Airworthiness Directives/method of compliance may be the same as the record of Airworthiness Directive accomplishment, although the retention requirements are different.

(a) The record of Airworthiness Directive accomplishment must be retained with the aircraft indefinitely.

(b) The Airworthiness Directive method of compliance record will only be retained until the work is superseded/repeated or until one year after the work is performed.

B. *Total Time in Service Records.* FAR Part 135 requires total time in service records for engines, propellers, and rotors. These records are used to schedule overhauls, retirement life limits, and inspections and may consist of aircraft maintenance record pages, separate cards or pages, a computer list, or other methods as described in the applicant's manual.

C. *Life Limited Parts Status Records.* FAR Part 135 requires records for components of the airframe, engine, propellers, rotors, and appliances that are identified to be removed from service when the life limit has been reached.

(1) The current life limited status of the part is a record indicating the life limit remaining before the required retirement time of the component is reached. This record must include any modification of the part in accordance with Airworthiness Directives, service bulletins, or product improvements by the manufacturer or applicant.

(2) The following are not considered a current life limited status record:

- Work orders
- Maintenance installation records
- Purchase requests
- Sales receipts
- Manufacturers documentation of original certification
- Other historical data

(3) Whenever the current status of life limited parts records cannot be established or has not been maintained (e.g., a break in current status) and the historical records are not available, the airworthiness of that product cannot be determined and it must be removed from service.

D. *Airworthiness Releases*

(1) When maintenance, preventive maintenance, or alterations on an aircraft are performed, an airworthiness release or log entry must be completed prior to operating the aircraft. Using the procedures described in the manual, the applicant must be able to retain all of the records necessary to show that all requirements for the issuance of an airworthiness release have been met.

(2) The applicant must identify those persons authorized to sign airworthiness releases. This includes any personnel outside of the applicant's organization who perform contract maintenance. Personnel authorized to sign must be appropriately certificated as required by FAR § 135.443.

E. *Overhaul List.* The applicant is required to develop manual procedures for recording the time since the last overhaul of all items installed on the aircraft that are required to be overhauled on a specified time basis. The items requiring overhaul are either listed on the operations specifications or listed in a document referenced in the operations specifications.

(1) The overhaul list includes the actual time or cycles in service since the last overhaul of all items installed on the aircraft. If continuity cannot be established between overhaul periods, the last overhaul records must be reviewed to reestablish the currency of the overhaul list.

(2) The overhaul list refers to the time since last overhaul of an item and must not be confused with an overhaul record, which requires a description of the work and identification of the person who performed and/or approved the work.

F. *Overhaul Records*

(1) A record must be made whenever an item of aircraft equipment is overhauled and must include the following:

- A description of the work performed or reference to data acceptable to the Administrator
- The name of the person performing the work if the work is performed by a person outside of the applicant's organization
- The name or other positive identification of the individual approving the work

NOTE: A return to service tag does not constitute an overhaul record.

(2) The applicant must retain the record and be able to make it available to the Administrator upon demand. The overhaul records shall be retained until the work is superseded by work of equal scope and detail.

G. *Current Aircraft Inspection Status.* The applicant is required to retain a record identifying the current inspection status of each aircraft.

(1) This record shall show the time in service since the last inspection required by the inspection program under which the aircraft and it's appliances are maintained.

(2) Inspection work packages or routine and non-routine items generated while performing any part of the inspection program must be retained as follows:

- For one year after the work is performed

- Until the work is repeated or superseded by other work

H. *Major Alteration and Major Repair.* Applicants are required to retain records of current major repairs and major alterations that are accomplished on the following:

- Airframe
- Engine
- Propeller
- Rotor
- Appliance

(1) Major alterations and major repairs must be listed with the date of accomplishment and a brief description of the work performed.

(2) The manual must include procedures for extracting the information required for the list from the actual record of accomplishment of the major alteration or major repair.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Part 135
- Working experience with operator record keeping systems
- Successful completion of the Airworthiness Inspectors Indoctrination String Course

B. *Coordination.* This task requires regional coordination.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 43
- Applicant's Maintenance Procedures Manual

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Applicant's Maintenance Manual*

(1) Ensure that the necessary procedures exist in the applicant's manual to ensure a suitable system for creating, preserving and retrieving required records.

(2) Ensure that all records will contain the following information, as applicable:

- Description of the work performed (or reference to data acceptable to the Administrator)
- Name of the person(s) performing the work when the personnel are not employed by the applicant's organization
- Name or other positive identification of the individual approving the work

B. *Review the Applicant's Manual Procedures.* Review the applicant's record keeping procedures to ensure that the requirements of FAR Part 135 will be met for the following:

(1) *Airworthiness Release Records.* Ensure the following:

(a) The record requirements of FAR § 135.443 will be met

(b) The records will be retained for one year after the work is performed or until repeated/superseded by other work

(2) *Total Time In Service Records*

(a) Evaluate the method of recording total time-in-service of airframes. This record must show the current time in service in hours.

(b) Ensure that procedures are in place to retain the records until the aircraft is sold and that the records will then be transferred with the aircraft.

(3) *Life Limited Parts Status*

(a) Ensure that the applicant has procedures for tracking the current status of life limited parts for each airframe, engine, propeller, rotor, and appliance, to include the following information:

- Total operating hours (including calendar time)/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(b) Ensure that procedures are in place to retain the records until the aircraft is sold and that the records will then be transferred with the aircraft.

(4) *Time Since Last Overhaul Records.* Ensure that the manual includes a method/procedure for updating this document from the overhaul records and ensuring that this document accompanies the aircraft upon sale.

(5) *Overhaul Records*

(a) Ensure that the manual describes how the applicant will document the last complete overhaul of each airframe, engine, propeller, rotor and appliance. The overhaul record should include the following information:

- Disassembly data
- Dimensional check data
- Replacement parts list
- Repair data
- Reassembly/test data
- Reference to data including overhaul specifications

(b) Ensure that these records will be retained until the work is superseded by work of equivalent scope and detail.

(6) *Current Aircraft Inspection Status*

(a) Evaluate the method the applicant will use to record the time in service since the last inspection.

(b) Ensure that procedures are in place to retain the records until the aircraft is sold and that the records will then be transferred with the aircraft.

(7) *Airworthiness Directive Compliance.* Evaluate how the applicant will comply with the record keeping requirements of the Airworthiness Directives, including emergency Airworthiness Directives. The procedures must generate a record that contains the following data:

(a) *Current status.* Ensure that the current status data will include the following:

- A list of all Airworthiness Directives applicable to the aircraft
- The date and time of compliance
- The time and/or date of the next required action (if a recurring Airworthiness Directive)

(b) *Method of compliance.* Ensure that this data will include either a record of the work performed or a reference to the applicable section of the Airworthiness Directive.

NOTE: Ensure that the records will be retained until the aircraft is sold and that the records will then be transferred with the aircraft.

(8) *Major Alteration and Major Repair Records*

(a) Evaluate the manual procedures to ensure that the applicant prepares and maintains a list of current major alterations and major repairs to each airframe, engine, propeller, rotor, and appliance.

(b) Ensure that the list includes the following information:

- The date of the work performed
- A brief description of the work performed

(c) Ensure that procedures are in place to retain the list until the aircraft is sold and then be transferred with the aircraft.

C. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Successful completion of this task will result in the following:

- A letter to the applicant confirming the results of inspection
- Continuation of the certification process

C. *Document the Task.* File all supporting paperwork in the applicant's office file.

9. FUTURE ACTIVITIES. Schedule follow-up inspections as required.

[CHAPTERS 95 THROUGH 100 RESERVED]

CHAPTER 101 FAR PART 125 INTRODUCTION

Section 1 Applicability of FAR Part 125

1. PURPOSE. FAR Part 125 prescribes rules governing the operation of U.S.-registered civil airplanes with either a passenger seating configuration of 20 or more or a maximum payload capacity of 6,000 pounds or more, when common carriage is not involved.

3. CONDITIONS AND LIMITATIONS

A. A FAR Part 125 operator cannot conduct any operation that results directly or indirectly from holding out transportation to the public.

B. Only one operating certificate may be issued to any one person. A partnership is considered a single person even though it may consist of more than one individual or corporation. Since all involved parties are considered a single person, only one name can appear on the certificate.

C. Seating configuration is defined as the number of passenger seats authorized for use by the manufacturer's type certificate or production data, supplemental type certificate, or other FAA-approved data. The addition or removal of seats constitutes a major alteration and requires appropriate FAA approval.

5. OPERATIONS BY FOREIGN NATIONALS

A. FAR § 125.247 outlines inspection programs and maintenance requirements. It requires defects be corrected according to FAR Part 43. This includes the exclusive use of FAA-certificated and appropriately rated persons to approve the airplane for return to service. When a foreign national operates a U.S.-registered airplane entirely outside the United States, its territories, or possessions, only FAR § 125.247 applies.

B. Foreign nationals who wish to operate within the United States, its territories, or possessions, using U.S.-registered airplanes to which FAR Part 125 applies, must be certificated under FAR Part 125.

(1) The operator must apply to the Flight Standards District Office (FSDO) nearest the port of entry for a letter of authorization allowing entry into the United States for certification purposes. The request must include the following:

- Name, address, and telephone number of the operator
- Make, model, serial, and registration number of the airplane
- Where in the United States the airplane will be based
- A statement indicating that the purpose of the request is to enter the U.S. to obtain certification under FAR Part 125

(2) The district office shall review the request and, if appropriate, issue a letter of authorization. The letter must contain appropriate operating limitations and authorize flight over U.S. territory only.

Section 2 Deviations

1. GENERAL

A. FAR § 125.3 allows a person to request a deviation from any portion or all of FAR Part 125. It also specifies the method of petitioning for deviations.

B. Deviation authority may be granted depending on the circumstances of the operation and the justification provided by the applicant. The applicant must justify the request for each section from which deviation is sought. The FAA evaluation considers the applicant's record, experience with the particular type of airplane, compensation arrangements, airplane seating capacity, and company operating procedures.

3. LETTER OF REQUEST

A. A request for deviation must be by letter, preferably on company letterhead, not less than 60 days prior to the first date of intended operation. It must include all pertinent information concerning the proposed operations, including the following:

(1) Name and address of the applicant

(2) The sections from which deviation is sought

(3) Aircraft subject to the deviation, including:

- Aircraft make, model, serial, and registration numbers
- Number of passenger seats
- The applicant's experience with this type of airplane
- The types of operations and compensation planned
- Inspection program used, as applicable
- Special equipment installed, as applicable

(4) Airmen subject to the deviation, including name, certificate number and ratings, and experience

(5) Reasons and justification for the deviation, including any mitigating circumstances that qualify the operation for a deviation

(6) Actions to be taken by the applicant to ensure the maintenance of a level of safety equivalent to that provided in the rule

(7) The name and phone number of the person authorized to answer any questions regarding the request

B. Requests for deviation authority must be addressed to the nearest FSDO, per FAR § 125.3.

5. INSPECTOR RESPONSIBILITIES

A. In response to requests for deviation authority, the district office will accomplish the following:

- Verify that the information in the letter of request is correct
- Ensure that all appropriate information, including operational background history, is provided
- Determine whether to issue or deny the deviation

B. The FSDO will issue a deviation when it determines that, without compliance with all or part of FAR Part 125, the operator will safely and satisfactorily conduct the operation while providing the required level of safety.

7. USING THE DEVIATION AUTHORITY

A. The FSDO grants a deviation by letter, outlining the operations allowed by the deviation and the limitations that must be observed.

B. The applicant must incorporate into the operations specifications any granted deviation from specific sections.

C. Operators granted a deviation from all FAR Part 125 requirements must carry a copy of the letter of deviation in the airplane during all flight operations.

CHAPTER 102 EVALUATE FAR PART 125 OPERATOR

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3202

B. *Avionics:* 5202

3. OBJECTIVE. This chapter describes the process used to issue a FAR Part 125 operating certificate.

5. GENERAL

A. *Certification Process.* The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested. The certification process consists of five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

B. *Change of Name.* A change of official name must be approached with care. A name change has the effect of a new certification; therefore, a new certificate and certificate number shall be issued.

7. PREAPPLICATION PHASE

A. *Preapplication Statement of Intent (PASI)*

(1) The submitted Preapplication Statement of Intent expresses an intent by the applicant to initiate certification. It also prompts the FAA to plan activities and commit resources. Therefore, a potential applicant should submit the Preapplication Statement of Intent only after reviewing the appropriate regulations and advisory material. The applicant should also consider certification and operation requirements for the following areas:

- Personnel
- Facilities
- Equipment
- Aircraft
- Administration

(2) The district office manager should use the Preapplication Statement of Intent to accomplish the following:

- Evaluate the complexity of the proposed operation
- Ensure trained and experienced inspectors are available to certificate the applicant
- Initiate district office and PTRS files on the potential applicant
- Obtain a precertification number

(3) The Preapplication Statement of Intent may be used by the regional office to assess the district office workload and to forecast staffing needs.

(4) The Aviation Standards National Field Office (AVN) maintains and assigns certificate and precertification numbers. Numbers are based on the type of operation proposed, as shown on the Preapplication Statement of Intent. The numbering system is automated and provides a data base of air operators and certificate status (active, cancelled, precertification).

B. *The Certification Team.* The district office manager will select a certification team consisting of at least one maintenance inspector, one avionics inspector, and one operations inspector.

(1) The person selected as Certification Project Manager (CPM) by the district office manager should have previous experience in certificating the same or similar-type operators. While experience as a principal inspector is desirable, the district office manager may appoint inspectors with less experience, depending on the situation.

(a) The Certification Project Manager works with the applicant.

- The Certification Project Manager schedules and conducts meetings, and coordinates correspondence with the applicant.

- If unable to attend a scheduled meeting, the Certification Project Manager shall appoint a team member to chair the meeting.

(b) The Certification Project Manager ensures that each certification task is completed in an acceptable and timely manner. All certification matters must be thoroughly coordinated with each team member.

(c) The Certification Project Manager should schedule periodic meetings with the certification team, unit supervisors, and/or the district office manager to ensure everyone concerned is fully informed of the current status of the certification. The Certification Project Manager must notify the unit supervisors and/or the district office manager of any information that may significantly affect or delay certification or that may attract media or political interest.

(2) Team members shall respond to requests for assistance from the Certification Project Manager. Additionally, team members shall keep the Certification Project Manager apprised of the status of the certification. Any discrepancy that may delay the certification effort must be brought to the attention of the Certification Project Manager immediately.

C. *Preapplication Meeting.* The preapplication meeting should provide the applicant with an overview of the certification process. At the preapplication meeting, the following should occur:

(1) The certification process should be explained to the applicant.

(2) The Certification Project Manager should use the Schedule of Events to facilitate discussion. These documents will help ensure all elements of the certification process are covered. The Schedule of Events lists items, activities, programs, aircraft, and/or facility acquisitions required for certification, along with the applicant's best estimate of the date the item will be acquired or ready for inspection. The Certification Project Manager shall ensure the applicant understands FAA needs in developing the schedule.

(a) The schedule must provide reasonable time for the FAA to review and accept or approve each item or event. In developing the Schedule of Events, certain events must occur before other activities. For example, airplanes must be brought under the applicant's control before conformity inspections are conducted.

(b) The number and types of events and activities that occur during certification vary according to the operation proposed. The Schedule of Events must include a complete listing of each document to be submitted, activity to be performed, and item to be inspected.

(c) The operator's failure to accomplish an item or event in a satisfactory or timely manner according to the Schedule of Events could delay certification. Also, if deficiencies are found in manuals or other documents, they must be returned for amendment or correction. This may delay final certification.

(d) If the applicant plans to petition for deviation, processing time must be considered when developing the Schedule of Events. FAR § 125.3 requires that a petition for deviation be submitted to AVS-1 at least 60 days before the date of intended operation.

(e) The Schedule of Events is intended to encourage an applicant to submit material well in advance of the date operations are proposed to begin. If, however, the application is submitted with only the minimum lead time required by regulation (for example, 60 days), complete documents, such as company maintenance manuals and policies and procedures manuals, may be required at the time of formal application.

(f) The inspector should remind the applicant to ensure that the Schedule of Events provides the information necessary for the team to know that the applicant is proceeding in an orderly manner.

(3) The applicant should be encouraged to ask questions about any part of the process that is unclear.

(4) The certification team should provide information concerning the form and content of the documents required for formal application.

NOTE: Inspectors should provide the applicant with guidance. However, it is important that each document, procedure, demonstration, or inspection reflects the applicant's knowledge, skills, and abilities. Therefore, inspectors must refrain from providing explicit instructions on how a task should be accomplished.

(a) *Formal application letter.* The formal application must be in the form of a letter and include the following information:

- A statement that it is a formal application for a FAR Part 125 operating certificate
- The applicant's mailing address and the physical location of its principal base of operations
- A list of flight crewmembers and the type of certificates held, including certificate number and ratings
- The names and titles of appropriate management personnel, such as the General Manager, Director of Operations, and the person responsible for scheduling inspections
- The names, titles, and signatures of persons authorized to initiate or respond to correspondence and sign operations specifications on behalf of the operator
- If a request for deviation from any requirement is anticipated, it should be noted in the initial compliance statement. The request and justification for the deviation must be made under separate cover and submitted to AVS-1 in accordance with FAR § 125.3.

NOTE: The Certification Project Manager may request a copy of the deviation request. However, only AVS-1 may issue a deviation from FAR Part 125. Therefore, inspectors shall refrain from discussing the merits of the deviation request with the applicant.

- The formal application letter must be signed by the owner, when applying as an individual; each partner, when applying as a partnership; or an authorized officer, when applying as an organization, such as a company or corporation. The date and state of incorporation must be shown, when applicable.

(b) *Initial compliance statement.* A compliance statement benefits both the applicant and the FAA by ensuring all applicable regulatory aspects are addressed during the certification process.

- The initial compliance statement shall be a complete list of all FAR Part 125 regulations. The list should refer to all subparts and each applicable section. The applicant must provide a brief narrative description or, preferably, a specific reference to a manual or other document describing the method of compliance. The applicant should note and explain any subparts or sections that do not apply.
- Specific regulations and subparts must be listed in the same numerical sequence as the regulations.
- Where compliance information has been developed, a manual reference or a description of the method of compliance must be entered next to the applicable regulatory section.
- If the method of compliance has not been fully developed, the applicant must submit a final compliance statement providing this information.
- When the method of compliance is formalized, a description can be added to the list in preparation for the final compliance statement.
- The Schedule of Events must show when the final compliance statement will be submitted.
- The final compliance statement must be reviewed and accepted before certain inspections and demonstrations can begin.

(c) *Policies and Procedures Manual.* This manual contains information about the applicant's organization, general policies and procedures, duties and responsibilities of personnel, and operational control procedures. The manual must comply with FAR § 125.71. It may be in the form of one or more manuals or sections of manuals. At the time of formal application, certain portions of the manual must be submitted. This allows the certification team to begin determining the applicant's ability to meet the certification requirements.

- The manual submitted at the time of formal application must show compliance with at least FAR § 125.73(a), (d) through (m), (o) through (q), and § 125.249(a)(1) and (b).
- Compliance with FAR §§ 125.73(b), (c), (n), and (r), and 125.249(a)(2) and (3) should be indicated on the schedule of events.

(d) *Management personnel.* The applicant must show sufficient management personnel to conduct operations safely and in accordance with the requirements of FAR Part 125. The policies and procedures manual required by FAR § 125.71 must accomplish the following:

- Set forth the duties, responsibilities, and authority of management personnel
- List the name and address of each person employed in a management position
- Designate persons responsible for scheduling inspections and for updating the approved weight and balance procedures on all airplanes operated by the applicant

9. FORMAL APPLICATION PHASE

A. *Beginning the Formal Application Phase.* The formal application phase begins when the applicant presents a formal request for certification to the FAA. The team ensures that each required document has been submitted. The team then reviews the formal application letter and Schedule of Events.

B. *Reviewing the Schedule of Events.* The Schedule of Events, when accepted, represents a commitment for both the applicant and the FAA. It sets dates for accomplishing or submitting the listed items. When reviewing the Schedule of Events, the team must carefully consider the feasibility of the proposed schedule with respect to logic of sequence, timeliness of events, completeness of events, and inspector availability.

(1) *Logic of sequence.* Many of the activities or events listed in the schedule must occur before other activities or events. For example, the aircraft conformity inspection must be completed before the emergency evacuation demonstration. The certification job aid should be used to ensure the sequence of events is logical. See Fig. 102-1.

(2) *Timeliness of events.* The Schedule of Events must be reasonable, realistic, and provide enough time for the team to review documents, manuals, and proposals.

(3) *Completeness of events.* The team must ensure the Schedule of Events is complete. Each required manual, document, event, and activity must be listed, along with the date the final compliance statement will be submitted.

(4) *Availability of personnel.* A major concern in meeting the Schedule of Events is the availability and capability of FAA personnel resources. The Certification Project Manager must determine that qualified inspectors are available or can be made available from other offices to assist the team in conducting an extensive manual review, consistent with the proposed Schedule of Events. The Certification Project Manager must determine the qualifications of the available inspectors. The Certification Project Manager also must determine if the certification project will require resources other than Flight Standards inspectors, such as Civil Aviation Security Inspectors, and the availability of those resources.

C. *Meeting with the Applicant.* At the discretion of the Certification Project Manager, the team may meet with the applicant to discuss the Schedule of Events or any other document submitted.

D. *Ending the Formal Application Phase.* The Formal Application Phase ends when the applicant has been notified, in writing, that the application is either accepted or rejected.

11. DOCUMENT COMPLIANCE PHASE

A. *Reviewing Documents.* In the Document Compliance Phase, the applicant's manuals and other documents are thoroughly reviewed and approved, accepted, or rejected. Each document must have an in depth review to be sure it complies with applicable regulations.

B. *Coordination.* The team must coordinate its efforts in reviewing manuals and other documents. The Schedule of Events determines the priority of items to be reviewed and shows if and when additional inspector support is needed.

C. *Deficient Documents.* If there are deficiencies in any document, team members should be ready to offer guidance but must avoid rewriting the applicant's documents.

D. *Concurrent Actions.* The Document Compliance Phase and the Demonstration Phase overlap in practice.

13. DEMONSTRATION AND INSPECTION PHASE. In this phase the team determines if the applicant's proposed procedures and programs are effective and whether facilities and equipment are satisfactory. Emphasis is on compliance with regulations and safe operating practices. Throughout this phase the Certification Project Manager must ensure that each aspect of the applicant's required demonstrations is observed and is accepted or rejected.

15. CERTIFICATION PHASE. An applicant is entitled to a certificate when the following criteria are met:

- The certification process is completed
- Each unsatisfactory item has been corrected
- It has been determined that the applicant is capable of complying with the Federal Aviation Regulations
- The applicant's ability to conduct operations in a safe manner has been demonstrated
- It is determined that the applicant has met all regulatory requirements and understands the conditions of the operating certificate

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the regulatory requirements of FAR Part 125.

B. *Coordination.* This task requires coordination with operations inspectors, maintenance inspectors, avionics inspectors, and regional Flight Standards division specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- SFAR 38-2
- FAR Parts 25, 43, 45, 47, 65, 91, and 145
- 49 CFR Part 173, Shippers-General Requirements for Shipments and Packages
- 49 CFR Part 175, Carriage by Aircraft, if appropriate (hazardous materials)
- 49 CFR Part 830, Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records (NTSB)
- Advisory Circular 20-42, Hand Fire Extinguishers for Use in Aircraft, as amended
- Advisory Circular 125-1, Operations of Large Airplanes Subject to FAR Part 125, as amended

B. *Forms*

- FAA Form 8400-6, Preapplication Statement of Intent
- FAA Form 8400-7, Operations Specifications
- FAA Form 8430-21, Operating Certificate

C. *Job Aids*

- Figure 102-1: Certification Job Aid
- Figure 102-2: Preapplication Statement of Intent
- Figure 102-3: Sample Operating Certificate

5. PREAPPLICATION PHASE. Figure 102-1, Certification Job Aid should be used in planning meetings, activities, and events associated with this task.

A. *Receive Initial Inquiry.* Before providing the potential applicant with a Preapplication Statement of Intent, determine if the proposed operation is applicable to FAR § 125.1.

(1) The applicant must have available a U.S.-registered civil aircraft with a seating configuration of 20 or more passengers or a maximum payload of 6,000 pounds or more.

NOTE: Temporary registration (pink copy) must be verified through the Aircraft Registry for proof of registration.

(2) The airplane must have an appropriate and current airworthiness certificate.

(3) *Limitations*

(a) An applicant operating airplanes under FAR Part 91 who is certificated to operate those airplanes under FAR Parts 121, 129, 135, or 137 is not eligible for a FAR Part 125 Operating Certificate.

(b) FAR § 125.11 prohibits the holder of an Air Carrier or Operating Certificate issued under FAR Parts 121, 129, or 135 from holding a FAR Part 125 operating certificate.

(c) An operating certificate may not be held jointly by two or more persons.

NOTE: A partnership is considered a single person even though it may consist of more than one person or corporation. For example, where both a parent and a subsidiary corporation exist, only one of the two corporations apply for any one certificate. That certificate cannot be issued to, or in the name of, both corporations. Regardless of common ownership, the parent and subsidiary corporation are considered by law as separate persons.

(d) A FAR Part 125 certificate holder is prohibited from conducting any operation which results directly or indirectly from any individual's holding out to the public to furnish transportation. Discuss this with the applicant and ensure there are no business agreements contrary to this restriction.

B. *If a Deviation Is Requested, Refer the Applicant to FAR § 125.3*

C. *Provide References to Applicant.* Encourage the applicant to obtain a copy of the appropriate, current regulations and revisions. Provide the applicant with the following:

- FAA Form 8400-6, Preapplication Statement of Intent (PASI)
- Advisory Circular 125-1, Operations of Large Airplanes Subject to FAR Part 125

D. *Process Preapplication Statement of Intent.* Within five working days of receipt of a signed Preapplication Statement of Intent, the district office manager shall ensure it is processed.

(1) Determine if information is complete, accurate, and acceptable (see Fig. 102-2).

(2) If unacceptable, note reasons in Section 2 of the Preapplication Statement of Intent. Notify the applicant of the discrepancies and state that a new Preapplication Statement of Intent is required.

(3) If acceptable, the district office manager shall determine if it is appropriate for the office to certificate the applicant and if necessary personnel are available.

(a) Obtain a precertification number from AVN-120.

NOTE: A final certificate number may be requested instead of a precertification number.

(b) Check the "Information only" block and enter the date the Preapplication Statement of Intent was sent to the region.

(c) Enter "Proceeding with formal certification" in the Remarks section and show the precertification or final certificate number.

(d) Send one copy of the Preapplication Statement of Intent to the Manager, Flight Standards Division. Retain the original in the district office.

E. *Select Certification Team*

F. *Schedule Preapplication Meeting.* Contact the applicant to arrange a preapplication meeting. Advise the applicant that key management personnel, as shown on the Preapplication Statement of Intent, should attend the meeting and be prepared to discuss, in general terms, specific aspects of the applicant's proposed operation. Use the certification job aid to plan and conduct the meeting.

G. *Conduct Preapplication Meeting*

(1) Review the Preapplication Statement of Intent with the applicant and verify that all information is current and correct. The applicant must note any changes on the Preapplication Statement of Intent.

(a) If there are changes that significantly affect the anticipated scope or type of operation, send a copy of the revised Preapplication Statement of Intent to the regional office.

(b) If the changes indicate the need to reassign certification responsibilities, the meeting should be terminated, and the following steps should be taken:

- Advise the applicant that notification of the new certificating office will be given
- Within five working days, send the revised Preapplication Statement of Intent to the regional office with a letter outlining the need to reassign certification responsibilities
- Within 10 working days of receipt of a request, the regional office shall assess the revised Preapplication Statement of Intent, reassign the certification project, and notify both the applicant and the newly assigned district office in writing

(2) Provide the applicant with an overview of the five-phase certification process described in this chapter.

(3) Advise the applicant of all applicable Federal Aviation Regulations. Recommend the applicant review them and any associated Advisory Circulars.

(4) Provide a package to the applicant consisting of at least the following:

- Advisory Circular 125-1
- The applicable certification job aid
- A sample of appropriate operations specifications (see Vol. II, Ch. 107)
- A sample Schedule of Events format

(5) Ensure the applicant understands the form and content of each document required for formal application. The formal application must consist of at least the following:

- A formal application letter
- A Schedule of Events
- An Initial Compliance Statement
- Policies and Procedures Manual
- Documentation that the applicant has or intends to acquire airplanes and facilities
- A copy of any deviation authority granted under FAR § 125.3

NOTE: Inform the applicant that while FAA inspectors may furnish informal guidance, it is solely the applicant's responsibility to produce acceptable documents and manuals.

(6) Advise the applicant that a formal application must be submitted at least 60 days before the proposed start-up date.

(7) Encourage the applicant to submit required items in draft form before the formal package is submitted and to notify the Certification Project Manager immediately of any problems or changes in the proposed operation.

H. *Conclude the Preapplication Meeting.* After discussing the certification process, regulatory requirements, and the formal application documents, verify that the applicant intends to continue the certification process. Advise the applicant to contact the Certification Project Manager regularly on the status of certification efforts. Inform the applicant that if there is no communication within any 60-day period after formal application, certification efforts will be terminated.

I. *When Required, Terminate the Certification Process.* The Certification Project Manager shall accomplish the following when notified by the applicant:

- Notify AVN-120 that the certification process is terminated, release the precertification number to the centralized certificate number data file, and indicate this action in Section 2 of the Preapplication Statement of Intent
- Return the Preapplication Statement of Intent to the applicant. Notify the applicant that the preapplication process is terminated and that a new Preapplication Statement of Intent is required to begin a new certification effort.
- Notify the regional office that the project is terminated

7. FORMAL APPLICATION PHASE

A. *Review Formal Application.* Determine that each item required for formal application has been submitted.

(1) If any required item is missing, reject the entire application and return it with a letter stating the reasons for rejection.

(2) Conduct an in depth review of the Schedule of Events.

B. *Conduct Formal Application Meeting.* The Certification Project Manager should conduct a formal application meeting when appropriate. Each member of the certification team should be present.

(1) Discuss each document and resolve each issue or deficiency.

(2) Review the upcoming certification process and discuss the impact on the applicant of not meeting the Schedule of Events.

(3) If any issue or deficiency cannot be resolved, the Certification Project Manager should end the meeting and inform the applicant that the formal application is not acceptable. The formal application must be returned to the applicant with a letter explaining the reasons for the rejection.

(4) Before concluding the meeting, the Certification Project Manager must ensure the applicant clearly understands the following:

- Written notification of acceptance or rejection of the application package will be sent within five working days after the meeting
- Accepting a formal application package does not mean acceptance or approval of the attachments. Each document shall be reviewed further and the applicant must take corrective action as required. Acceptance or approval of each attachment shall be indicated as the certification process continues.

C. *Accept or Reject the Formal Application Package.* Send the applicant a letter either accepting or rejecting the formal application package. If the package is rejected, return the application and attachments and indicate specific reasons for rejection.

NOTE: **Document thoroughly the reasons for rejection. Rejecting a formal application will be a sensitive issue since the applicant most likely will have expended considerable funds and resources. Therefore, the reasons must clearly indicate that to proceed with the certification process would not be productive.**

9. DOCUMENT COMPLIANCE PHASE

A. *Review Documents.* Ensure each document is complete and correct. Review documents by referencing the Federal Aviation Regulations, completed portions of the compliance statement, and the appropriate manual or document. The team shall evaluate the following documents:

- Policies and Procedures Manual
- Management Personnel Qualifications
- Minimum Equipment Lists, cockpit checklists, and aircraft performance documents
- Operations specifications
- Final compliance statement
- Noise emission control standard
- Weight and balance procedures
- Crewmember qualifications (operations inspectors)
- Inspection programs and maintenance procedures
- Documents showing the applicant has, or is acquiring, airplanes and appropriate facilities
- Any previously granted deviation
- Emergency evacuation demonstration plan, if applicable
- Any other appropriate document referenced in the operator's policies and procedures manual

B. *Obtain a Profile of the Applicant and Personnel from the Enforcement Information System (EIS) and the Accident/-Incident Data Subsystem (AIDS)*

NOTE: Enforcement Information System and Accident/-Incident Data Subsystem information is sensitive and must be kept confidential.

C. *Address Deficient Documents.* If deficiencies are found in any document, notify the applicant.

(1) If the deficiencies can be resolved informally (by phone or meeting), prepare a record showing the deficiencies and the corrective action agreed on. Provide a copy of the record to the applicant. When action is completed, note the

date on the office file copy and advise the applicant that the action is satisfactory.

(2) If significant revision is required, return the document to the applicant with a letter outlining the deficiencies. Address any impact on the Schedule of Events.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Conduct Demonstrations and Inspections*

(1) Observe company and/or contract maintenance personnel performing scheduled and unscheduled aircraft maintenance and inspections.

NOTE: Since a FAR Part 125 applicant is not required to conduct proving flights, it may not be possible to observe maintenance and inspections being performed. If this occurs, the Schedule of Events must show that this item will be accomplished during post-certification surveillance. The applicant must advise the Principal Maintenance Inspector when and where maintenance and inspections will be performed.

(2) Review aircraft records. (See Vol. II, Ch. 111 and FAR §91.417 [old §91.173].

(3) Inspect airplanes for conformity with appropriate type certificates and FAR Part 125.

(4) Inspect the airplanes for conformity with noise control standards.

(5) Evaluate principal maintenance base.

(6) Conduct an inspection of the principal operations base.

(7) Evaluate the applicant's ability to keep and maintain records and reports.

(8) Observe the applicant testing flight attendant crewmembers (operations inspectors).

(9) Conduct or observe pilot qualification functions (operations inspectors).

(10) Observe the applicant's emergency evacuation and/or ditching demonstration, if required.

(11) Evaluate other facilities, equipment, personnel, and operations determined necessary by the Certification Project Manager/team.

B. *Send Letter Listing Unacceptable Items, if Required.* If the applicant does not adequately demonstrate compliance or discrepancies cannot be resolved, forward a letter listing all unacceptable items to the applicant within 10 working days.

C. *Resolve Discrepancies.* After correcting all unacceptable items, the applicant must notify the Certification Project Manager in writing, detailing the corrective action taken.

D. *Issue Letters Showing Acceptance or Approval*

13. CERTIFICATION PHASE

A. *Prepare Operating Certificate.* When the applicant has met all regulatory requirements for certification, the Certification Project Manager must prepare FAA Form 8430-21.

(1) *Certificate holder's name.* Enter the certificate holder's full and legal name directly below the words "This certifies that".

(2) *Certificate holder's address.* Enter the address of the certificate holder's principal base of operations directly below the certificate holder's name. A post office box address is not acceptable unless it also reflects the physical location of the principal base of operations.

(3) *Certification Statement of Authority.* Do not modify the pre-printed certification statement of authority. Type "**Part 125 Operations**" in the space provided.

(4) *Certificate Number.* Obtain a final certificate number from AVN-120.

(5) *Effective Date.* The effective date shall be the date all requirements for certification were met. If amending a certificate to reflect an address change or a change of the assigned district office, show the date of original issuance on the new certificate.

(6) *Issued at.* Enter the four-character, alpha-numeric designator and city and state of the Certificate Holding District Office (for example, EA18, Richmond, VA).

(7) *Signature.* Operating certificates issued to air operators complying with FAR Part 125 shall be signed by the Certificate Holding District Office manager.

(8) *Signature, Title, and Region/Office.* Enter the full title of the district office manager in the space provided. Show the acronyms of the region and the Flight Standards District Office (FSDO) and number in the "region/office" space (for example, ASW-FSDO-18).

B. *Sign Operations Specifications.* Operations specifications must be signed and dated by the applicant and the appropriate principal inspectors. Give the original certificate and operations specifications to the new certificate holder.

C. *Prepare Certification Report.* Within 30 days after issuing the certificate, the Certification Project Manager shall ensure a certification report is prepared. This report must include the name and title of each inspector who assisted in the certification project and be signed by the Certification Project Manager. The report shall contain the following:

- A copy of the Preapplication Statement of Intent
- The certification job aid
- The letter of application
- The Schedule of Events
- The Final Compliance Statement
- The Emergency Evacuation Demonstration Evaluation
- A copy of the Operating Certificate issued
- A copy of all operations specifications issued
- A summary of any difficulty encountered during certification
- A copy of any partial deviation or waiver issued

D. *Distribute Certification Report*

(1) Retain the original certification report in the district office.

(2) Send one copy of the report to the regional office for information.

(3) If airplanes will be domiciled outside the certificating district office's jurisdiction, the principal inspectors may wish to provide any or all of the certification file to the appropriate district office.

E. *Establish an Official Office File.* The file shall contain at least the following:

- The certification report and attachments
- Approved minimum equipment lists, if applicable
- Surveillance reports in PTRS
- General correspondence relevant to the operator or agency
- Follow-on action requirements

15. TASK OUTCOMES

A. Completion of this task results in one of the following:

- Issuance of a certificate and operations specifications
- A letter to the applicant indicating the certificate is denied
- A letter to the applicant confirming termination of the certification process by the applicant

B. Complete a PTRS Transmittal form.

17. FUTURE ACTIVITIES

A. *Transition.* The district office manager must ensure there is an orderly transition from the certification process to certificate management, as appropriate.

B. *Post-certification Program.* Assigned inspectors should carefully observe the operator during the first 90 days. Additional inspections may be necessary to determine operating practices are performed at an adequate level of safety. Direct particular attention to areas which may not have been demonstrated or observed during certification, such as cargo and passenger loading, and scheduled and unscheduled maintenance and inspections.

FIGURE 102-1. PART 125 CERTIFICATION JOB AID

WPMS CODE	OPS 1201	AWS 3201	AVI 5201	NAME OF APPLICANT:	INSP. INITIAL	DATE	REF.
	I. PREAPPLICATION PHASE						
	A. INITIAL ORIENTATION: Inspector _____ 1. DETERMINE ELIGIBILITY 2. ADVISORY CIRCULAR PROVIDED TO APPLICANT 3. PREAPPLICATION STATEMENT OF INTENT: a. Copy to regional office b. Precertification number _____						
	B. CERTIFICATION TEAM DESIGNATED (at least one operations, one maintenance, and one avionics inspector) Name Specialty CPM _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____						
	C. CONDUCT PREAPPLICATION MEETING 1. VERIFY Preapplication Statement of Intent INFORMATION 2. OVERVIEW OF CERTIFICATION PROCESS 3. PROVIDE CERTIFICATION PACKAGE a. Certification Job Aid b. Schedule of Events c. Advisory Circular Checklist d. Sample Operations Specifications 4. EXPLAIN FORMAL APPLICATION SUBMISSIONS						
REMARKS:							

FIGURE 102-1.—(Cont.)

WPMS CODE	II. FORMAL APPLICATION PHASE	INSP. INITIAL	DATE COMPL'ED	REF.
	A. REVIEW APPLICANT'S SUBMISSIONS 1. FORMAL APPLICATION LETTER a. Mailing address			
	b. Principal base of operations			
	c. List of Flight Crewmembers o Certificate numbers o Ratings			
	d. Key Management Personnel			
	e. Persons authorized to sign Operations Specifications o Name o Title o Signature			
	f. Deviations			
	2. SCHEDULE OF EVENTS			
	3. INITIAL COMPLIANCE STATEMENT			
	4. COMPANY GENERAL MANUAL			
	5. CONTRACTS, LEASES, ETC.			
	6. AGREEMENTS			
	7. LETTERS OF INTENT			
	B. EVALUATE FAA RESOURCE CAPABILITY BASED ON SCHEDULE OF EVENTS			
REMARKS:				
	C. FORMAL APPLICATION MEETING 1. SCHEDULE MEETING Date: _____ Time: _____ 2. DISCUSS EACH SUBMISSION 3. RESOLVE DISCREPANCIES/OPEN ITEMS 4. REVIEW CERTIFICATION PROCESS 5. REVIEW IMPACT ON SCHEDULE OF EVENTS			
	D. ISSUE LETTER ACCEPTING/REJECTING APPLICATION			
REMARKS:				

FIGURE 102-1.—(Cont.)

WPMS CODE	III. DOCUMENT COMPLIANCE PHASE	INSP. INITIAL	DATE RET'D	DATE RESUB'D	DATE APPRV'D/ ACCEP'D	REF.
	A. EVALUATE FINAL COMPLIANCE STATEMENT					
REMARKS:						
	B. EVALUATE MANAGEMENT QUALIFICATIONS					
	1. GENERAL MANAGER					
	2. DIRECTOR OF OPERATIONS					
	3. INSPECTION SCHEDULER					
	4. CHECK AIRMEN					
	5. OTHER MANAGEMENT PERSONNEL					
REMARKS:						
	C. EVALUATE APPLICABLE DOCUMENTS, CONTRACTS, LEASES, AND AGREEMENTS					
	1. AIRCRAFT LEASES					
	2. MAINTENANCE CONTRACTS/AGREEMENTS					
	3. SERVICING CONTRACT/AGREEMENT					
REMARKS:						

FIGURE 102-1.—(Cont.)

WPMS CODE	III. DOCUMENT COMPLIANCE PHASE (CONT'D)	INSP. INITIAL	DATE RET'D	DATE RESUB'D	DATE APPRV'D/ ACCEP'D	REF.
	E. EVALUATE APPLICABLE MANUALS					
	1. GENERAL OPERATIONS MANUAL					
	2. GENERAL MAINTENANCE MANUAL					
	3. AIRPLANE FLIGHT MANUAL					
	4. AIRCRAFT OPERATIONS MANUAL					
	5. AIRCRAFT CHECKLISTS					
	a. Normal					
	b. Abnormal					
	c. Emergency					
	6. CHARTS/PUBLICATIONS					
	7. WEIGHT & BALANCE PROGRAM					
	8. FUELING PROCEDURES					
	9. HAZARDOUS MATERIALS					
	10. AIRCRAFT INSPECTION PROGRAM					
	11. MAINTENANCE TECHNICAL MANUALS					
REMARKS:						
	F. OTHER EVALUATIONS					
	1. OPERATIONS SPECIFICATIONS					
	a. Operations					
	b. Maintenance/Avionics					
	c. Weight & Balance					
	2. EMERGENCY EVACUATION PLAN					
	3. BRIEFING CARDS					
	4. ENVIRONMENTAL ASSESSMENT					
	a. Noise					
	b. Emissions					
	5. WEATHER DISSEMINATION					
	6. MEL					
	7. FLIGHT RELEASE PROCEDURES					
REMARKS:						

FIGURE 102-1.—(Cont.)

WPMS CODE	IV. DEMONSTRATION & INSPECTION PHASE	INSP. INITIAL	DATE STARTED	DATE COMPL'D	DATE APPRV'D/ ACCEP'D	REF.
	A. EVALUATE APPLICANT CONDUCTING TRAINING					
	1. MAINTENANCE					
	2. SERVICING					
	3. INSPECTION					
REMARKS:						
	B. AIRMAN TESTING/CERTIFICATION					
	1. FLIGHTCREW					
	2. FLIGHT ATTENDANTS					
REMARKS:						
	C. INSPECT AIRCRAFT FOR CONFORMITY					
	D. REVIEW RECORDS					
	E. INSPECT BASE					
	F. INSPECT MAINTENANCE FACILITY					
REMARKS:						

FIGURE 102-1.—(Cont.)

WPMS CODE	IV. DEMONSTRATION & INSPECTION PHASE (CONTINUED)	INSP. INITIAL	DATE STARTED	DATE COMPL'D	DATE APPRV'D/ ACCEP'D	REF.
	G. INSPECT RECORDKEEPING PROCEDURES					
	1. AIRCRAFT MAINTENANCE RECORDS					
	2. TRAINING RECORDS					
	3. AIRMAN RECORDS					
	4. FLIGHTCREW DUTY RECORDS					
	5. MAINTENANCE CREW DUTY RECORDS					
	6. FLIGHT ATTENDANT RECORDS					
	7. INSPECTION RECORDS					
REMARKS:						
	H. EVALUATE REPORTING PROCEDURES					
	1. MAINTENANCE					
	2. OPERATIONS					
REMARKS:						
	I. EVALUATE EMERGENCY EVACUATION DEMONSTRATION					
	J. INSPECT FLIGHT LOCATING FACILITIES					
REMARKS:						

FIGURE 102-1.—(Cont.)

WPMS CODE	V. CERTIFICATION PHASE	INSP. INITIAL	DATE COMPLETED	REF.
	A. APPROVE OPERATIONS SPECIFICATIONS			
	B. PRESENT CERTIFICATE & OP SPECS TO CERTIFICATE HOLDER			
REMARKS:				
	C. PREPARE CERTIFICATION REPORT			
	1. EMERGENCY EVACUATION DEMONSTRATION EVALUATION			
	2. ASSEMBLE ATTACHMENTS			
	3. OUTLINE PROBLEMS			
	4. SUGGESTIONS TO IMPROVE CERTIFICATION PROCESS			
	5. DISTRIBUTE REPORT			
REMARKS:				
	D. DEVELOP POSTCERTIFICATION SURVEILLANCE PROGRAM			
	1. WITHIN GEOGRAPHICAL AREA			
	2. OUTSIDE GEOGRAPHICAL AREA			
REMARKS:				

FIGURE 102-2. PREAPPLICATION STATEMENT OF INTENT

Form Approved
OMB No. 2120-0008

U.S. Department of Transportation
Federal Aviation Administration

PREAPPLICATION STATEMENT OF INTENT

Section 1A. To Be Completed By All Applicants

1. Name and mailing address of company	2. Address of principal base where operations will be conducted (do not use post office box)

3. Proposed Startup date	4. Requested three-letter company identifier in order of preference
	1. 2. 3.

5. Management Personnel

Name (Last, first, middle)	Title	Telephone (including area code)

Section 1B. To Be Completed By Air Operators

6. Proposed type of operation (check as many as applicable)

- ☐ Air Carrier Certificate
- ☐ Operating Certificate
- ☐ Part 121
- ☐ Part 125
- ☐ Part 135
- ☐ Passengers and Cargo
- ☐ Cargo Only
- ☐ Scheduled Operations
- ☐ Nonscheduled Operations
- ☐ Single Pilot Operator
- ☐ Single Pilot-in-Command Operator
- ☐ Basic Part 135 Operator

Section 1C. To Be Completed By Air Agencies

7. Proposed type of agency and rating(s)

- ☐ Part 145 Repair Station
  - ☐ Domestic
  - ☐ Foreign ☐ *New* ☐ *Renewal*
  - ☐ Satellite
    - ☐ Airframe ☐ Instrument
    - ☐ Powerplant ☐ Accessory
    - ☐ Propeller ☐ Specialized Service
    - ☐ Radio
- ☐ Part 147 Maintenance Technician School
  - ☐ Airframe
  - ☐ Powerplant
  - ☐ Both
- ☐ Part 149 Parachute Loft

Section 1D. To Be Completed By Air Operators

8. Aircraft Data		9. Geographic area of intended operations
Numbers and types of aircraft *(by make, model, and series)*	Number of passenger seats or cargo payload capacity	

FAA Form 8400-6 (4-87)

FIGURE 102-2.—(Cont.)

Section 1E. To Be Completed By All Applicants		
10. Additional information that provides a better understanding of the proposed operation or business (attach additional sheets, if necessary)		
11. The statements and information contained on this form denote an intent to apply for FAA certification.		
Signature	Date	Name and Title

Section 2. To Be Completed By FAA District Office	
Received by (district office):	Date forwarded to Region:
Date:	For: ☐ Action ☐ Information only
Remarks:	

Section 3. To Be Completed By Regional Office	
Received by:	Precertification Number:
Date:	Date coordinated with AVN-120:
District office assigned responsibility:	Date forwarded to district office:
Remarks:	

FIGURE 102-3. SAMPLE OPERATING CERTIFICATE

U.S. Department of Transportation
Federal Aviation Administration

Operating Certificate

This certifies that

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

in accordance with said Act and its rules, regulations, and standards;

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect

By Direction of the Administrator.

Certificate number: _____

Effective date: _____

Issued at: _____

_____
(Signature)

_____
(Title)

FAA Form 8430-21 (6-87)

CHAPTER 103. EVALUATE QUALIFICATIONS OF FAR PART 125 MANAGEMENT PERSONNEL

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3352

B. *Avionics:* 5352

3. OBJECTIVE. This chapter describes the process used to evaluate the qualifications of the FAR Part 125 management personnel responsible for ensuring compliance with the operator's aircraft maintenance/inspection programs.

5. GENERAL

A. FAR § 125.25 requires operators to have sufficient management personnel to conduct their operations in accordance with FAR Part 125. A Director of Operations is required. The operator must also designate a person to schedule inspections and update the approved weight and balance system for all airplanes. Depending on the complexity of the operations and maintenance organization, the organization may include additional management personnel, as appropriate. The primary emphasis is on having sufficient personnel to ensure safe operations.

B. Management qualifications must be based on the duties, responsibilities, and authority of the position as stated in the operator's manual. Knowledge, skills, certificate requirements, and experience needed to carry out the duties of the position must be considered.

C. The operator must list management personnel in the policies and procedures manual. When reviewing the manual or revision for acceptance, the inspector must consider the individual's employment history and credentials.

D. The operator must notify the FAA of any change in management personnel within 10 days (FAR § 125.25).

E. The person responsible for scheduling inspections and other maintenance required by the manual and updating the approved weight and balance system should meet the following qualifications:

- Have a thorough knowledge of the operator's aircraft maintenance/inspection program
- Have knowledge of the operator's airplanes
- Be familiar with the requirements of FAR Parts 25, 43, 65, 91, and 125

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the following:

- The regulatory requirements of FAR Parts 91 and 125
- Civil Aviation Regulation 4b
- Advisory Circular 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125

B. *Coordination.* This task requires coordination among maintenance, avionics, and operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. References

- FAR Parts 25, 43, and 65

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Duties, Responsibilities, and Authority of the Position as Specified in the Policies and Procedures Manual*

(1) Ensure there are sufficient management personnel to conduct operations in accordance with the requirements of FAR Part 125.

(2) Ensure the duties and responsibilities listed are adequate for the proposed operation.

B. *Review Employment History, Credentials, and Experience*

(1) Ensure each person has thorough knowledge of the operator's aircraft maintenance inspection program.

(2) Ensure each person has knowledge of the operator's type aircraft.

C. *Ensure Each Individual Holds Appropriate Certificates and Ratings Required to Perform Required Duties*

(1) *Review National Data Bases*

(a) Validate certificates.

(b) Obtain the individual's enforcement history.

(c) Determine if the person held a management position in a company whose operating certificate was revoked. If so, determine if the individual's performance contributed to the revocation.

(2) *Analyze findings.* Investigate all unclear areas and discrepancies.

D. *Conduct Debriefings*

(1) Before meeting with the operator, discuss initial findings with appropriate FAA personnel to determine content of the briefing.

NOTE: Rejecting an individual is a sensitive matter. In some cases, political, media, or other national issues may be involved. The inspector should notify appropriate FAA supervisory personnel when these issues are identified.

(2) Brief the operator/applicant on the results of the evaluation. Discuss any deficiencies.

7. TASK OUTCOMES

A. *Complete a WPMS Transmittal Form*

B. *Accept or Reject Management Personnel*

(1) Accept the manual/revision listing the individual, as appropriate.

(2) Reject the manual/revision in writing, as appropriate. Detail the reasons for rejection in a letter to the operator.

NOTE: An individual may be evaluated based on information received before a manual/revision or operations specifications are submitted (such as Preapplication Statement of Intent or 10-day notification letter). Based on this preliminary information, the inspector may be able to determine the person is not qualified for the position. In this case, notify the operator/applicant of the rejection by letter.

9. FUTURE ACTIVITIES. In the case of original certification, review the schedule of events to determine if a revision is necessary.

CHAPTER 104. EVALUATE FAR PART 125 POLICIES AND PROCEDURES MANUAL/REVISION

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3302/3303

B. *Avionics:* 5302/5303

3. OBJECTIVE. This chapter describes the process used to evaluate a Policies and Procedures Manual or revision for a FAR Part 125 operator or applicant.

5. GENERAL

A. The Policies and Procedures Manual must provide policies, procedures, and technical criteria in sufficient detail to ensure regulatory requirements are fully met. The manual must be written so as to be readily understood. FAR § 125.71 requires an operator to have a manual, keep it current, and use it. The original manual must be reviewed and accepted by the FAA before it is implemented by the operator. A manual revision may be issued by the operator prior to being reviewed and accepted by the FAA.

B. The manual should define all aspects of the operator's organization. The maintenance section must address policies, procedures, and standards for administering the inspection program and any other subject appropriate for the particular operator/applicant. The operator is responsible for ensuring the manual provides sufficient guidance for maintaining a high level of safety. Inspectors may offer assistance in developing the manual/revision, but the operator is responsible for ensuring the material complies with the regulations.

C. Advisory circulars, preambles to regulations, and other guidance material may be used to assist the operator/applicant in developing the manual. The operator should use caution when incorporating the text of these documents into the manual since they are advisory and may not meet the exact needs of the operator. Under no circumstances may the manual simply reference an advisory document. It may, however, reference technical documents, such as equipment manufacturer's manuals or service bulletins.

7. MANUAL CONTENT. There are certain items that the manual must cover in accordance with FAR §§ 125.73 and 125.249. Additional items may be incorporated at the discretion of the operator/applicant, provided they are not contrary to the regulations and operations specifications. The manual may be in two or more separate parts containing all the necessary information required by the Federal Aviation Regulations.

A. *Definitions and Acronyms.* Each significant term used in the manual should be defined. The definitions must reflect their intended use and include acronyms and/or abbreviations unique to the manual.

B. *Scheduled Inspection Programs and Maintenance Requirements*

(1) The contents of the approved inspection program and the operations specifications must be in the manual as required by FAR § 125.73.

(2) FAR § 125.249 requires that the manual also contain any additional information that may not be part of the inspection program requirements.

(3) Scheduled inspection programs and the maintenance requirements section must include forms, detailed instructions, and references for routine and non-routine requirements.

C. *Inspection Personnel*

(1) The manual must contain a current list of persons who will conduct inspections. They must be identified by name and address.

(2) The manual should describe the operator's procedures for ensuring persons performing required inspections are appropriately certificated, trained, qualified, and authorized.

(3) Each person performing required inspections should be given written information describing responsibilities, authorities, and inspection limitations.

D. *Revision System.* Manuals must be easy to revise. Each revised page must show the revision number and date. The manual should have a page control system which shows the number of pages and ensures the latest revision is included. Page control usually is identified as a list of effective pages.

9. FUELING PROCEDURES. The manual must specify procedures for fueling airplanes.

A. *Elimination of Fuel Contamination.* The manual must contain procedures to prevent fuel contamination that can occur at the servicing station or within the airplane. Examples include water, incorrect fuel type, dirt, algae, or other foreign matter. If fuel-

ing is performed by a contractor, the operator must have procedures to determine proper storage and care of the contractor's fuel and equipment.

B. *Fire protection.* The manual procedures for fire protection should address the following in sufficient detail:

- Proper grounding of the airplane
- Use of any required electrical equipment
- Availability of proper fire fighting equipment
- Minimum distance from other equipment, such as the Auxiliary Power Unit, other vehicles, etc.
- Smoking and fire restrictions
- Prohibiting fueling in hangars or in proximity to electrical storms
- Any other procedures determined necessary by the operator or FAA inspector

C. *Passenger protection.* The manual must have procedures to ensure the safety, supervision, and welfare of all persons on board the airplane, including any person who may be incapacitated. The effects of fuel fumes, accidental spills, fire, weather, and other factors should be considered.

11. INITIAL CERTIFICATION

A. During initial certification, applicants are encouraged to submit drafts of the manual before submitting a formal application. This enables inspectors to determine if the applicant is proceeding in an appropriate manner. Inspectors should retain copies of the draft after review to ensure recommended changes are incorporated and no other changes have been made.

B. If drafts are given a cursory review before the formal application is submitted, record the activity under certification (3200/5200) in the WPMS.

13. COMPLIANCE STATEMENT. The compliance statement often references the policies and procedures manual. Therefore, inspectors must ensure these documents do not conflict and that references to the manual are accurate.

15. ACCEPTING A MANUAL

A. The original policies and procedures manual is accepted rather than approved. Acceptance is by letter to the operator/applicant indicating the policies and procedures are not contrary to the requirements of the Federal Aviation Regulations.

B. It is important that the manual be reviewed and accepted by all specialties.

NOTE: There is no requirement to sign and date the complete manual. Each page should NOT be initialed and dated by the appropriate specialist.

17. MANUAL REVISIONS. Inspectors should encourage operators to discuss manual revisions prior to printing and distributing them. Review for conformity with regulatory requirements and the operator's operations specifications and operating certificate can preclude the operator's having to make costly changes after a revision has been printed and distributed. When a manual revision which does not conform to the appropriate regulations or the operator's operations specifications or operating certificate is printed and distributed, the inspector should immediately notify the operator in writing. The inspector should request appropriate action to resolve the nonconformance to the satisfaction of the Administrator.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 91, and 125
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- On-the-job training respective to this task
- Previous experience with FAR Part 121, Part 135, or Part 125 operator manual systems

B. *Coordination.* This task requires coordination among maintenance, avionics, and operations inspectors. Regional coordination may be necessary.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 25, 43, 45, 47, 65, 91, and 145

- Advisory Circular 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125
- Advisory Circular 150-5230-4, Aircraft Fuel Storage, Handling, and Dispensing On Airports
- Advisory Circular 43-9B, Maintenance Records
- Advisory Circular 120-27A, Weight and Balance Control
- Operator's compliance statement

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Manual, Revision, or Draft for Review*

(1) If this task is performed as a part of an original certification, review the Schedule of Events to determine the time frame for completing the manual review.

(2) Assess the extent of the revision. If the revision affects only one area, it may not be necessary to review the entire manual. However, if a revision has a significant effect on several areas, or is, in effect, a new manual, review the entire manual. Ensure each page shows the proper revision number and date.

(3) *Review Operator File.* Determine the reason for the revision, i.e., an FAA action, change in operations specifications, change of equipment, environment, etc.

(4) *Review Compliance Statement.* For original certification, ensure the manual is not contrary to the operator/applicant's compliance statement.

NOTE: When reviewing the manual, ensure each item listed in FAR §§ 125.73 and 125.249 is addressed. Items addressed must be complete, accurate, and ensure the operator/applicant can maintain a high degree of safety and efficiency. Ensure that none of its provisions, procedures, instructions, etc., are contrary to other sections of FAR Part 125 or other regulations.

B. *Review Management Personnel Authorizations.* The manual must contain the name of each management person authorized to act for the operator. The manual must describe the assigned area of responsibility, duties, responsibilities, and authority.

C. *Ensure Manual Contains Weight and Balance Procedures.* The manual must contain procedures to ensure airplanes have been weighed within the preceding 36 calendar months. The operator may use fleet averaging.

D. *Ensure Manual Contains a Copy of the Operations Specifications or Appropriate Extracted Information*

E. *Review Procedures for Approving Airplanes for Return to Service.* The following must be addressed:

- Qualifications and authorizations of persons approving airplanes for return to service
- Procedures for determining when an airworthiness release or maintenance record is required
- The form and manner of documenting that an airplane is approved for return to service (airworthiness release or airplane maintenance record)
- Procedures to ensure the airworthiness release or airplane maintenance record entry contains the certification required by FAR § 125.411(b)(2). This requirement may be met by stating in the manual that the signature of a person authorized in FAR § 43.3 constitutes approval for return to service after maintenance.
- A means of ensuring the pilot in command obtains a copy of the airworthiness release
- Procedures to ensure each airworthiness release is retained for at least 60 days

NOTE: Do not confuse airworthiness release requirements with maintenance record requirements.

F. *Review Procedures for Reporting Defects or Unairworthy Conditions.* Ensure procedures address the following:

- Items required to be reported
- Responsibilities of the pilot in command
- Persons responsible for preparing and submitting the report
- The form and manner of the report, such as existing FAA form, operator-developed form, or computer printout

- Submission of the report within 72 hours, even if complete information is unavailable
- Updating of the report on a periodic basis, until all information is finally submitted

G. *Evaluate Procedures for Obtaining Maintenance when Previous Arrangements Have Not Been Made.* The manual must outline appropriate procedures for obtaining maintenance, preventive maintenance, or servicing that has not been arranged previously.

(1) Ensure the manual accomplishes the following:

- Indicates persons authorized to arrange for the maintenance, preventive maintenance, or servicing
- Describes procedures for the pilot in command to obtain maintenance, preventive maintenance, or servicing at a location where previous arrangements have not been made

(2) If the pilot in command is authorized to obtain the maintenance on behalf of the operator, the manual must contain procedures for the pilot to determine the maintenance facility is capable of performing the necessary work. The following factors should be considered:

- Type of airplane
- Type of maintenance or service required
- Certificate and rating of an approved FAA facility
- If non-certificated facility, an appropriately rated, fully qualified, and current FAA-certificated mechanic is required
- Required inspection items (RII)
- Approval for return to service requirements
- Additional factors identified by the operator or inspector

H. *Review Procedures Regarding Inoperable Equipment.* The manual must describe procedures for operating when equipment becomes inoperable en route. If this requirement is met using an approved Minimum Equipment List (MEL), the approved list must be a part of the manual.

I. *Review Airplane Fueling Procedures.* Evaluate the following:

- Elimination of fuel contamination
- Fire protection
- Passenger protection
- Procedures for supervising fueling activities
- Electrostatic protection

J. *Ensure the Manual Describes the Operator's Maintenance Organization, if Applicable*

K. *Review List of Those Persons with Whom the Certificate Holder Has Arranged to Perform Inspections.* Names and addresses must be included.

L. *Ensure the Manual Contains the Approved Airplane Inspection Program.* In addition to the approved program, the following must be addressed:

- Method of performing routine and non-routine inspections
- List of Required Inspection Items. These are items which, if improperly inspected, may result in a failure, malfunction, or defect that could adversely affect the safe operation of the airplane.
- Method of performing required inspections (RII)
- Procedures for inspecting work performed under previously required inspection (RII) findings (buy-back procedures)
- Procedures, standards, and limits for required inspections (RII) and for accepting or rejecting items required to be inspected
- Instructions to prevent a person who performs any item of work from performing any required inspection (RII) of that item
- Procedures to ensure work interruptions do not adversely affect required inspections (RII)
- Procedures to ensure required inspections (RII) are properly completed before the airplane is released to service

M. *Evaluate Recordkeeping System*

(1) Ensure the manual contains a suitable system, which may include a coded system that provides for the retention of the following:

- A description of the work performed (or reference to data acceptable to the Administrator)
- The date the work was performed
- The name of the person performing the work and the person's certificate type and number
- The name of the person approving the work and the person's certificate type and number

(2) Ensure the recordkeeping requirements of FAR § 91.173 are met. (Ref. Advisory Circular 43-9B.)

N. *Evaluate Procedures for Performing Maintenance, Preventive Maintenance, and Alterations* (FAR § 125.243(a)(2)).

O. *Review Procedures for Using the Maintenance Log.* The manual must contain policies and procedures for using the airplane maintenance log. There must be provisions for keeping a copy of the airplane maintenance log in the airplane.

P. *Review Manual Revision and Distribution Procedures*

(1) Ensure the revision system addresses distribution.

(a) The manual must be retained at the main base of operation.

(b) A copy or appropriate portions of the manual must be provided to the operator's flight crewmembers and the FAA Certificate Holding District Office.

(c) The manual or appropriately extracted information must be provided to the operator's maintenance and ground crew.

(d) Each airplane must have on board at least the information regarding its particular needs and differences, unless the operator/applicant is operating into a facility where the information is kept.

(2) Ensure that procedures for revising and distributing the manual provide all manual holders with current information.

Q. *Analyze Findings.* Evaluate all unclear areas, omissions, or apparent discrepancies to determine if changes are required.

R. *Conduct Debriefings*

(1) Discuss initial findings with appropriate FAA personnel to determine the content of the operator/applicant briefing. This discussion must include the certification team or assigned principal inspectors. It may be necessary to coordinate with regional, engineering, or other FAA personnel.

(2) Brief operator/applicant on results of evaluation. Discuss any deficiencies.

7. TASK OUTCOMES

A. *Accept or Reject Manual/Revision*

(1) *Manual/revision is accepted.* If it is determined that the manual or revision meets all regulatory requirements, ensure the manual or revision has been fully coordinated with each specialty.

(a) *Original certification.* The Certification Project Manager or principal inspector should send the operator/applicant a letter accepting the manual. The district office file should be updated with copies of the acceptance letter.

(b) *Revision.* Revisions may be accepted by either of the following actions:

- The Principal Maintenance Inspector will receipt and return the revision transmittal to the operator
- The Principal Maintenance Inspector will send a letter accepting the revision

NOTE: At no time will the manual pages be signed, initialed, and dated as accepted in any part of the manual.

(c) *Acceptance letter.* The acceptance letter should accomplish the following:

- Confirm all information given during the debriefing
- Indicate the date the manual was submitted
- State the manual is accepted and may be implemented
- Remind the operator to distribute the manual

(2) *Manual/Revision is rejected*

(a) If the manual is not acceptable, advise the operator/applicant by letter that the manual is rejected and return it to the operator/applicant along with the reasons for the rejection. Ensure the letter accomplishes the following:

- Confirms all agreements made during the debriefing
- Indicates date the manual/revision was submitted
- Identifies revision number and date
- Identifies and describes each deficiency by volume, chapter, section, page, etc.
- References each deficiency by the regulation
- Reminds the operator not to implement deficient items
- Encloses submitted, unacceptable manual

(b) If this review is performed as a part of a certification, inform the applicant in the letter that issuance of the certificate will be withheld until deficiencies are corrected. If necessary, advise the applicant to revise the schedule of events.

(c) If a manual revision is not acceptable, notify the operator in writing, requesting appropriate action to resolve the discrepancies. The operator must make the corrections in the subsequent revision.

B. *Complete WPMS Transmittal Form*

9. FUTURE ACTIVITIES

A. *Schedule of Events.* In the case of original certification, review the schedule of events to determine if a revised schedule of events is necessary.

B. *Surveillance.* Within 30 days, determine whether the operator is operating in accordance with the accepted manual procedures.

CHAPTER 105. EVALUATE FAR PART 125 AIRPLANE INSPECTION PROGRAM AND MAINTENANCE

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3343/3344

B. *Avionics:* 5343/5344

3. OBJECTIVE. This chapter describes how to evaluate and approve an applicant/operator submitted Airplane Inspection Program (AIP) and engine maintenance program or revision.

5. GENERAL. This job task provides for interaction between the applicant and the FAA from initial inquiry to approving the program/revision. It ensures that programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

A. An inspection program selected under FAR § 125.247(e) must be approved for a specific operator's use. The FAA reviews the program to ensure it meets regulatory requirements, is complete, and is appropriate for the intended operation.

B. Airworthiness inspectors should have as much knowledge of the applicant/operator's operation as possible. This includes areas of operation, type of equipment, operating history, and maintenance/inspection organization(s) with which it arranges for the performance of maintenance.

NOTE: An Aircraft Inspection Program is authorized for use in operations specifications. Therefore, it cannot be transferred.

7. COORDINATION. The Airplane Inspection Program approval must be coordinated between maintenance and avionics. It is essential, therefore, that both specialties are involved early in the planning process.

9. AIRPLANE INSPECTION PROGRAM

A. The operator may use a continuous airworthiness maintenance program approved for the airplane model under FAR Part 121 or 135. However, only the inspection portion of the continuous airworthiness maintenance program shall be evaluated to ensure it meets FAR Part 125 requirements.

(1) A continuous airworthiness maintenance program is an all-encompassing program which includes maintenance, inspections, continuing analysis and surveillance, etc.

(2) All elements are closely related and may not be effective as "stand-alone" programs. Any effect on the inspection program when maintenance and quality control are not performed in accordance with the continuous airworthiness maintenance program should be considered.

B. Inspection programs currently recommended by the manufacturer may be used. The manufacturer's inspection program might not cover survival equipment and avionics equipment.

C. An inspection program developed by the applicant/operator may be used.

11. ENGINE MAINTENANCE. Engines must be maintained in accordance with the overhaul intervals recommended by the manufacturer or a program approved by the Administrator.

A. If the manufacturer does not have a recommended overhaul interval, a maintenance program recommended by the manufacturer may be approved by the Administrator as an on condition program/trend analysis program.

B. The applicant/operator may develop an on-condition or overhaul program for approval by the Administrator.

13. CHANGES TO APPROVED TIME INTERVALS

A. *Operator-Initiated Changes.* The operator may request approval to amend inspection or overhaul intervals.

(1) The operator must justify the request using past operating experience, environmental conditions, airplane utilization, and other data necessary to substantiate changes.

(2) Engine maintenance programs and overhaul intervals may be justified by teardown reports, manufacturer recommendations, and the operator's experience.

(3) Operator-initiated time changes require revisions to both the Airplane Inspection Program and operations specifications.

NOTE: Limitations specified for life-limited items and airworthiness directives shall not be amended or

extended unless authorized in writing by FAA engineering.

B. *Manufacturer Escalations*

(1) If a manufacturer extends the recommended inspection or overhaul interval, the operator may request approval to use the extension by submitting a revision to the Airplane Inspection Program. The request must be accompanied by the manufacturer's recommendation.

(2) Inspectors should not automatically approve a time escalation recommended by the manufacturer. The operator's airplane use and experience must be considered to ensure the escalation will not compromise safety.

15. POLICIES AND PROCEDURES MANUAL. The Airplane Inspection Program must be included in the operator's policies and procedures manual. The operator should submit a manual revision (in accordance with manual revision procedures) at the same time the Airplane Inspection Program/revision is submitted for approval. This allows the FAA to approve the Airplane Inspection Program/revision and accept the manual concurrently, thus expediting implementation of the program.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 125
- Previous experience with complex maintenance/inspection programs

B. *Coordination.* This task is performed by both maintenance and avionics inspectors. It may require coordination and/or assistance from operations and/or regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 25, 39, 43, 45, 47, 65, and 91
- Advisory Circular 20-42, Hand Fire Extinguishers for Use in Aircraft
- Advisory Circular 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125
- Advisory Circular 91-56, Supplemental Structural Inspection Program
- Advisory Circular maintenance inspection notes

B. *Forms*

- FAA Form 8400-7, Operations Specifications
- FAA Form 8000-36, WPMS Transmittal

C. *Job Aids.* None.

5. PROCEDURES

A. *Schedule and Conduct a Preliminary Meeting with Applicant, If Necessary*

(1) Advise applicant of regulatory requirements and policies.

(2) For an existing operator, remind the operator that the Airplane Inspection Program/revision must be included in the policies and procedures manual.

B. *Plan and Coordinate Task*

(1) Determine that the airplane meets eligibility requirements.

(2) Review operator file to identify any information concerning the Airplane Inspection Program/revision and to determine its effect on other programs or procedures used by the operator.

(3) *Review Schedule of Events.* If this task is performed as a part of an original certification, review the Schedule of Events to ensure the task can be accomplished in accordance with the schedule.

NOTE: When evaluating the program, ensure all information is clear and easily understood. It must identify the scope of each task and provide detailed, step-by-step procedures.

C. *Evaluate Instructions, Procedures, and Standards For Conducting Inspections*

(1) The program must include airframe, airplane engines, propellers, appliances, survival and emergency equipment, and their component parts. Additionally, all required tests and checks recommended by the airplane or equipment manufacturer must be addressed.

(2) Persons responsible for performing the work must be identified.

(3) The instructions, procedures, and standards must be easily understood. They must contain sufficient detail and outline each step that must be accomplished to perform the inspection and ensure established standards are met.

D. *Evaluate Procedures For Scheduling Inspections.* The program must list inspection intervals and describe personnel responsibilities for scheduling and performing inspections.

E. *Evaluate Procedures To Ensure Inspections Are Performed By Properly Certificated Persons.* The manual must list those persons with whom the operator has arranged for performance of inspections under FAR Part 125. The list shall include the persons' names and addresses.

F. *Evaluate Airplane Engine Maintenance/Overhaul Intervals.* Engine overhaul intervals must correspond to the engine manufacturer's recommended overhaul intervals or a program approved by the Administrator.

G. *Evaluate Procedures For Reporting and Correcting Mechanical Irregularities.* The program must include detailed instructions, procedures, and the necessary forms and documents for the recording and repair of mechanical irregularities. These instructions, procedures, and forms may appear elsewhere in the company manual, but their location must be referenced in the Airplane Inspection Program.

H. *Evaluate Instructions For Using the Airplane Inspection Program.* Make sure the Airplane Inspection Program includes instructions on its use.

I. *Analyze Findings.* Evaluate findings to determine if program changes are required. Coordinate with other specialties before debriefing operator.

J. *Conduct Debriefings*

(1) Before meeting with the operator/applicant, discuss initial findings with appropriate FAA personnel to determine content of the briefing. Depending on the findings, it may be necessary to coordinate with the certification team, principal inspectors, regional specialists, or other FAA personnel.

(2) Brief operator/applicant on results of evaluation. Discuss any deficiencies.

7. TASK OUTCOMES

A. *Approve or Reject Airplane Inspection Program/ Revision*

(1) If it is determined that the program or revision meets all regulatory requirements, process as follows:

(a) Ensure the Airplane Inspection Program or revision has been fully coordinated between maintenance and avionics and any other appropriate person(s).

(b) For a new or totally revised program, indicate "Approved" on the back of the operations specifications. The principal maintenance inspector shall sign and date the document.

NOTE: The date the Airplane Inspection Program and engine maintenance program are approved must be the same as the date the operations specifications are approved.

(c) Initial and date each page of the Airplane Inspection Program or revision unless another approval control is used.

(d) Send the approved Airplane Inspection Program/revision and the original and one copy of the operations specifications to the operator, as appropriate. Request the operator retain the original and acknowledge receipt of the operations specifications by signing and dating the copy and returning the copy to the district office.

(e) Send a copy of the new or amended operations specifications to the regional Airworthiness Branch.

(f) Update district office file with copies of the acceptance letter, the signed and dated Airplane Inspection Program/revision, and the receipted operations specifications.

(2) If it is determined the Airplane Inspection Program/revision is not acceptable, advise the operator/applicant by letter that the program is rejected. Return it to the operator/applicant along with the reasons for the rejection. Ensure the letter accomplishes the following:

- Confirms all agreements made during the debriefing
- Identifies the date the Airplane Inspection Program/revision was submitted
- Shows the revision number and date
- Identifies and describes all deficiencies by chapter, section, page, etc.
- Refers each deficiency to the appropriate regulation

- Returns the original Airplane Inspection Program and unapproved operations specifications
- If a revision, reminds the operator not to implement revision

NOTE: If this review is performed as a part of a certification, inform the applicant in the letter that issuance of the certificate will be withheld until deficiencies are corrected. If necessary, advise the applicant to revise the schedule of events.

B. *File a WPMS Transmittal Form*

9. FUTURE ACTIVITIES

A. *Schedule of Events.* In the case of original certification, review the schedule of events to determine if a revised schedule of events is necessary.

B. *Policies and Procedures Manual.* Be sure the policies and procedures manual includes the approved Airplane Inspection Program/revision.

CHAPTER 106. EVALUATE A FAR PART 125 INSPECTION TRAINING PROGRAM/RECORD

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3305/3306

B. *Avionics:* 5305/5306

3. OBJECTIVE. This chapter describes the process used to evaluate a Required Inspection Item (RII) training program.

5. GENERAL

A. FAR § 125.251 requires that inspection personnel be properly trained. Effective training is essential to ensure that required inspections (RII) are performed properly. Although procedures for inspecting airplanes may be similar, each operator's program is unique in terms of equipment, procedures, and methods of documenting tasks.

B. Training programs are accepted as part of the Policies and Procedures Manual.

C. The operator must ensure that contractors' personnel are trained according to the operator's procedures.

7. CONTENT

A. The training program should cover the following:

- The certificate holder's policies and procedures manual
- The Federal Aviation Regulations regarding Required Inspection Items requirements
- Methods and techniques to conduct the required inspections (RII)

(1) There should be a method for documenting the individual's training record.

(2) The operator must have a method to authorize a person to perform the Required Inspection Items. The authorization may be in the form of a listing or an individual card.

B. Training consists of formal instruction and/or on-the-job-training. Training credit may be given for previous experience on similar type airplanes. However, procedures unique to the operator's Required Inspection Items must be taught.

9. TRAINING RECORDS

A. Training records should be current. They should indicate the content of formal training and on-the-job-training. Credit for previous experience must be shown.

B. Training records should be retained at the operator's main base, or at other locations listed in the operator's manual, to ensure all authorized personnel are properly trained before performing required inspections (RII). The operator is responsible at all times for the accuracy of these records.

11. EVALUATING A TRAINING PROGRAM

A. A training program is evaluated to ensure persons perform required inspections (RII) with the highest degree of competency. Training received throughout the operator's system must be of equal quality and effectiveness.

B. While the operator's capabilities must be considered, the size of the operation should not influence the need for an effective required inspection (RII) training program.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 125
- Completion of the FAA General Aviation or Air Carrier Airworthiness Inspectors Indoctrination Course
- Previous experience with required inspection (RII) training

B. *Coordination.* This task requires coordination with maintenance and avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 25, 43, 65, and 91
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Training Program as a Manual/Revision*

B. *Evaluate Content of Training Program.* The training program for persons performing Required Inspections Items (RII) should include the following:

- Training on the designated required inspection items listed in the company's policies and procedures manual
- Training on the method of performing the Required Inspection Items
- Training on buy-back procedures of previous Required Inspection Item findings
- Training on the procedures, standards, and limitations for the acceptance or rejection of a Required Inspection Item
- Training on company procedures for work interruptions on Required Inspection Items
- The name of the person responsible for the overall administration of the Required Inspection Item training
- Procedures for evaluating previous experience and training and providing appropriate credits to records
- Recordkeeping procedures. Records should include the student's name, course title, date completed, instructor's name and signature, the number of hours of training performed, and a notation of whether the course was completed successfully.
- A training syllabus describing content of course, format of training, duration of training courses, standards for grading students, and training aids

C. *Evaluate Training Facilities and Equipment.* Ensure facilities, training aids, and reference material are adequate to support the training program.

D. *Analyze Findings.* Discuss any deficiencies with assigned maintenance and avionics inspectors. Determine the need for corrective action.

E. *Debrief Operator.* Discuss findings, including any deficiencies with the operator. Discuss any need for corrective action.

7. TASK OUTCOMES

A. *Accept or Reject Training Program*

(1) *Program Accepted.* The Required Inspection Item training will be accepted as part of the complete manual.

(2) *Program Rejected.* Notify the operator in writing of deficiencies found.

B. *Complete WPMS Transmittal Form*

9. FUTURE ACTIVITIES. After accepting an inspection training program, observe training in progress. Evaluate instructors and teaching techniques to ensure the training program is effective.

CHAPTER 107. EVALUATE FAR PART 125 OPERATIONS SPECIFICATIONS

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3315/3316

B. *Avionics:* 5315/5316

3. OBJECTIVE. This chapter describes the process used to evaluate and initiate operations specifications.

5. GENERAL

A. Operations specifications are required by FAR § 125.31. They are authorizations requested by the operator and approved by the FAA.

(1) Operations specifications must contain the following:

- Adequate provisions to meet all items listed in FAR § 125.31
- Any other provisions applicable to the operations
- No information contrary to the Federal Aviation Regulations
- Reference to any deviations authorized

(2) Operations specifications are issued when any of the following occur:

- Original certification
- The operator requests a change in the operations specifications
- The operator seeks new authorization requiring operations specifications
- The FAA determines that safety in air commerce requires an amendment to the operations specifications

B. Operations specifications are divided into Parts A through E. Part D contains airworthiness authorizations and Part E contains weight and balance control information. Parts D and E are issued exclusively by airworthiness inspectors. Only those parts necessary for the operator to meet the requirements of FAR Part 125 shall be issued.

C. Operator-initiated operations specifications must reflect the operator's authorizations, together with the necessary conditions and limitations. The inspector will advise and give samples to applicants preparing operations specifications. The inspector should provide needed guidance while ensuring that the actual development of the operations specifications is done by the applicant.

7. COORDINATION. Issuing or amending operations specifications may affect other specialties. Operations specifications should be reviewed by airworthiness, avionics, and operations inspectors to determine if their areas are affected. This coordination may reveal the need for further communication with the operator or other FAA personnel.

9. REQUIRED AUTHORIZATIONS. Operations specifications authorize specific operations, programs, and equipment. They may contain the entire text of the program or procedure, or they may reference the text in the manual. Operations specifications contents requirements are specified in FAR § 125.31.

11. PREPARATION

A. Operations specification are legal documents. Language should clearly specify the authorization, conditions, and/or limitations being approved.

B. Operations specifications should not contain erasures, strikeovers, or typographical errors. Minor pen-and-ink changes may be accepted if they are initialed by both the operator and the appropriate FAA inspector.

C. The operator must submit an original and at least two copies to the FAA for review.

13. VOLUNTARY SURRENDER OF OPERATIONS SPECIFICATIONS

A. An operator may surrender operations specifications when the authorization is no longer required. The operator must forward the operations specifications with a letter explaining reasons for the surrender. The letter must be signed by a person authorized to sign operations specifications for the company.

B. The district office must provide the regional office with a copy of the operations specifications and letter.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. Prerequisites

- Knowledge of the regulatory requirements of FAR Part 125
- The inspector performing this task must be a principal inspector

B. *Coordination.* This task requires coordination among maintenance, avionics, and operations inspectors. Regional coordination may be required.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125
- Advisory Circular 120-27, Weight and Balance Control
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8400-7, Operations Specifications

C. *Job Aids.* None.

5. OPERATOR-INITIATED OPERATIONS SPECIFICATIONS/AMENDMENTS

A. *Receive Submitted Operations Specifications.* Ensure operations specifications are in the proper format.

B. *Review Operator File.* Determine the need for an operations specifications approval or amendment.

(1) Ensure a similar specification does not already exist.

(2) Ensure operational data does not conflict with new specifications.

C. *Review Submitted Operations Specifications*

(1) Determine content is appropriate for the authorizations requested.

(2) Ensure the operator has properly completed, signed, and dated the reverse side.

(3) Determine that the operator has valid data to support the reasons and justification for the operations specifications/ amendment.

(4) Ensure the operator has the procedures, equipment, facilities, training, personnel, and other support necessary to carry out the programs outlined in the proposed operations specifications.

(5) Ensure the operations specifications, manual, and compliance statement are in agreement.

(6) If approving an inspection program, ensure the airplane is listed by serial and registration number.

(7) Ensure pages are numbered for each Part (i.e., Part D, 1 of 2, 2 of 2).

D. *Analyze Findings.* Evaluate deficiencies to determine if corrections or other actions are required.

E. *Conduct Debriefings*

(1) Before meeting with the operator/applicant, discuss initial findings with appropriate FAA personnel to determine the content of the briefing.

(a) It may be necessary to coordinate with regional, engineering, or other FAA personnel.

(b) Identify any actions the operator must accomplish before implementing the operations specifications.

(2) Brief the operator on the results of the evaluation. Discuss any deficiencies.

F. *Approve or Disapprove Original and All Copies of the Operations Specifications*

(1) *Approve operations specifications*

(a) Enter the date of approval as the page control date on the front.

(b) Complete reverse side of the operations specifications.

- Indicate the operations specifications set forth on the reverse side are APPROVED.
- Enter the date of approval as the effective date.

- If an amendment, assign the next consecutive amendment number appropriate for that specific operations specification and enter the effective date of the superseded amendment.
- The block shall be signed by the principal inspector, with title shown.

(c) Provide original and at least one copy of the approved operations specifications to the operator. Advise the operator of requirement to acknowledge receipt by completing the appropriate block on the copy and returning the receipted copy to the district office. Retain the receipted copy of the approved operations specifications in the district office.

(d) Send one copy of the operations specifications to the regional office. (It does not have to be a receipted copy.)

(2) *Disapprove operations specifications.* Forward the unapproved operations specifications to the operator with a letter outlining the reasons for disapproval. Advise operator of appeal procedures in FAR § 125.35(c).

7. FAA-INITIATED OPERATIONS SPECIFICATIONS/AMENDMENTS

A. *Coordinate with Appropriate Specialists.* If an amendment is being issued because of an emergency, notify the region through established procedures.

B. *Prepare FAA Form 8400-7*

(1) *Prepare front of form.* Specify the authorizations, conditions, and/or limitations applicable to the operator.

(2) *Prepare reverse side*

(a) In the first block, enter the certificate number.

(b) In the second block, enter the operator's full legal name as shown on the operating certificate.

(c) In the third block, enter amendment supporting data. Indicate the reason and justification for issuing the amendment. Do not complete any other portion of this block.

C. *Notify the Operator of Proposed Operations Specifications.* By letter, inform the operator that the FAA is proposing to amend the operations specifications. The letter must be either hand delivered or sent certified mail and a return receipt requested. The letter must accomplish the following:

- State the FAA is proposing to amend operations specifications
- Cite the reasons in detail
- Advise the operator of option to respond with written information, views, and arguments concerning the proposed amendment
- Indicate the date by which the operator may reply. Allow at least 7 days from when the operator is expected to receive the letter.
- Enclose a draft of the proposed amendment

D. *Review and Evaluate Operator's Comments*

E. *Determine if the Operations Specifications Will Be Adopted*

(1) If it is decided not to adopt the amendment, notify the operator by letter that the notice is rescinded.

(2) If it is decided to adopt the amendment, complete the reverse side of the operations specifications.

(a) Indicate the operations specifications set forth on the reverse side are APPROVED.

(b) Enter the date of approval as the effective date.

NOTE: The effective date shall be no less than 30 days after the operator receives the approved amendment.

(c) If an amendment, assign the next consecutive amendment number appropriate for the specific operations specifications. Enter the effective date of the superseded amendment.

(d) The block shall be signed by the principal inspector, with title shown.

G. *Notify the Operator of Decision in Writing.* The letter shall be either hand delivered or sent certified mail with a return receipt requested.

(1) The letter must accomplish the following:

- State the FAA-proposed amendment is adopted

- State the effective date
- Discuss FAA evaluation of operator's comments, if submitted
- Advise the operator of appeal provisions of FAR § 125.35(d). Petition for reconsideration must be sent to Director of Flight Standards within 30 days of receipt.
- Request a copy of petition, if one is filed
- Advise the operator to acknowledge receipt by completing the appropriate block on the copy and returning the receipted copy to the district office
- Enclose the original and at least one copy of the approved operations specifications

(2) If the amendment is adopted, send the original and one copy of the approved operations specifications to the operator. Retain one copy in the district office.

H. *Send One Copy of the Operations Specifications to the Regional Office*

9. TASK OUTCOMES

A. *Operations Specifications/Amendment Approved.* If submitted materials contain no deficiencies, this task will result in a approved operations specifications/ amendment. For FAA-initiated amendments, the file shall also contain a copy of the letter proposing the amendment and any operator comments.

B. *Operations Specifications/Amendment Disapproved.* If the submitted material contains deficiencies, this task will result in a letter to the operator.

C. *Complete WPMS Transmittal Form*

D. *Update District Office Files.* File receipted copy of the operations specifications according to established procedures. Retain superseded copies in district office files.

11. FUTURE ACTIVITIES. The operator may petition the Director of Flight Standards to reconsider an FAA-initiated amendment. In this case, the effective date of the amendment is stayed pending the decision of the Director, unless such action would compromise safety.

FIGURE 107-1 SAMPLE OPERATIONS SPECIFICATIONS

U.S. Department of Transportation
Federal Aviation Administration

Operations Specifications

Form Approved
OMB No. 2120-0028

Issued to: Discount Air Service, Inc.

Part E - WEIGHT AND BALANCE PROGRAM

d. Crew Weight. For crewmembers the following average weights may be used:

Female Flight Attendants - 130 pounds
Male Flight Attendants - 150 pounds
All other Crewmembers - 170 pounds

e. Passenger and Crew Baggage. When an average, actual or declared passenger weights may be used, the following average passenger baggage weights may be used in lieu of actual weights:

a. For each piece of check baggage, an average of not less than 23.5 pounds.

b. For each passenger boarding the aircraft, an average of not less than 5 pounds of hand baggage whether or not such baggage is carried by the passenger.

c. Use of average baggage weights is not authorized in the case of flights involving the carriage of special groups.

IN ANY EVENT, REGARDLESS OF WHICH METHOD IS USED, THE AIRCRAFT MUST NOT EXCEED ALLOWABLE WEIGHT AND CENTER OF GRAVITY LIMITS.

24. Instructions for Calculation of Center of Gravity.

(Aircraft Series) - Tabular.

25. Special Instructions for Loading.

26. Periodic Aircraft Weighing.

All aircraft will be weighed each 36 months.

Page Control Date April 27, 1988 Part E Page 2 of 2

FAA Form 8400-7 (2-84) Formerly FAA Form 1014

FIGURE 107-1—(Cont.)

U.S. Department of Transportation
Federal Aviation Administration
Washington, D.C.

Certificate No. EE-00-0-Z

The Federal Aviation Administration issues the Operations Specification on the reverse side hereof to

DISCOUNT AIR SERVICE, INC. hereby makes application for amendment of the Operations Specifications appearing on the reverse side hereof, as follows:

Amendment supporting data *(if insufficient space attach additional page)*

Original Certification in Compliance with Part 125 of the Federal Aviation Regulations.

I certify that the statements submitted in connection herewith are true and that I am duly authorized to make this application on behalf of the applicant.

Date _____ Cecil M. Lyons, III
Signature

Title

The operations Specifications set forth on the reverse side hereof are _____

Amendment No. ONE

Effective Date April 27, 1988

Supersedes Specification dated Jan. 16, 1986

By direction of the Administrator

John P. Armbruster
Signature

Wallace P. Armbruster
Principal Maintenance Inspector
Title

Received for the certificate holder by:

Date _____

Signature

Title

CHAPTER 108. EVALUATE FAR PART 125 EMERGENCY EVACUATION/ DITCHING DEMONSTRATION/PROCEDURES

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3308

B. *Avionics:* 5308

3. OBJECTIVE. This chapter describes procedures to determine that an applicant/operator for FAR Part 125 can safely evacuate passengers in the event of an emergency landing.

5. GENERAL

A. *Definitions*

(1) *Dark of Night:* A level of illumination approximating the natural level of light that occurs 90 minutes after official sunset under clear sky conditions.

(2) *Demonstration Project Coordinator:* The individual assigned by the operator/applicant to organize and conduct the demonstration. This person also serves as official contact with the FAA for the purposes of the demonstration.

(3) *Ditching Demonstration:* The evacuation of passengers and crew into life rafts after a simulated forced water landing.

(4) *Emergency Evacuation Demonstration:* The evacuation of passengers and crew from a simulated aborted takeoff.

(5) *Extended Over-Water Operations:* Flights conducted at a horizontal distance of more than 50 nautical miles from the nearest shoreline.

(6) *FAA Team Leader:* The inspector who heads the FAA team evaluating the emergency evacuation or ditching demonstration. In the case of an existing operator, it is the principal operations inspector; for a FAR Part 125 certificate applicant, it is the Certification Project Manager.

(7) *Launch a Life Raft:* Remove the life raft from storage, manipulate it out of the airplane via stands and ramps, and position it on the ground before inflation.

(8) *Launch a Slide Raft:* Inflate the slide raft in a normal manner, then lower it to the ground.

(9) *Passengers:* Participants in the demonstrations who represent aircraft passengers. These individuals may not be crewmembers, mechanics, or training personnel.

(10) *Seating Configuration:* The number of passengers seats authorized for use by the manufacturer type certificate or production data, supplemental type certificate, or other FAA-approved data. Adding or removing seats is a major alteration and requires appropriate FAA approval.

B. *Type Certification Demonstrations.* An airplane manufacturer must conduct an emergency evacuation demonstration in accordance with FAR § 25.803 to obtain type-certification. This demonstration is the responsibility of the applicable FAA Aircraft Certification Office (ACO) and tests the following:

- The basic airplane design and its ability to be evacuated safely
- The airplane's emergency evacuation systems
- The manufacturer's FAA approved emergency evacuation procedures

7. REGULATORY REQUIREMENTS. FAR §§ 25.803 and 125.189 and FAR Part 125, Appendix B, specify the requirements for conducting these demonstrations, when they must be performed, how they are to be conducted, and the specific criteria which must be met by the applicant, operator, or manufacturer.

A. *FAR Part 125 Demonstrations.* FAR Part 125 specifies two types of evacuation demonstrations: a full-scale aborted takeoff and a full-scale ditching.

B. *Partial Demonstrations.* Partial aborted takeoff or partial ditching demonstrations are not allowed under FAR Part 125 except by deviation authority. Procedures would be the same as for the full-scale aborted takeoff or full-scale ditching. Criteria that can be used for evaluation are FAR § 121.291(c)(1) and (e) and the air carrier inspector's handbook.

C. *Initial Introduction of a Type and Model Aircraft.* FAR § 125.189(a)(1) requires an emergency evacuation demonstration upon initial introduction of a type and model airplane for carrying passengers. If the operator has previously conducted a successful demonstration of an airplane of the same type or model, with the same number and type of exits, the same cabin configuration, and the same emergency

equipment, the demonstration does not have to be repeated.

D. *Increase in Seating Capacity.* FAR § 125.189(a)(2) requires an operator to conduct a full-scale emergency evacuation demonstration when the following changes occur:

- Passenger seating capacity is increased by more than 5 percent over that successfully demonstrated
- A major change in the passenger cabin interior configuration affects the emergency evacuation of passengers

E. *Full-Scale Demonstrations.* A full-scale emergency evacuation demonstration simulates an aborted takeoff. It requires each passenger seat installed on the airplane to be occupied by a demonstration participant before initiation of the demonstration.

(1) After the initiation signal, all participants and crewmembers must be evacuated using the airplane's emergency evacuation equipment and no more than 50 percent of the emergency exits and slides.

(2) The demonstration must show that the airplane and emergency equipment, using operator-developed emergency procedures, allow for the evacuation of the airplane's full seating capacity, including crewmembers, in 90 seconds or less.

(3) An operator proposing to use a type and model airplane with a seating capacity greater than has ever been previously demonstrated for that particular type and model must conduct a full-scale demonstration with that type and model of airplane.

(4) FAR Part 125, Appendix B, outlines specific conditions and criteria used during full-scale emergency evacuation demonstrations. The appendix is divided into two sections.

- Section (a), the aborted takeoff demonstration, specifies the requirements for a full-scale evacuation demonstration, including such items as environmental conditions, passenger complement, crewmember qualifications, and the number of exits to be opened.
- Section (b), the ditching demonstration, specifies the requirements for a simulated ditching, including testing crewmember knowledge of emergency equipment, procedures, and emergency equipment reliability.

F. *Extended Overwater Operations.* FAR § 125.189(c) requires an applicant/operator intending to engage in extended overwater operations (defined in FAR § 1.1) to conduct a full-scale, simulated ditching demonstration in accordance with FAR Part 125, Appendix B. If the certificate holder has previously conducted a successful simulated ditching as required by FAR § 121.291(d) in the same type airplane, an additional ditching demonstration is not required.

G. *Analysis and Tests.* FAR § 25.803(d) permits the use of a combination of analysis and tests to show that an airplane is capable of being evacuated within 90 seconds under the conditions specified in FAR § 25.803(c). Analysis and tests can be used only if the Administrator finds that this method will provide emergency evacuation demonstration data equivalent to an actual demonstration.

(1) The FAA, however, prohibits the use of analysis and tests to increase seating capacity more than 5 percent above the seating capacity established by a full-scale demonstration. For example, if a full-scale demonstration was satisfactorily accomplished with a maximum seating capacity of 200 passengers, the analysis and test method would allow up to a maximum of 10 additional passengers. No further increase in capacity above the 210-passenger limit would be permitted without a full-scale demonstration.

(2) This 5 percent increase may not be approved by the certification team or the principal inspector without the analysis and tests being evaluated by the appropriate Aircraft Certification Office. Any request for an increase of up to 5 percent by the analysis and test method shall be forwarded through AFS-1 to the appropriate Aircraft Certification Office. The Aircraft Certification Office is the organization within the FAA authorized to evaluate the analysis and tests.

9. MANUFACTURER CONDUCTED DEMONSTRATIONS. FAR § 25.803(c) requires manufacturers of transport category airplanes having more than 44 passengers seats to conduct a full-scale demonstration for the issuance of a type certificate. If the manufacturer wants the demonstration to meet both the certification requirements of FAR § 25.803(c) and the operational requirements of FAR § 125.189(a), the demonstration shall be conducted in accordance with FAR Part 125, Appendix B and the procedure described below.

A. *Type Certification Only Demonstration.* If the demonstration is conducted for the purpose of complying only with FAR § 25.803 (the certification rule),

or by persons other than flight standards inspectors assigned by AFS-1, the airplane shall not be considered "previously demonstrated" for operations to be conducted under FAR Part 125. Therefore, a FAR Part 125 operator who proposes to put such an airplane into service must conduct a full-scale demonstration in accordance with FAR § 125.189(a) and FAR Part 125, Appendix B.

B. *Aircraft Certification Office.* Aircraft Certification Offices have primary responsibility for the planning, conduct, and evaluation of manufacturer emergency evacuation demonstrations.

11. THE ABORTED TAKEOFF DEMONSTRATION

A. *Airplane Configuration.* If an operator proposes to operate airplanes configured with 44 or less passenger seats, even though they may have been type certificated with more than 44 seats, an emergency evacuation demonstration is not required.

B. *Requirements for Full-Scale Demonstration.* After the principal inspector or Certification Project Manager determines that a full-scale demonstration is required, the operator must develop a plan outlining the manner in which the demonstration is to be conducted. FAA inspectors responsible for the demonstration is to be conducted. FAA inspectors responsible for the demonstration must meet with the operator as often as necessary to ensure that the operator clearly understands which documents and information are required for the plan to be accepted for evaluation.

C. *Participants*

(1) *Representative Passenger Complement.* In a full-scale aborted takeoff emergency evacuation demonstration, the operator must assemble a representative passenger complement in accordance with FAR Part 125, Appendix B, (a)(7). Before conducting the demonstration, the operator must ensure that the participants meet the appropriate criteria. If participants do not meet the criteria, the operator must repeat the demonstration.

(a) Participants must be representative of a normal passenger complement as follows:

Passengers	Age	Percentage of full seating capacity
Adult Females	12–60	30% minimum
Adult Males	12–60	50% to 60%
Adult Males and Females (proportional mix).	over 60	5% minimum
Children (prorated by age).	3–11	5% to 10%
Life-sized dolls	-	3 each

(b) The "life-sized dolls" referred to above must be carried by passengers to simulate infants two years old or younger.

(c) None of the passengers may be crewmembers, mechanics, or training personnel who maintain or operate the airplane.

(d) No employee of an applicant, certificate holder, or manufacturer may be seated next to an exit.

(e) Because of child labor laws in some localities, it may not always be possible to have children between the ages of three and 11 participating in full-scale evacuation demonstrations. In these situations, a proportional mix of the overall passenger complement may be substituted.

(f) The operator may not practice, rehearse, or describe the demonstration for the passengers, nor may any participant have taken part in this type of demonstration within the preceding six months.

(2) *Company Personnel*

(a) Company officials, such as directors of operations and maintenance, must be available at the site of a demonstration. These individuals must have authority to direct modifications to the demonstration plan at the time of the demonstration. They must also be able to respond to the FAA for specific corrective actions which may be required due to deficiencies during the demonstration.

(b) Other company personnel present at the demonstration site should have a direct role in conducting the demonstration. It is the company's responsibility to ensure that these persons do not pose a distraction or affect the demonstration's outcome.

(3) *Use of Flight Attendants.* If the applicant/operator proposes to use flight attendants, the demonstration flight attendant complement must have the minimum number the operator proposes to use during FAR Part 125 operations. In no case shall the minimum number be less than that specified in FAR § 125.269.

(4) *The Demonstration Team.* The FAA team responsible for evaluating the emergency evacuation demonstration is headed by a team leader. Maintenance, avionics, and operations inspectors familiar with FAR Part 125 operations and applicable regulatory requirements should be assigned as needed.

(a) *Initial Certifications.* For an initial certification, the Certification Project Manager also serves as the demonstration team leader.

(b) *Existing Operator.* When a demonstration is conducted by an existing operator, the district office manager will normally assign one of the operator's principal inspectors or a regional expert to serve as the demonstration team leader.

(c) *Team Leader Responsibilities.* The FAA team leader is responsible for planning, conducting, and evaluating the emergency evacuation demonstration. The team leader also serves as the focal point and central spokesperson for the FAA on all matters pertaining to the demonstration.

(5) *Safety Personnel.* The company shall provide safety personnel at strategic locations around the aircraft to protect participants. Safety personnel shall not provide any assistance to crewmembers, such as positioning slides or assisting evacuees through exits, nor may they in any manner contribute to the efficiency of the evacuation. Safety personnel are used only to ensure passengers are not accidentally injured by slipping off wings or falling from exits.

(6) *Other Personnel*

(a) Non-company or non-FAA personnel must have specific reasons to observe the emergency evacuation demonstration. Usually, these individuals will be representatives of the aircraft manufacturer, manufacturers of other items of equipment used during the demonstration, or other organizations that have a direct interest in aviation safety.

(b) The operator is responsible for all non-FAA personnel who observe the demonstration. Those not directly involved in the demonstration should be kept at a reasonable distance away from the airplane by some restrictive means, such as ropes or lines.

(7) *FAA Observers.* The FAA team leader is responsible for the FAA personnel who observe the demonstration. FAA observers should be limited to those who are required to evaluate the conduct of the demonstrations or need to be involved for other specific reasons, such as:

- Members of the FAA team responsible for evaluating the demonstration
- FAA inspectors from other offices whose operators will be acquiring the same or similar type aircraft as the one being demonstrated
- Regional or Headquarters officials or designees
- FAA personnel from the Certification Directorate, the Flight Operations Evaluation Board, the Aircraft Evaluation Group, or any other FAA office concerned with any technical or engineering aspects of the aircraft

D. *Airplane Positioning.* The airplane must be positioned in a normal ground attitude and configured for takeoff. Each passenger compartment door or curtain must be positioned as it would be for a normal takeoff.

13. MAXIMUM DEMONSTRATED SEATING CAPACITIES. Before conducting emergency evacuation demonstrations, the inspector must know the maximum number of passenger seats for specific air transport category aircraft used in FAR Part 125 operations. This information, along with data regarding interior configurations and other relevant factors, can be obtained through the following offices:

- The Seattle Aircraft Evaluation Group (ANM) for large aircraft
- The Central Aircraft Evaluation Group (ACE) for small aircraft

15. THE OPERATOR'S PLAN

A. The operator must submit an emergency evacuation or ditching demonstration plan no later than 30 working days before the demonstration is to occur. The applicant/operator's plan shall contain the following information:

(1) *Letter of Request.* Team leaders must ensure that the operator is aware that the initiation signal must be given to both cabin and FAA personnel simultaneously. Developing the procedure for this requirement is the operator's responsibility. The demonstration team leader must thoroughly review the procedure for adequacy.

(2) *Airplane Diagram*

(3) *Appropriate Portions of the Manual*

(4) *Passenger Information Card*

(5) *A Description of the Emergency Equipment Installed on the Aircraft.* The type and model of each item of equipment, as applicable, must be indicated.

(6) *List of Crewmembers.* The plan must include a list of each crewmember, both flight deck and cabin, who is or will be qualified to participate in the demonstration.

(a) The flight crew must be qualified in the aircraft to be used. However, the initial operating experience requirement need not be completed.

(b) Flight attendants designated by the FAA to participate in the demonstration shall not be provided emergency training or aircraft emergency equipment familiarization in addition to that specified in the applicant's or operator's approved training program (if any) before the demonstration.

(7) *Description of Plans to Ensure Dark of Night.* FAR Part 125, Appendix B, (a)(1), specifies that the full evacuation demonstration shall be conducted during the dark of night. Therefore, the plan must contain a description of how the operator will ensure the demonstration is conducted in the dark of the night or in conditions which simulate the dark of the night. The most effective way of controlling the level of illumination is to conduct the demonstration in a darkened hanger.

(8) *Description of Position.* The plan must include a description of how the applicant or operator plans to ensure the airplane is positioned in a location that will allow the unobstructed deployment of all emergency evacuation slides or slide rafts, as applicable.

B. *FAA Review of the Operator's Plan.* Upon submission of the proposal, the principal inspectors or the certification team shall conduct a cursory review to ensure all the required information and documents are included. It is important that the FAA respond to the operator's plan in a timely manner. Minor omissions or deficiencies can often be resolved quickly by contacting the company's evacuation demonstration project coordinator. If the applicant/operator's plan has a significant number of required items or documents missing or is obviously incomplete, the entire plan must be returned to the applicant/operator with a written explanation of why it is unacceptable. The applicant/operator shall be advised that the FAA will take no further action until an acceptable plan is submitted.

(1) *Evaluating the Plan.* The team leader must ensure that the information and items in or attached to the operator's letter of request are acceptable and consistent with the proposed type of operation. During this analysis and review the demonstration team leader shall ensure the following:

- The applicant/operator's emergency procedures in the operator's manual have been FAA approved
- Evacuation procedures in the operator's manuals, including the individual crewmember assignments, are realistic, can be practically accomplished, and comply with FAR § 125.73(m)
- The passenger information card is understandable and consistent with the type and model of airplane to be demonstrated. Guidance is provided in Advisory Circular 121-24, "Passenger Safety Information Briefing and Briefing Cards."
- The emergency equipment is acceptable for the type of operation proposed

(2) *On-Site Evaluation.* Certain items in the proposal may require on-site evaluation. For example, the hangar or ramp area the applicant/operator intends to use for the demonstration should be inspected for its adequacy. The inspector should determine that the applicant/operator has, or is making, provisions for participant safety during the demonstration, including the use of safety observers, stands, padding, mats, and any other appropriate safety measures.

(3) *Resolving Deficiencies.* Deficiencies noted during this analysis and review should be resolved immediately with the company's evacuation demonstration project coordinator. If major discrepancies surface during the FAA evaluation or if the FAA and the applicant/operator are unable to resolve significant issues, the inspector shall return the operator's plan with a letter explaining why it is being returned. The operator shall be advised that the discrepancies outlined in the letter must be corrected and a plan resubmitted before the FAA takes further action. If, after a detailed evaluation, the submission is found acceptable, the operator shall be notified and the actual demonstration observed.

17. PRE-DEMONSTRATION MEETING WITH OPERATOR. After reviewing and evaluating the operator's plan, the FAA team leader should meet with the operator's project coordinator. In the meeting, the team leader should accomplish the following:

- Review the operator's plan and ensure it reflects the operator's thorough familiarity with the applicable criteria

- Ensure the operator is aware of responsibilities regarding participant safety, including provisions for safety observers, stands, ramps, padding, and ambulance coordination, as applicable
- Review the method and signals for initiating the demonstration, training methods, and timing criteria
- Determine the signal to be used to terminate the demonstration, such as an air horn or other clear and distinguishable audible signal. A suitable device should be agreed upon and tested to ensure its adequacy.

NOTE: Previous experience has shown that a whistle blast may not be adequate.

- Resolve any issues the operator may have before conducting the demonstration

19. FAA TEAM PLANNING

A. The FAA team leader shall plan the team member assignments in the following areas:

- Timekeeping
- Position inside or outside the airplane
- Inspection of the emergency equipment, the airplane, and any applicable documents

B. The team leader should distribute to the inspectors an aircraft diagram showing their assigned locations for the demonstration.

C. The typical crewmembers selected from the list provided by the operator should not include those who may have an above average level of competency or experience in airplane evacuation procedures. The team should avoid selecting the following types of crewmembers:

- Those used in previous demonstrations
- Emergency procedures instructors
- Supervisors
- Check airmen
- Union safety representatives

21. SELECTING EXITS. In airplanes with even number of exits, no more than 50 percent of the total number of exits and slides may be opened and deployed. When an airplane has an odd number of emergency exits, subtract one. Fifty percent of the remaining number of exits shall be opened and the associated slides (if applicable) deployed. All other exits must be blocked.

A. *Flight Attendants and Emergency Exits.* Any emergency exits assigned to flight attendants as part of their evacuation duties may be selected for use during the demonstration. These floor-level exits (doors) and non-floor-level exits (windows or plugs) may be used, provided they are designated as primary exits in the company's evacuation procedures. Ventral (stairs) and tailcone exits should not be used unless they are paired with another exit. If there is any doubt about which exits are paired, consult the Aircraft Certification Office responsible for the type certificate of the model.

B. *Blocking Exits.* The operator may propose the method of blocking and provide the logistical support, as applicable, for the proposed method. The FAA team, however, determines which exits are to be blocked. After the FAA team determines which exits shall be used, the team must exercise extreme care to ensure the operator does not obtain that information.

C. *Methods of Blocking Exits.* The following are examples of acceptable methods of blocking exits during an emergency evacuation demonstration:

(1) Position an inspector inside the airplane at each door or window exit before initiating the demonstration. When the evacuation is initiated, the inspectors positioned in front of exits to be opened shall remove themselves from that position as quickly as possible. Inspectors positioned in front of exits not to be used will block the exit by holding up their hands and stating in a distinct, clear manner, "This exit is blocked." This is considered the most effective method for blocking overwing exits.

(2) Tape a swatch of red cloth outside covering each door window and window exit. Secure to the covering a line long enough to reach the ramp or hangar floor. At the initiation signal, designated inspectors will pull the line to remove the covering from the door windows or window exits that are to be used and will leave the covering on the ones not to be used, i.e., "blocked."

(3) Outside the aircraft, rig red lights in front of the door or window exits. These red lights, when illuminated, can simulate a fire at those exits to be blocked. These lights must be illuminated simultaneously with the initiation signal.

D. *Coordination with Operator.* When a method of blocking the exits has been determined, the FAA team leader must notify the company's project coordinator of FAA concurrence with the method and

ensure the company will provide the required maintenance and logistical support to prepare the airplane for the demonstration.

23. INITIATION SIGNAL. The operator should propose a method which provides the same initiation signal for the participants inside the airplane and the FAA team members outside the airplane. The preferred method is for a company employee to interrupt the airplane's normal source of power by disconnecting or turning off an external source of power or a ground power unit, or by disconnecting or turning off the auxiliary power unit. Either of these actions provide a clear initiation signal in two ways:

- Inside the airplane, the flight attendants observe the extinguishing of the normal cabin lighting and the illumination of the emergency lighting system as their signal to commence the evacuation demonstration
- Outside the airplane, the FAA observers stationed at each exit and the team leader, who serves as the timekeeper, observe the extinguishing of the external lights (for example, taxi lights, anti-collision lights, position lights, and logo lights). This signal initiates the timing and necessary observation actions of the FAA team.

25. PRE-DEMONSTRATION INSPECTION. Before the demonstration, the FAA team must inspect the airplane and emergency equipment. The aircraft must be configured and equipped for takeoff, in accordance with the operator's manuals and procedures, to include the full passenger seating configuration and all the appropriate emergency equipment. Stands and ramps used to descend from the wing to the ground should be inspected for structural integrity and security. Other safety equipment such as mats or inverted life rafts may be placed on the ground to protect participants. No other equipment that is not part of the airplane's emergency evacuation system may be used to aid the participants in reaching the ground. If stands and ramps are used only for the exits that will be activated, they must not be positioned against the aircraft until all passengers and crewmembers have boarded the aircraft, all exits and doors have been closed, and all passengers and cockpit windows have been blocked out. This will prevent disclosure of the available emergency exits.

27. PRE-DEMONSTRATION BRIEFINGS. Before the actual demonstration, three separate briefings should be conducted for the crewmembers involved in the demonstration, the participants, and the FAA team.

A. *Crewmember Briefing.* The company's emergency evacuation project coordinator should provide crewmembers with certain information regarding the demonstration. The FAA team leader must attend this briefing to resolve any questions and ensure the following items are discussed:

- The purpose of the demonstration, which is to evaluate the adequacy of the company's emergency procedures and the effectiveness and reliability of the airplane's emergency equipment
- The initiation signal
- The significance of the 90-second time limit
- The signal to be used by the FAA team leader for stopping the demonstration. Any evacuation activity in progress shall immediately cease with a "stop" signal.
- The importance of safety during the demonstration, including crewmember responsibilities and safety observer duties and limitations

B. *Participant Briefing.* Before the demonstration, participants should be provided the following information by the company's project coordinator:

- The purpose of the demonstration is to evaluate how quickly the aircraft can be evacuated safely
- Participants are requested to pay attention to the flight attendant's instructions
- Individual safety is not to be compromised at any time during the demonstration

29. CONDUCTING THE DEMONSTRATION. The team leader shall ensure all pre-demonstration briefings and inspections are conducted before the actual demonstration. The following sequence of events represents an acceptable means, derived from many years of experience, for conducting the demonstration.

A. *Passenger Boarding.* The team leader shall advise the operator to board the passengers as routinely as possible and prepare for departure. No passenger may be assigned a specific seat unless the FAA team determines the assignments are in accordance with the operator's normal boarding procedures.

B. *Flight Attendant Preparations.* Flight attendants shall prepare for a normal departure in accordance with the operator's procedures. This includes closing and securing all exits, galleys, etc., and arming the emergency evacuation system for takeoff. They also

shall conduct a passenger briefing in accordance with FAR § 125.327 and the company's procedures. Flight attendants shall sit at their assigned positions with their restraint systems fastened.

C. *Carry on Luggage.* The carry-on luggage distributed by the FAA team consists of small suitcases, gym bags, airline flight bags, briefcase, etc., that will fit under a passenger seat. They must be filled with clothes or newspaper and should be placed in the main aisles, one bag per seat row for each aisle. Approximately one-half of the total average amount of carry-on baggage, blankets, pillows, and other similar articles should be placed in the aisles and emergency exit access ways to create minor obstructions.

D. *Flight Crew Preparations*

(1) Before the initiation signal, the flight crew shall accomplish all the appropriate checklists and configure the airplane for a normal takeoff. If the operator's emergency evacuation procedures require the wing flaps or leading edge lift devices to be placed in the fully extended position, the airplane will be so configured before the demonstration and before any stands and ramps are positioned. Wing flaps and leading edge lift devices shall not be repositioned until after the demonstration.

(2) After completing all required pre-takeoff actions, the pilot in command shall advise the FAA team leader, positioned forward of the nose of the aircraft, by ground interphone that the airplane is ready for takeoff.

E. *FAA Team Responsibilities*

(1) FAA observers assigned to exits that are to be used shall count the number of participants as they exit the airplane.

(2) After the termination signal, each observer shall note any continuing evacuation, which constitutes an unsatisfactory demonstration.

(3) FAA observers inside the airplane shall note any passenger or crewmember participants who remain in the airplane after the team leader's termination signal.

(4) Team members in the cabin shall assure that all equipment works properly, e.g., floor proximity lighting, emergency exit lights, etc.

(5) The FAA team should immediately confer on the observations of each team member and the overall conduct of the demonstration before advising the operator of the demonstration results. It is important that team members do not discuss the results of their observations with company personnel or participants. It is the responsibility of the FAA team leader to brief the appropriate company management personnel on the demonstration results.

31. DITCHING DEMONSTRATIONS

A. The ditching demonstration allows the FAA to evaluate the operator's ability to prepare the passengers, airplane, and ditching equipment safely for a planned water landing. The demonstration is conducted in accordance with the requirements specified in FAR § 125.189(c), FAR Part 125, Appendix B(b), and information and guidance provided in this section. During the demonstration the following areas are evaluated:

- Emergency Training
- Ditching Procedures
- Crewmember Competency
- Equipment Reliability and Capability

B. *Ditching Demonstration Regulatory Requirements.* FAR § 125.189(c) requires an operator planning to operate a land airplane in extended overwater flights to conduct a full-scale ditching demonstration when no other FAR Part 125 applicant or certificate holder has successfully demonstrated the proposed type and model. Partial aborted takeoff or partial ditching demonstrations are not allowed under FAR Part 125 except by deviation authority. A full-scale demonstration is conducted in accordance with the criteria in FAR Part 125 Appendix B(b), Ditching Demonstrations.

(1) *Location.* The demonstration must be conducted outside during daylight hours or in a lighted hanger if conducted at night.

(2) *Required Crewmembers.* All crewmembers required by the operator's emergency ditching procedures must be present.

(3) *Participants.* Participants are used in a ditching demonstration only when required by the operator's procedures to assist in removing and launching life rafts. Passengers shall not receive any instructions before the demonstration except for those required by the operator's manual.

C. *The Ditching Demonstration Process.* Ditching demonstrations are normally conducted after the satisfactory completion of the aborted takeoff emergency evacuation demonstration.

(1) *Ditching Demonstration Combined with Aborted Takeoff Demonstration.* If the operator plans to conduct the ditching demonstration in conjunction

with the emergency evacuation demonstration, the operator's demonstration plan must include information applicable to the ditching demonstration.

(2) *Ditching Demonstration Without Emergency Evacuation Demonstration.* If the operator must conduct a ditching demonstration but chooses not to conduct it with the emergency evacuation demonstration, the plan must be submitted at least 15 working days before the date of the actual demonstration.

(3) *Review of Ditching Plan.* When the ditching demonstration plan has been submitted and accepted by the FAA, the inspector must review the proposal thoroughly to ensure the following:

- The proposed demonstration meets the criteria in FAR § 125.189(c) and FAR Part 125, Appendix B(b)
- Emergency ditching procedures in the operator's manual have been accepted and must provide for safe operating practices

(4) *FAA Team Appointment.* If an aborted takeoff emergency evacuation demonstration is not conducted, the district office manager shall appoint a ditching demonstration team and a team leader.

(5) *Use of Passengers to Aid Post-Ditching Evacuation.* If the operator's procedures require the use of passengers, the necessary passengers must be aboard the aircraft and participate in the demonstration. The operator may not practice, rehearse, or describe the demonstration to the passengers. No participant may have taken part in this type of demonstration within the preceding six months.

(6) *Ditching Demonstration Time Limit.* The regulations do not specify a maximum time limit to complete a ditching demonstration. During an actual ditching situation, the airplane may remain afloat for a short time; therefore, it is imperative that emergency equipment, crewmember competency, and emergency procedures provide for rapid evacuation.

(a) During the demonstration, emphasis is on crewmember efficiency and ability in the time period between the decision to ditch and the actual water landing. Six minutes is considered the maximum time acceptable for ditching preparation, beginning with the ditching announcement and ending with the actual evacuation of the airplane.

(b) All participating crewmembers must have correctly donned life preservers and removed life rafts from stowage, if applicable. Crewmembers must be ready to evacuate within six minutes of the ditching announcement. Failure to do so constitutes an unsatisfactory demonstration.

(c) The FAA team leader begins timing when the captain issues the evacuation order. At the end of the six minute "planned ditching" period the crew must be prepared for a simulated water landing. After the simulated water landing, all life rafts will be removed from storage. This action is not specifically timed; however, the crewmembers must demonstrate competency in removing the rafts. Equipment must be capable of being removed for deployment in a reasonable amount of time. All life rafts and slide rafts will be launched and inflated. Crewmembers assigned to any inflated raft shall enter the raft and locate and describe the use of each item of emergency equipment within the raft.

(7) *Simulating a Ditching.* Either the airplane, a life-size mockup, or a floating device which accurately simulates the passenger compartment must be used for the demonstration (FAR Part 125, Appendix B (b)(6) (i) and (ii)). The FAA prefers to use the airplane for all ditching demonstrations. If the operator proposes to use a life-size mockup or a floating device to conduct the demonstration, approval must be granted by AFS-1. The operator's request must include specific reasons why the airplane cannot be used. AFS-1 will respond in writing to the operator, granting or denying use of a life-size mockup or floating device.

(8) *Ditching Emergency Exits.* Stands must be placed at each emergency exit and wing. FAR § 25.807(d) requires that, during type certification, ditching emergency exits must be above the calculated waterline that shall exist when the airplane is at rest in the water. This waterline and the designated ditching emergency exits are defined in the manufacturer's ditching document, which is part of the final, FAR Part 25 type-certification report. This waterline is where the tops of the stands shall be positioned.

33. EVALUATING EMERGENCY EVACUATION AND DITCHING DEMONSTRATIONS

A. During the observance of the aborted takeoff demonstration or the ditching demonstration, the FAA team evaluates the following:

- Crewmember compliance and effectiveness in performing assigned duties and responsibilities
- The flight crew's effectiveness in exercising command responsibilities and the coordination and communication between the flight crew and flight attendants

- Any shortcomings, deficiencies, or delays caused by the emergency equipment
- Adherence to applicable time limits (90 seconds for emergency evacuation and six minutes for ditching)
- Proper opening of all designated exits and slides. Designated exits and slides must be ready for use. If applicable, all passengers and crewmembers must properly evacuate within the appropriate time limit.
- Efficient removal of life rafts from storage
- Proper inflation of all designated life rafts or slide rafts
- The capability of each item of emergency equipment to perform its intended function

B. *Unsatisfactory Demonstrations.* Failure to meet the specified time limit is automatic grounds for an unsatisfactory demonstration.

(1) Depending on the severity of the deficiency, deficiencies in other areas (i.e., crewmember ineffectiveness, equipment malfunctions, etc.) that occur even when the time limits are met may be grounds for an unsatisfactory demonstration.

(2) If the cause of a relatively severe deficiency was improper company training, procedures, or maintenance, the demonstration should be judged unsatisfactory. For example, if all the emergency lighting failed to illuminate because of a maintenance problem, there are sufficient grounds for determining that the demonstration is unsatisfactory.

(3) Minor deficiencies can usually be resolved with responsible company personnel without having to declare the demonstration unsatisfactory.

C. *Satisfactory Demonstrations.* When the operator meets the specified time limits and any minor discrepancies are resolved, the demonstration is considered satisfactory.

D. *Reporting Requirements.* The team leader is responsible for the preparation and distribution of the emergency evacuation or ditching demonstration report. The report shall include at least the following:

- FAA Form 8430-1, Emergency Evacuation Demonstration Report. A form is required for each demonstration attempt. For example, if two demonstrations are unsuccessful and a third is satisfactory, three forms shall be completed and submitted as part of the demonstration report package.
- The passenger information briefing card required by FAR § 125.327(c)
- A diagram of the aircraft, including emergency equipment, exits, exits used, the number of approved passenger seats, and the location of seats used by flight attendants
- The name and specialty of each member of the FAA team

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the regulatory requirements of FAR Part 125.

B. *Coordination.* This task requires coordination with operations inspectors and the regional office.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR §§ 25.803(c) and 121.291
- Advisory Circular 121-24, Passenger Safety Information Briefing and Briefing Cards
- FAA Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8430-1 (Revised), Emergency Evacuation Demonstration Report

C. *Job Aids*

Figure 108-1, Passenger Participant Mix

Figure 108-2, Instructions For Completing FAA Form 8430-1

5. PROCEDURES

A. *Determine the Need for an Emergency Evacuation/Ditching Demonstration*

(1) If any of the following conditions apply, a demonstration is required:

- Initial introduction of a type and model airplane for carrying passengers, if more than 44 seats are installed
- Passenger seating capacity is increased by more than 5 percent over that previously demonstrated
- A major change is made in the cabin configuration, affecting the emergency evacuation of passengers
- An operator plans to use a land airplane in extended overwater operations

(2) If a demonstration is required, advise the operator or applicant in writing that a demonstration plan is required (Figure 108-1). Include a copy of the Plan Requirements Job Aid (Figure 108-2).

B. *Ensure that Emergency Evacuation/Ditching Procedures are Included in the Company Manual*

C. *Review Operator's Plan.* Use Figure 108-2 to determine if the plan submitted by the operator is satisfactory or unsatisfactory.

(1) If the operator must conduct a ditching demonstration and intends to do so with the aborted takeoff demonstration, the plan must include the information in Figure 108-2 and the following:

(a) Copies of the operator's manual relating to crewmember ditching duties and responsibilities

(b) A description of the applicable emergency equipment used for the ditching demonstration (life rafts, survival gear, etc.), including type and model

(c) The airplane type and model or a description of the mockup or floating device (simulating a passenger compartment) that will be used

(d) The proposed date, time, and location of the ditching demonstration

(e) The name and telephone number of the company's ditching demonstration project coordinator

(f) A list of all crewmembers who will participate in the demonstration

(2) The plan must also include a representative diagram of the aircraft with the following information:

(a) Location and designation of each exit

(b) Locations of emergency ditching equipment, including:

- Life rafts/slide rafts
- Survival radios
- Pyrotechnic signaling devices
- Passenger/crewmember life preservers or individual flotation devices

(3) If the plan is unsatisfactory, return the plan to the operator with a letter indicating the reasons the plan is not acceptable (Figure 108-3). Advise the operator in the letter that a revised plan must be received within 30 days of the date on the letter.

(4) When a plan is finally satisfactory, send a copy to the regional office.

D. *Assemble FAA Team Members.* Once an evaluation team has been assembled, a team leader will be designated. The team leader will accomplish the following:

(1) Provide specific team member assignments for the demonstration

(2) Distribute an airplane diagram to the inspectors showing their assigned locations for the demonstration

(3) Determine which emergency exits shall be opened and the manner in which other exits shall be blocked

(4) Select typical crewmembers to be used in the demonstration from the list provided by the operator

(5) Determine a signal to be used to initiate the demonstration

(6) Determine the signal to be used to terminate the demonstration

(7) Review the regulatory criteria

(8) Assign report writing requirements to members of the team

E. *Perform Pre-Demonstration Airplane and Emergency Equipment Inspection.* Use the Pre-Demonstration Inspection Job Aid (Figure 108-4). If there is any check in the "NO" column of the job aid, then enter the inspection as unsatisfactory. If the inspection is unsatisfactory, determine if the problem can be corrected immediately.

(1) If the problem can be corrected immediately, indicate satisfactory on the job aid and proceed with the pre-demonstration FAA team briefing.

(2) If the problem cannot be corrected immediately, reschedule the inspection and subsequent demonstration.

F. *Conduct Pre-Demonstration Briefing of FAA Team Members.* The team leader must brief FAA personnel on the following items:

- The objectives of the demonstration
- The initiation signal
- Assignments with regard to exits to be used or blocked
- The signal that stops the demonstration
- The importance of not discussing the results of the their observations with anyone other than the team leader

G. *Evaluate Operator's Pre-demonstration Crewmember Briefing.* Ensure that the operator's demonstration project coordinator includes the following items in the crewmember briefing:

- The purpose of the demonstration
- The initiation signal
- The significance of the time limits for full-scale evacuations, partial evacuations, or ditching, as applicable
- The signal to be used by the FAA team leader for stopping the demonstration. Any evacuation or ditching activity in progress shall immediately cease with a stop signal.
- The importance of safety during the demonstration, including crewmember responsibilities and safety observer duties and limitations

(1) If the briefing was satisfactory, proceed with the emergency evacuation demonstration or ditching demonstration, as applicable.

(2) If the briefing was not satisfactory, inform the demonstration project coordinator of the deficiencies. Have the crewmembers briefed again. When the briefing is satisfactory, proceed with the emergency evacuation demonstration or ditching demonstration, as applicable.

H. *Conduct Emergency Evacuation Demonstration*

(1) Tell the demonstration project coordinator to move the participants into position.

(2) Ensure that the flight attendants accomplish the following:

- Prepare for a normal departure in accordance with the applicant/operator's procedures
- Conduct a passenger briefing in accordance with FAR § 125.327 and the company procedures
- Sit at their assigned positions with their restraint systems fastened

(3) Distribute carry-on baggage, blankets, pillows, and items of clothing in the aisles and emergency exit access ways to create minor obstructions.

(4) Ensure each external door and exit and each internal door or curtain is in position for a normal takeoff.

(5) Ensure that the flight crew accomplishes the following:

- Completes all the appropriate checklists
- Configures the airplane for a normal takeoff
- Sits in normal positions with restraint systems fastened

(6) When advised that the crew is ready, ensure that all FAA team members and any company safety observers are ready and in position.

(7) Issue a warning signal, which must precede the initiation signal by 30 seconds. Then, issue the initiation signal.

(8) The team leader begins timing with at least two stopwatches (a primary and a backup) when the external airplane lights are extinguished.

(9) Issue a clearly audible signal terminating the demonstration at the end of the applicable time period.

I. *Conduct a Ditching Demonstration*

(1) In addition to the procedures for an emergency evacuation above, the ditching demonstration shall be conducted in the following manner:

(a) Before the ditching demonstration, inspect each item of emergency ditching equipment for compliance with appropriate airworthiness and other applicable directives

(b) The FAA team leader shall ensure inspectors and crewmembers are at their assigned positions. The team leader shall then advise the captain to commence the demonstration.

(c) The pilot in command shall initiate the demonstration by ordering the crewmembers to prepare for ditching

(2) The team leader shall begin timing with at least two stopwatches (a primary and a backup) when the pilot in command announces to prepare for ditching.

(3) Observe crewmembers preparation activities.

(4) At the end of six minutes, advise the pilot in command to announce that the airplane is in the water.

(a) When the ditching signal is received, each evacuee (crewmembers and participants, if applicable) must don a life preserver according to the operator's procedures and the flight attendant's briefing.

(b) Each life raft or slide raft must be launched and inflated according to the operator's procedures. All required emergency equipment must be placed in the rafts.

(c) Each evacuee must enter a life raft or slide raft. The crewmembers assigned to the raft shall locate and describe the use of each item of emergency equipment.

(5) Observe the deployment of the rafts.

(6) Observe crewmembers' ability to use the emergency equipment.

J. *Evaluate Emergency Evacuation or Ditching Demonstration.* Immediately confer with the FAA team on the observations of each team member and the overall conduct of the demonstration. If any item on any team member's Evaluation Job Aid is marked in the "NO" column, then judge the entire demonstration unsatisfactory.

K. *Advise Operator of Results.* When the team reaches agreement on the demonstration results, the team leader shall advise the operator.

(1) If the results are unsatisfactory, issue a letter of disapproval to the operator. The demonstration process must begin again.

(2) If the results are satisfactory, issue a letter of approval to the operator. Add the airplane to the operator's operations specifications.

L. *Complete Emergency Evacuation Demonstration Report, FAA FORM 8430-1 Revised* (See Figure 108-2).

M. *Disposition of Form.* Complete the form only through item 22. Have the District Office Manager

sign the original. Forward one copy to the Regional Office. Provide the operator with a copy. Place the original in the district office file on the operator.

7. TASK OUTCOMES. Completion of this task results in one of the following:

A. Completion of FAA Form 8430–1, indicating the emergency evacuation or ditching demonstration was satisfactory.

B. Completion of FAA Form 8430–1, indicating the emergency evacuation or ditching demonstration was unsatisfactory.

9. FUTURE ACTIVITIES. The record of any emergency evacuation or ditching demonstration will be reviewed in future surveillance.

FIGURE 108-1. PASSENGER PARTICIPANT MIX

Passengers	Age	Percentage of Full Seating Capacity
Adult Females	12-60	30% minimum
Adult Males	12-60	50% to 60%
Adult Males and Females (proportionate mix)	over 60	5% minimum
Children (prorated by age)	3-11	5% to 10%
Life-sized dolls	-	3%

FIGURE 108.2 INSTRUCTIONS FOR COMPLETING FAA FORM 8430-1

Complete FAA Form 8430-1 in accordance with the following instructions:

BLOCK NUMBER	DEMONSTRATION
1	Date and time of the demonstration (Use 24-hour time)
2	Results of the demonstration (Sat or Unsat)
3	Full and proper name of the airline and its four-letter designator
4	Complete aircraft make, model, series, and N number, for example: MD-9-80 (N 23AA)
5	Names and titles of FAA team members
6	Check the appropriate block for the type of demonstration. Both an emergency evacuation and ditching demonstration block may be checked, if applicable.
7	Check the reason(s) for conducting the demonstration.
8	Enter the total number of flight crew, flight attendants, and passengers aboard the aircraft.
9	Check the applicable regulations.
10	List each exit used and the number of persons who evacuated from that exit (Example: LF3/46).
11	Check the appropriate block for the type of slide used.
12	Enter the total elapsed time in the appropriate block.
13	Check the appropriate box which describes the aircraft location.
14-20	Check the appropriate box (Sat or Unsat).
21	Briefly describe how exits were blocked (example: exits were blocked with red lights).
22	Briefly describe how the demonstration was initiated (example: deactivated aircraft's normal source of power).
23	Remarks must reference the appropriate block number. More than one line may be used for one item. Comments must be listed for each unsatisfactory item.
24	The team leader signs this report and the district office manager initials it. A regional specialist shall review the report, sign and date Block 25, and forward a complete copy of the report to AFS-1.

CHAPTER 109. APPROVE FAR PART 125 MINIMUM EQUIPMENT LIST/REVISION

Section 1. Background

1. WPMS ACTIVITY CODES

A. Maintenance: 3312 (initial)/3313 (revision)

B. Avionics: 5312 (initial)/5313 (revision)

3. OBJECTIVE. This chapter describes the process used to evaluate and approve a Minimum Equipment List/Revision.

5. GENERAL

A. A Minimum Equipment List allows an operator to continue a flight or series of flights, with certain equipment inoperative, to a place where repairs can be made. For the operator to be able to use the Minimum Equipment List, the procedural requirements for the equipment loss must be met. In the absence of an approved Minimum Equipment List, further flights will be suspended until the repair or replacement of non-functioning equipment is accomplished.

(1) The failure of any instruments or equipment required or installed in the aircraft must be compensated for by controlled conditions providing an acceptable level of safety. Controlled conditions include the following:

- Restrictions for certain flight operations
- Changes to in-flight operational procedures
- Temporary deactivation of components

(2) The operator, through a controlled program, must make repairs within the time frame referenced by current guidance and the operator's approved maintenance program. Although the approved lists provide for specific time limitations for certain items, the operator should repair or replace the affected item before the time limit expires.

B. Many aircraft have installed equipment that is not essential for safe operations under all operating conditions. Much of this equipment is required for certain kinds of operations, such as night, instrument flight rules (IFR), or operation in icing conditions. Other equipment, such as entertainment systems and galley equipment, may be installed for convenience. If some deviation from the type certificated configuration and equipment were not permitted, the aircraft could not be flown unless all such equipment was operable and/or installed.

(1) The Minimum Equipment List and the Configuration Deviation List should be carried on board the aircraft.

(2) No flight can take off from any airport with inoperative equipment other than the items provided for in the Minimum Equipment List and/or Configuration Deviation List.

7. REDUNDANT EQUIPMENT ITEMS. Most aircraft have some redundancy of systems and equipment to provide both schedule reliability and the necessary level of safety. The FAA encourages aircraft manufacturers and operators to install additional items of equipment to serve as alternatives for required instruments or equipment under certain conditions.

9. AIRCRAFT SYSTEMS. The Minimum Equipment List must address specific aircraft systems to ensure that airworthiness is not degraded.

A. Where the Master Minimum Equipment List states for a particular item "as required by the FAR", the operator's Minimum Equipment List should specify in the remarks column the conditions under which the specific item may be inoperative. This will provide definitive guidance to the maintenance and operations personnel as to which equipment may be inoperative for a particular operation.

B. The operator's Minimum Equipment List and Configuration Deviation List may be more restrictive than the Master Minimum Equipment List. Under no circumstances may the operator's lists be less restrictive.

(1) The operator's lists must be compared item by item with the current Master Minimum Equipment List and Aircraft Flight Manual for the subject aircraft.

(2) Placards, alternate operating procedures, and instructions for the isolation of malfunctions must be technically correct.

11. PRINCIPAL INSPECTOR RESPONSIBILITIES. The Principal Operations Inspector must coordinate with maintenance and avionics inspectors on approval and acceptance of Minimum Equipment Lists and Configuration Deviation Lists.

13. MASTER MINIMUM EQUIPMENT LISTS. The Master Minimum Equipment List serves as a guideline in the development of a Minimum Equipment List.

A. Master Minimum Equipment Lists are developed by Flight Operations Evaluation Boards.

B. Instruments and items of equipment that will be covered by a Minimum Equipment List include:

- The minimum required for type certification
- The minimum required by the operating rules
- Any optional items not evaluated in an inoperative condition during type certification flight test
- Equipment considered as part of the type design

15. CONFIGURATION DEVIATION LISTS. Under an amendment to the type certificate, the Aircraft Certification Office (ACO) may approve the operation of aircraft with missing secondary airframe and engine parts. To qualify, the aircraft must be certificated under FAR Part 25 or CAR 4b and intended for use under the operating rules of FAR Part 125.

A. The aircraft manufacturer develops the Configuration Deviation List and submits it to the Aircraft Certification Office for approval. The approved list is incorporated into the limitations section of the Aircraft Flight Manual as an appendix.

B. The Configuration Deviation List must be a part of the operator's manual system.

17. REFERENCE AND MANUAL REQUIREMENTS

A. The Standard Minimum Equipment List Preamble will be used for all Minimum Equipment Lists.

B. The operations and maintenance procedures in the operator's Minimum Equipment List must reference instructions in the operator's manual.

C. The operator's manual must contain instructions governing the use of the Minimum Equipment List and Configuration Deviation List.

D. *Page Control System.* The operator must have a page control system to show that the Minimum Equipment List and Configuration Deviation List are current and complete.

E. *Revisions.* Changes to an operator's Minimum Equipment List and Configuration Deviation List may affect training programs and the instructions in the operator's manual. Both the initial lists and any subsequent changes must be approved by the Principal Operations Inspector or the manager of the Certificate Holding District Office, with the concurrence of the assigned avionics and maintenance inspectors.

F. The operator's maintenance manual must include instructions and provisions appropriate to the use of the Minimum Equipment List and Configuration Deviation List.

G. Procedures must be established for advising the pilot in command of any inoperative or removed items prior to a flight.

19. DELETING ITEMS FROM THE MINIMUM EQUIPMENT LIST/CONFIGURATION DEVIATION LIST. Principal inspectors may act to delete certain items from the operator's Minimum Equipment List and Configuration Deviation List when repairs or replacements are not accomplished according to approved procedures.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Part 125
- Knowledge of Minimum Equipment List Preamble

B. *Coordination.* This task requires close coordination between operations and airworthiness staffs. Coordination may also be required with the Flight Operations Evaluation Board, Flight Operations Policy Board, and regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Section 604 of the Federal Aviation Act of 1958, amended
- FAR § 125.201
- Master Minimum Equipment List for subject aircraft

- Operator's Aircraft Maintenance Manual for subject aircraft
- Approved Aircraft Flight Manual
- Operator's General Maintenance Manual
- Operator's Aircraft Operating Manual for subject aircraft
- Operator's General Operations Manual
- Order 8700.1, Operations Inspector's Handbook
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Operator's Minimum Equipment List/ Configuration Deviation List*

(1) Coordinate with principal inspectors.

(2) Review the proposed lists.

(3) If this task is performed as part of an original certification, review the Schedule of Events to ensure this task can be accomplished according to the schedule.

B. *Evaluate Minimum Equipment List*

(1) Ensure the operator's proposed Minimum Equipment List addresses all items listed in the Master Minimum Equipment List. Ensure agreement between the lists in the "Number Required" sections.

(2) Ensure that the number of equipment items listed in the "Number Installed" column agrees with the number actually installed according to the current airplane equipment list.

(3) Ensure that the "Remarks or Exceptions" column includes the following:

- All restrictions and special provisions of the Master Minimum Equipment List
- All maintenance procedures required, identified by an "M"
- A specific reference to the document containing maintenance procedures

(4) Review all maintenance procedures described in the "Remarks and Exceptions" column for completeness.

(5) Ensure that the operator has a revision system for the proposed Minimum Equipment List to guarantee that changes to the Master Minimum Equipment List will be reflected.

(a) Instructions for the use of the revision system must be provided.

(b) The Minimum Equipment List must be current. The document must contain a List of Effective Pages.

(6) Ensure that the Standard Minimum Equipment List Preamble is used in its entirety, without modification.

(7) Ensure that the list includes a Table of Contents, and that pages are numbered according to the applicable Air Transport Association numbering system (e.g., Air Conditioning Systems, page 21-1, 21-2, 21-3, etc.).

(8) Ensure that all abbreviations and symbols used in the document are defined.

C. *Ensure Required Procedures Are Developed and Included in the Operator's Maintenance Manual*

(1) Ensure the operator's maintenance manual includes the following:

- A list of personnel responsible for Minimum Equipment List management
- A list of personnel authorized to defer maintenance in accordance with the Minimum Equipment List
- A description of personnel training requirements for Minimum Equipment List procedures
- Procedures for authorizing personnel to defer maintenance on the Minimum Equipment List
- Instructions for placarding of inoperative/ removed items, and samples of placards

(2) Ensure the operator's maintenance manual contains procedures for control of Minimum Equipment List deferred maintenance items, including:

- Parts procurement and distribution for corrective action of deferred items

- Scheduling of corrective action, describing when and where maintenance will be performed
- Coordination between the operator's maintenance and flight departments for possible restrictions, exceptions, and procedures
- Reporting and recording of the deferral and subsequent corrective maintenance pertinent to both maintenance and flight departments

D. *Analyze Findings.* Determine what, if any, corrective action is required. Provide the Principal Operations Inspector with the findings.

E. *Schedule and Conduct Meeting.* If deficiencies are discovered during the review, coordinate with assigned principal inspectors to schedule a meeting with the operator to discuss the problem areas. Brief the operator on the findings and discuss how to resolve any deficiencies.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in issuance of a letter of authorization in accordance with FAR §§ 125.201(b)(2) and one of the following:

- For certification, the applicant's Minimum Equipment List will be approved by initial and date on each page
- For a revision, the operator's Minimum Equipment List will be revised according to the operator's approved revision procedures
- A formal letter to the operator/applicant, stating the reasons for disapproval of the Minimum Equipment List or Revision

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 110. EVALUATE FAR PART 125 OPERATOR'S WEIGHT AND BALANCE CONTROL PROGRAM

Section 1. Background

1. WPMS ACTIVITY CODES

- Maintenance: 3328/3329

3. OBJECTIVE. This chapter describes the process used to evaluate an operator/applicant's weight and balance control program.

5. GENERAL

A. Approved weight and balance control procedures are the only means for an operator/applicant to authorize the use of other than known weights for crew, passengers, baggage, or cargo. The weight and balance control program, including loading schedules and charts, are approved on operations specifications by the principal maintenance inspector. This program must be included in the operator/applicant's Policies and Procedures Manual.

B. The operator/applicant may develop and submit for approval any method or procedure by which it can show that an aircraft:

- Is properly loaded according to approved configuration (loading schedules or charts)
- Will not exceed authorized weight and balance limitations during all ground and flight operations
- Will be periodically reweighed and its data re-evaluated
- Will have its data recalculated, if changes necessitate

C. The operator/applicant's weight and balance control procedures may either be an independently controlled document which includes all the instructions and procedures for maintenance, operations, and baggage/cargo control, or it may be included in the manual.

7. ESTABLISHED WEIGHT AND CENTER OF GRAVITY (CG) LIMITS

A. During type certification, the aircraft manufacturer must flight test weight and balance under all conditions and establish center of gravity limits. These limits are approved by the FAA. Type certificate data sheets contain information needed to determine weight and balance limits.

B. If an operator/applicant proposes an unusual or complex weight and balance program, or a program substantially different from the Approved Aircraft Flight Manual or Pilot Operating Handbook, regional assistance should be requested.

9. LOADING PROCEDURES

A. *Use of Average Passenger Weights.* For aircraft operated under FAR Part 125, average passenger and baggage weights may be authorized.

(1) Average weights may be determined by actually weighing passengers and baggage and documenting the weights. Average weights must be based on acceptable data collected during actual operations.

(2) Generally, average weights for operations in warm climates are lighter than those in colder climates. In establishing average passenger and baggage weights, operating environment must be considered. For example, clothing worn or carried in colder climates may affect the established weight.

NOTE: The average passenger and baggage weights in Advisory Circular 120-27, as amended, do not comprise a regulatory requirement or authorization. The information is guidance only and must be evaluated for applicability to individual operators.

B. *Non-Standard Weight Groups.* Average weights are not suitable for groups that tend to be heavier or lighter than the average. The operator/applicant must use actual weights for loading non-standard weight groups and their baggage (such as athletic squads, military personnel, and children's groups).

C. *Carry-on Baggage.* Procedures must be provided for controlling carry-on baggage.

(1) Carry-on baggage must be limited to articles that may be placed in overhead compartments or under seats. No article may be placed in an overhead compartment that causes the weight limit of the compartment to be exceeded.

(2) Carry-on baggage weight must either be accounted for in the same manner as checked baggage or be added to the passenger weight.

(3) Operators using average weights for computing weight and balance should re-evaluate carry-on baggage weight at least once per year.

11. AIRCRAFT WEIGHTS

A. *Weighing of Aircraft.* Aircraft operated under FAR Part 125 are required to be weighed at least once every 36 calendar months. Both the operator/applicant's operations specifications and manual must reflect this requirement.

B. *Use of Fleet Weights.* A fleet generally is considered to be three or more aircraft of the same model and configuration. This allows realistic averages to be determined.

(1) Aircraft operating under fleet weights must be weighed in accordance with the operator/applicant's instructions. The operating weights and center of gravity position must be within established limits. The use of fleet weights is authorized by operations specifications.

(2) An operator's empty fleet weight is determined by averaging aircraft weights as follows:

Fleet size	Weighing policy
3 aircraft	Weigh all aircraft
4 to 9 aircraft	Weigh 3 aircraft plus at least 50 percent of the number over 3
Over 9 aircraft	Weigh 6 aircraft plus at least 10 percent of the number over 9

C. Scales used to weigh passengers, aircraft, cargo, and baggage must be calibrated and traceable to a national standard. Calibration must be performed in accordance with the civil authority for weights and measures having jurisdiction over the area in which the scales are used. The frequency of testing depends on use and handling.

13. CONTRACTORS. An operator/applicant may use a contractor to weigh items required to be weighed. However, the operator/applicant is responsible for ensuring the contractor complies with the operator/applicant's approved weight and balance control program. This includes ensuring scales are calibrated and tested in accordance with the operator/applicant's Policies and Procedures Manual.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 125
- Inspector performing this task must be a Maintenance Inspector
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Previous experience with FAR Parts 121, 125, or 135 weight and balance programs

B. *Coordination.* This task requires close coordination between maintenance and operation inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 43, and 91
- Advisory Circulars 120-27 and 91-23
- Approved Flight Manuals
- Approved Weight and Balance Manuals
- Type Data Sheets and Aircraft Specifications
- Supplemental Type Certificates
- Aircraft Equipment Lists
- Aircraft Maintenance Records (Weight and Balance Records)
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Coordinate With Operator/Applicant.* Operator/applicant must submit the following for review:

- Manual or revision
- Weight and Balance Program document (if not part of manual)
- Operation Specifications Part E
- Pertinent company procedures
- Instructions for completing forms used in aircraft weight control and aircraft loading
- Mathematical justification for loading provisions or schedules

B. *Review the Operator/Applicant's Manual/Program Document.* The manual must include procedures, levels of authority, and information appropriate to FAR Part 125. In addition, the following must be included:

(1) Manual introduction, to include:

- Description of the philosophy and the goals of the manual
- Description of the division of contents between volumes, if more than one volume
- List of effective pages including dates

(2) Manual revision and distribution procedures, to ensure:

- Current information is provided to all manual holders
- Manuals are available to maintenance, operations and ground personnel and are furnished to the Certificate Holding District Office

(3) Definitions of all significant terms used in the program. The definitions must reflect their intended use. Acronyms or abbreviations unique to the manual must also be defined.

(4) Description of the organizational unit responsible for the control and maintenance of the weight and balance program, to include:

- Definitions of lines of authority
- Description of the support structure

(5) Job descriptions for all elements

(6) Training programs that include the following:

- Maintenance personnel
- Operations and dispatch personnel
- Ground handling personnel

(7) A means of documenting and retaining individual training records

(8) Procedures for:

- Determining standards and schedules for calibration of aircraft scales
- Pre-weighing instructions and requirements
- Determining which aircraft are to be weighed
- Establishing and maintaining equipment lists for each aircraft
- Recording type and serial number of scale used, airplane weight, residual fluids, and scale tare weights
- Initial weighing of aircraft
- Monitoring and adjusting individual aircraft or fleet, empty weight and center of gravity
- Periodic reweighing of aircraft
- Ensuring aircraft are configured in accordance with approved data

(9) A loading schedule consisting of graphs/tables or a special loading schedule for a calculator or computerized program. These schedules must ensure pertinent data is available concerning all probable weight and balance conditions of the aircraft.

(10) A load manifest on which all required loading information shall be entered by personnel responsible for weight and balance control, including procedures for:

- Completing the load manifest
- Ensuring load manifest is carried on the aircraft
- Retaining the load manifest for the time periods specified in the Federal Aviation Regulations
- Distribution of the load manifest in accordance with FAR § 125.383

(11) Procedures to be used by crew members, cargo handlers, and other personnel concerned with aircraft loading, for the following:

- Distribution of passengers

- Distribution of fuel
- Distribution of cargo
- Verification and acceptance of actual cargo weights as listed on a bill of lading
- Restriction of passenger movement during flight, if applicable
- Hazardous material requirements, if applicable

(12) A drawing of each cargo and/or passenger configuration to include emergency equipment locations

(13) Mathematical justification for loading provisions or schedules. This may be included under separate cover and not as part of the company manual.

(14) An alternate procedure for allowing manual computations, if a computerized weight and balance program is utilized

(15) Procedures used for determining passenger, crew, and baggage weights for domestic and/or international flights

(16) Procedures for a weight range system, if applicable, that ensures:

(a) The range is typical of passengers carried on similar operations

(b) Computations for critical load considerations support the ranges

(c) Personnel responsible for loading the aircraft are required to prepare appropriate loading records

(d) The system includes methods for loading passengers whose weights are outside the range

(e) Loading records indicate the number of passengers within the stated range and account for passengers that do not fall within the range

(17) A system for loading nonstandard weight groups, such as athletic squads or military groups and their baggage, which must utilize actual weights for both passengers and baggage

(18) Procedures to verify actual weight of cargo

(19) Standards and schedules for calibration of commercial scales used to determine baggage/cargo weights

(20) Procedures to ensure that carry on baggage is limited to articles which may be placed in overhead compartments or under seats. Carry-on baggage weight must be accounted for in the same manner as checked baggage or added to the average passenger weight.

C. *Review Operator/Applicant's Operations Specifications.* Ensure that the operations specifications reference the following:

(1) Aircraft make/model/series

(2) Type of loading schedule

(3) Loading schedule instructions for:

- Passenger and crew (average or actual weight)
- Baggage (average or actual weight) and cargo (actual)
- Nonstandard weight groups

(4) Periodic weighing schedule and procedures

(5) Weight and balance control procedures

NOTE: The above items must be referenced by indicating the locations of the same items in the operator/applicant's manuals, e.g. chapter, section, page.

D. *Analyze the Results.* Upon completion of review, analyze the results and determine whether the operator/applicant's manual and operations specifications meet all requirements.

E. *Meet With Operator/Applicant.* Discuss discrepancies with the operator/applicant and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of the task will result in an issued or amended operations specifications.

C. Approve operations specifications in accordance with Vol. II, Ch. 107

D. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 111 EVALUATE FAR PART 125 OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3634

B. *Avionics*: 5634

3. OBJECTIVE. This chapter describes the process used to evaluate an applicant's procedures for utilizing, preserving, and retrieving the maintenance records required by FAR Part 125.

5. GENERAL. To comply with the maintenance recording requirements of the Federal Aviation Regulations, the applicant's company manual, as defined in FAR §§ 125.71, 125.75, and 125.249, must identify and contain procedures to complete all applicable documents as specified in FAR Parts 91 and 125.

A. *Current Airworthiness Directive Status.* The applicant must keep a record showing the current status of applicable Airworthiness Directives, including the method of compliance.

(1) This record must include the following:

- List of Airworthiness Directives with revision dates applicable to the type of airplane
- The method of compliance
- The time in service, or the cycles, and/or the calendar date when the next action is required for a recurring Airworthiness Directive

(2) An acceptable method of compliance should include a reference to one of the following:

- A specific portion of the Airworthiness Directive
- A manufacturer's service bulletin, if the bulletin is referenced in the Airworthiness Directive
- Another document generated by the person performing the maintenance that shows compliance with the Airworthiness Directive, such as an Engineering Order (EO) or Engineering Authorization (EA)

NOTE: Alternative methods of compliance must be approved by the appropriate FAA Engineering Directorate and will apply only to the applicant making the application.

(3) The document that contains the current status of Airworthiness Directives/method of compliance may be the same as the record of Airworthiness Directive accomplishment. Both the record of Airworthiness Directive accomplishment and the record of Airworthiness Directive method of compliance must be retained with the airplane records.

B. *Total Time in Service Records*

(1) FAR Part 125, through the applicable requirements of FAR Part 91, requires the total time in service records for airframes, engines, and when applicable, propellers. Total time in service records may consist of the following:

- Airplane maintenance record pages
- Designated cards or pages
- A computer listing
- Other methods as described in the applicant's company manual

(2) Required total time in service records must be retained with the airplane records. If the airplane is sold, the records must be transferred to the purchaser.

C. *Life Limited Parts Status Records.* Records must be kept for components of the airframe, engine, propellers, and appliances that are identified to be removed from service when their life limit has been reached.

(1) The current life limited status of the part is a record indicating the life limit remaining before the required retirement time of the component is reached. This record must include any modification of the part as directed by Airworthiness Directives, service bulletins, or manufacturer/applicant initiated product improvements.

(2) The following are not considered a current life limited status record:

- Work orders
- Maintenance installation records
- Purchase requests
- Sales receipts
- Manufacturer's documentation of original certification
- Other historical data

(3) Whenever the current status of life limited parts records cannot be established and the historical records are not available, the airworthiness of that product cannot be determined and it must be removed from service.

(4) Current status of life limited parts records must be retained with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

D. *Airworthiness Release/Approval for Return to Service.* After performance of maintenance, preventive maintenance, or alterations on an airplane, an airworthiness release or an approval for return to service must be completed before the airplane is operated.

(1) Using the procedures described in the company manual, the applicant must be able to retain all the records necessary to show that all requirements for approving the airplane for return to service have been met.

(2) As applicable, the applicant must identify the following:

- Those persons authorized to perform inspections
- Those persons authorized to sign an airworthiness release

(3) These personnel must be appropriately certificated as required by FAR Part 43.

E. *Overhaul Records*

(1) A record must be made whenever an item of airplane equipment is overhauled and must include the following:

- A description of the work performed or reference to data acceptable to the Administrator
- The name of the person performing the work
- The date of completion of the work performed
- The signature and certificate number of the individual approving the airplane for return to service

NOTE: A return to service tag does not constitute an overhaul record, although it may be used to reference the overhaul records.

(2) The owner must retain the record and be able to make it available to the Administrator upon demand. The overhaul records must be retained until the work is repeated or superseded by work of equal scope and detail.

F. *Current Airplane Inspection Status.* The applicant must retain a record identifying the current inspection status of each airplane.

(1) This record shall show the time in service since the last inspection required by the inspection program under which the airplane, engines, emergency equipment, propellers, and appliances are maintained.

(2) Records of inspection work packages or routine and non-routine items generated while performing any part of the inspection program must be retained until the work is repeated or superseded by work of equal scope and detail.

G. *Major Repair and Major Alteration Records.* Applicants must retain the records for each major repair/-alteration made to an aircraft, including work done on the following:

- Airframe
- Engine
- Propeller
- Appliance

(1) Major repair records must be retained until the work is repeated or superseded by other work, or for one year after the work is accomplished.

(2) Major alteration records must be retained with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 91 and 125
- Successful completion of the Airworthiness Inspectors Indoctrination String Course or equivalent

B. *Coordination.* This task requires coordination with the applicant and may require regional coordination.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, and 145
- Applicant's Company Manual

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review The Applicant's Maintenance Manual Recordkeeping Procedures*

(1) Ensure that procedures exist in the applicant's manual that create a suitable system for initiating, preserving, and retrieving the required records.

(2) Ensure that all records will contain the following information, as applicable:

- Description of the work performed (or reference to data acceptable to the Administrator)
- The name of the person performing the work with that person's certificate type and number
- The name of the person approving the work with that person's certificate type and number

B. *Review the Applicant's Recordkeeping System.* Review the applicant's recordkeeping system to ensure that the requirements of FAR Parts 91 and 125 will be met for the following:

(1) *Airworthiness releases/approval for return to service records.* Ensure the following:

(a) Record requirements of FAR § 125.411 will be met

(b) Approval for return to service records will be retained for one year after the work is performed or until repeated or superseded by other work

(c) Airworthiness releases will be retained for at least 60 days

(2) *Total time in service records*

(a) Evaluate the method of recording total time in service of the airframe, engine, and propeller.

(b) Ensure that procedures are in place to retain the records with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

(3) *Life Limited Parts Status*

(a) Ensure that the applicant has procedures for tracking the current status of life limited parts for each airframe, engine, propeller, and appliance, to include the following information:

- Total operating hours (including calendar time)/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(b) Ensure that procedures are in place to retain the records with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

(4) *Time Since Last Overhaul Records.* Ensure that procedures exist for updating this document from the overhaul records and for ensuring that this document accompanies the airplane upon sale.

(5) *Overhaul Records*

(a) Ensure that the manual describes how the applicant will document the last complete overhaul of each airframe, engine, propeller, and appliance. The overhaul record should include the following information:

- Disassembly data
- Dimensional check data
- Replacement parts list
- Repair data
- Reassembly/test data
- Reference to data including overhaul specifications

(b) Ensure that these records will be retained until the work is repeated or superseded by work of equivalent scope and detail.

(6) *Current Airplane Inspection Status*

(a) Evaluate the method the applicant will use to record the time in service since the last inspection.

(b) Ensure that procedures are in place to retain the records with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

(7) *Airworthiness Directive Compliance.* Evaluate how the applicant will comply with the recordkeeping requirements of the Airworthiness Directives, including emergency Airworthiness Directives. The procedures must generate a record that contains the following data:

(a) *Current status.* Ensure that the current status data will include the following:

- A complete list of Airworthiness Directives applicable to the airplane
- The date and time of compliance
- The time and/or date of the next required action (if a recurring Airworthiness Directive)

(b) *Method of compliance.* Ensure that this data will include either a record of the work performed or a refer-

ence to the applicable section of the Airworthiness Directive.

NOTE: Ensure that the records will be retained with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

(8) *Major Repair Records.* Ensure that the applicant will prepare and maintain a record for each major repair to an airframe, engine, propeller, or appliance.

(a) Ensure that this record will include the following information:

- A description of the work performed
- The FAA-approved data used to perform the work
- The date of completion of the work performed
- The signature and certificate number of the person approving the airplane for return to service

(b) Ensure that these records will be retained until the work is repeated or superseded, or for one year after the work is performed.

(9) *Major alteration records.* Ensure that the applicant will prepare and maintain a record for each major alteration to an airframe, engine, propeller, or appliance.

(a) Ensure that this record will include the following information:

- A description of the work performed or data acceptable to the Administrator
- The date of completion of the work performed
- The signature, type of certificate, and certificate number of the person approving the airplane for return to service

(b) Ensure that these records will be retained with the airplane indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

C. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Successful completion of this task will result in the following:

- A letter to the applicant confirming the results of inspection
- Continuation of the certification process

C. *Document the Task.* File all supporting paperwork in the applicant's office file.

9. FUTURE ACTIVITIES. Schedule follow-up inspections as required.

[CHAPTERS 112 THROUGH 124 RESERVED]

CHAPTER 125 INTRODUCTION TO FAR PART 129

1. GENERAL. FAR Part 129 prescribes rules governing the operation within the United States of foreign air carriers appropriately authorized by the Civil Aeronautics Board or the Department of Transportation (DOT). In 1987, FAR Part 129 was amended to require FAA approval of maintenance programs to the standards of Annex 6 of the International Civil Aviation Organization (ICAO) for U.S.-registered aircraft engaged in common carriage by foreign air carriers/persons. In addition, amended FAR Part 129 allows for FAA approval of an MEL for these aircraft if the operator requests it. FAR Parts 43, 91, 121, and 125 were concurrently amended to accommodate the amendment to FAR Part 129. The inspector is advised to become familiar with ICAO Annex 6, Part I and FAA Advisory Circular 129-4, Maintenance Programs for U.S.-Registered Aircraft Under FAR Part 129, which explains how the ICAO standards relate to FAR Part 129.

3. BACKGROUND

A. *International Civil Aviation Organization.* In 1944 the International Civil Aviation Organization (ICAO) was established with the signing of the Chicago Convention. As an annex to the Chicago Convention, the "International Standards and Recommended Practices" was established as a set of standards similar to the Federal Aviation Regulations. A member state may adopt different standards but is obligated to notify the Organization of the differences. International Civil Aviation Organization standards represent minimum international standards and do not replace national regulations. ICAO Annex 6, Part I provides standards for maintenance of aircraft used in air transportation.

B. *FAA Authority and Role.* The predominant operating rules governing foreign operators are contained in FAR Parts 91 and 129. However, if a foreign operator uses U.S.-registered aircraft, other Federal Aviation Regulation Parts will apply, e.g. FAR Part 43.

NOTE: The U.S. registration does not convey any additional authorization to the foreign air carrier beyond that granted in its operations specifications.

C. *FAR Part 129 Maintenance Program Background.* FAR Amendment 129-14, effective February 14, 1988, requires that each U.S.-registered aircraft operating under FAR Part 129 be maintained under a maintenance program approved by the Administrator. In addition, the amendment includes U.S.-registered aircraft operated in common carriage by foreign persons outside of the United States. FAR Parts 43, 91, 121, 125 and 135 were amended accordingly.

(1) Maintenance programs for U.S. registered aircraft were previously approved under FAR Part 91 and occasionally FAR Part 125. These were suitable aircraft programs but they did not encompass the administrative requirements of ICAO Annex 6. The purpose of amendment 129-14 was for the FAA to ensure, by program approval, that the programs in use by foreign air carriers satisfy the U.S. committment to ICAO.

(2) FAA Advisory Circular 129-4 was developed to provide guidance on what constitutes an acceptable maintenance program. Included in AC 129-4 are the applicable ICAO standards. [See supplementary information in the Federal Register (Final Rule Volume 52, No. 102, 5/28/87).]

D. *FAR Part 129 Maintenance Program and Its Limits.* The standard for maintenance programs approved under FAR Part 129 is ICAO Annex 6, Part I. This annex prescribes, in broad terms, a continuous airworthiness maintenance program. The regulations provide for a "maintenance program". Continuous airworthiness maintenance programs approved by the country holding the certificate or authority of operation for its registered aircraft differ from maintenance programs approved by the FAA for U.S.- registered aircraft under FAR Part 129. The significant difference is that maintenance programs for aircraft registered to the foreign country of operation usually include the authority to perform maintenance on those aircraft. FAA approved programs for U.S. registered aircraft under FAR Part 129 do not. Therefore, maintenance standards and administration of the maintenance function are approved under FAR Part 129 but performance of maintenance of the aircraft is governed by the provisions of FAR Part 43.

E. *Department of Transportation (DOT) Authority and Role.* Economic authority must be obtained from DOT before a foreign operator may conduct any passenger or cargo operations to and from the United States.

F. *Aircraft Size.* FAR § 129.14 and AC 129-4 apply to all size aircraft. The requirements of the advisory circular may have to be scaled down for small aircraft.

5. RELATIONSHIPS WITH FOREIGN NATIONALS

A. Inspectors should exercise tact and diplomacy during any contact with representatives of the various foreign government agencies and foreign air carriers. Inspectors should provide any reasonable assistance requested.

B. Before scheduling any official visit to a foreign country, the inspector should coordinate the trip with the foreign air carrier and advise the appropriate Foreign Civil Aviation Authority (FCAA) and U.S. Embassy of the purpose and details of the planned visit. If appropriate, the inspector should invite a representative of the FCAA to participate.

C. In cases when the subject of a meeting may be controversial, the responsible regional office will be notified.

D. The FCAA should be requested to participate in the development of maintenance programs required by FAR Part 129. Their concurrence with those programs should be sought but is not mandatory. This should be a routine matter and does not require regional or higher level notification.

E. Particular care should be taken to explain any FAR Part 129 related discrepancy to the foreign air carrier. Items not regulated by the applicable Federal Aviation Regulations or operations specifications shall not be inspected unless a specific written request has been made by the foreign air carrier, the FCAA, or the Administrator.

7. FAR PART 129 OPERATIONS SPECIFICATIONS. The district office holding the foreign air carrier's operations specifications shall maintain those operations specifications.

9. FOREIGN AIR CARRIERS OPERATING U.S. REGISTERED AIRCRAFT. The district office responsible for the maintenance program shall maintain the approved maintenance program, the Minimum Equipment List, and other records.

CHAPTER 126 EVALUATE A FOREIGN OPERATOR OPERATING U.S.-REGISTERED AIRCRAFT

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3302/3312

- Revision MEL: 3313

NOTE: THE WPMS codes for evaluating maintenance programs are to be developed.

B. *Avionics:* 5302/5312

- Revision MEL: 5313

3. OBJECTIVE. This chapter provides guidance in evaluating a maintenance program and the Minimum Equipment List (MEL) for a foreign operator of U.S.-registered aircraft.

5. GENERAL

A. *Definitions*

(1) *Assigned inspector.* The FAA inspector assigned compliance responsibility for maintenance programs approved under FAR § 129.14.

(2) *Expository manual.* A manual system, representative manual, or specific portions of manuals that identify the approved maintenance program.

B. *Applicable Operations.* Any operation of U.S.-registered aircraft engaged in common carriage by a foreign air carrier/person is subject to the Minimum Equipment List and maintenance program requirements found in FAR § 129.14. This includes arrangements in which a manufacturer supplies an interim delivery U.S.-registered aircraft.

7. MAINTENANCE PROGRAM REQUIREMENTS. The requirement for the operator to have a maintenance program approved by the FAA ensures that the operator's U.S.-registered aircraft will be maintained in an airworthy condition and in accordance with a program approved by the Administrator. Refer to Advisory Circular 129-4, Maintenance Programs for U.S.-Registered Aircraft, as amended, for guidance on what an acceptable maintenance program consists of and for a complete discussion of how the requirements of ICAO Annex 6 apply to U.S.-registered aircraft operating under FAR Part 129. The ICAO standards are adopted as the basis for the FAA approved maintenance programs. This applies to all operators including those operators who may not be ICAO members. The maintenance program must also meet the minimum requirements of the regulations.

A. *Identifying the Relevant Federal Aviation Regulation.* FAR § 129.14(a) establishes the requirements for approved maintenance and administration functions, while FAR Part 43 provides the performance standards for the maintenance function.

B. *Approving the Maintenance Program.* Program approval will normally be accomplished by a maintenance inspector but can be done by an avionics inspector. In either case, the evaluation of the aircraft maintenance programs should be a joint maintenance and avionics effort.

(1) The operator's manual system will consist of two tiers that will require specific approval. The first tier is that part of its manual system which describes the maintenance program that falls under FAR Part 129 and that meets the standards specified by ICAO Annex 6 concerning the operator's maintenance organization, administration, and control procedures as they apply to maintenance of U.S.-registered aircraft. The second tier is the aircraft program for each make and model of U.S.-registered aircraft operated by the FAR Part 129 operator.

(2) Those parts of the operator's manual system that prescribe the maintenance programs must be identified in order to support the approval document. This is one of the most complex areas in the maintenance program approval process. The literature that the inspector has to work with may vary greatly according to the size of the operator. Therefore, the choice of what material must be included or referenced as the approved program will have to be resolved on a case by case basis for each operator.

(a) For example, if the operator's manuals are written or arranged in such a manner that the pertinent parts cannot be readily separated, the operator's entire manual system may be referenced in the approval document. In other cases, the operator may have a single manual, sometimes approved by the FCAA, that identifies all of the

essential elements, but references other supportive manuals; or the operator's manual system may be arranged in such a way that specific chapters may be extracted and identified individually.

(b) The inspector should require the operator to develop additional procedures to support the ICAO standards or to meet unique Federal Aviation regulatory requirements if these are missing from the operator's existing program. Therefore, the "expository manual" must be determined at the assigned inspector's discretion based on the circumstances that are found. This determination must also take into consideration the method of revision control that will be employed to keep the approved programs current.

(3) The operator's mechanism for adjustment of aircraft maintenance programs will require thorough analysis. Its application to U.S.-registered aircraft must be well defined in the operator's program. Advisory Circular 129-4 does not require a separate, approved reliability document. If the operator uses reliability control to adjust its maintenance porogram, the system should be described in its manual with pertinent pages identified as part of the approved program. It is imperative that the approved program ensures FAA access to reliability (and/or analytical) data to facilitate FAA surveillance.

(4) If the operator uses short term escalation, this must be described in the expository manual as part of the approved maintenance program.

(5) The operator's expository manual may reference other approved documents that address specific tasks, i.e., an engine manufacturer's manual. The expository manual and significant referenced material that make up the approved program (under FAR Part 129) must be written in the English language. Secondary material can be in the local language if interpretation is available.

C. *Revision Control*

(1) The assigned inspector and the foreign operator must agree on a system of revision control. This system of revision control must be part of the maintenace program document.

(2) Any operator changes to the approved maintenance program must be approved. However, if the revisions are approved by the operator's FCAA, which abides by the rules of ICAO, and the revisions are not contrary to Federal Aviation Regulations, then the assigned inspector may choose to accept the maintenance program revision on that approval basis.

(3) Some changes will require prior FAA approval regardless of whether the FCAA approves them. Since this is an area of inspector's judgment, there cannot be a list of rules.

(a) Items that need prior FAA approval must be decided on a case by case basis. The following are some examples:

- Advisory Circular 129-4 provides that C and D check intervals as well as significant changes to their content should require prior approval
- The assigned inspector may determine that other significant or basic elements of the operator's aircraft maintenance program cannot be revised without prior approval
- Prior approval may also be required for changes to basic elements within the FAR Part 129 maintenance administration program
- Some operators may have a reliability program that permits adjustment to their aircraft maintenance program without further approval from their FCAA. Any revision to the operator's manual that changes the administrative procedures controlling this type of program should require prior approval. Conversely, if the FCAA directly approves each change to the operator's aircraft maintenance program that is generated by the operator's reliability program, changes to the administrative procedures need not require prior FAA approval.

(b) There may be numerous similar examples. However, in any event, the inspector should coordinate with the FCAA.

(4) The maintenance program should establish a time frame within which to notify the FAA of any revision to the approved program. A copy of the revision must be sent to the district office responsible for maintaining the maintenance program.

D. *Standards for Recordkeeping.* Maintenance records requirements are governed by ICAO Annex 6, Part I, and should be included in the maintenance program under FAR Part 129. The maintenance records requirements of FAR §§

91.173 and 91.174 were negated by Amendment 91-201 and ICAO standard 8.8 now governs the FAR Part 129 operator's records requirements.

E. *Aircraft Maintenance.* The aircraft must be maintained by persons authorized under FAR § 43.3.

NOTE: FAR § 43.13 is amended to accept the methods, procedures, and practices prescribed by a maintenance program approved under FAR Part 129. This allows for the Maintenance Release certification stated in ICAO Annex 6 standard 11.4.

F. *Program Adoption.* A previously approved aircraft maintenance program adoption follows the guidelines found in AC 129-4, as applicable.

9. MINIMUM EQUIPMENT LISTS (MEL). Each foreign air carrier may obtain approval for an MEL under FAR § 129.14. MELs are approved by Letter of Authorization, not by operations specifications, and a copy of the letter must be carried aboard the aircraft.

A. Each foreign operator may develop its own MEL based on the Master Minimum Equipment List approved by the FAA for the specific aircraft type.

B. In seeking approval of a MEL, the foreign operator must show that the procedures in its maintenance program are adequate to support the use of its MEL.

C. A foreign operator leasing a U.S.-registered aircraft from a U.S. air carrier may opt to use an approved MEL in accordance with the U.S. air carrier's approved MEL, subject to FAA approval of each arrangement.

11. MAINTENANCE PROGRAM AND MEL APPROVALS

A. The responsibility for approving maintenance programs and MELs for U.S.-registered aircraft is delegated to certain regions and specific district offices. Any office receiving an application from a foreign air carrier must forward it to the appropriate regional office as follows:

- ANM-200 for Canadian operators based on or west of 100 west longitude
- AEA-200 for Canadian operators based east of 100 west longitude
- AEU-200 for foreign operators located in Europe, Africa, the Middle East, or India
- ASO-200 for foreign operators located in the Caribbean or Central or South America
- ASW-200 for foreign operators based in Mexico
- AWP-200 for foreign operators located in Asia, the Pacific Basin, Australia, or New Zealand

B. The operator's FCAA should be encouraged to participate in the maintenance program approval process. A written concurrence with the FAA approval should be requested to ensure the FCAA understands and does not object to the maintenance program as approved by the FAA.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 65, and 129
- Completion of the Airworthiness Inspector's Indoctrination Course

B. *Coordination.* This task requires coordination between maintenance, avionics, and operations inspectors. The task may require coordination with the Regional Office and/or the appropriate Foreign Civil Aviation Authority (FCAA) and U.S. Embassy, as required.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 21, 91, and 145
- Advisory Circular 129-4, Maintenance Programs for U.S. Registered Aircraft Under Part 129, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Chs. 37 and 163

- International Civil Aviation Organization, Annex 6, Part I

B. *Forms.* None.

C. *Job Aids*

- Figure 126-1, Maintenance Program Approval Document

5. PROCEDURES

A. *Receive Application Letter.* Applications for foreign air carrier operations specifications must be made in letter form. Ensure the application includes the following:

(1) The information prescribed in Appendix A of FAR Part 129

(2) A copy of the Department of Transportation 402 permit or exemption

(3) The following documents for each leased U.S.-registered aircraft operated by the applicant:

- Registration markings as required by FAR § 147
- The lease agreement or a written memorandum of the terms thereof signed by both parties, if applicable
- A proposed MEL tailored to the applicant's operations and based on the FAA approved Master MEL, if applicable
- A maintenance program that satisfies the requirements of FAR § 129.14
- Application for special purpose flight airman certificates, if applicable

B. *Verify Approval of Operations Specifications.* Ensure operations specifications have been approved by operations aviation safety inspectors before proceeding with approval of the maintenance program.

C. *Approve Maintenance Program*

(1) Determine which of the operator's manuals or portions of them (pages, sections, and chapters) require specific FAA approval.

(2) Ensure that all applicable items found in AC 129-4, paragraphs 7 - 16 are included in the operator's maintenance program.

D. *Approve MEL Use.* If an operator applies for an MEL, the inspector must ensure that a Master Minimum Equipment List exists for that aircraft. Procedures for approval are the same as in Vol. 2, Ch. 37.

E. *Approve U.S. Operator's Aircraft Maintenance Program and MEL for Use By a Foreign Operator.* The assigned inspector must ensure the following for leased aircraft maintained under an adopted maintenance program and an adopted MEL:

- The foreign operator is capable of meeting the requirements of the lessor's adopted maintenance program
- The foreign operator is capable of meeting the maintenance and operational requirements of the lessor's MEL

F. *Inform the Operator of Notification Requirements.* Instruct the operator to send notification of any changes or revisions to its maintenance program to the district office with responsibility for the maintenance program.

G. *Evaluate Revisions to an Approved Maintenance Program.* Evaluate revisions to the maintenance program are evaluated as in original approval. All revisions will be approved in accordance with procedures provided in the maintenance program.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Approve or Disapprove.* Completion of this task will result in one of the following:

(1) If the applicant meets the operating and maintenance requirements of FAR Parts 43, 91, and 129, accomplish the following, as applicable:

- Issue the maintenance program approval
- Coordinate with the Principal Operations Inspector to confirm issuance of the MEL letter of authorization

(2) If the evaluation indicates deficiencies or omissions in the application or attachments, contact the foreign air carrier.

(a) Inform the applicant in writing of any deficiencies requiring corrective, actions.

(b) If deficiencies can not be satisfactorily resolved, terminate the application process and return the application and associated data to the applicant with a letter describing the reasons for the termination.

(c) Notify the regional office before returning or rejecting an application of a foreign air carrier.

C. *Document Task.* File supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Surveillance as requested by the inspectors assigned to the certificate.

FIGURE 126-1 MAINTENANCE PROGRAM APPROVAL DOCUMENT

SECTION I. APPROVAL OF MAINTENANCE PROGRAM UNDER FAR PART 129

OPERATOR _____

PROGRAM IDENTIFICATION _____

Revision Control * _____

SUBMITTED BY ** _____
(name, title, signature, date, location)

FAA Approval _____
(name, title, signature, date, location)

FCAA Concurrence *** _____
(name, title, signature, date, location)

SECTION II. APPROVAL OF INDIVIDUAL AIRCRAFT MAINTENANCE PROGRAM

AIRCRAFT, ENGINE, AND PROPELLER MAKE AND MODEL _____

_____

PROGRAM IDENTIFICATION _____

Revision Control * _____

SUBMITTED BY ** _____
(name, title, signature, date, location)

FAA Approval _____
(name, title, signature, date, location)

FCAA Concurrence *** _____
(name, title, signature, date, location)

* Whatever program control references are subject to FAA approval)
(revision number, date, list of effective pages, etc.)

** Certification that this program is submitted to the FAA for approval for operations under FAR Part 129 on behalf of the above identified operator and I am authorized by that company to effect this submission.

*** Not mandatory.

[CHAPTERS 127 THROUGH 134 RESERVED]

CHAPTER 135 INTRODUCTION TO FAR PART 133 RELATED TASKS

1. EXTERNAL-LOAD OPERATIONS. FAR Part 133 is applicable to all operators conducting rotorcraft external-load operations. Any person conducting rotorcraft external-load operations must acquire a Rotorcraft External-Load Operator Certificate. The operator must have at least six months exclusive use of at least one rotorcraft certificated under FAR Parts 27, 29, or FAR § 21.25 for the special purpose of rotorcraft external-load operations.

3. ATTACHING MEANS. The attaching means for the external-load must have been approved under Part 8 of the Civil Aviation Regulations or under FAR Parts 27, 29, or 133.

5. LOAD CLASSES. The rotorcraft external-load operator may apply for authorization to operate in load classes A, B, C, and D.

A. Class A is an external cargo load that cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

B. Class B is an external cargo load that can be jettisoned and is lifted free of land and/or water.

C. Class C is an external cargo load that can be jettisoned and remains in contact with land or water during the rotorcraft operation.

D. Class D is an external cargo load other than Class A, B, or C. A class D authorization is approved on an individual basis through the issuance of operations specification. A class D authorization has special considerations, especially in terms of operating rules.

CHAPTER 136 EVALUATE FAR PART 133 OPERATOR

Section 1 Background

1. WPMS ACTIVITY CODE

- *Maintenance:* 3202

3. OBJECTIVE. This chapter describes how to evaluate an applicant for a FAR Part 133 Rotorcraft External-Load Operator Certificate.

5. GENERAL

A. The certification process provides for interaction between the applicant and the FAA, from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

B. The certification process consists of five phases. Due to the nature of FAR Part 133 operations, the way the five phases are used will depend on the size and complexity of the proposed operation. The five phases are as follows:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

(1) In evaluating an applicant for FAR Part 133 operations, airworthiness inspectors will focus primarily on the demonstration and inspection phase.

(2) An individual airworthiness inspector designated as the Certification Project Manager (CPM) will be concerned with all phases. The Certification Project Manager shall closely coordinate all activities with the appropriate specialty.

C. *Classes of External-Loads Authorizations*

(1) FAA operations inspectors approve four distinct classes of external-loads. Regardless of class, airworthiness inspectors will only be concerned with the load attaching and quick release devices.

(2) Class D authorizes the carrying of personnel. The personnel-lifting devices should be approved by FAA Engineering.

D. *Rotorcraft External-Load Attaching Means.* Rotorcraft external-load attaching means must meet the requirements outlined in FAR § 133.43(a).

(1) While conducting external-load operations, the aircraft must have on board a facsimile of the approved Rotorcraft External-Load Operating Certificate (FAA Form 8430–2). This certificate constitutes a valid airworthiness certificate while the operator conducts external-load operations. It in no way invalidates the airworthiness certificate issued at certification. The facsimile, carried in the aircraft, is only valid while an external-load is attached.

NOTE: The standard airworthiness certificate issued at certification must be displayed in accordance with FAR § 91.27.

(2) Each external-load attaching means must have been approved under one of the following:

- Part 8 of the Civil Air Regulations on or before January 17, 1964
- FAR Part 133, before February, 1977
- FAR Part 27 or 29, as applicable, regardless of the approval date
- Supplemental Type Certificate
- FAA Form 337, Repair/Alteration Data Form—Aircraft, Engineering, Appliance

E. *Quick Release Device*

(1) A quick release device must have been approved under either of the following:

- FAR Part 27 or 29, as applicable
- FAR Part 133, before February 1, 1977

(2) A control for quick release must be installed in accordance with FAR § 27.865. In addition, a manual mechanical control for the quick release device must be readily accessible to either the pilot or another crewmember.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the regulatory requirements of FAR Part 133.

B. *Coordination.* This task requires coordination between maintenance and operations inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- CAR Part 8
- FAR Parts 27, 29, and 43
- Advisory Circular 133-1A, Rotorcraft External-Load Operations in Accordance with Federal Aviation Regulations Part 133
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8430-2, Rotorcraft External-Load Operating Certificate
- FAA Form 337, Repair/Alteration Data Form - Aircraft, Engineering, Appliance

C. *Job Aids.* None.

5. PROCEDURES

A. *Determine That External-Load Attaching Means Have Been Approved*

(1) Examine the aircraft maintenance and alterations records to ensure the attaching means have been installed using data previously approved by the Administrator. Ensure that the data are either part of the type design of the rotorcraft or have been added as a supplement to the type design.

(2) If the approval is by Supplemental Type Certificate (STC), ensure the approval is reflected in the rotorcraft maintenance and alteration records by a FAA Form 337.

(3) If the rotorcraft was approved before February 1, 1977, the load attachment installation may have been approved as a field approval.

B. *Observe Demonstration.* A satisfactory demonstration of the quick-release must be performed in accordance with FAR §§ 133.41 and 133.43. If at all possible, maintenance inspectors should witness this demonstration.

C. *Ensure Markings and Placards Are Displayed Conspicuously.* Determine that the external-load attaching means are appropriately placarded for total load. Ensure placards containing information regarding the rotorcraft-load combination(s) and occupancy limitations are placed in the cockpit in plain view of the pilot.

D. *Debrief the Certification Project Manager.* Inform the Certification Project Manager of any discrepancies found. Advise as to the necessity for corrective action. If there are no discrepancies noted, indicate that the airworthiness requirements have been met.

7. TASK OUTCOMES

A. Successful completion of this task will result in the issuance or denial of an operating certificate by the Certification Project Manager.

B. *File a Completed WPMS Transmittal Form*

9. FUTURE ACTIVITIES. Observe on-site activities to ensure the operator is complying with the applicable regulations.

CHAPTER 137 EVALUATE FAR PART 133 ROTORCRAFT LEASE AGREEMENT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3430

B. *Avionics:* 5430

3. OBJECTIVE. This chapter describes procedures to determine if an operator's rotorcraft lease agreements comply with the requirements of FAR § 133.19.

5. GENERAL. Under the provisions of FAR § 133.19, the operator must have exclusive use of at least one rotorcraft for six consecutive months.

A. An operator who does not own a rotorcraft must have a written lease agreement providing exclusive use of a rotorcraft for at least six consecutive months. The lease agreement must specify the party responsible for the maintenance of the rotorcraft.

B. A lease agreement is not required if an operator has sole possession, control, and use of a rotorcraft as an owner, and provides its own maintenance.

7. OWNERSHIP OF ROTORCRAFT. In determining ownership of the aircraft, the inspector should research the following:

- Aircraft Registration Listings (N-number listings)
- FAA Form 8710–4, Rotorcraft External-Load Operator Certificate of Application
- Verbal confirmation from the operator

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites.* This task requires knowledge of the regulatory requirements of FAR Part 133.

B. *Coordination.* This task may require coordination with avionics inspectors, other maintenance inspectors, and operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 91
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms*

- FAA Form 8710–4, Rotorcraft External-Load Operator Certificate of Application

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator Data.* The operator must have exclusive use of one rotorcraft per the provisions of FAR § 133.19. Review the operator's certificate or attached list of aircraft to determine which rotorcraft are used under a lease agreement.

B. *Evaluate Lease.* Determine if the lease agreement meets the requirements of FAR § 133.19. The lease must allow for the following:

(1) Arrangements for the maintenance of the rotorcraft

(2) Exclusive use of the rotorcraft for at least six consecutive months

C. *Analyze Results*

(1) If the lease agreement is satisfactory, no further action is required.

(2) If the agreement is unsatisfactory, advise the Certification Project Manager, who will inform the operator of all deficiencies noted. Discuss any corrective actions that may be required.

7. TASK OUTCOMES. Completion of this task will result in the following:

- A completed WPMS form
- A formal letter from the Certification Project Manager to the operator confirming the results of the evaluation, if necessary
- A record of the evaluation in the operator's file in the district office

9. FUTURE ACTIVITIES. It may be necessary to conduct one or more follow-up visits to ensure the operator is complying with the applicable regulations.

[CHAPTERS 138 THROUGH 145 RESERVED]

CHAPTER 146 INTRODUCTION TO FAR PART 137

1. AGRICULTURAL AIRCRAFT OPERATIONS. FAR Part 137 is applicable to all persons conducting agricultural aircraft operations within the United States. The conducting of these operations requires an Agricultural Aircraft Operator Certificate. Exceptions include the use of public aircraft and the dispensing of water on forest fires by rotorcraft external-load operators.

3. PUBLIC EMERGENCIES. FAR § 137.1(b) allows certificated agricultural operators to deviate from FAR Part 137 for relief and welfare activities during public emergencies. The determination of a public emergency is made by an agency of the United States or by a state or local government.

5. DEFINITION OF AGRICULTURAL AIRCRAFT OPERATION. An agricultural aircraft operation involves any of the following functions:

- The dispensing of any economic poison, as defined in FAR § 137.3
- The dispensing of any other substance intended for plant nourishment, soil treatment, plant growth, or pest control
- Any dispersing activities directly affecting agriculture, horticulture, or forest preservation

7. AIRCRAFT EQUIPMENT

A. The applicant must have at least one certificated and airworthy aircraft equipped for agricultural operations.

B. FAR § 137.31 requires each aircraft operated by an agricultural aircraft operator to be equipped with a suitable and properly installed shoulder harness for the use of each pilot. This use of the term "suitable and properly installed" shall be interpreted to mean "of an approved type".

9. HAZARDOUS/TOXIC MATERIALS. The danger of contamination by toxic agricultural chemicals is very real. Common sense in the presence of agricultural chemicals is very important, and inspectors should be on the alert for exposure to hazardous/toxic materials.

A. *Accident Investigation.* For safety reasons, inspectors should determine what chemicals were being dispensed before reporting to the site of an agricultural aircraft accident. The inspector must determine the chemicals' specific hazards and the precautions to be taken. In this type of aircraft accident, a large amount of chemical can be concentrated in a small area, increasing the hazards to investigating inspectors.

B. FAA inspectors should become familiar with the Federal and state agencies that work with aerial application of hazardous/toxic materials. Some district offices may also maintain files on this subject. Refer to Vol. II, Ch. 211, "Conduct Accident Investigation".

CHAPTER 147 EVALUATE FAR PART 137 OPERATOR

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3202

B. *Avionics:* 5202

3. OBJECTIVE. This chapter describes procedures to evaluate an applicant for a FAR Part 137 certificate.

5. GENERAL

A. The certification process provides for interaction between the applicant and the FAA, from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

(1) The certification process consists of five phases, as follows:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

(2) Due to the nature of FAR Part 137 operations, the way the five phases are used will depend on the size and complexity of the proposed operation. Inspectors may find that some of the phases overlap. For example, an inspector may review documents from the Document Compliance Phase prior to the meeting held during the Formal Application Phase.

B. *The Certification Team.* The district office has the responsibility of appointing a certification team. The size of the certification team will depend on the complexity of the proposed operation. The team should consist of at least one operations and one maintenance inspector. An avionics inspector also may be required. A member of the team will be designated as Certification Project Manager.

C. The Certification Project Manager (CPM) shall closely coordinate all activities with the appropriate specialty.

D. *Eligibility Requirements.* FAR Part 137 authorizes both private and commercial agricultural aircraft operations.

(1) The private agricultural aircraft operator may not conduct operations over property unless the operator is the owner or lessee of the property or has ownership or other legal interest in the crops located on the property. In addition, the operator may not conduct operations over a congested area or for compensation or hire. These conditions do not limit commercial agricultural aircraft operators.

(2) The private operator/applicant must hold either a private, commercial, or airline transport pilot certificate with appropriate ratings.

(3) The commercial operator/applicant must have available the services of a pilot having a current commercial or airline transport pilot certificate with appropriate ratings.

(4) The applicant for either a private or commercial agricultural aircraft operator certificate must provide at least one properly certificated airworthy aircraft equipped for agricultural operations.

(5) The applicant for a commercial operator certificate must have the services of a chief supervisor of agricultural operations. This supervisor should possess the appropriate knowledge and skills.

E. *Deviations and Waivers*

(1) Public aircraft used to conduct agricultural operations need not comply with the certification rules of FAR Part 137 but must comply with the operating rules of FAR Part 137.

(2) A rotorcraft equipped for agricultural operations under a FAR Part 133 certificate only is limited to the dispensing of water on forest fires.

(3) The following are examples of deviations to FAR Part 137 applicability that require authorizations:

- Operations within a control zone
- Operations below Visual Flight Rule minimums
- Operations over congested areas

7. PREAPPLICATION PHASE. The applicant will submit a letter of intent, outlining the proposed operation. If the applicant requires information about the application or needs additional guidance, the Certification Project Manager has the option of conducting a preapplication meeting.

9. FORMAL APPLICATION PHASE. The Formal Application Phase begins when the team receives the application and/or letter of intent. The entire team then meets with the applicant. Any questions that arise at this time should be resolved.

11. DOCUMENT COMPLIANCE PHASE. During this phase, the application and all other submitted material will be reviewed.

13. DEMONSTRATION AND INSPECTION PHASE. During this phase, the applicant will demonstrate the ability to comply with the Federal Aviation Regulations and safe operating practices.

A. *Records*

(1) Commercial agricultural aircraft operators must have a system for maintaining a current list of customers and services provided. This system must include a method of retaining these records.

(2) The FAA does not require private agricultural aircraft operators to maintain comparable records detailing their agricultural dispensing operations.

B. *Aircraft.* The maintenance inspector(s) will conduct the inspection of aircraft records, the aircraft, and dispensing equipment for both commercial and private agricultural aircraft operators.

NOTE: When inspecting previously used dispensing equipment, caution should be used in order to prevent contamination from hazardous/toxic materials.

C. *Base Inspections.* The size and complexity of the operation will determine the extent of the inspection required at an operator's base.

D. Unless previously demonstrated, the applicant or designated chief supervisor must show satisfactory knowledge and skills regarding agricultural aircraft operations.

15. THE CERTIFICATION PHASE. If certification requirements are met and the certificate is to be issued, the air operator certificate number must be obtained from AVN-120.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 137
- Successful completion of the General Aviation, Airworthiness, or Operations Indoctrination Course
- Knowledge of and associated experience with FAR Part 137 operations

B. *Coordination.* This task requires close coordination between the Airworthiness and Operations Inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 1, 43, 61, and 91
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Ch. 221, and Vol. III, Ch. 27
- Advisory Circular 137-1, Agricultural Aircraft Operations, as amended

B. *Forms*

- FAA Form 8710-3, Application for Agricultural Aircraft Operator Certificate (Figure 147-1)
- FAA Form 8430-21, Operating Certificate

C. *Job Aids.* None.

5. PREAPPLICATION PHASE

A. *Provide Applicant With Necessary Information and Application Form.* Advise the applicant to submit a letter of intent. Advise the applicant to assure compliance with any other applicable Federal, state, and/or local aerial application regulations.

B. *Schedule Preapplication Meeting, if Necessary*

C. *Obtain a Precertification Number from AVN-120, if Required*

7. FORMAL APPLICATION PHASE

A. *Accept Application and Review Letter of Intent.* The letter of intent should include the following information:

- Specific type of agricultural aircraft operator certificate for which applicant is applying (commercial or private)
- Company legal name and appropriate company business names (d/b/a's), principal operation base address, primary airport address, mailing address (if applicable), and telephone numbers
- Type of aircraft to be operated
- Type of materials to be dispensed
- Estimated date when operations or services will begin
- Names and addresses of any management personnel or chief supervisor

B. *Conduct Formal Meeting, as Appropriate*

C. *Schedule Inspections*

9. DOCUMENT COMPLIANCE PHASE. Review the application and associated documents to ensure the information is complete and correct.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Conduct Knowledge and Skill Tests, as Required*

B. *Inspect Commercial Applicant's Record System*

C. *Inspect Aircraft.* Inspect the aircraft and the aircraft maintenance records to ensure the following:

- Aircraft are properly certificated and airworthy
- Inspection status is current
- Aircraft are appropriately equipped for agricultural operations
- Aircraft are in condition for safe operation

D. *Conduct a Facility Inspection, as Appropriate.* (See Vol. II, Ch. 221)

E. *Analyze Findings.* Conduct a debriefing with the certification team to analyze the findings.

F. *Debrief Applicant.* Conduct a meeting with the applicant and resolve any deficiencies.

13. CERTIFICATION PHASE

A. *Prepare Operating Certificate.* When the applicant has met all regulatory requirements for certification, the Certification Project Manager must prepare FAA Form 8430-21, Operating Certificate, as follows:

(1) *Certificate holder's name.* Enter the certificate holder's full and legal name directly below the words "This certifies that". Other names, such as "doing business as", shall not be shown on the certificate.

(2) *Certificate holder's address.* Enter the address of the certificate holder's principal base of operations directly below the certificate holder's name. A post office box address is unacceptable unless it also reflects the physical location of the principal base of operations.

(3) *Certification Statement of Authority.* Specify "commercial" or "private" agricultural aircraft operations.

(4) *Certificate Number.* Obtain a certificate number from AVN-120.

(5) *Effective Date.* The effective date shall be the date all requirements for certification are met. If amending a certificate to reflect an address change or a change of the assigned district office, show the date of original issuance on the new certificate.

(6) *Issued at.* Enter the four-character, alpha-numeric designator, city, and state of the Certificate Holding District Office.

(7) *Signature, Title, and Certificate Holding District Office Designation.* The Certificate Holding District Office manager or designee shall sign operating certificates issued to operators complying with FAR Part 137. Enter the full title of the person signing the certificate in the space provided. Show the designations of the region and the Flight Standards District Office (FSDO).

B. *Ensure Certification Report Is Prepared.* This report establishes the district office file and must include the name and title of each inspector who assisted in the certification project. The report must be signed by the Certification Project Manager. The report shall contain the following:

- A copy of the letter of intent
- The certification job aid
- The application
- Schedule of events
- A copy of the Operating Certificate
- A summary of any difficulties encountered during the certification process, including a description of corrective actions
- A copy of any authorization for deviation or waiver issued

15. TASK OUTCOMES

A. *File a PTRS Transmittal Form*

B. Completion of this task will result in one of the following:

(1) Issuance of a certificate

(2) A letter to the applicant indicating the certificate is denied

(3) A letter to the applicant confirming termination of the certification process by the applicant

C. *Distribute Certification Report*

(1) Retain the original certification report and all supporting documents in the operator/applicant's district office file.

(2) Send one copy of the report to the regional office for information.

(3) If aircraft will be domiciled outside the Certificating District Office's geographical area of responsibility, the principal inspectors may wish to provide any or all of the certification file to the appropriate district office.

17. FUTURE ACTIVITIES

A. *Transition.* The district office manager must ensure there is an orderly transition from the certification process to certificate management.

B. *Post-certification Program.* Assigned inspectors should carefully observe the operator during the first 90 days of operation. Additional inspections may be necessary to determine operating practices are performed at an adequate level of safety. Direct particular attention to areas that may not have been demonstrated or observed during certification.

FIGURE 147-1 FAA FORM 8710-3, APPLICATION FOR AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE

Form Approved
OMB No. 2120-0049

U.S Department of Transportation
Federal Aviation Administration

AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE APPLICATION

INSTRUCTIONS
Submit in duplicate to the local General Aviation District Office.

1. APPLICATION FOR	TYPE	FOR DISPENSING *(Check one)*	
	☐ PRIVATE	☐ ECONOMIC POISONS	☐ ORIGINAL
	☐ COMMERCIAL	☐ OTHER THAN ECONOMIC POISONS	☐ AMENDMENT
			☐ REISSUANCE

2. NAME AND ADDRESS OF APPLICANT	3. PRINCIPAL OPERATIONS BASE *(Airport, City, State)*
TELEPHONE NUMBER ( )	TELEPHONE NUMBER ( )

4. OPERATING AS			5. NAME OF CHIEF SUPERVISOR OF OPERATIONS IF OTHER THAN SHOWN IN ITEM 2. (COMMERCIAL OPERATIONS ONLY)
	☐ INDIVIDUAL	OTHER *(Specify)*	*(First)* *(Middle initial)* *(Last)*
	☐ CORPORATION		
	☐ PARTNERSHIP		

6. AIRMAN CERTIFICATE HELD				CERTIFICATE NUMBER
GRADE	RATINGS			
☐ PRIVATE	☐ ASEL	☐ AMES	TYPE RATING(S) *(Specify)*	
☐ COMMERCIAL	☐ AMEL	☐ HELICOPTER		
☐ AIRLINE TRANSPORT	☐ ASES	☐ GYROPLANE		

7A. DO YOU HOLD A CURRENTLY EFFECTIVE CERTIFICATE OF WAIVER FOR CONDUCTING AGRICULTURAL AIRCRAFT OPERATIONS?	☐ NO ☐ YES *(Complete 7B)*

7B. WAIVER HELD	DATE ISSUED	EXPIRATION DATE	FAA DISTRICT OFFICE WHERE ISSUED

8. AGRICULTURAL AIRCRAFT TO BE OPERATED

MAKE	MODEL	EQUIPPED FOR		TOTAL NUMBER EACH AIRCRAFT OPERATED	REGISTRATION MARK *(List one)*
		LIQUID	SOLID		

9. LIST THE NAME(S) AND AIRMAN CERTIFICATE NUMBER OF AGRICULTURAL PILOT(S) WORKING FOR YOU AT THE PRESENT TIME
(Use separate sheet and attach if additional space is needed.)

NAME	CERT. NO.	NAME	CERT. NO.

10. REMARKS

11. CERTIFICATION: I CERTIFY THAT STATEMENTS MADE ON THIS FORM ARE TRUE AND CORRECT.

DATE	TITLE	SIGNATURE

FAA Form 8710-3 (10-83)

FIGURE 147-1 (Cont.) FAA FORM 8710-3, APPLICATION FOR AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE

INSPECTION REPORT — For FAA Use Only
(To be completed by the General Aviation or Flight Standards District Office)

COMPLIANCE WITH APPLICABLE REGULATIONS			
1. PILOT(S)	NOT REQUIRED	SATISFACTORY	UNSATISFACTORY
A. CERTIFICATES			
B. RATING(S)			
C. KNOWLEDGE TEST			
D. SKILL TEST			
2. AIRCRAFT			
A. CERTIFICATED			
B. AIRWORTHY			
C. EQUIPPED FOR AGRICULTURAL OPERATIONS			

3. REMARKS *(Include an explanation of denial if application is disapproved).*

4. DISTRICT OFFICE ACTION

	CERTIFICATE ISSUED	INSPECTORS SIGNATURES
	APPLICATION DISAPPROVED	
DATE INSPECTION COMPLETED		

[CHAPTERS 148 THROUGH 154 RESERVED]

CHAPTER 155 INTRODUCTION TO FAR PART 141 RELATED TASKS

1. GENERAL. FAR Part 141 prescribes rules governing the operation of pilot schools.

A. *Importance of Maintaining Training Aircraft.* Training aircraft are subject to greater wear and deterioration because of frequent takeoffs and landings. This is particularly true in aircraft with retractable gear. Engines are also very vulnerable to overheating and rapid cooling damage under these conditions.

B. *Airworthiness Inspector's Role in FAR Part 141 Tasks*

(1) The FAA airworthiness inspector will concentrate primarily on the continued airworthiness of the training aircraft. The inspector's responsibilities will only be with the aircraft in certification and surveillance situations. Student records and other related matters are of little concern to the airworthiness inspector.

(2) Airworthiness inspectors may occasionally find themselves functioning as the Certification Project Managers on certification teams. Should this be the case, they should closely coordinate with operations inspectors assigned to the team for those activities that are inherently operations-oriented.

3. INSTRUMENT TRAINING. Some certificated schools use aircraft for instrument flight training. The equipment installed for radio navigation and instrument training must comply with the requirements set forth in FAR Part 91.

CHAPTER 156 EVALUATE FAR PART 141 PILOT SCHOOL

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3230

B. *Avionics:* 5230

3. OBJECTIVE. This chapter describes how to evaluate an applicant for a FAR Part 141 pilot school certificate.

5. GENERAL

A. The certification process provides for interaction between the applicant and the FAA, from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

(1) The certification process consists of five phases, as follows:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

(2) Due to the nature of FAR Part 141 operations, the way the five phases are used will depend on the size and complexity of the proposed operation. The five phases may overlap. For example, an inspector might review documents during the Document Compliance Phase prior to attending the meeting in the Formal Application Phase.

B. The Certification Project Manager (CPM) shall closely coordinate all activities with the appropriate specialties.

C. *Importance of Maintaining Training Aircraft.* Training aircraft are subject to greater wear and deterioration because of the frequent takeoffs and landings. Malfunctions that may be controlled by an experienced pilot could place the relatively inexperienced student pilot in a critical situation. This is particularly true in complex aircraft with controllable propellers and retractable gear. The frequency of takeoffs and landings on a training aircraft can make engines vulnerable to overheating and rapid cooling damage.

A. *Application of Systems Analysis Processes.* Experience has shown that safety is enhanced when operators employ systems analysis concepts. Inspectors should encourage operators to develop and use systems to control the maintenance of school aircraft.

(1) Inspectors should suggest that operators do the following:

- Clearly define the management organization
- Establish a well-defined chain of command
- Provide individual job descriptions explaining the scope and detail of authority and responsibility
- Provide specific instructions regarding the accomplishment of jobs

(2) Inspectors should encourage pilot schools to define the following:

- The control and schedule of aircraft for required inspection(s) and maintenance
- The scope and detail of the maintenance inspections
- The correction and recording in aircraft records of pilot-recorded discrepancies
- The maintenance of aircraft operated under lease agreements

B. *Contract Maintenance.* Maintenance may be accomplished under contract arrangement, providing sufficient certificated mechanics are readily available to maintain the school's aircraft. Arrangements for maintenance by other than school-operated facilities and personnel should be described in a written statement.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 141
- Familiarity with the type equipment to be used by applicant
- Completion of the Airworthiness Inspectors' Indoctrination Course

B. *Coordination.* This task will require coordination with maintenance, avionics, and operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 45, 47, 65, 91, 133, and 137
- Order 8300.10, Airworthiness Inspectors' Handbook, Vol. III, Chs. 26 and 27

B. *Forms*

- FAA Form 8420-8, Application for Pilot School Certificate
- FAA Form 8000-4, Air Agency Certificate

C. *Job Aids.* None.

5. PREAPPLICATION PHASE

A. *Provide the Applicant with Necessary Information and an Application Form.* Advise the applicant to submit a letter of intent.

B. *Schedule a Preapplication Meeting, If Necessary*

7. FORMAL APPLICATION PHASE. Following submission of the application form and letter of intent, discuss with the applicant any obvious deficiencies in the application and suggest corrective actions.

9. DOCUMENT COMPLIANCE PHASE. Review the application, letter of intent, and any relevant attachments in detail for completeness and accuracy. If necessary, meet with the applicant to resolve deficiencies and answer questions.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Review General Aviation Alerts.* Review for trends and problem areas regarding the make(s) and model(s) of aircraft the operator intends to use.

B. *Inspect Aircraft.* Inspect aircraft for certification, registration, airworthiness, and condition for safe operations. Ensure the operator has available aircraft equipped to perform functions appropriate for the course of training.

(1) Inspect special purpose equipment installed on aircraft, such as external load equipment, agricultural dispensing equipment, and modifications for handicapped students, for approved data.

(2) Ensure the aircraft and the equipment list agree.

(3) Ensure that the installed equipment to be used for radio navigation and instrument training is operational and complies with the minimum requirements.

C. *Inspect Aircraft Maintenance Records*

(1) Inspect aircraft maintenance and alteration records to determine that all aircraft have current, appropriate inspections and meet all of the Federal Aviation Regulations requirements. Ensure compliance with all applicable Airworthiness Directives and life-limited parts requirements.

(2) Ensure that current weight and balance information is available to the pilot of the aircraft.

D. *Ensure Adequate Personnel, Facilities, and Equipment.* Discuss with the applicant the advisability of having properly certificated and trained personnel to maintain the aircraft. Verify that any contract maintenance agreements are described in writing and provide for a sufficient number of certificated mechanics readily available to maintain the school's aircraft. Ensure the applicant has access to facilities and equipment adequate to maintain the school's aircraft.

E. *Analyze Findings.* Discuss with the Certification Project Manager any deficiencies or problem areas found.

13. CERTIFICATION PHASE. When the applicant has met all regulatory requirements for certification, the Certification Project Manager must prepare FAA Form 8000-4, Air Agency Certificate.

15. TASK OUTCOMES

A. If the applicant terminates or fails to complete the certification process, a letter should be sent to the applicant confirming this action. All documentation furnished by the applicant shall be returned.

B. Completion of this task will result in one of the following:

(1) Issuance of a certificate

(2) A letter to the applicant indicating the certificate is denied

C. *Establish an Office File.* The Certification Project Manager will establish a district office file to contain all documents associated with the certification process.

D. *File a PTRS Transmittal Form*

17. FUTURE ACTIVITIES

A. *Transition.* The district office manager must ensure there is an orderly transition from the certification process to certificate management.

B. *Post-certification Program.* Carefully observe the operator during the first 90 days. Additional inspections may be necessary to determine operating practices are performed at an adequate level of safety. Direct particular attention to areas that may not have been demonstrated or observed during certification.

[CHAPTERS 157 THROUGH 160 RESERVED]

CHAPTER 161 INTRODUCTION TO FAR PART 145

Section 1 General

1. PURPOSE

A. This chapter defines FAR Part 145 repair stations and their capabilities. It also defines and describes air agency certificates and operations specifications.

B. *Definitions*

(1) *Domestic repair station:* A facility, located in the U.S., that performs maintenance and/or alterations on airframes, powerplants, propellers, and/or appliances.

(2) *Foreign repair station:* A certificated facility, located outside of the U.S., that performs maintenance and/or alterations on airframes, powerplants, propellers, and/or appliances for U.S. registered aircraft.

(3) *Satellite repair station:* An additional certificated facility or location of a domestic parent facility.

(4) *Manufacturer's Maintenance Facility (MMF):* A manufacturer of aircraft, aircraft engines, propellers, appliances, and/or parts certificated as a repair station with limited ratings.

(5) *Air agency certificate:* FAA Form 8000-4 is the authority granted by the FAA for a repair station to conduct business. The certificate states the following information:

(a) Repair station number

(b) What the repair station's ratings are, to include:

- Class ratings
- Limited ratings
- Limited specialized service ratings

(c) The location and name of the repair station

(d) The expiration date, as applicable

(6) *Operations specifications:* FAA Form 8000-4-1 is issued by the FAA to indicate the limitations to the ratings as specified on the air agency certificate.

(7) *Class ratings:* Ratings issued if the repair station can prove the capability to maintain a representative number of products under this rating. A class rating should not be issued and then restricted to a specific product. For such a case, a limited rating should be issued.

(8) *Limited ratings:* Ratings issued to repair stations for the performance of maintenance on particular makes and models of airframes, powerplants, propellers, radios, instruments, accessories, and/or parts.

(9) *Limited specialized service ratings:* Ratings issued for a special maintenance function when the function is performed in accordance with a specification or data acceptable to the Administrator. The operations specifications must include the specifications or data used by the repair station to perform that service in accordance with FAR § 145.33(c).

Section 2 Air Agency Certificates and Operations Specifications

1. COORDINATION. Issuing or amending operations specifications may affect other specialties. Operations specifications should be reviewed by airworthiness maintenance and avionics inspectors to determine if their areas are affected. This coordination may reveal the need for further communication with the operator or other FAA personnel.

3. PREPARATION. Air agency certificates and operations specifications are legal documents. Language should clearly specify the authorizations, ratings, and/or limitations being approved. When filling out these forms, there should not be any erasures, strikeovers, or typographical errors.

A. *Air Agency Certificates.* The certificate will include the following information:

(1) *Domestic repair stations*

(a) After "Number", insert the certificate number assigned to the facility. This will be in accordance with the current air agency numbering system.

(b) Under "This certificate is issued to", insert the official name of applicant's business. This must be the same as shown on the application form.

(c) Under "whose business address is", insert the address/location of the applicant's business. This must be the same as shown on the application form

(d) After "to operate an approved", insert the words "repair station".

(e) Under "with the following ratings:" insert the ratings issued. The ratings must be listed by the general category, such as airframe, powerplant, radio, etc.

- If a repair station is issued a limited rating, then it must be listed as such on the certificate, e.g., limited radio
- When ratings are added or amended, the date of each issuance will be shown in parenthesis following the added or amended rating

(f) After "shall continue in effect," insert the word "indefinitely".

(g) Under "Date issued:", insert the issuance date of the certificate. This will be the date of original certification.

(h) Under "By direction of the Administrator", insert the signature of the office manager.

(2) *Foreign repair stations*

(a) After "Number", insert the certificate number assigned to the facility. This will be in accordance with the current air agency numbering system.

(b) Under "This certificate is issued to", insert the official name of applicant's business. This must be the same as shown on the application form.

(c) Under "whose business address is", insert the address/location of the applicant's business. This must be the same as shown on the application form.

(d) After "to operate an approved", insert the words "repair station".

(e) Under "with the following ratings:" insert the ratings issued. The ratings must be listed in the broad sense, such as airframe, powerplant, radio, etc.

- If a repair station is issued a limited rating, then it must be listed as such on the certificate, e.g., limited radio
- When ratings are added or amended, the date of each issuance will be shown in parenthesis following the added or amended rating

(f) Where the certificate states "shall continue in effect," insert the date of expiration (see Vol. II, Ch. 162, Section 1).

(g) Under "Date issued:", insert the issuance date of the certificate. This will be the date of original certification.

(h) Under "By direction of the Administrator", insert the signature of the office manager.

(i) At the very bottom of the page, the last line referring to "any alteration of the certificate" will be stricken in its entirety.

B. *Operations Specifications*

(1) Following "The rating(s) set forth on Air Agency Certificate Number", insert the air agency certificate number from the respective certificate.

(2) Following "is/are limited to the following", insert, as applicable:

- Class ratings
- Limited ratings, to include makes, models, or parts
- Limited rating for specialized services, to include the specification used
- Air carrier's geographic authorization, (foreign certificate holders only)

(3) Following "Delegated authorities", insert "none".

(4) Under "Date issued or revised", insert the date the inspection was satisfactorily completed.

(5) Under "For the Administrator", insert the signature block of the assigned inspector.

Section 3 Evaluating A FAR Part 145 Foreign Repair Station Under Contract to a U.S. Carrier At A Location Other Than The Repair Station Facility

1. GENERAL

A. U.S. air carriers have encountered a need for maintenance at stations where the frequency and scope of that maintenance does not warrant staffing and equipping the station for its accomplishment. This situation may be further complicated by prohibition against U.S. mechanics working in foreign countries by the government of those countries.

B. In an effort to provide those services while reducing the administrative effort of the FAA and industry, procedures were developed to certificate these activities for specific contracted air carriers. This certificate may be issued to a foreign air carrier, manufacturer, or other maintenance organization in accordance with FAR Part 145, Subpart C.

C. If similar work is already being done at a remote location on like equipment and meets the conditions for contractual work as described in this chapter, the existing operations specifications can be issued/amended without further demonstration of ability or submittal of an application.

CHAPTER 162 CERTIFICATE FAR PART 145 DOMESTIC REPAIR STATION/SATELLITE STATION

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3230

B. *Avionics:* 5230

3. OBJECTIVE. This chapter describes the process used to evaluate an applicant for certification of a domestic or satellite repair station.

5. THE CERTIFICATION PROCESS. This process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested. The certification process consists of five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

A. *Preapplication Phase*

(1) *Preapplication Statement of Intent (PASI), FAA Form 8400-6*

(a) The PASI will be used by the Manager, Flight Standards Division or designee to evaluate the complexity of the proposed operation. This allows the establishment of the certification team to be based on the complexity of the certification. A Certification Project Manager (CPM) will be designated as the principal spokesperson for the FAA during certification.

(b) An applicant should conduct a thorough review of the appropriate regulations and advisory material to provide guidance for personnel, facility, equipment, and documentation requirements. As a result of this review, the applicant must address, in the PASI, how these requirements will be met.

NOTE: Submittal of the PASI by the applicant shows an intent to initiate the certification process.

(2) *Preapplication Meeting.* The preapplication meeting should be held in the district office. This will allow the applicant to become familiar with the FAA personnel with whom they will be working.

(3) *Application for Repair Station Certificate and/or Rating, FAA Form 8310-3.* During the preapplication meeting the applicant should be instructed on how to complete the application.

(4) *Formal Application Attachments.* During the preapplication meeting requirements for the application attachments should be discussed. This discussion should include the following:

(a) *Inspection Procedures Manual.* The applicant should be encouraged to use Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended, for guidance in developing the manual. The manual should allow the user to understand its content without further explanation and must not contradict any regulatory requirements.

NOTE: It is the applicant's responsibility to develop manuals and procedures that ensure safe operating practices and compliance with the rules. The team can offer suggestions for improvement but must not "write" the material.

(b) *Compliance statement.* The compliance statement will ensure that all applicable regulatory requirements are addressed during the certification process. This is done by listing each applicable FAR Part 145 section with a brief narrative or specific reference to a manual/document that describes how the applicant will comply with the regulation.

NOTE: If the Inspection Procedures manual references sections of the applicant's existing company Quality Control manual there must be a corresponding cross reference list. This list must reference the FAR sections to corresponding manual pages and can be used in place of a compliance statement.

B. *Formal Application Phase.* To begin the Formal Application Phase the team will receive the application, and attachments. As a rule, the team will meet with the applicant after receiving the formal application package. All questions about the proposed operation, the formal application, and attachments should be resolved at this time. The meeting should consist of the certification team members and all key management personnel from the applicant's organization.

C. *Document Compliance Phase.* In this phase, the application is thoroughly reviewed for approval or disapproval and the manual and related attachments are reviewed for acceptance or rejection. This review ensures both conformity to the applicable regulations and safe operating practices. This phase is done in the district office by the certification team.

D. *Demonstration and Inspection Phase.* In this phase the certification team ensures that the applicant's proposed procedures are effective and that facilities and equipment meet regulatory requirements. The Certification Project Manager must decide if demonstrations will be required.

E. *Certification Phase.* Once the applicant meets the regulatory requirements of FAR Part 145, the certification team will issue the repair station certificate and operations specifications with the appropriate ratings.

7. SPECIALIZED SERVICE RATINGS. An applicant may request a Specialized Service Rating, e.g., emergency equipment, non-destructive testing, welding, altimeter/pitot static testing, etc. The repair station's operations specifications must contain the military or civilian specification used in performing the specialized service. This specification must be current and approved by the Administrator.

9. WORK PERFORMED AWAY FROM THE STATION/SATELLITE STATIONS

A. *Work Performed Away from the Station*

(1) A station may perform work at a place other than its fixed location by moving facilities, material, equipment and technical personnel to perform specific maintenance functions such as the following:

- Testing of altimeter systems
- Non-Destructive Testing (NDT)
- Responding to special circumstances, such as an aircraft on the ground (AOG) at an isolated airport requiring repairs to allow it to be flown safely to the operator's main base or to a repair station

NOTE: Continuous operation at a permanent facility other than the station's fixed location must not occur.

(2) Procedures for performing and inspecting this work must be included in the repair station manual. The certificate holder must perform the work in the same manner as when performed at the parent facility, to include using:

- All necessary personnel
- All required technical data
- All required materials
- All required equipment

NOTE: The address shown on the repair station's certificate is considered the station's fixed location. Any other fixed location must be certificated as a satellite station.

B. *Satellite Facilities*

(1) A domestic repair station may request certification of satellite facilities only within the United States or its possessions. If certification is sought outside this area, that facility is considered a foreign repair station and must be certificated as such, per Vol. II, Ch. 163.

(2) A parent facility requests a satellite certificate to ensure control over the inspection procedures at these facilities and locations. Though the parent facility is establishing and ensuring this control, each satellite must satisfy all requirements of FAR Part 145 for each rating sought.

(3) The precertification number of a satellite facility coincides with the parent repair station number. Advise AVN-120 (Aviation Standards National Field Office) that a satellite repair station number is required.

(4) A repair station may cross-utilize personnel anywhere in its system, as long as:

- Personnel are identified on the station roster

- The repairman's certificate shows the parent station certificate number

(5) Each satellite repair station is to be considered a stand-alone operation with the district office nearest the location of the satellite having jurisdiction over that facility.

(a) The district office having jurisdiction over the parent facility shall certificate the satellite only if the physical location falls within its geographic control.

(b) Any district office that has certificated a satellite in another district's geographic area of responsibility shall coordinate and cause transfer of the responsibility for that operation to the appropriate office at the earliest opportunity.

(6) Any differences of opinion and/or position relating to the inspection procedures of satellite repair stations and the parent repair station shall be resolved by negotiation between the responsible district offices.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination String Course
- Previous experience with certification or surveillance of FAR Part 145 Repair Stations

B. *Coordination.* This task requires coordination among airworthiness inspectors. Regional coordination may be required.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 45, 65, 121, and 125
- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- SFAR 36
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Chs. 161, 164, and 165

B. *Forms*

- FAA Form 8000-4, Air Agency Certificate
- FAA Form 8000-4-1, Repair Station Operations Specifications
- FAA Form 8060-4, Temporary Airman Certificate
- FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- FAA Form 8400-6, Preapplication Statement of Intent (PASI)
- FAA Form 8610-2, Airman Certificate and/or Rating Application, if applicable
- AC Form 8300-10, Certificate, Authorization, or Designation Action Request

C. *Job Aids.* None.

5. PREAPPLICATION PHASE

A. *Respond to Initial Inquiry*

(1) Discuss with the applicant the following subjects, to include:

(a) The necessary technical expertise required by the applicant's proposed organization, to include the following:

- Aviation-related experience
- Proposed organizational structure

- Knowledge of the specific maintenance functions to be performed

(b) The rating required for the type of work to be accomplished

(c) The requirements for sufficient personnel to meet the demands of the proposed repair station. This includes at least one certificated person with appropriate ratings that coincide with the ratings sought.

(d) Facility requirements for the ratings sought, to include:

- The need for climate-controlled conditions
- The size of the facility
- Appropriate test equipment
- Special tools, etc.

(e) The necessity of having current technical data available prior to certification. Technical data will include the following:

- Federal Aviation Regulations
- Airworthiness Directives
- Type certificate data sheets, if applicable
- Advisory Circulars, as required
- Processes, e.g., maintenance processes
- Manufacturer's service manuals, instructions, and Service Bulletins

NOTE: Appliance manufacturer's maintenance manuals or instructions, though not specifically approved by the FAA, are considered to be in compliance with FAR §§ 43.7, 65.95, 121.379(b), 135.437(b), and 145.51.

(2) Furnish a PASI to the applicant with instructions to complete and submit it to the district office in whose area the parent facility is located.

B. *Initiate Certification Process.* Upon receipt of a completed and signed PASI, the district office must accomplish the following:

(1) For a satellite certification coordinate with Certificate Holding District Office of the parent repair station

(2) Coordinate with the district office manager/designee to determine the control of the following:

- Supervision of the certification process
- Makeup of the certification team

(3) The designated certification team will process the PASI as follows:

(a) Obtain a precertification number from AVN-120

(b) Check the "Information only" block and enter the date the PASI was forwarded to the region

(c) In the Remarks section, enter "Proceeding with formal certification" and show the precertification or final certificate number

(d) Forward one copy of the PASI to the Manager, Flight Standards Division. Retain the original in the district office.

(4) The Certification Project Manager will contact the applicant to arrange a preapplication meeting.

C. *Conduct Preapplication Meeting.* Meet with the applicant to discuss questions, if any, concerning the certification process, regulatory requirements, the formal application and attachments, etc. Accomplish the following during the meeting(s):

(1) Discuss the regulations applicable to the proposed maintenance operation

(2) Provide the applicant with the following material:

- A copy of Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- A copy of FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- Copies of FAA Form 8610-2 Repairman Application, if applicable

(3) Inform the applicant that a formal application package for a domestic repair station certificate must contain the following material:

- A completed FAA Form 8310-3
- Two copies of the Inspection Procedures Manual
- Two copies of contracted functions to be performed for the repair station, as applicable
- A letter requesting the application be processed and indicating when facilities and equipment will be ready for formal inspection
- A letter of compliance
- An application for repairman certificate and letter of recommendation, if applicable
- If a Limited Rating is requested, the make and model of the particular item(s) to be maintained and the nature of the work to be performed
- If approval of a Class 2 Propeller Rating or a Class 1, 2, or 3 Accessory Rating is being sought, a list, by type or make, of the propeller or accessory

7. FORMAL APPLICATION PHASE

A. *Receive the Formal Application.* Ensure that all documents have been submitted and are complete.

B. *Evaluate Application Package.* Based on the initial survey of the application package a decision must be made whether to continue with the certification process.

C. *Conduct Application Meeting.* Any open questions concerning the package must be answered before proceeding to the next phase. This should be done in the most effective way possible, e.g., meetings or correspondence.

9. DOCUMENT COMPLIANCE PHASE

A. *Review Application Package.* Review the content of each submitted document for regulatory compliance. The documents to be reviewed include:

- A completed FAA Form 8310-3
- Inspection Procedures Manual (ref Vol. II, Ch. 164)
- The contracted functions to be performed for the repair station, if applicable
- The letter of compliance
- Application for repairman certificate and letter of recommendation, if applicable
- The list of makes and models of the particular item(s) to be maintained and the nature of the work to be performed for any Limited Ratings
- The list, by type or make, of the of the propeller or accessory to worked on for a Class 2 Propeller Rating or a Class 1, 2, or 3 Accessory Rating

B. *Document Deficiencies.* If deficiencies are found in any document, return it to the applicant with a letter outlining the deficient areas. Inform the applicant that the certification process will not continue until all deficiencies are resolved.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Coordinate and Schedule Inspection.* Coordination is required between the Certification Project Manager, team members, and the applicant.

B. *Perform Housing and Facility Inspection.* During the Demonstration and Inspection Phase, inspect repair station facilities to ensure that work being done is protected from weather elements, dust, and heat. Ensure that workers are protected to the point that the quality of their work will not be impaired (ref Vol. II, Ch. 165). In addition, inspect the following:

(1) The inspection system, refer to Vol. II, Ch. 164, to ensure:

- Employees are familiar with and are capable of performing their assigned duties
- Facilities are capable of supporting manual procedures

(2) Maintenance recordkeeping system to ensure compliance with FAR § 145.61.

(3) The system for reporting serious defects or unairworthy conditions to ensure compliance with FAR § 145.63.

C. *Evaluate Maintenance Organization.* Ensure the following:

(1) The number of personnel is sufficient to satisfy the volume and type of work to be performed, as required by FAR § 145.39

(2) Individuals directly in charge of a maintenance functions are appropriately certificated

(3) A personnel roster is available and includes all supervisory and inspection personnel

(4) Supervisory and inspection personnel employment summaries are available

D. *Analyze Deficiencies*

(1) If deficiencies are noted, notify the applicant in writing. If appropriate, meet with the applicant to review deficiencies in detail.

(2) Corrective action must be taken and the Certification Project Manager notified in writing, by the applicant, in order for the certification process to continue. Each deficiency and corrective action must be fully documented and recorded in the certification file.

13. CERTIFICATION PHASE

A. *Prepare Certificates.* When the applicant has met all regulatory requirements, the Certification Project Manager will accomplish the following:

(1) Complete blocks 6-9 of FAA Form 8310-3, to show:

- Findings and recommendations
- Any remark or discrepancy noted during inspection
- Date of inspection
- Office and signature of Certification Project Manager

(2) Prepare FAA Form 8000-4, Air Agency Certificate, which shall be signed by the district office manager

(3) Prepare FAA Form 8000-4-1, Repair Station Operations Specifications. The operations specifications, showing the limitations to be issued, shall be signed by the appropriate maintenance or avionics inspector. These limitations may be listed on separate operations specifications pages.

NOTE: The Air Agency Certificate and operations specifications for a satellite repair station will be issued by the district office in which the satellite is located. A copy will be forwarded to the Certificate Holding District Office of the parent organization.

(4) If applicable, issue FAA Form 8060-4, Temporary Airman Certificate, with appropriate ratings

B. *Prepare Certification Report.* Ensure a certification report is prepared. The report must include the name and title of each inspector on the certification team. The report is signed by the Certification Project Manager and contains at least the following:

- A copy of the PASI
- The completed FAA Form 8310-3
- The compliance statement
- A copy of the Air Agency Certificate issued
- A copy of the issued operations specifications
- A copy of any Temporary Airman Certificate issued
- A summary of all discrepancies encountered during the inspection

15. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task will result in one of the following:

- Issuance of a certificate and operations specifications
- A letter to the applicant indicating the certificate is denied
- A letter to the applicant confirming termination of the certification process by the applicant

C. *Distribute Certification Report.* Distribute the completed report as follows:

- Retain the original certification report in the district office
- Forward one copy of the certificate report, certificate, and operations specifications to all involved district and regional offices

D. *Document Task.* File all supporting paperwork in the certificate holder/applicant's office file.

17. FUTURE ACTIVITIES. The district office must ensure there is an orderly transition from the certification process to certificate management.

CHAPTER 163 CERTIFICATE FAR PART 145 FOREIGN REPAIR STATION/ADDED RATING

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3230

B. *Avionics:* 5230

3. OBJECTIVE. This chapter describes the process used to evaluate an applicant for certification of a foreign repair station or added rating.

5. THE CERTIFICATION PROCESS. The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance or denial. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested. The certification process consists of five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

NOTE: For the purposes of this chapter, "district office" refers to the office performing the certification, to include International Field Offices, as applicable.

A. *Preapplication Phase*

(1) *Preapplication Statement of Intent (PASI) FAA Form 8400-6*

(a) The PASI will be used by the Manager, Flight Standards Division or designee to evaluate the complexity of the proposed operation. This allows the establishment of the certification team to be based on the complexity of the certification. A Certification Project Manager (CPM) will be designated as the principal spokesperson for the FAA during certification.

(b) An applicant should conduct a thorough review of the appropriate regulations and advisory material to provide guidance for personnel, facility, equipment, and documentation requirements. As a result of this review, the applicant must address, in the PASI, how these requirements will be met.

NOTE: Submittal of the PASI by the applicant shows an intent to initiate the certification process.

(2) *Preapplication Meeting.* The preapplication meeting should be held in the district office. This will allow the applicant to become familiar with the FAA personnel with whom they will be working.

(3) *Application for Repair Station Certificate and/or Rating, FAA Form 8310-3.* During the preapplication meeting the applicant should be instructed on how to complete the application.

(4) *Formal application attachments.* During the preapplication meeting requirements for the application attachments should be discussed. This discussion should include the following:

(a) *Inspection Procedures Manual.* The applicant should be encouraged to use Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended, for guidance in developing the manual. The manual should allow the user to understand its content without further explanation and must not contradict any regulatory requirements.

NOTE: It is the applicant's responsibility to develop manuals and procedures that ensure safe operating practices and compliance with the rules. The team can offer suggestions for improvement but must not "write" the material.

(b) *Compliance statement.* The compliance statement will ensure that all applicable regulatory requirements are addressed during the certification process. This is done by listing each applicable FAR Part 145 section with a brief narrative or specific reference to a manual/document that describes how the applicant will comply with the regulation.

NOTE: If the Inspection Procedures manual references sections of the applicant's existing company Quality Control manual there must be a corresponding cross reference list. This list references the FAR sections to corresponding manual pages and can be used in place of a compliance statement.

(c) *Additional certification information and data requirements.* The foreign repair station must submit the following additional information and data for original certification:

- A letter stating the reasons for requesting foreign repair station certification
- Two copies of a suitably bound brochure including all of the requirements listed in FAR § 145.11
- Evidence that the prescribed fees, per FAR Part 187 Appendix A, have been paid
- If available, a copy of the repair station certificate issued by the country where the station is located

(d) *Additional certification renewal information and data requirements.* The foreign repair station, when applying to the district office, must submit the following additional information and data for certificate renewal:

- Records of work on U.S. aircraft/components since last certificate was issued
- Evidence that the prescribed fees, per FAR Part 187 Appendix A, have been paid

(5) *Personnel certificate requirements*

(a) Personnel requirements for foreign repair stations differ from domestic requirements in that airman certificates are not required for supervisory or inspection positions.

(b) If no certificate is held from either the U.S. or the country where the station is located, the determination of performance qualifications is made by using oral or practical tests, or any method acceptable to the Administrator.

(6) *Supervisory and final inspection personnel requirements.* Personnel qualifications for supervisory and final inspection personnel include the following:

(a) The ability to understand the following:

- Applicable FAA regulatory requirements
- FAA Airworthiness Directives
- Maintenance and service instructions for the items to be worked on
- U.S. type certificate data sheets

(b) The ability to read, write, and understand English

B. *Formal Application Phase.* To begin the Formal Application Phase the team will receive the application, and attachments. As a rule, the team will meet with the applicant after receiving the formal application package. All questions about the proposed operation, the formal application, and attachments should be resolved at this time. The meeting should consist of the certification team members and all key management personnel from the applicant's organization.

C. *Document Compliance Phase.* In this phase, the application is thoroughly reviewed for approval or disapproval and the manual and related attachments are reviewed for acceptance or rejection. This review ensures both conformity to the applicable regulations and safe operating practices. This phase is done in the district office by the certification team.

D. *Demonstration and Inspection Phase.* In this phase the certification team ensures that the applicant's proposed procedures are effective and that facilities and equipment meet regulatory requirements. The Certification Project Manager must decide if demonstrations will be required.

E. *Certification Phase*

(1) Once the applicant meets the regulatory requirements of FAR Part 145, the certification team will issue the repair station certificate and operations specifications with the appropriate ratings.

(2) *Certificate Durations.* Foreign repair station certificates expire 12 months after initial certification. A certificate can be renewed for up to 24 months if:

- The repair station meets regulatory requirements for renewal
- The application is submitted prior to the certificate expiration date

7. SPECIAL AUTHORIZATIONS/SPECIALIZED SERVICE RATINGS

A. *Special Authorizations.* U.S. air carriers at times encounter a need for maintenance at stations where the frequency and scope of that maintenance does not warrant staffing and equipping the station for its accomplishment. This situation may be further complicated by prohibition against U.S. mechanics working in foreign countries by the government of those countries.

(1) To provide these services while reducing the administrative effort of the FAA and industry, procedures were developed to certificate these activities for specific contracted air carriers. This certificate may be issued to a foreign air carrier, manufacturer, or other maintenance organization in accordance with FAR Part 145, Subpart C.

(2) If similar work is already being done at a remote location on like equipment and meets the conditions for contractual work as described in this chapter, the existing operations specifications can be issued/amended without further demonstration of ability or submittal of an application.

B. *Specialized Service Ratings.* An applicant may request a Specialized Service Rating, e.g., emergency equipment, non-destructive testing, welding, aircraft static testing for radio shops, etc. The repair station's operations specifications must contain the military or civilian specification used in performing the specialized service. This specification must be industry current and approved by the Administrator.

9. WORK PERFORMED AWAY FROM STATION WITHIN THE COUNTRY OF LOCATION

A. A station may perform work at a place other than its fixed location by moving facilities, material, equipment and technical personnel to perform specific maintenance functions such as the following:

- Testing of altimeter systems
- Non-Destructive Testing (NDT)
- Responding to special circumstances, such as an aircraft on the ground (AOG) at an isolated airport requiring repairs to allow it to be flown safely to the operator's main base or to a repair station

NOTE: Continuous operation at a permanent facility other than the station's fixed location must not occur.

B. Procedures for performing and inspecting this work must be included in the repair station manual. The certificate holder must perform the work in the same manner as when performed at the parent facility, to include using:

- All necessary personnel
- All required technical data
- All required materials
- All required equipment

NOTE: The address shown on the repair station's certificate is considered the station's fixed location.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination String Course
- Previous experience with certification or surveillance of FAR Part 145 Foreign Repair Stations

B. *Coordination.* This task requires coordination among

- Certification team members
- Regional and district offices, as appropriate

- U.S. Embassy and the Foreign Civil Air Authority (FCAA) of the country involved

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 45, 121, 125, and 187
- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Chs. 161, 164, and 165

B. *Forms*

- FAA Form 8000-4, Air Agency Certificate
- FAA Form 8000-4-1, Repair Station Operations Specifications
- FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- FAA Form 8400-6, Preapplication Statement of Intent (PASI)
- AC Form 8300-10, Certificate, Authorization, or Designation Action Request

C. *Job Aids.* None.

5. PREAPPLICATION PHASE

A. *Respond to Initial Inquiry*

(1) Discuss with the applicant the following subjects, to include:

(a) The necessary technical expertise required by the applicant's proposed organization, to include the following:

- Aviation-related experience
- Proposed organizational structure
- Knowledge of the specific maintenance functions to be performed

(b) The ratings required for the type of work to be accomplished

(c) The requirements for sufficient personnel to meet the demands of the proposed repair station

(d) Facility requirements for the ratings sought, to include:

- The need for climate-controlled conditions
- The size of the facility
- Appropriate test equipment
- Special tools, etc.

(e) The necessity of having current technical data available prior to certification. Technical data will include the following:

- Federal Aviation Regulations
- Airworthiness Directives
- Type Certificate data sheets, if applicable
- Advisory Circulars, as required
- Processes, e.g., maintenance processes
- Manufacturer's approved service manuals, instructions, and Service Bulletins

NOTE: Appliance manufacturer's maintenance manuals or instructions, though not specifically approved by the FAA, are considered to be in compliance with FAR §§ 43.7, 65.95, 121.379(b), 135.437(b), and 145.51.

B. *Review Request for Validity*

(1) Instruct the applicant to complete and submit both a letter stating the reasons for opening a repair station and two copies of a suitably bound brochure. The brochure must include the following:

- A physical description of the facilities
- Photographs of the facilities
- A description of the proposed inspection system with an organizational chart

- A list, including names and titles, of all managing and supervisory personnel

- A list of services obtained under contract, if any, with the names of each contractor and the types of service provided

(2) Upon receipt of the letter and brochure, the district office must accomplish the following:

(a) Coordinate with the regional office to determine if the request for repair station is valid, per FAR § 145.71 and 145.73

(b) Coordinate with the Foreign Civil Air Authority of the country involved to determine acceptability of certification

(3) If the request is deemed invalid, stop the process at this point and notify applicant.

(4) If the request is deemed valid:

(a) Furnish a PASI to the applicant with instructions to complete and submit it to the district office in whose area the parent facility is located.

(b) Instruct the applicant to submit proof of payment of the fees prescribed by FAR Part 187

(c) Coordinate with the U.S. Embassy in the country involved

C. *Initiate Certification Process*

(1) Upon submittal of the PASI, the district office must do the following:

(a) Forward one copy of the PASI to the Manager, Flight Standards Division. Retain the original in the district office.

(b) Coordinate with the Manager, Flight Standards Division or designee to decide the control of the following:

- Supervision of the certification process

- Makeup of the certification team

(2) The designated certification team will process the PASI as follows:

(a) Obtain a precertification number from AVN-120. A final certificate number may be requested instead of a precertification number.

(b) Check the "Information only" block on the PASI and enter the date the PASI was forwarded to the Manager, Flight Standards Division

(c) In the Remarks section, enter "Proceeding with formal certification" and show the precertification or final certificate number

(3) The Certification Project Manager will contact the applicant to arrange a preapplication meeting.

D. *Conduct Preapplication Meeting.* Meet with the applicant to discuss questions, if any, concerning the certification process, regulatory requirements, the formal application and attachments, etc. Accomplish the following during the meeting(s):

(1) Discuss the regulations applicable to the proposed maintenance operation

(2) Provide the applicant with the following material:

- A copy of Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals

- A copy of FAA Form 8310-3, Application for Repair Station Certificate and/or Rating

(3) Inform the applicant that a formal application package for a foreign repair station certificate must contain the following material:

(a) A completed FAA Form 8310-3

(b) Two copies of the Inspection Procedures Manual

(c) A letter of compliance

(d) For approval of a Class 2 Propeller Rating or a Class 1, 2, or 3 Accessory Rating, two copies of a list, by type or make, of the propeller or accessory

7. FORMAL APPLICATION PHASE

A. *Receive the Formal Application.* Ensure that all documents have been submitted and are complete.

B. *Evaluate Application Package.* Based on the initial survey of the application package, a decision must be made whether to continue with the certification process.

C. *Conduct Application Meeting.* Any open questions concerning the package must be answered before proceeding to the next phase. This should be done in the most effective way possible, e.g., meetings or correspondence.

9. DOCUMENT COMPLIANCE PHASE

A. *Review Application Package.* Review the content of each submitted document for regulatory compliance. The documents to be reviewed include:

- A completed FAA Form 8310-3
- Inspection Procedures Manual (see Vol. II, Ch. 164)
- The letter of compliance
- The list, by type or make, of the of the propeller or accessory to worked on for a Class 2 Propeller Rating or a Class 1, 2, or 3 Accessory Rating

B. *Document Deficiencies.* If deficiencies are found in any document, return it to the applicant with a letter outlining the deficient areas. Inform the applicant that the certification process will not continue until all deficiencies are resolved. If the certification process is stopped, the involved U.S. embassy, Foreign Civil Air Authority, and Manager, Flight Standards Division must be informed.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Perform Housing and Facility Inspection.* During the Demonstration and Inspection Phase, inspect repair station facilities to ensure that work being done is protected from weather elements, dust, and heat. Ensure that workers are protected to the point that the quality of their work will not be impaired (see Vol. II, Ch. 165). Additionally, inspect the following:

(1) The inspection system, refer to Vol. II, Ch. 164, to ensure:

- Employees are familiar with and capable of performing their assigned duties
- Facilities can support manual procedures

(2) Maintenance recordkeeping system, to ensure compliance with FAR § 145.79

(3) The system for reporting serious defects or unairworthy conditions, to ensure compliance with FAR § 145.79

B. *Evaluate the Maintenance Organization.* Ensure that the number of personnel is sufficient to satisfy the volume and type of work to be performed, as required by FAR § 145.75.

C. *Analyze Deficiencies*

(1) If deficiencies are noted, notify the applicant in writing. If appropriate, meet with the applicant to review deficiencies in detail.

(2) Corrective action must be taken and the Certification Project Manager notified in writing, by the applicant, in order for the certification process to continue. Each deficiency and corrective action must be fully documented and recorded in the certification file.

13. CERTIFICATION PHASE

A. *Prepare Certificates.* When the applicant has met all regulatory requirements, the Certification Project Manager will accomplish the following:

(1) Complete blocks 6-9 of FAA Form 8310-3, to show:

- Findings and recommendations
- Any remark or discrepancy noted during inspection.
- Date of inspection
- Office and signature of Certification Project Manager

(2) Prepare FAA Form 8000-4, Air Agency Certificate, which shall be signed by the district office manager

(3) Prepare FAA Form 8000-4-1, Repair Station Operations Specifications. The operations specifications showing the limitations to be issued shall be signed by the appropriate maintenance or avionics inspector. These limitations may be listed on separate operations specifications pages.

NOTE: If applicable, the FAR Part 145 certificate should not exceed the ratings and limitations of the repair station certificate issued by the country where the station is located.

B. *Prepare the Certification Report.* Ensure a certification report is prepared. The report must include the name and title of each inspector on the certification team. The report is signed by the Certification Project Manager and contains at least the following documentation:

- A copy of the PASI
- The completed FAA Form 8310-3
- The compliance statement
- A copy of the Air Agency Certificate issued
- A copy of the issued Operations Specifications

15. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task will result in the following:

(1) For a successful certification:

(a) Issuance of a certificate and operations specifications

(b) Notification of issuance to the following:

- Applicant
- U.S. Embassy in the country involved
- Foreign Civil Air Authority of the country involved

(2) For an unsuccessful certification, due to either applicant termination or the failing of inspection, letters describing the situation to the following:

- Applicant
- Regional office
- U.S. Embassy in the country involved
- Foreign Civil Air Authority of the country involved

C. *Distribute the Certification Report.* Distribute the completed report as follows:

- Retain the original certification report in the district office
- Forward a copy of the certification report to the Manager, Flight Standards Division

17. FUTURE ACTIVITIES

A. *Transfer of Activities.* The district office must ensure there is an orderly transition from the certification process to certificate management.

B. *Surveillance Scheduling.* When certification is complete, surveillance scheduling must be done for certificate renewal.

CHAPTER 164 EVALUATE FAR PART 145 INSPECTION PROCEDURES MANUAL/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3230/3371

B. *Avionics:* 5230/5371

3. OBJECTIVE. This chapter describes the procedures necessary to evaluate, accept, and/or deny all FAR Part 145 repair/satellite stations' Inspection Procedures Manual submissions or revisions.

5. GENERAL

A. *Regulatory Requirements.* Before issuing a certificate, a manual that includes the applicant's inspection procedures must be accepted by the Administrator. When a certificate holder revises an existing manual, these revisions must be submitted to the FAA for acceptance prior to implementation. The process in both of these situations is the same.

B. *Non-regulatory Items.* There are some recommendations included in this handbook referenced from Advisory Circular 145-3 that are not required by the regulations. They have been included to assist the inspector and certificate holder/applicant in developing a more complete description of the repair station's overall functions and responsibilities.

C. If this task is performed as part of an original certification, the entire manual will be submitted. If this task is performed as a revision, only that portion of the manual that is revised will be received.

D. Domestic repair stations may approve articles for return to service after a major repair. In order to do this, the customer's work order and maintenance release may be used, in lieu of FAA Form 337, under the privileges of their certificate. Additionally, the repair station must provide the customer:

- A signed copy of the work order, showing the work accomplished
- The maintenance release form signed by an authorized repair station representative

NOTE: Both of these items may be on the same form, therefore requiring only one signature.

E. *Work Performed For FAR Part 121/125 Operators*

(1) Repair stations that perform work for operators operating under a FAR Part 121 continuous airworthiness maintenance program must include a section on how FAR Part 121 Subpart L and the air carrer's manual is to be complied with, how the work is to be performed and that a current copy of the air carrier's manual will be provided.

(2) Repair stations that perform work for operators operating under a FAR Part 125 approved airplane inspection program must comply with the operator's approved inspection program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination course
- Experience with FAR Part 145 operations

B. *Coordination.* This task may require coordination with other specialties, region, or a district office.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, 121, and 125

- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Chs. 162, 163, and 165

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Certificate Holder/Applicant's Submitted Manual/Revision.* Ensure that:

(1) Submission includes at least two copies of the manual/revision

(2) Each page is signed by an authorized person from the applicant or air agency

B. *Review Certificate Holder/Applicant's Submitted Manual/Revision.* Review the manual/revision to ensure that it meets the regulatory requirements of FAR § 145.45. The manual/revision must include the following:

(1) *Incoming inspections.* A system or method for the following types of inspections of incoming articles and/or materials:

(a) New items from the manufacturer, for:

- Shipping damage
- Traceability of life limits, if applicable
- Identification and tagging of parts to manufacturer's invoice

(b) Overhauled or repaired parts from an approved agency, for:

- Shipping damage
- Traceability of life limits, if applicable
- Traceability of overhaul record and/or maintenance release tag

(c) Items sent out for contracted maintenance functions, for:

- Shipping damage
- Conformity to specifications (FAA and manufacturer's), to include type of material and state of preservation

(d) Items of unknown origin, for:

- Shipping damage
- Conformity to specifications, drawings, or dimensions (FAA and manufacturer's), to include type of material and state of preservation
- Airworthiness status including Airworthiness Directives and traceability of life limits, if applicable
- Functional tests, as applicable

(2) *Preliminary inspections.* A system or method for preliminary inspection of articles to be repaired, for:

- State of preservation
- Functional operation prior to disassembly, if applicable
- Traceability of life limits and/or time since overhaul, if applicable
- Identification and tagging of parts to manufacturers invoice

(3) *Hidden damage inspections.* A system or method for inspection of damaged parts for hidden damage. Ensure that items are disassembled as necessary and inspected for hidden damage in adjacent areas.

(4) *In-progress inspections.* A system or method of inspection, testing, and/or calibration, during and after disassembly and at various stages while work is in progress.

(5) *Final inspection.* A system or method of inspection, testing, and/or calibration of units at completion of work.

(6) *Inspection and in-progress work records.* A system of forms for recording the results of all inspections and in-progress work, and procedures for utilizing and retaining them, per FAR § 145.61. Samples must be included.

(7) Procedures and authorizations for approval for return to service, including a method to ensure, that when signing a maintenance release, the repair station number is included on the release. A sample of the major repair maintenance release statement should be included in the inspection procedures manual.

(8) *Additional manual material.* Ensure that the additional material included in the manual is not contrary to the regulations.

(9) *Manual revision control system.* Ensure that:

(a) For original certification, there is a list of effective pages in accordance with Advisory Circular 145-3

(b) For a revision, that the revision is in accordance with the control system in the certificate holder's current manual

C. *Perform Facilities Inspection, as Applicable.* If a revision includes a change to the facilities or equipment, the inspector must inspect those facilities (see Vol. II, Ch. 165).

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following actions:

(1) Accepting the manual by doing the following:

(a) Placing "Accepted", with date, office identification, and signature of inspector on the list of effective pages

(b) Filing office copy of manual as follows:

- If an original manual, file a copy of the entire Inspection Procedures manual in the certificate holder/applicant's office file
- If a revision, remove affected pages, insert revised pages in current manual, and update the manual control system

(c) Returning the manual to the applicant with a letter, if applicable

(2) Rejecting the manual by doing the following:

(a) Returning all copies to the applicant with letter explaining discrepancies

(b) Explaining to applicant that the manual must be corrected and resubmitted in order to proceed with the certification or revision process

C. *Document Task.* File all supporting paperwork in the certificate holder/applicant's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 165 EVALUATE FAR PART 145 REPAIR STATION'S FACILITIES AND EQUIPMENT

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3378

B. *Avionics:* 5378

3. OBJECTIVE. This chapter describes the procedures used to evaluate a FAR Part 145 repair facility for original certification, change in rating, or change in location or facilities.

5. GENERAL

A. When determining the suitability of permanent housing for the maintenance of airframes, the inspector should consider climatic conditions. This is to determine if worker efficiency will be adversely affected by high or low temperatures, excessive dust or sand, or other conditions. The inspector should also consider the maintenance being performed to determine if work processes are affected adversely by conditions.

B. Because of the requirement for biennial testing of systems on aircraft operating under IFR (FAR §§ 91.171 and 91.172) and other specialized services such as X-ray, magnaflux, etc., there may be a need for a station to have the capability to move from location to location.

(1) Applicants may move any or all of their material, equipment, and technical personnel from place to place for the purpose of performing their functions. The address shown on the repair station application will be considered the station's permanent location.

(2) If the station wishes to establish an additional location different than that shown on the application, the applicant should apply for satellite certification. If facilities exist that the certificate holder does not want certificated as a satellite station, they must be inspected and accepted by the Administrator prior to being used.

C. Applicants for Class 1, 2, or 3 Accessory or Instrument ratings must possess the equipment and have the capability to inspect, test, and where necessary calibrate the items that will be worked on.

7. SATELLITE REPAIR STATION INSPECTIONS

A. An approved repair station may apply for certification of additional facilities or locations as satellites of a parent organization. This enables the parent facility to control inspection procedures at each facility and location. Each satellite must satisfy all requirements of Part 145 for each rating sought. A satellite facility inspection is conducted in the same manner as a repair station facility inspection.

B. A letter must accompany the application. This letter must:

- Request the application be processed
- Indicate when the facilities and equipment will be ready for inspection
- Show the certificate number of the parent station

C. An application for the satellite station need not be limited to the ratings held by the parent organization. The ratings sought by the satellite must be on the application.

D. A U.S. certificated repair station wishing to operate a satellite maintenance facility in a foreign country must apply for a foreign repair station certificate, not a satellite certificate.

9. FOREIGN REPAIR STATIONS INSPECTIONS

A. The supervisory or inspection personnel of a foreign repair station must be able to understand the Federal Aviation Regulations and the maintenance and service instructions of the articles to be worked on. These personnel are not required to hold U.S. airmen certificates.

(1) If no certificate is held, determination of performance qualifications is made by using oral tests, practical tests, or any method acceptable to the Administrator.

(2) Supervisory personnel or personnel responsible for the final inspection of work on an aircraft of U.S. registry at a foreign repair station must be able to read, write, and understand English.

B. Although foreign repair stations are not required to comply with FAR §§ 145.61 and 145.63, foreign repair stations are required to make reports and keep records in compliance with FAR § 145.79.

11. CONTRACT MAINTENANCE FACILITIES

A. FAR § 145.11 requires an applicant for a repair station certificate to provide a list of maintenance functions to be performed by other persons. To ensure the original certification criteria will continue to be met, the certificate holder must submit a revised listing when changes occur. It is the inspector's responsibility to ensure that FAR Part 145, Appendix A allows the work to be contracted out. This listing must be retained in the district office files.

B. If work is contracted out to a non-certificated person, the applicant is responsible for ensuring that all work is performed in accordance with regulatory requirements.

C. If a certificated repair station intends to perform job functions that were previously contracted out, principal inspectors should plan to observe these functions during surveillance. If this requires the addition of facilities or equipment to perform these functions, they must be inspected prior to use.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination course

B. *Coordination.* This task may require coordination with another specialty or district office, and the certificate holder/applicant.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, 121, and 125
- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Chs. 162, 163, and 164

B. *Forms*

- FAA Form 8310-3, Application for Repair Station Certificate and/or Rating

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive/Review Application Documents/Inspection Procedures Manual.* Review the application for accuracy and a determination of ratings or location applied for. Also determine if any maintenance functions will be contracted out.

B. *Evaluate Housing and Facilities.* Inspect the following:

(1) Housing and shop areas to ensure the following:

(a) Adequate housing includes sufficient work space for maintenance functions to be accomplished

(b) If requesting an airframe rating, housing includes:

- Suitable permanent housing for at least one of the heaviest aircraft within the weight class of the rating being sought
- If climatic conditions allow, a permanent work dock that meets the requirements of FAR § 145.35(a)

(c) Proper storage and protection of:

- Materials
- Parts
- Supplies

(d) Proper identification and protection of parts and subassemblies during:

- Disassembly
- Cleaning
- Inspection
- Repair
- Alteration
- Assembly

(e) Segregation of the following:

- Incompatible work areas, e.g., metal shop, battery charging area, or painting area next to an assembly area
- Unpartitioned parts cleaning areas

(f) Proper ventilation, lighting, and temperature and humidity for the type and complexity of work being accomplished

(2) Technical documents to ensure that documents:

- Are in compliance with FAR § 145.57
- Are appropriate for the maintenance to be performed
- Are current, accurate, and complete and in repair station's possession
- Are easily accessible to personnel
- Include a method to ensure revisions are made

(3) Equipment, tools, and test equipment, per rating sought, to ensure:

(a) Required types and quantities are available and under the control of the repair station

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator
- A recordkeeping system of calibration results

NOTE: If the repair station utilizes an engine test cell, it must be correlated to the manufacturer's specifications.

C. *Review Personnel Roster.* Ensure the following:

(1) Personnel directly in charge of maintenance functions for the repair station are certificated in accordance with FAR Part 65, as required by FAR § 145.39(d)

(2) The applicant has a roster of supervisory and inspection personnel that lists at least one appropriately certificated airmen in a supervisory position. This must be based on the complexity of the operation.

(3) Certificate holder's roster includes inspectors authorized to make final airworthiness determinations

(4) Ensure that technical supervisory personnel in propeller or instrument repair stations are certificated as provided for in FAR Part 65, Subpart E

NOTE: In radio repair stations, technical supervisory personnel may be certificated airframe mechanics or certificated repairmen, if appropriately experienced. The repairman certificate should carry the rating "Repairman - Radio."

D. *Analyze Findings.* If deficiencies were found, meet with certificate holder/applicant to discuss possible corrective actions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the one of the following:

(1) If the facilities were found acceptable:

- An entry on the application form in the "Findings - Recommendations" block (block 7) indicating that the facility is acceptable for certification

- A letter acknowledging the successful completion of the inspection
- For change in location, reissue certificate indicating the new location
- For change in rating, if manual IAW Chapter 164 is found acceptable, reissue certificate and operations specifications indicating the change in rating

(2) If the facilities were found unacceptable:

- A letter describing any deficiencies that must be corrected prior to certification
- Schedule a follow-up evaluation to ensure that the corrective actions meet the requirements for certification

C. *Document Task.* File all supporting paperwork in the certificate holder/applicant's office file.

9. FUTURE ACTIVITIES. Perform follow-up inspection, as applicable.

[CHAPTERS 166 THROUGH 184 RESERVED]

CHAPTER 185 INTRODUCTION TO FAR PART 147

1. FAR PART 147. FAR Part 147 prescribes the requirements for issuing aviation maintenance technician school certificates and associated ratings. FAR Part 147 also provides the general operating rules for the holders of those certificates and ratings.

3. CERTIFICATION. Certification teams are used to conduct an original certification, to approve an added rating, and to approve a curriculum change affecting the facilities, equipment, materials, or tools of an existing school.

5. USE OF THE AVIATION MAINTENANCE TECHNICIAN SCHOOL NORM. This guide is used for the FAR Part 147 surveillance task, Vol. 2, Ch. 105.

A. *School Norms.* When an individual school norm drops below the national norm in excess of the requirements of FAR § 147.38(a), an asterisk (*) will appear opposite the school norm on the AC Form 8080-08. The responsible region/district office may obtain more detailed performance information to assist in determining problem areas by requesting AC Form 8080-08 and/or AC Form 8080-13 from AVN-140. The report data may be freely shared with the school to which it refers.

B. *Aviation Maintenance Technician School Norm vs. National Passing Norms, AC Form 8080-08, and Associated Reports in the Series.* This series of reports provides information to the school and the responsible FAA region and district offices about the test performance of school graduates. The reports are used to monitor school performance and to determine whether schools meet the quality of instruction provisions of FAR § 147.38(a). The reports are distributed quarterly following the quarter in which the test activity occurs. On-request reports may be sought at any time. The reports are distributed for all schools on the file for the months of January and July. The report data may be shared freely with the school to which it refers. Requests for report information from persons other than those of the subject school should be referred to AVN-140.

(1) **AC Form 8080-08,** Aviation Maintenance Technician School Norms vs. National Passing Norms, is the basic report of the series. It contains a record of test activity and performance of graduates of the subject school who apply for a mechanic written test for the first time within 60 days after graduation. It is produced quarterly and distributed to each **school** that has mechanic test activity during the report quarter. The report is also available on request to the responsible FAA region or district office.

(2) **AC Form 8080-10,** Aviation Maintenance Technician School Norms vs. National Passing Norms, contains a summary of information for all schools in a region that had written test activity during the report quarter. It is produced quarterly and distributed to the responsible **region.** AC Form 8080-10 is a summary report intended to conserve region/district office manpower in monitoring school activity and performance.

(3) **AC Form 8080-13,** Aviation Mechanic Test Applicant Listing, contains a record by applicant name of the test performance for graduates from a subject school for a time period specified by the requestor. It is produced when requested of AVN-140 by the responsible FAA **region** or **district office** and is distributed to the requesting office.

(4) "Non-school" reports are quarterly reports arranged by the region in which the testing occurred, available by request from AVN-140 of the responsible region. These reports are made for the following:

- Applicants who graduate from a certificated school, but who take the mechanic tests for the first time more than 60 days after graduation
- Applicants who qualify for testing through actual experience and are not graduates of a certificated school

C. *How to Read the Aeronautical Center Report in the 8080 Series.* The report is divided into three AREAS:

(1) *The Heading.* The first horizontal line at the top of all the forms list the name of the report, the quarter test activity, the AC Form number, and the date of the report. The second horizontal line lists the school identifier, the name of the school, the region, and the district office identifier.

(2) *The Main Body*

(a) *AREA 1 - Current Quarter.* Figure 185-1 is a sample of a Current Quarter Report. Current quarter test

activity and performance data for the quarter uses the first five vertical columns on the left side of the form comprising Area 1.

(b) *AREA 2 - Two Year (24 month) Accumulative.* The right side of Figure 185-1 (same as Area 1 above) shows AREA 2. The two year accumulative scores for the total of the school's applicants, the norm, the total number of national applicants, and then the national norm comprise the last four vertical columns on the right hand side of the report.

(c) *AREA 3 - Written Test Subject Area Norm Vs. National Subject Area Norm.* This report compares the school's 12 month subject norm with the national 12 month subject norm directly underneath it. Below the overall 12 month comparison, subject norms are broken down by month comparing the school's norm against the national norm, respectively. The norms are read horizontally across the form. The subject areas are read horizontally by codes A-T at the heading and subject area are abbreviated and read below all the scores.

FIGURE 185-1 READ VALUES FOR AC FORM 8080-08

1. AREA 1 Report. CURRENT MONTH.

Vertical Column 1. TYPE TEST. The types are: GENERAL, AIRFRAME 1 then 2, POWERPLANT 1 then 2

Vertical Column 2. NO. APPLS. Shows total number of applicants taking the original test only. (Partial completions or retakes are not included.)

Vertical Column 3. NO. APPLS. PASS. Total number of applicants passing the test or a section of the test.

Vertical Column 4. PCT. APPLS. PASS. The percent of applicants passing the test or a section of the test.

Vertical Column 5. AVG. GRADE. The average grade for the test or sections of the test.

2. AREA 2 Report. TWO-YEAR ACCUMULATIVE.

Vertical Column 6. APPLS. The total number of applicants from a school taking the test for the first time.

Vertical Column 7. NORM. The school passing norm, representing the percentage of all first time applicants within 60 days after graduation from the certificated school and within the 24 month period of the report.

Vertical Column 8. NAT'L APPL. The total number of applicants from all schools taking the test for the first time within the 24-month period of the report.

Vertical Column 9. NAT'L APPL. The national passing norm, representing the percentage of all applicants from all the schools passing the test on the first attempt within 60 days after graduation and within the 24-month period of the report.

HOW TO INTERPRET: If Column 7 is flagged by an asterisk (*) it notes that the figure is below the norm limits set by FAR Section 147.38(a). It takes into account the school size and the allowable tolerance.

3. AREA 3 Report. ONE-YEAR ACCUMULATIVE DATA, MONTHLY DATA, IDENTIFICATION OF TECHNICAL AREAS.

Horizontal Line 7. Code letters A-T. The code letters are the same as those used in the appropriate "stuffer sheets" provided with written test grade reports [AC Form 8080-2-15 General] [AC Form 8080-2-16 Airframe] [AC Form 8080-2-17 Powerplant]

Horizontal Line 8. SUB NORM 1-YR. Accumulative school applicant norm for each subject area for the school shown in AREA 1 for the 12-month period.

Horizontal Line 9. NAT NORM. 1-YR. Displays the accumulative applicant norm for each subject area for all schools for the 12-month period.

Horizontal Lines 11 - End. This area of the report provides monthly data by dual horizontal line for each of the 12 months of the year. SUB JAN and NAT JAN (through December) show the comparative scores between the school and the nation.

HOW TO INTERPRET: The number in the SUB line should be smaller than the number in the NAT line. The presence of an asterisk preceding the number in the Sub line indicates that that subject area is a problem area for those applicants of the school for which the report is published.

AVIATION MAINTENANCE TECHNICIAN SCHOOL NORMS VS NATIONAL PASSING NORMS — FOR SEP 76 — RIS AC 8080-08 — DATE 10/08/76

SCHOOL 2296 SOUTHERN STATE METROPOLITAN — SOUTHERN — ASO-GADO-61

	CURRENT MONTH					TWO YEAR ACCUMULATIVE			
TYPE TEST	NO APPLS	PCT APPLS PASS	AVG GRADE			APPLS	NORM	APPLS	NATL NORM
POWERPLANT SECTION 1	0	0	0.0			12 *	60	7,217	70
2	0	0	0.0						

AREA 1

AREA 2

AREA 3

WRITTEN TEST SUBJECT AREA NORM VS NATIONAL SUBJECT AREA NORM

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
SUB NORM 1YR	2.71	0.86	0.43					0.57	0.43	1.00	1.71	1.14	*2.29	*1.43	0.86	0.00	*1.00	1.57		
NAT NORM 1YR	2.78	1.49	0.95					0.58	0.44	1.17	2.02	2.14	2.04	1.06	1.06	0.36	0.85	2.31		
SUB JAN	2.50	0.50	0.00					0.00	0.00	0.50	1.00	0.00	*2.50	1.00	0.00	0.00	0.50	0.50		
NAT JAN	2.94	1.36	0.92					0.75	0.39	1.24	1.64	2.11	1.95	1.05	0.92	0.43	0.80	2.31		
SUB FEB	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT FEB	3.06	1.45	1.06					0.65	0.56	0.72	2.04	1.95	1.79	1.13	1.21	0.29	0.94	2.44		
SUB MAR	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT MAR	2.85	1.34	1.07					0.54	0.50	0.76	2.05	2.06	1.78	1.19	1.30	0.27	0.93	2.35		
SUB APR	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT APR	2.34	1.49	1.09					0.36	0.42	0.78	1.98	2.15	1.53	0.95	1.20	0.31	0.89	2.40		
SUB MAY	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT MAY	2.73	1.91	0.97					.6	0	7	2.29	2.11	2.04	1.01	1.23	0.35	0.98	2.59		
SUB JUN	0.00	0.00	0.00					.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT JUN	3.05	1.56	0.91					.6	0	3	2.2	2.23	2.35	1.09	0.98	0.40	0.88	2.26		
SUB JUL	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT JUL	2.86	1.73	0.90					0.65	0.34	1.55	2.13	2.35	2.20	1.08	0.93	0.54	0.83	2.33		
SUB AUG	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT AUG	2.76	1.38	1.00					0.58	0.43	1.45	2.01	2.27	2.18	1.05	1.03	0.41	0.66	2.26		
SUB SEP	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT SEP	2.82	1.42	1.00					0.59	0.39	1.49	2.24	2.17	2.37	1.06	0.97	0.34	0.85	2.21		
SUB OCT	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT OCT	2.53	1.36	0.93					0.58	0.47	1.39	1.63	1.99	1.97	1.11	1.03	0.34	0.78	2.24		
SUB NOV	*2.80	1.00	0.60					*0.80	*0.60	*1.20	*2.00	1.60	*2.20	*1.60	*1.20	0.00	*1.20	*2.00		
NAT NOV	2.51	1.22	0.82					0.54	0.46	1.14	1.63	2.05	1.81	1.00	0.91	0.30	0.70	1.97		
SUB DEC	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NAT DEC	2.68	1.29	0.82					0.59	0.42	1.17	1.66	2.06	2.06	1.04	0.93	0.39	0.80	2.29		
	REENGIP	TEUNRGB	EINNGSP					EINNGST	FPIRORET	EENLGEC T	LSUYBS	ISGYNS	FMUETLER	FSUYES	ISNYDSUCT	CSOYOSL	ESXYHST	PROP		

FIGURE 185-1 (CONTINUED)

CHAPTER 186 CERTIFICATE FAR PART 147 AVIATION MAINTENANCE TECHNICIAN SCHOOL

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3230

B. *Avionics:* 5230

3. OBJECTIVE. This chapter provides guidance for certificating an Aviation Maintenance Technician School under FAR Part 147.

5. GENERAL

A. *Certification Process.* The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance. It ensures programs, systems, and methods of compliance are thoroughly reviewed, evaluated, and tested. The certification process consists of five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

B. *Authority.* Regulatory authority for certificating Aviation Maintenance Technician Schools is derived from Sections 313(a), 314, 601, and 607 of the Federal Aviation Act of 1958, as amended, and FAR Part 147.

C. *Inspector's Responsibility.* Inspectors should not become involved in determining the market need for the school, the selection of resource people, or of materials. Inspectors must remain objective in evaluating the applicant's facilities, personnel, and curriculum content. The inspector may participate as an advisor but should not participate as a voting member on school advisory boards or committees.

7. PREAPPLICATION PHASE

A. *Initial Inquiry.* Upon initial contact from an applicant the district office manager or unit supervisor will advise the applicant of the necessity for a pre-application meeting. The inspector also directs the applicant to which regulations must be met and where copies of the regulations may be obtained. The applicant is given a blank Pre-Application Statement of Intent [PASI], FAA Form 8400-6 and advised where to send it. The inspector does not schedule a pre-application meeting until the applicant has reviewed these requirements and has completed the application.

B. *The PASI*

(1) The submission of a PASI expresses an intent by the applicant to initiate certification. It also allows the FAA to plan activities and commit resources. Therefore, a potential applicant should submit a copy of the PASI only after reviewing the appropriate regulations and advisory material. The applicant should consider the personnel, facility, equipment, and paperwork requirements for certification and operation.

(2) The PASI should be used by the district office manager to evaluate the complexity of the proposed operation and to ensure trained and experienced inspectors are available to certificate the applicant. It also should be used to initiate district office files on the potential applicant and to obtain a precertification number.

(3) The PASI may be used by the regional office to assess district office workload and forecast staffing needs.

(4) AVN-120 maintains and assigns certificate and precertification numbers upon request. Numbers are based on the type of operation proposed, as shown on the PASI.

C. *Establish Certification Team.* Upon receipt of a completed PASI, the district offices notifies the regional office. The district office manager or the airworthiness unit supervisor establishes a team of inspectors to conduct the certification. The team will consist of at least one maintenance inspector from the certificating district office and one regional representative. One team member will be designated as the Certification Project Manager (CPM). Regional and/or headquarters participants should not serve as the Certification Project Manager.

(1) When requested by the regional office, AFS-300 will determine if headquarter's participation is appropriate and, within five working days of receipt of the Preapplication Statement of Intent, will notify the regional office of the determination and the name(s) of any AFS-300 participants.

(2) Regional and headquarters representatives may serve as active members of the team or as advisors. These representatives should attend both the preapplication and the formal application meetings. They also should be present during facility inspections.

D. *Pre-Application Meeting.* During the pre-application meeting, the inspector should counsel the applicant concerning regulatory requirements and FAA policies. Applicants should be made aware of any ethical considerations involved.

(1) The applicant should understand that the purpose of an Aviation Maintenance Technician School is to qualify the student to perform the duties of an aviation maintenance technician (FAR § 147.21(a)). The contribution to aviation safety made by a certificated aviation maintenance technician should be emphasized when working with an applicant for a FAR Part 147 certificate.

(2) Applicants should be encouraged to set high goals when establishing courses. The applicant should recognize and accept responsibility to maintain high standards and continuously improve programs.

NOTE: Applicants should not be forced to exceed FAR Part 147 requirements.

(3) The inspector should make an informal on-site visit to check the facilities and equipment, if available.

9. FORMAL APPLICATION PHASE. The formal application phase requires a Formal Application Meeting to present the required certification documents and discuss those issues relevant to the particular application. The certification project manager (CPM) meets with the official(s) representing the school. The Aviation Maintenance Technician School Certificate and Ratings Application (FAA Form 8310-6), the compliance statement, the curriculum, standards for graduation, attendance and make-up procedures, grading procedures, facility layout, and the instructor qualifications are reviewed for conformity to the regulations.

A. *Compliance Statement.* The compliance statement benefits the applicant by ensuring all applicable regulatory requirements are addressed during the certification process. The compliance statement must list each applicable FAR Part 147 section and provide a brief narrative or a specific reference to a manual or other document describing the planned method of compliance with the regulation.

B. *Curriculum.* For guidance on curriculum requirements, refer to Vol. 2, Ch. 187.

(1) Practical projects referred to in FAR § 147.21(d) include all functions specified in the curriculum that involve hands-on tasks. Therefore, practical projects should include virtually any task taught to levels 2 or 3, as specified in FAR Part 147 Appendices, since all of these require some practical application.

(2) FAR § 147.38 addresses the maintenance of curriculum requirements. Generally, the Federal Aviation Regulations prescribe minimum standards for certification and operation. These standards may be exceeded, but only when approved as a part of an approved curriculum.

C. *List of Instructors and Qualifications.* The certificate number, ratings, and subjects must be listed for each instructor. There must be at least one certificated instructor for every 25 students in each shop or laboratory class (FAR § 147.23). The suitability of non-certificated instructors to teach certain general courses will be evaluated on an individual basis.

D. *Student Enrollment Statement.* This statement indicates the maximum number of students to be taught for each rating during each enrollment period.

E. *Written Description of Facilities.* This description must include a facility layout plan indicating the relative location of classrooms to shops/laboratories, including dimensions, and the relative location of each facility to each other facility when there is more than one site or location for the school.

F. *Inventory of Equipment, Materials and Tools.* The inventory must detail which tools will be provided by the school and which tools the students will be required to own.

11. DOCUMENT COMPLIANCE PHASE. In the Document Compliance Phase, the applicant's manuals and other documents are thoroughly reviewed and then approved or rejected. Each document must be given an in-depth review to ensure it complies with applicable regulations and conforms to safe operating practices.

13. DEMONSTRATION AND INSPECTION PHASE. In this phase the certification team makes an on-site inspection to determine whether the applicant's proposed procedures and programs are effective (see Vol. 2, Ch. 187). At this time the applicant demonstrates that the facilities and equipment are safe and satisfactory (see Vol. 2, Ch. 188). Emphasis is on compliance with the regulations. Throughout the Demonstration and Inspection Phase, the Certification Project Manager must ensure that each aspect of the applicant's required demonstration is first observed and then approved or disapproved.

A. Suitability of facilities, equipment, tools and materials is determined in relation to the approved curriculum. For example, an area may not be suitable for aircraft assembly. However, with appropriate scheduling and proper consideration of factors such as light, heat, noise, etc., that same area may be demonstrated to be suitable for classroom instruction.

B. The amount of materials and the kinds of equipment and tools to be used also depend on the curriculum and number of students. For example, the applicant must demonstrate that the school has tools and equipment that are appropriate to accomplish each project.

15. CERTIFICATION PHASE. An applicant is entitled to a certificate when the following have been accomplished:

- The certification process is completed
- Each unsatisfactory item has been corrected
- It is determined that the applicant has met all regulatory requirements and understands the related responsibilities
- It has been determined the applicant is capable of complying with the Federal Aviation Regulations on a continuing basis
- The applicant's ability to conduct operations in a safe manner has been demonstrated

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43, 65 and 147

B. *Coordination.* This task requires coordination with maintenance inspectors, avionics inspectors, the regional Flight Standards division, and headquarters.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- Sections 313(a), 314 , 601, and 607 of the Federal Aviation Act of 1958, as amended

B. *Forms*

- FAA Form 8000-4, Air Agency Certificate
- FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application
- FAA Form 8400-6, Preapplication Statement of Intent
- AC Form 8300-10, Certificate, Authorization, or Designation Action Request

C. *Job Aids.* None.

5. PREAPPLICATION PHASE

A. *Handle Initial Inquiry.* Upon initial contact with the applicant, determine if the proposed operation is subject to FAR Part 147. If it appears that the applicant is capable of meeting the regulatory requirements for certification accomplish the following:

(1) Advise the applicant as to which regulations must be met and where copies of the regulations may be obtained.

(2) Provide the applicant with a Preapplication Statement of Intent (PASI), FAA Form 8400-6. Instruct the applicant to complete the Preapplication Statement of Intent and submit it to the district office with jurisdiction over the area in which the facility is located.

B. *Schedule Pre-Application Meeting.* Upon receipt of

a completed PASI, the office manager or unit supervisor assigns a Certification Project Manager (CPM) to the project. The CPM schedules a pre-application meeting and advises the applicant that key management personnel, as listed on the PASI, should attend the meeting. Inform the applicant that these key personnel must be prepared to discuss specific aspects of the applicant's proposed operation.

NOTE: This meeting may be combined with the Formal Application meeting, at the discretion of the Certification Project Manager.

C. *Review PASI.* The district office manager or the manager's designee reviews the PASI for completeness and accuracy.

(1) Forward two copies to the regional office for processing. The district office will obtain a precertification number from AVN-120.

(2) If a regional representative is designated to serve on the certification team, enter the name of the regional representative in the Remarks section of the Preapplication Statement of Intent.

D. *Conduct Pre-Certification Inspections.* If possible, visit the proposed school before a formal application is filed. Inspect and make necessary recommendations regarding the following:

- Classrooms
- Work areas
- Materials
- Laboratories
- Technical data
- Instructional aids
- Other areas as needed

E. *Select Certification Team Members.* The district office manager forwards a list of team members and their particular areas of specialty to the regional office.

F. *Conduct Preapplication Meeting*

(1) Ensure the applicant is aware of the regulatory requirements and FAA policies regarding certification and operation of aviation maintenance technician schools.

(2) Inform the applicant that a formal application consists of at least the following:

(a) A letter requesting the application be processed and indicating when facilities and equipment will be ready for formal inspection

(b) Two completed copies of FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application

(c) A compliance statement listing each applicable FAR Part 147 section and providing either a brief narrative or, preferably, a specific reference to a manual or other document which describes the manner of compliance with the regulation

(d) A detailed description of the proposed curriculum. Emphasize that since the actual curriculum must be approved before certification, the applicant can save time and money by submitting the actual curriculum with the formal application.

(e) A written description of the facilities to be used for instruction. Ask the applicant to provide detailed drawings with dimensions of classrooms and laboratory/shop facilities. The drawings should show the relative location of each school facility.

(f) An inventory of the materials, equipment and tools to be used. Advise the applicant to detail which tools will be provided by the school and which the students will be required to own.

(g) A list of instructors showing any required certificate number(s), ratings, and subjects to be taught by each. Each subject in the proposed curriculum must be accounted for on the instructor listing. Ensure the applicant understands that technical maintenance courses other than certain general subjects must be taught by appropriately certificated Airframe and/or Powerplant Aviation Maintenance Technicians. Inform the applicant that at least one certificated instructor is required for every 25 students in each shop or laboratory class (FAR § 147.23).

(h) A statement indicating the maximum number of students to be taught for each rating during each enrollment period. This information will also be shown on the application form.

(i) The appropriate and current technical data

necessary for the rating(s) sought. The procedures should demonstrate how and by whom the data will be updated. The data should include the following:

- Federal Aviation Regulations
- Type certificate data sheets
- Airworthiness directives
- Supplemental type certificates
- Maintenance manuals
- Advisory circulars
- Other instructional material as required by FAR § 147

(3) Inform the applicant that three types of ratings may be issued - Airframe, Powerplant, and combined Airframe and Powerplant.

(4) Instruct the applicant to complete FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application.

(5) Ensure the applicant understands the purpose and content of the formal application attachments.

(6) Inform the applicant that the school must have approved systems for determining final course grades and for controlling and recording attendance. Advise the applicant to present these systems to the FAA in writing for approval.

(7) The applicant must provide procedures for updating technical data library and calibration of precision tools.

(8) Inform the applicant of administrative and recordkeeping requirements for certification.

(9) Ensure that the applicant understands FAR § 147.31, regarding crediting students for previous training and experience (see Vol. 2, Ch. 187). Inform the applicant that the school may not teach students before certification as an Aviation Maintenance Technician School and then give credit for that training after certification (FAR § 147.31(c)(1)(iv)).

(a) Ensure the applicant understands that when granting credit for previous aviation maintenance technician **experience** (FAR § 147.31(c)(3)), only documentary evidence and testing is permitted. Emphasize that previous experience must be aviation maintenance experience and be comparable to the required curriculum subjects.

(b) Explain to the applicant that any of several methods may be used to determine the amount of credit to be given to students for previous **training** under FAR § 147.31(c)(1).

7. FORMAL APPLICATION PHASE

A. *Review the Formal Application and Attachments.* Review the application and attachments. Determine that all documents have been submitted and are complete.

B. *Schedule and Conduct Formal Application Meeting.* Meet with key school personnel to discuss submitted formal application. Resolve any open questions or discrepancies at this time.

C. *Accept or Reject Formal Application.* Based on the initial review of the application and any meetings with the applicant, accept or reject the application. Advise the applicant in writing of the results. If the application is rejected, return the application and attachments with a letter stating the reasons for rejection.

9. DOCUMENT COMPLIANCE PHASE

A. *Review Documents.* Thoroughly review the applicant's curriculum and other documents to ensure each complies with applicable regulations. Approve, accept, or reject each document as appropriate. Documents reviewed during this phase may include the following:

- FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application
- The compliance statement
- Curriculum (FAR § 147.21)
- Instructor requirements and qualifications (FAR § 147.23)
- Minimum standards for graduation and method of determining final grades (FAR § 147.31)
- Procedures for recording and controlling attendance, and provisions for makeup classes (FAR § 147.31)

- Written procedures for taking FAA written, oral and practical tests and for recordkeeping requirements found in FAA Order 8610.4, Chapter 5

- Procedures for maintaining, keeping, and distributing student records and transcripts (FAR § 147.33)

- Procedures for updating technical data library and calibration of precision tools

- Facility layout

B. *Document Deficiencies.* If deficiencies are found in any document submitted by the applicant, return the document with a letter outlining the deficient areas.

NOTE: The certification team should be ready to offer suggestions on how to improve the product but should avoid "writing" the applicant's documents.

C. *If Necessary, Terminate the Certification Process.* If the documents are not of sufficient quality to continue certification, advise the applicant of the impracticability of continuing the certification project and schedule a meeting with the applicant to discuss each deficiency in detail.

(1) Complete item 13 of FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application, by checking "disapproved", or by indicating that the application was withdrawn, as appropriate.

(2) Return the application with a letter advising the applicant of the reasons for termination. Advise the applicant that a new PASI is required to initiate the certification process again.

(3) Forward two copies of the letter to the Regional Office, which will forward one copy to AFS-300.

(4) Notify AVN-120 that the project has been terminated.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Observe Demonstrations and Conduct Inspections.* Ensure that the applicant's proposed procedures and programs are effective, and that facilities and equipment are safe and satisfactory. Follow the procedures in Vol. 2, Ch. 188. Ensure compliance with regulations as follows:

- Facilities meet the requirements of FAR §§ 147.13 and 147.15

- Instructional aids meet the requirements of FAR § 147.17

- Materials, tools, and shop equipment meet the requirements of FAR § 147.19

B. *Document Deficiencies.* If deficiencies exist, provide a list of discrepancies to the applicant. Schedule a meeting to discuss in detail the appropriate corrective action to be taken. Place documentation in the certification file.

(1) If the applicant does not demonstrate compliance or discrepancies cannot be resolved, send a letter of rejection and a list of discrepancies.

(2) Inform the applicant that the Certification Project Manager must be notified in writing of all corrective action taken.

13. CERTIFICATION PHASE

A. *Issue Certificate.* When all regulatory requirements have been met, accomplish the following:

(1) Complete Block 13 of FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application.

(2) Approve the curriculum by signing and dating the list of effective pages and revision pages.

(3) Obtain a final certificate number from AVN-120.

(4) Prepare an Air Agency Certificate, FAA Form 8000-4. Ensure the certificate is signed by the district office manager. Give the original certificate to the new certificate holder.

(5) Prepare and process a "Certificate, Authorization, or Designation Action Request," AC Form 8300-10.

B. *Prepare Certification File.* Once the school is certificated, prepare a district office file. The file must include the name and title of each inspector who assisted in the certification. The file is signed by the Certification Project Manager. The file shall contain at least the following:

(1) Copy of the Preapplication Statement of Intent

(2) Completed FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application

(3) The compliance statement

(4) Copy of the Air Agency Certificate issued

(5) Copy of the approved curriculum

(6) List of the instructors, their qualifications, and the courses they will be teaching

(7) Facility layout

(8) Procedures for updating technical library and calibration of precision tools

(9) Summary of any difficulty encountered during certification

C. *Distribute Certification Report.* Distribute the Certification Report, FAA 8310-6, retaining the original certification report in the district office and forwarding two copies to the regional office which forwards one copy to AFS-300.

15. TASK OUTCOMES

A. *Complete WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

- Issuance of an air agency certificate
- A letter to the applicant indicating that the certificate is denied
- A letter to the applicant confirming termination of the certification process by the applicant

17. FUTURE ACTIVITIES

A. Observe the school during the first 90 days of operation.

B. Additional inspections may be necessary to determine compliance with the applicable Federal Aviation Regulations.

C. The inspector may direct changes in the methods or techniques of operation.

CHAPTER 187 EVALUATE FAR PART 147 AVIATION MAINTENANCE TECHNICIAN SCHOOL'S CURRICULUM/REVISION AND INSTRUCTOR QUALIFICATIONS

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3384 (initial)/3385 (revision)

B. *Avionics:* 5384 (initial)/5385 (revision)

3. OBJECTIVE. This chapter provides guidelines for evaluating the curriculum or curriculum revision of an Aviation Maintenance Technician School certificated under FAR Part 147.

5. GENERAL

A. *Definitions*

(1) *Check:* A check is to verify proper operation without the item qualifying for return to service condition. The item checked does not necessarily have to be the item overhauled.

(2) *Quality standards:* The highest standard a school can be held to is to train the student to develop manipulative skills sufficient to simulate return to service even though the training aid itself may not be capable of meeting return to service standards.

(3) *Troubleshoot:* In order to "troubleshoot" the airframe, powerplant, or aircraft component, the item must be made operational.

B. *Curriculum Background.* FAR § 147.21 sets forth the minimum curriculum requirements. Maintenance of curriculum requirements is set forth in FAR § 147.38.

(1) Practical projects referred to in FAR § 147.21(d) include all functions specified in the curriculum that involve hands-on tasks. Therefore, practical projects should include virtually any task taught to levels 2 or 3, as specified in FAR Part 147 Appendices, since all of these require some practical application.

(2) FAR § 147.38 addresses the maintenance of curriculum requirements. Generally, the Federal Aviation Regulations prescribe minimum standards for certification and operation. These standards may be exceeded, but only when approved as a part of an approved curriculum.

(3) An Aviation Maintenance Technician School must adhere to its approved curriculum. Any new course material the school wishes to add must be incorporated into the approved curriculum and approved by the FAA before it may be used. This does not prohibit a school from teaching unapproved courses, such as refresher courses or academic courses required to complete a degree program. However, those courses must be clearly distinguishable from approved Aviation Maintenance Technician School courses.

(4) The inspector should inform the school that will be required to keep its approved Aviation Maintenance Technician School curriculum current with industry needs by revising courses. It must be made clear, however, that these revisions require FAA approval before they can be implemented.

C. *Curriculum Components.* The curriculum or revision must be approved by the FAA. The FAR Part 147 curriculum will consist of the following for each subject:

- Subjects taught
- Course content
- Teaching level requirements
- Test requirements
- Classroom or theory hours
- The total number of hours required for successful completion
- Shop or lab hours
- A schedule of required tests or quizzes
- Order of instruction for each rating

NOTE: At the discretion of the inspector, and in consultation with the school, it may be advantageous

to include the school's operating rules in the curriculum (FAR Part 147, Subpart C).

D. *Texts.* If specific texts are approved as part of the curriculum, any change to a different text will require FAA approval as a revision.

7. CURRICULUM REQUIREMENTS

A. *Hours of Instruction.* The number of hours of instruction offered must be at least the minimum specified by FAR § 147.21. The school may offer more hours of instruction; however, regardless of the number of hours offered, the entire aviation maintenance technician curriculum must be approved by the FAA at the time of initial certification. The following blocks of time are not to be included in calculating the minimum number of instructional hours specified in FAR § 147.21:

(1) Time used to take the FAA oral and practical test

(2) Time spent in taking the FAA written test

(3) Time set aside for review and final testing at the conclusion of the course. This is not to preclude review and testing from the curriculum, but to differentiate between the time spent in learning new material and that spent in review.

B. *Order of Instruction.* The curriculum must describe the order of course progression for each rating offered. For example, Basic Electricity would be followed by Aircraft Electrical Systems.

C. *Subjects Prescribed by FAR Part 147.* The curriculum must cover the subjects and items prescribed in FAR Part 147, Appendix B, and in Appendix C or D, as applicable.

(1) Subjects that are submitted for approval as part of the curriculum will not be made part of the curriculum until approved by the FAA.

(2) Each subject item must be taught at least to the indicated level of proficiency as defined in FAR Part 147, Appendix A. When the school wishes to teach a subject item to a level beyond the requirements, the teaching level must be made part of the approved curriculum. Subject items must not be taught to a level less than that shown in the approved curriculum.

(3) Additional subjects/courses that are required by the school for their purposes, i.e. degree programs, shall not be submitted as part of the FAA approved curriculum.

(4) A distinction shall be made between additional courses/subjects that are part of the approved curriculum under FAR Part 147 and those that are not.

(5) The teaching of additional subject material beyond the requirements of FAR Part 147, Appendix B, C, and D will require additional instruction hours beyond those required by FAR § 147.21.

D. *Practical Application Projects*

(1) The curriculum shall list the practical projects that must be completed for each subject item. There must be sufficient practical projects to address the requirements of FAR Part 147, Appendix B and Appendices C and D, as applicable. The curriculum shall include enough detail to evaluate the practical projects for correct teaching level, for equipment and tools needed, and for performance standards and objective grading criteria.

(2) The teaching level must be specified for each project under each subject item. The minimum teaching level is specified in FAR Part 147 Appendices. As in the case of theoretical courses, if the teaching level is to exceed the Federal Aviation Regulation requirements, it must be specified as such in the curriculum.

(3) The curriculum must show an appropriate amount of time for each project. Inspectors shall look for time allotments that are excessive or insufficient.

(4) The curriculum shall provide that each task in each subject item is accomplished. For example, if a project requires that the student inspect and repair to accomplish a practical project, a requirement for both inspection and repair must be included in the project plan.

(5) The **overall** curriculum must be taught at least 50 percent in the shop or lab. However, not every subject item lends itself to 50 percent shop work. The inspector should ensure that shop and theory are balanced as appropriate to the subject item being taught. The inspector should review the curriculum if the courses seem artificially organized to meet the 50 percent requirement.

E. *Scheduling of Tests.* Upon completion of each curriculum subject, a test must be scheduled. In addition, quizzes may be scheduled between subject items.

F. *Grading Criteria.* A generally accepted academic

standard for passing (including the FAA written exams) is a minimum of 70 percent. However, the school may require a higher minimum passing grade. All theoretical and practical portions of each subject listed in the curriculum must be passed to the approved grading standard. Each practical project must also be passed to the approved standard.

G. *Make Up Provisions*

(1) The curriculum must show the number of hours of allowed absences.

(2) All material missed shall be made up in the same subject area.

(3) All practical projects missed shall be made up.

9. REVISIONS TO THE CURRICULUM. Changes to the approved curriculum must be approved before implementation. Changes in the curriculum may include changes in any of the following:

- Teaching level
- Hours of instruction
- Testing
- Make-up provisions
- Course content
- Equipment or facilities affecting instruction in theoretical subjects or the accomplishment of practical projects
- Order of instruction
- Addition or deletion of a rating

11. CREDIT FOR PREVIOUS INSTRUCTION OR EXPERIENCE

A. *Crediting Previous Instruction at a Certificated Aviation Maintenance Technician School.* The school must use either a reliable method of evaluating documentation or an entrance test to ensure that previous instruction is comparable to that offered by the crediting school. When not using an entrance test, schools should be encouraged to use catalogs, course descriptions, and other documents to determine the credit to be granted.

(1) Students may take a course of study for one rating. The course of study will include the General portion of the curriculum. A student returning to school to study for a second rating after having graduated from the course for the first rating will not have to retake the General portion of the curriculum. The General portion must be clearly separate and distinct from either the Airframe or the Powerplant portions and conform to the requirements of FAR Part 147, Appendices A and B.

(2) If a certificated aviation maintenance technician school is under suspension by the FAA, courses taught during the suspension period shall not be credited retroactively, even if the school becomes re-certificated later.

(3) An applicant shall not teach students as an aviation maintenance technician school before certification and then give credit for that training after the school becomes certificated.

(4) A school may credit a student with instruction that was satisfactorily completed at another aviation maintenance technician school either before or after its certification (FAR § 147.31(c)(1)(iv)).

B. *Crediting Previous Instruction from Other Schools (Non-Aviation Maintenance Technician Schools, Accredited and Non-accredited).* As a general practice, credit may be granted only for subjects that apply to the General portion of the curriculum.

NOTE: Accreditation, as referenced in FAR Part 147 refers to schools accredited within the United States. Certificated Aviation Maintenance Technician Schools may not grant credit for maintenance instruction recieved outside the United States.

C. *Crediting Previous Instruction from Military Technical Schools.* When credit is granted, it may be granted only on the basis of an entrance test, as specified in FAR § 147.31(c)(2).

D. *Credit for Previous Experience.* As a general rule, creditable previous mechanic experience shall be **aviation maintenance** experience. Credit for all previous experience must be documented and demonstrated by testing. The test must be equal to the test given to students who complete the comparable required curriculum subjects at the school.

13. INSTRUCTOR QUALIFICATIONS AND FACULTY REQUIREMENTS

A. *Faculty Requirements*

(1) An instructor must hold an FAA mechanic certificate with ratings appropriate to the subjects that the instructor teaches.

(2) Individuals listed as instructors, lab assistants or teaching assistants must also be properly certificated if they are used for instruction in any subjects other than mathematics, physics, drawing, or similar subjects. The suitability of non-certificated instructors to teach certain general courses will be evaluated on an individual basis. Cases have arisen where instructors have not taught these subjects in a manner applicable to aviation maintenance. Inspectors must be aware of this type of situation and ensure that the appropriate information is taught according to the FAA-approved curriculum.

B. *Student/Teacher Ratios.* FAR § 147.23 requires at least one certificated instructor for each 25 students in each shop or laboratory class. The inspector has discretion to prescribe a lower student to teacher ratio according to the needs of the class.

C. *Performance.* The inspector should encourage the school to provide for regular assessment of instructor performance.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43, 65, and 147

B. *Coordination.* This task may require coordination with certification team members, regional specialists and avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.5, General Aviation Job Function Reference Guide for Aviation Safety Inspectors (Airworthiness), as amended

B. *Forms*

- FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Curriculum.* For an initial certification, thoroughly analyze the curriculum prior to the date of the team inspection. Ensure the following:

- The number of hours meets the requirements of FAR § 147.21
- The curriculum fulfills the requirements of FAR Part 147, Appendices A, B, C, and D
- Instructor qualifications match the subjects being taught
- All subjects taught to a level of two or three involve practical hands-on projects
- At least 50 percent of the total curriculum is spent in the lab and/or shop
- The curriculum shows a schedule of tests for each subject
- The curriculum states the minimum standards for a student to successfully complete the requirements for FAA certification
- Grading criteria for academic and practical subjects have been developed
- Make-up provisions are included
- Procedures for crediting previous experience or instruction have been developed

B. *Review Instructor Qualifications.* Ensure the instructors' certificates are valid and that there are no certificate actions pending.

7. TASK OUTCOMES

A. *Complete a WPMS Transmittal Form*

B. *Curriculum/Revision/Instructor Qualifications Are Approved*

(1) For an initial certification, complete FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application. Attachments to FAA Form 8310-6 must include the following:

- The proposed curriculum
- A list of required practical projects
- A schedule of required tests
- A list of instructors names, with certificate numbers, ratings held, type, and subject(s) to be taught

(2) *Revision.* As appropriate to the approved method for recording revisions, initial the applicable document(s). Return the curriculum to the school.

C. *Curriculum/Revision/Instructor Qualifications Are Not Approved*

(1) *Initial certification.* For an initial certification, complete FAA Form 8310-6. Fill out FAA Form 8310-4, which is on the back of FAA Form 8310-6.

(2) *Revision.* Send a letter to the school outlining the deficiencies and explaining why the curriculum is unacceptable. In all cases, reference the applicable Federal Aviation Regulation sections.

(3) *Instructor Qualifications.* If an instructor is found to be unqualified or otherwise ineligible to teach the subjects as designated by the school curriculum, notify the school in writing, detailing the specific problem.

9. FUTURE ACTIVITIES. Routine surveillance.

CHAPTER 188 EVALUATE FAR PART 147 AVIATION MAINTENANCE TECHNICIAN SCHOOL FACILITIES, EQUIPMENT, MATERIALS, TOOLS AND RECORDS

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3230

B. *Avionics:* 5230

3. OBJECTIVE. This chapter provides guidance for evaluating the facilities, equipment, materials, and tools for an Aviation Maintenance Technician School. Such an evaluation occurs as part of an original certification, addition of a rating, curriculum change, or change of location.

5. GENERAL

A. *Definitions*

(1) *Common hand tools:* Small, ordinary tools such as ratchets, sockets, etc.

(2) *Instructional aids:* Equipment used in order to instruct. Examples include mock-ups, diagrams, visual aids, aircraft, engines, components, etc.

(3) *Shop Equipment:* Machinery, fabricating devices, spray paint equipment, battery chargers, etc.

(4) *Special tools:* Highly specialized tools such as tensionometers, micrometers, torque wrenches, etc.

B. *Appropriate Equipment and Facilities.* An Aviation Maintenance Technician School must have instructional equipment and suitable facilities appropriate to the ratings taught and approved by the FAA. Materials and tools must be of a type, quantity and quality appropriate to the needs of the curriculum and the number of students.

7. PRE-INSPECTION ACTIVITY

A. *Initial Certification.* The certification team will approve the curriculum before formal inspection of the facility. During the Preapplication Meeting, the Certification Project Manager (CPM) may request a briefing and an informal inspection of the facility. The applicant may request that an inspector informally evaluate the facility to see if it appears to be within the guidelines of the Federal Aviation Regulations. This may be accomplished before completion of the facility, but after a Preapplication Statement of Intent (PASI) has been submitted.

B. *Added Rating/Curriculum/Location Change.* To add a rating, or execute a change in curriculum or location that affects facilities, equipment, materials, or tools, etc., the office manager or airworthiness unit supervisor will determine whether one inspector or a team is necessary to accomplish the site inspection.

(1) To add a rating, see the appropriate sections on changes to curriculum in Vol. 2, Ch. 187 and the appropriate sections on changes to equipment, materials, tools and records found below.

(2) For changes to curriculum, see curriculum requirements as found in Vol. 2, Ch. 187.

(3) For change in location, the district office must make a detailed analysis of the change in plans and their effect on the following:

- The students in training, whether or not in actual attendance during the time of the change
- Loss of instructional hours as shown in the curriculum. There must not be a loss of instructional hours.
- The school's method of meeting the certification requirements particularly space requirements and curriculum per FAR §§ 147.15 and 147.21

(4) Approval shall be granted to the school in writing.

(5) If a change has been made without approval, the district office shall notify the certificate holder in writing that the school certificate is revoked.

C. *Change of FAA District.* When the location is a change to another FAA district, the application for approval must be directed to the district office that has current

certificate responsibility. The originating district office will contact and coordinate directly with the receiving district office. The school remains the responsibility of the originating district office until the change is approved.

9. DEMONSTRATION ACTIVITY. Ensure compliance with regulations as follows:

- Facilities meet the requirements of FAR §§ 147.13 and 147.15
- Instructional aids meet the requirements of FAR § 147.17
- Materials, tools, and shop equipment meet the requirements of FAR § 147.19

11. FACILITIES. The instructional equipment, shop equipment, hand tools and physical layout of the building must meet the requirements outlined in FAR §§ 147.15, 147.17, and 147.19. The inspector should keep in mind that the facility must constitute an environment suitable for learning.

A. *Classroom Areas.* An area suitable for classroom instruction may not be suitable for lab and/or shop. With appropriate scheduling and consideration of factors such as ventilation, lighting, noise, and temperature control, an area appropriate for lab and/or shop may be acceptable for classroom instruction.

B. *Shop Environment.* Ventilation must be such that fumes from painting, fueling, degreasing, and doping facilities, etc. are properly removed from the immediate work area and are not allowed to pass into other instructional areas.

C. *Facility Size and Location*

(1) Facilities must be of a size adequate for the number of authorized students to accomplish any of the shop/lab projects designated for that area.

(2) Facilities must be located and classes scheduled so that students can travel between classes without cutting into instructional time. Inspectors should pay special attention to situations in which the students cannot easily and quickly go from one class to another.

13. EQUIPMENT

A. *Instructional Equipment*

(1) The instructional aids required in FAR § 147.17 must be appropriate to the scope and depth of the curriculum of the school. The inspector shall determine that the complexity of instructional aids are appropriate to the specific teaching level of the subject item.

(2) In some situations, the school may choose to use active aircraft for instructional purposes in the shop. This is permissible as long as the aircraft is on the premises at the time of instruction. The inspector shall remind the school that active aircraft used to comply with FAR §§ 147.17(a)(2) and (d) become part of the approved instructional equipment and must be available as specified in FAR § 147.37.

(3) The inspector shall ensure compliance with requirements for the ratio of instructional equipment to students in each shop course. FAR § 147.17(2)(c) requires that not more than eight students may work at any one unit of equipment at a time. However, the inspector may determine that eight students may be too many to safely and competently complete a certain project such as live aircraft that are used for the demonstration of gear retraction systems.

B. *Shop Equipment*

(1) The inspector must determine that enough equipment is in place and in satisfactory operating condition to adequately serve the student enrollment and meet shop project requirements.

(2) The equipment must be located so that it can be operated in a safe and efficient manner. Large standing equipment must be securely installed. Placement of large pieces of equipment should provide sufficient aisle space so that students can move about freely. The inspector must determine that the floor is free from clutter and items such as extension cords.

15. MATERIALS. The school must have sufficient materials in stock and properly stored to provide for the approved student enrollment. In order to ensure adequate instruction, the amount and variety of stocks should directly reflect the requirements of the curriculum.

17. TOOLS

A. *Tool Standards.* For subjects taught at Level 3, all tools required to meet "return to service" standards must be in satisfactory working condition and of the proper kind for the purpose for which they are intended. FAR § 147.19 requires the school to have an adequate supply of materials and tools appropriate to the curriculum of the school.

B. *Student Hand Tool Policy.* The school may either provide common hand tools or require students to furnish their own. In either case, the school must establish a policy on provision of common hand tools. Any tools that the school requires the student to furnish must be listed in the curriculum. Special tools, such as cylinder hold down wrenches, micrometers, etc., must be furnished by the school.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43 and 65
- Knowledge of FAR Part 147, including Appendices A, B, C, and D
- Previous experience with certification or surveillance of FAR Part 147 schools is desirable

B. *Coordination.* This task requires coordination with avionics inspectors and certification team members, as appropriate.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- Order 8300.5, General Aviation Job Function Reference Guide for Aviation Safety Inspectors (Airworthiness), as amended
- The school curriculum

B. *Forms*

- FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Rating Application
- FAA Form 8000-4, Air Agency Certificate (for initial certification)

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Applicant's File.* Before inspecting the facility, review the applicant's application and district office file. Check for any previous violation history. Review previous correspondence. Check the curriculum or proposed curriculum for currency. Take a copy of the curriculum and facility layout to the school site.

B. *Inspect the Facility.* Compare the curriculum against the instructional aids, shop equipment and hand tools at the site. Compare the physical layout with the facility layout plan.

(1) Check the instructional aids for agreement with the curriculum. Determine that the items required for each course are actually at the site as required by the approved student level.

(2) Determine that all instructional aids are actually operable and safe to use. For example, a retractable landing gear instruction device should operate properly.

(3) Ensure that adequate stocks of operational/maintenance instructions, parts manuals, and technical data are at the site, according to the requirements of the curriculum.

(4) Determine that the number and size of classrooms and shop areas are consistent with the facility layout submitted with the curriculum. Ensure that the lighting and ventilation are adequate.

(5) Verify that the tools, materials, and shop equipment match the inventories/descriptions required by the curriculum. Ensure that these items are properly stored.

(6) Verify that a record keeping system is in place for tool inventory, calibration, and the updating of technical instructional materials.

(7) Inform the applicant of any discrepanices noted. Make a record of such deficiencies in the remarks section of FAA Form 8310.6, as appropriate.

7. TASK OUTCOMES

A. *Complete a WPMS Transmittal Form*

B. *Facility Approved*

(1) For an initial certification or added rating, complete FAA Form 8310.6, as applicable. Attach the appropriate documents, as required. Make a copy of the form and all

pertinent documents and retain a copy for the district office file.

(2) For a curriculum or location change that affects facilities, equipment or tools, complete FAA Form 8310.6, as applicable. Retain a copy of the form for the district office file.

C. *Facility Disapproved*

(1) Mark FAA Form 8310-6 disapproved and return to the applicant with attachments. Retain a copy for the office file.

(2) Write a letter to the applicant stating the reasons for disapproval. Advise applicant to re-submit a new application when the discrepancies are corrected. Upon receipt of a new application, re-schedule the facility inspection.

9. FUTURE ACTIVITIES. Routine surveillance.

[CHAPTERS 189 THROUGH 194 RESERVED]

[CHAPTERS 190 THROUGH 194 RESERVED]

CHAPTER 195 INTRODUCTION TO PART 149 PARACHUTE LOFTS

1. FAR PART 149. FAR Part 149 prescribes general operating rules and certification requirements for parachute lofts. In practice, certification and surveillance of FAR Part 149 parachute lofts overlap with the certification and surveillance conducted under FAR Part 65.

3. FAR PARTS 65 AND 149. FAR Part 65 prescribes certification requirements, privileges, and limitations for parachute riggers. Because FAR Part 149 requires a parachute loft to have the work performed or supervised by certificated parachute riggers, an inspector conducting a certification or inspection under FAR Part 149 will also need to be familiar with FAR Part 65.

A. *Facilities and Equipment.* The certificated parachute rigger must have available the facilities and equipment specified in FAR § 65.127 and the identifying seal specified in FAR § 65.133. The certificated parachute loft must have available the facilities and equipment specified in FAR § 149.13.

B. *Recordkeeping*

(1) FAR § 65.131 requires the certificated parachute rigger to maintain a record of packing, maintenance, and alteration of parachutes as performed or supervised. (See Vol. 2, Ch. 28.) FAR § 65.133 requires each certificated rigger to seal the packed parachute with the identifying mark prescribed by the FAA.

(2) FAR Part 149 does not require the loft to make an entry in the parachute record. The only recording requirement in FAR Part 149 is for the loft to make and keep adequate records of all work performed by it (FAR § 149.15(a)).

C. *Repairs and Alterations.* Guidance on repairs and alterations is found in Advisory Circular 105.2, Sport Parachute Jumping, as amended.

CHAPTER 196 CERTIFICATE FAR PART 149 PARACHUTE LOFT/ ADDED RATINGS

Section 1. Background

1. WPMS ACTIVITY CODE

- *Maintenance:* 3230

3. OBJECTIVE. This chapter provides guidelines for certificating a parachute loft under FAR Part 149.

5. GENERAL

A. The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance. It ensures programs, systems, and intended methods of compliance are thoroughly reviewed and evaluated. The certification process consists of five phases:

- Preapplication Phase
- Formal Application Phase
- Document Compliance Phase
- Demonstration and Inspection Phase
- Certification Phase

B. *Certification Team.* FAR Part 149 certification will often be accomplished by the Principal Maintenance Inspector working alone. If more than one inspector is assigned to the certification, the district office manager or designee will appoint a Certification Project Manager.

C. *Eligibility Requirements*

(1) *General eligibility*

(a) FAR § 149.3 provides that an applicant who meets the requirements of FAR Part 149 is entitled to a parachute loft certificate and appropriate ratings.

(b) The holder of a parachute loft certificate that has been revoked may not make further application for one year after the revocation, unless the revocation order provides otherwise.

(2) *Personnel.* The applicant must have certificated and appropriately rated personnel who are qualified to perform or supervise the type of work for which the applicant seeks a rating, in accordance with FAR § 149.13.

(3) *Facilities and equipment.* The inspector should request a descriptive overview of the proposed facilities (FAR § 149.13). Consideration must be given to the following:

- The facility's heating, lighting, and ventilation
- Facility size
- Equipment and materials
- Drawing equipment
- Storage of parts and materials

(4) *Technical data.* The applicant must have or obtain current technical data needed for the proposed operation, including the following:

- Appropriate Federal Aviation Regulations
- Applicable Airworthiness Directives
- Applicable Technical Standard Orders and referenced documents
- Current manufacturers' instruction manuals and technical data

D. *Change of Name, Ownership, Location, and/or Rating*

(1) *Change of name.* If a certificate holder requests a change in the name of the agency, a new application must be submitted. An amended certificate is issued using the new name, with no change to the certificate number and original date of issue.

(2) *Change of ownership.* A change of ownership requires a new certification. The new owner must apply for an original certificate.

(3) *Change of location.* A change of location is processed as an original certification, with no change to the certificate number and date of issue.

(a) No operation at the new location may be authorized until that location has been inspected and found satisfactory.

(b) Authorization for partial operation at either location must be in writing, setting forth the conditions for operation.

(4) *Added rating.* An added rating is processed as an original certification, with no change to the certificate number and date of issue.

(5) *Deleted rating.* If a certificate holder seeks to delete a rating, a new application must be submitted. If the FAA finds that the certificate holder must delete a rating due to inability to meet the applicable requirements, an amended certificate will be required. In both cases, the inspector will issue an amendment to the certificate.

7. PREAPPLICATION PHASE. The Certification Project Manager should tell the applicant which regulations and advisory materials are required and where copies may be obtained. Detailed discussions should not be held until the applicant has become familiar with these requirements.

A. *Preapplication Statement of Intent (PASI).* The inspector should instruct the applicant to complete the Preapplication Statement of Intent and submit it to the district office with jurisdiction over the area in which the facility will be located.

(1) The submission of a Preapplication Statement of Intent expresses an intent by the applicant to initiate certification. It also allows the FAA to plan activities and commit resources. Therefore, a potential applicant should submit a copy of the Preapplication Statement of Intent only after reviewing the appropriate regulations and advisory material. The applicant should consider the personnel, facility, equipment, and paperwork requirements for certification and operation.

(2) The Preapplication Statement of Intent should be used by the district office manager or designee to accomplish the following:

- Evaluate the complexity of the proposed operation
- Ensure trained and experienced inspectors are available to process the application
- Initiate district office files on the potential applicant
- Assess district office workload and forecast staffing needs, if so required

B. *Preapplication Meeting(s).* In most cases, the certification team will meet with the applicant before the formal application is submitted to discuss the certification process, regulatory requirements, etc. The applicant's key management personnel and members of the FAA certification team should attend the meeting. Additional meetings may be held as needed.

(1) The meeting should begin with a review of the regulations applicable to the proposed operation.

(2) The applicant should be encouraged to submit a draft copy of the inspection system. This will enable the team to prescribe corrective action for the proposed inspection system before a final document is submitted for acceptance.

(3) At the meeting, the Certification Project Manager must advise the applicant that the formal application for a parachute loft certificate consists of at least the following:

- Two completed copies of FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- A statement indicating when facilities and equipment will be ready for formal inspection
- A compliance statement
- A description of the proposed inspection system
- A description of the facilities, equipment, and materials
- A list of certificated personnel

9. FORMAL APPLICATION PHASE

A. *Task.* During the Formal Application Phase, the team conducts a cursory review of the application and attachments to determine that all documents have been submitted and are complete. In-depth reviews are conducted during the Document Compliance Phase.

B. *Review Results.* Based on the results of the cursory review of the application and any meetings with the applicant, the Certification Project Manager must accept or reject the application for processing and advise the applicant. In the case of rejection, the Certification Project Manager must return the application and attachments with an explanation as to why the application was found unacceptable.

11. DOCUMENT COMPLIANCE PHASE. During the Document Compliance Phase, the applicant's documents are thoroughly reviewed and accepted or rejected. Each of the documents must be given an in-depth review to ensure compliance with applicable regulations and conformity to safe operating practices. If deficiencies are found in any document submitted by the applicant, the Certification Project Manager shall return the document with an explanation of the deficient areas. If necessary, the Certification Project Manager may schedule a meeting with the applicant to review each deficiency in detail.

A. *Application for Repair Station Certificate.* If the organization is a partnership, each partner shall be listed as the owner. If the organization is a corporation, the name of the corporation and the state and year of incorporation shall be shown. The signature of the applicant is required. If the organization is a partnership, each partner must sign. For a corporation, the signature must be that of a responsible corporate official, such as the President, Vice President, or Treasurer.

B. *Compliance statement.* The compliance statement benefits the applicant by ensuring that all applicable regulatory requirements are addressed during the certification process. For each applicable FAR Part 149 section, the compliance statement must provide either a brief narrative or a specific reference to a manual or other document describing the method of compliance.

C. *Description of the inspection system.* The inspection system should be clearly described in a document. This description should allow the user to understand the inspection system without further explanation. The inspection system document may not contradict any of the Federal Aviation Regulations.

13. DEMONSTRATION AND INSPECTION PHASE. During this phase the certification team determines whether the applicant's proposed procedures, facilities, personnel, and equipment are adequate and in compliance with regulations and accepted operating practices.

A. *On Site Inspection.* During the Demonstration and Inspection phase, the certification team must visit the applicant's facility to determine whether the facility meets the requirements of FAR §§ 149.13, 149.17, and 65.127. This will allow the team to view work areas, equipment, personnel, technical data, etc. If necessary, the Certification Project Manager must schedule a subsequent meeting with the applicant to review any deficiencies in detail.

(1) Technical data must be appropriate for the work to be performed. Data must be current, complete, and in the applicant's possession when performing maintenance, repairs, or alterations. Data must also be readily available to personnel. The applicant must provide a method to ensure revisions are made.

(2) Equipment and tools must be available and tested to ensure calibration to an applicable standard. There must be an established system to ensure the calibration is maintained.

(3) The number of certificated personnel must be sufficient to satisfy the volume and type of work to be performed. Employees must understand and be able to perform their assigned duties.

(4) A maintenance recordkeeping system must be established in accordance with FAR § 149.15. There must be a system for reporting serious defects or unairworthy conditions. FAA Form 8010-4, Malfunction or Defect Report, is recommended.

(5) The inspection system must be sufficient in scope and detail to ensure work functions conducted within the loft meet all safety standards and restore parachutes to an airworthy condition. There must be a system for recording all work performed, with the name(s) of the person(s) performing the work. FAR Part 65 requires that the records of parachutes packed by persons not certificated under FAR Part 65 include the name of the supervising certificated parachute rigger.

(a) The recordkeeping system should record the following for each parachute upon which work is performed:

- The manufacturer and type of the unit
- The serial number or identifying symbol of the unit
- The date work is performed
- A description of the work performed

- The name of the person performing the work

(b) The inspection system document must identify the procedure used by the certificated parachute rigger to approve or disapprove parachutes and/or parachute parts.

B. *Corrective Action.* After resolving all discrepancies, the applicant must notify the Certification Project Manager of the corrective action taken.

15. CERTIFICATION PHASE. During this phase, letters and endorsements indicating acceptance or approval must be issued, as appropriate. A certificate is issued to the applicant when the following items have been accomplished:

- The certification process has been completed
- Each unsatisfactory item has been corrected
- The applicant has met all regulatory requirements and demonstrated an understanding of the associated responsibilities
- The applicant has shown the capacity for on-going compliance with the Federal Aviation Regulations

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 65 and 149

B. *Coordination.* None.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- Advisory Circular 105-2, Sport Parachute Jumping, as amended
- Technical Standard Order C23 series and referenced documents

B. *Forms*

- FAA Form 8000-4, Air Agency Certificate
- FAA Form 8010-4, Malfunction or Defect Report
- AC Form 8300-10, Certificate, Authorization, or Designation Action Request
- FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- FAA Form 8400-6, Preapplication Statement of Intent (PASI)

C. *Job Aids*

- Figure 196-1, FAA Form 8310-3, Application for Repair Station Certificate and Rating
- Figure 196-2, FAA Form 8000-4, Air Agency Certificate

5. PREAPPLICATION PHASE

A. *Handle Initial Inquiry.* Upon initial contact with the applicant, determine if the proposed operation is subject to FAR Part 149.

(1) Advise the applicant which regulations and advisory materials are required and where copies may be obtained. Do not schedule more detailed discussions until the applicant has become familiar with these requirements.

(2) Inform the applicant that there are five ratings: Packing and General Maintenance, Canopy Overhaul, Harness Overhaul, Metal Parts and Container Overhaul, and Drop Testing. Instruct the applicant to complete the Preapplication Statement of Intent (PASI), FAA Form 8400-6 and submit it to the appropriate district office.

(3) Inform the applicant that it is necessary to write in the ratings applied for in Section 1C, Number 7, of the Preapplication Statement of Intent.

B. *Process the Preapplication Statement of Intent.* Review the completed Preapplication Statement of Intent for completeness and accuracy.

C. *Designate Certification Team.* The district office manager or designee shall appoint one or more inspectors to conduct the certification.

D. *Schedule Preapplication Meeting.* Contact the applicant to arrange a preapplication meeting. Advise the applicant that key management personnel, as listed on the Preapplication Statement of Intent, should attend the meeting. Inform the applicant that these key personnel must be prepared to discuss specific aspects of the applicant's proposed operation.

NOTE: At the discretion of the Certification Project Manager, this meeting may be combined with the Formal Application meeting.

E. *Conduct Preapplication Meeting*

(1) Ensure the applicant is aware of the eligibility requirements prescribed in FAR § 149.13. Ensure the applicant is familiar with the regulatory requirements and FAA policies regarding certification and operation of parachute lofts.

(2) Discuss the requirements for an inspection system. Encourage the applicant to provide a draft of the proposed inspection system.

(3) Inform the applicant that a formal application consists of at least the following:

- Two completed copies of FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- A statement indicating when facilities and equipment will be ready for formal inspection
- A compliance statement
- A description of the proposed inspection system
- A description of the facilities and equipment
- A list of certificated personnel

(4) Ensure the applicant understands the purpose and content of the formal application attachments.

(5) Inform the applicant that for each applicable FAR Part 149 section the compliance statement must provide a brief narrative or a specific reference to a manual or other document describing the manner of compliance.

(6) Instruct the applicant to fill out FAA Form 8310-3, Application for Repair Station Certificate and/or Rating [see Figure 196-1] are as follows:

(a) *Location.* In Block 1.B., the agency name and physical location of the facilities where the maintenance will be performed shall be entered. A post office box is not acceptable.

(b) *Ratings.* In Block 2 (Other) write, "Parachute loft" and list the ratings.

(c) *Name of owner and authorized signature.* In Block 5, fill in the legal name. If the organization will operate with a d/b/a, both the legal and d/b/a names should be listed, specifying which is which. Again in Block 5 enter the authorized signature.

7. FORMAL APPLICATION PHASE

A. *Review the Formal Application and Attachments.* Determine that all required documents have been submitted and are complete.

B. *Schedule and Conduct Formal Application Meeting.* Meet with key personnel to discuss the submitted formal application. Resolve any open questions or discrepancies at this time.

C. *Accept or Reject the Formal Application.* If the application is rejected, return the application and attachments with an explanation of the reasons for rejection.

9. DOCUMENT COMPLIANCE PHASE

A. *Review Documents.* Thoroughly review the application and other documents to ensure each complies with applicable requirements. Each document must be accepted or rejected, as appropriate.

B. *Document Deficiencies.* If deficiencies are found in any document submitted by the applicant, return the document(s) with an explanation outlining the deficient area(s).

NOTE: The certification team should be ready to offer suggestions on how to improve documents but should avoid "writing" the applicant's documents.

11. DEMONSTRATION AND INSPECTION PHASE

A. *Conduct Precertification Visit, As Needed*

B. *Conduct Formal Facility Inspection.* Determine whether the facility meets the requirements of FAR §§ 149.13, 149.17, and 65.127. Ensure that the applicant's proposed facilities, equipment, and materials meet the applicable requirements.

(1) Ensure the applicant meets the requirements for initial certification.

(2) Ensure the following:

- Technical data are appropriate and current for the work performed
- Equipment and tools are available and calibrated to acceptable standards
- The number of certificated personnel is sufficient to satisfy the volume and type of work to be performed
- A maintenance recordkeeping system is in place
- A system is established for reporting defects and/or unairworthy conditions
- The inspection system provides that maintenance and alterations performed in the loft meet applicable safety standards. FAR § 149.19 requires that the parachute loft maintains parachutes in or restores parachutes to an airworthy condition.

C. *Analyze Results*

(1) If the applicant meets all requirements for an FAR Part 149 certificate, proceed to the certification phase.

(2) If deficiencies exist, ensure appropriate corrective action is taken.

(a) If the applicant does not demonstrate compliance or if deficiencies cannot be resolved, provide the applicant with a list of discrepancies. Schedule meetings with the applicant to review deficiencies in detail. Inform the applicant that the Certification Project Manager must be shown that all deficiencies are corrected in order to proceed with the certification process.

(b) Document fully each deficiency and corrective action. Include this documentation in the certification file.

13. CERTIFICATION PHASE

A. *Issue Certificate.* Upon approval of the application, the Certification Project Manager shall accomplish the following:

- Complete the lower portion of the Application for Repair Station Certificate and/or Rating, FAA Form 8310-3, showing the date of inspection, findings, and recommendations. In Block 7.A & B, references to FAR 145 should be changed to "FAR 149", as required.
- Obtain a final certificate number from AVN-120
- Prepare an Air Agency Certificate, FAA Form 8000-4, which shall be signed by the district office manager (see Figure 196-2, Air Agency Certificate)
- Prepare and process AC Form 8300-10, Certificate, Authorization, or Designation Action Request

B. *Prepare Certification Report.* The Certification Project Manager must sign the certification report, which must include the name and title of each inspector who assisted in the certification project. The report must include at least the following:

- A copy of the Preapplication Statement of Intent
- The Compliance Statement
- The completed FAA Form 8310-3, Application for Repair Station Certificate and/or Rating
- A copy of the Air Agency Certificate issued
- A summary of any deficiencies or difficulties the applicant may have had in meeting the certification requirements

C. *Establish Office File.* The Certification Project Manager must establish an official office file after certification is complete. The file shall contain at least the following:

- The certification report and attachments
- General correspondence relevant to the operator or agency
- A copy of AC Form 8300-10, Certificate, Authorization, or Designation Action Request
- Reports or other data required to be submitted by the applicant

15. TASK OUTCOMES

A. Completion of this task will result in one of the following:

- Issuance or amendment of an air agency certificate
- Return of the application to the applicant with a disapproval
- Return of the application to the applicant upon termination of the certification process by the applicant

B. *Distribute the Certification Report*

(1) Retain the original certification report in the district office.

(2) In accordance with regional policy, forward a copy of the certification report to the regional office.

C. *Complete a WPMS Transmittal Form*

17. FUTURE ACTIVITIES. During surveillance, pay particular attention to any areas in which the certificate holder may have had difficulties during the certification process.

FIGURE 196-1
FAA FORM 8310-3
APPLICATION FOR REPAIR STATION CERTIFICATE AND RATING

US Department of Transportation
Federal Aviation Administration

APPLICATION FOR REPAIR STATION CERTIFICATE AND/OR RATING

Form Approved OMB No. 212-0010

If additional space is required for any item, attach additional sheets of paper

1. REPAIR STATION NAME NUMBER, LOCATION, & ADDRESS		2. REASON FOR SUBMISSION	
A. OFFICIAL NAME OF STATION	REPAIR STATION NUMBER	X	ORIGINAL APPLICATION FOR CERTIFICATE AND RATING
			CHANGE IN RATING
	PHONE NUMBER		CHANGE IN LOCATION OF HOUSING AND FACILITIES
			CHANGE IN OWNERSHIP
B. LOCATION WHERE BUSINESS WILL BE CONDUCTED		OTHER (Specify) PARACHUTE LOFT Ratings: (list)	
C. OFFICIAL MAILING ADDRESS OF REPAIR STATION (Number, street, city, state, and ZIP code)			

3. RATINGS APPLIED FOR		CLASS	LIMITED	4. LIST OF MAINTENANCE FUNCTIONS CONTRACTED TO OUTSIDE AGENCIES
	AIRFRAME			
	POWERPLANT			
	PROPELLERS			
	RADIO			
	INSTRUMENT			
	ACCESSORY			
	SPECIALIZED SERVICE			

5. APPLICANT'S CERTIFICATION

NAME OF OWNER (Include name(s) of individual owner, all partners, or corporation name giving state and date of incorporation)

I hereby certify that I have been authorized by the repair station identified in item 1 to make this application and that statements and attachment hereto are true and correct to the best of my knowledge.

DATE	TITLE	AUTHORIZED SIGNATURE

FOR FAA USE ONLY	RECORD OF ACTION REPAIR STATION INSPECTION	Reports Identification Symbol FS 8320-5

6. REMARKS (Identify by item number. Include deficiencies found, ratings denied)

7. FINDINGS - RECOMMENDATIONS

	A. STATION WAS FOUND TO COMPLY WITH REQUIREMENTS OF FAR ~~145~~ 149	
	B. STATION WAS FOUND TO COMPLY WITH REQUIREMENTS OF FAR 145 EXCEPT FOR DEFICIENCIES LISTED IN ITEM 6	
	C. RECOMMEND CERTIFICATE WITH RATING APPLIED FOR AN APPLICATION BE ISSUED	8. DATE OF INSPECTION
	D. RECOMMEND CERTIFICATE WITH RATING APPLIED FOR ON APPLICATION (Except those listed in item 6) BE ISSUED	

9. OFFICE	SIGNATURE(S) OF INSPECTOR(S)

10. SUPERVISING OR ASSIGNED INSPECTOR

ACTION TAKEN		CERTIFICATE ISSUED	INSPECTOR'S SIGNATURE
	APPROVED AS SHOWN ON CERTIFICATE ISSUED ON DATE SHOWN →	NUMBER	
		DATE	TITLE
	DISAPPROVED		

FAA Form 8310-3 (1-83)

FIGURE 196-2
FAA FORM 8000-4
AIR AGENCY CERTIFICATE

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Air Agency Certificate

Number 178-63

This certificate is issued to
EAST COAST PARACHUTE SERVICE, INC.
whose business address is
1169 Old Naval Air Station
Kanakee, Conn. 06994
upon finding that its organization complies in all respects with the requirements of the Federal Aviation Regulations relating to the establishment of an Air Agency, and is empowered to operate an approved Parachute Loft

with the following ratings:
Packing and General Maintenance
Canopy Overhaul
Harness Overhaul
Metal Parts and Container Overhaul.
Drop Testing

This certificate, unless canceled, suspended, or revoked, shall continue in effect indefinitely.

By direction of the Administrator
Ralph Burlingame
Ralph Burlingame
Chief, Airworthiness Unit, AEA-GADO-9

Date issued:
October 14, 1977

This Certificate is not Transferable, and any major change in the basic facilities, or in the location thereof, shall be immediately reported to the appropriate regional office of the Federal Aviation Administration

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both

FAA Form 8000-4 (1-67) SUPERSEDES FAA FORM 390.

[CHAPTERS 197 THROUGH 201 RESERVED]

CHAPTER 202 DESIGNATE/RENEW DESIGNATED MECHANIC EXAMINER (DME) OR DESIGNATED PARACHUTE RIGGER EXAMINER (DPRE)

Section 1 Background

1. PTRS ACTIVITY CODES

- *Maintenance:* 3522/3524

3. OBJECTIVE. This chapter provides procedures for the issuance, renewal, and cancellation of certificates for Designated Mechanic Examiners (DME) or Designated Parachute Rigger Examiners (DPRE).

5. GENERAL

A. *Authority.* FAR Part 183 provides for Designated Mechanic Examiners and Designated Parachute Rigger Examiners. FAA Order 8610.4, Aviation Mechanic Examiner Handbook, as amended, describes the procedures for designation and renewal of the Designated Mechanic Examiner. FAA Order 8610.5, Parachute Rigger Examiner Handbook, as amended, describes the procedures for designation and renewal of the Designated Parachute Rigger Examiner.

B. An examiner will be required to conduct oral and practical tests within the guidelines provided by the FAA. The examiner must understand the authority and limitations of the designation.

NOTE: The district office must establish a need on the part of the public for each designation issued or renewed.

7. ELIGIBILITY

A. Applicants for Designated Mechanic Examiner or Designated Parachute Rigger Examiner certificates must have the following qualifications:

- Be at least 23 years old
- Show evidence of a high level of knowledge in the subjects required by FAR Part 65 for the certification of mechanics or parachute riggers
- Have available a fixed base of operation equipped to test each subject area for the ratings authorized

B. An applicant should be personally known by inspectors of the designating district office as a person with a reputation for honesty and dependability. If this is not the case, the applicant may be recommended in writing by an FAA inspector personally acquainted with the applicant's work, standards, and integrity for at least one year.

C. An applicant for a Designated Mechanic Examiner certificate must have held a mechanic certificate for at least five years. The applicant's mechanic certificate and rating(s) must correspond to the examiner designation(s) sought.

(1) The applicant must have actively exercised the privileges of the mechanic certificate for the three years immediately prior to the issuance of the examiner designation.

(2) When eligible persons are not available for designation, the five year requirement may be reduced to three years if the applicant meets all other requirements and possesses above average technical qualifications.

D. The applicant for a Designated Parachute Rigger Examiner certificate must have held a master parachute rigger certificate for at least two years. The applicant must have actively exercised the privileges of the rigger certificate for at least the two years immediately prior to issuance of the examiner designation.

9. ORIENTATION AND STANDARDIZATION

A. Candidates for initial designation must successfully complete a Maintenance Airman Examiner Standardization Course prior to the issuance of the designation.

(1) Inspectors who have never held a Designated Mechanic Examiner certificate should attend the Maintenance Airman Examiner Standardization Course at the first opportunity.

(2) The regional Flight Standards Division Manager may authorize the designation pending successful completion of the first available course.

B. Examiners must successfully complete a Maintenance Airman Examiner Standardization Recurrent Course every other year or their designations will be cancelled.

(1) The district office must schedule each examiner for the course once every two years at the time of renewal. If necessary, the supervising district office may extend the two year recurrent training requirement.

(2) FAA Airworthiness Inspectors are expected to attend the course(s) with their assigned examiners.

11. FIXED BASE OF OPERATION. Each examiner must have available a fixed base of operation equipped to exercise the authority of the designation.

A. The equipment and materials provided must be adequate for an airman applicant to demonstrate the knowledge and skills required for the rating sought. Equipment and materials may be evaluated by selecting random projects in each subject area from the oral and practical test guide. If the examiner cannot test in each subject area or if the range of possible projects in any subject area is too restrictive, the examiner's equipment and materials will be considered inadequate.

B. Airworthy aircraft, other aircraft, aircraft subassemblies, operational mockups, and other aids may be used for testing airman applicants.

C. Tools, equipment, materials, and necessary apparatus required to complete a project assignment must be the type recommended by aircraft manufacturers or accepted in the aviation industry.

D. The examiner will be required by the designating district office to report any significant change in the equipment or materials available to test applicants.

13. PRIVILEGES AND LIMITATIONS

A. A designated examiner is authorized to do the following:

- Accept applications and conduct oral and practical tests appropriate to the examiner's Certificate of Authority
- Charge a reasonable fee for services and materials. The amount of the fee and the conditions required for passing the tests should be clearly understood.
- Issue initial/original FAA Form 8060-4, Temporary Airman Certificate, unless otherwise directed by the designating district office

B. A designated examiner shall NOT do the following:

- Conduct tests at locations other than the base of operations, unless authorized by the supervising FAA district office
- Conduct or monitor any portion of FAA airman written tests while also conducting the oral/practical tests, unless authorized in writing by the district office
- Endorse, amend, alter, or issue any permanent airman certificate
- Reissue an expired temporary airman certificate
- Conduct oral and practical tests simultaneously with more than two applicants unless authorized by the FAA district office
- Combine teaching with testing of an applicant
- Conduct oral and practical tests without proof of the applicant's eligibility as required by FAR Part 65

C. Designated Mechanic Examiners wanting to administer oral and practical tests outside the geographical area of their designating district office must first accomplish the following:

- Request permission in writing from both the designating district office and the office(s) where the tests will be conducted
- Provide these offices with written notification of the date(s) and address(es) of the testing site(s)
- Make the request so that the designating district office has sufficient time to evaluate the proposal
- Provide evidence to the receiving district office that the temporary test site has adequate facilities, equipment, and materials for testing applicants for the ratings sought

D. When permission is granted for an examiner to administer oral and practical tests in the area of jurisdiction

of another district office, the examiner then comes under the jurisdiction of that office. Certification files must be submitted to the jurisdictional district office. Requests for testing outside the designated mechanic examiner's regional geographic area will be denied.

15. RENEWAL

A. All designations expire on October 31 every year. The designation will be renewed when the district office determines the need for the designation still exists and the examiner meets the requirements for renewal.

B. An annual meeting of designated examiners shall be held by each district office to discuss examiner procedures and problems. This meeting may be held in conjunction with the Biennial Maintenance Airman Examiner Standardization Course conducted by AVN-144.

C. A renewal file presented by the designee must include a FAA Form 8430-9, Certificate of Authority, and a record of all oral and practical tests conducted since the issuance or last renewal of designation.

17. VOLUNTARY SURRENDER OR CANCELLATION OF DESIGNATION

A. Voluntary surrender of an examiner's designation shall be treated as a cancellation.

B. Designations may be cancelled for the following reasons:

- The examiner no longer meets the requirements for designation
- The need for an examiner's services no longer exists
- There is evidence of malpractice or fraud
- The examiner needs constant and/or continuing assistance and guidance in order to comply with procedures and the requirements of the Federal Aviation Regulations
- The examiner shows inability to work well with applicants and/or FAA personnel
- FAA policy changes affect the examiner program
- The examiner does not attend or does not successfully complete a Maintenance Airman Examiner Standardization course required as a condition of renewal
- The supervising FAA district office determines that cancellation is appropriate (FAR § 183.15(d)(6))

NOTE: District offices should keep in mind that a cancellation of designation may be contested. Therefore, documentation of substandard performance, lack of need, or other reason for cancellation should be established prior to taking this action.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 65 and 183
- FAR Parts 1, 21, 39, 43, and 91
- FAA Order 8610.4, Aviation Mechanic Examiner Handbook, as amended
- FAA Order 8610.5, Parachute Rigger Examiner Handbook, as amended

B. *Coordination.* This task may require coordination with AVN-144.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

B. *Forms*

- FAA Form 8000-5, Certificate of Designation
- FAA Form 8110-14, Statement of Qualification

- FAA Form 8430-9, Certificate of Authority

C. *Job Aids.* None.

5. PROCEDURES

A. *Ensure the Applicant Meets the Qualifications for the Designation Sought*

B. *Determine Need for Initial/Continuing Designations.* Evaluate the following:

- Public need for the designation
- Number of requests for the service received by the district office
- Activity levels of current designees

C. *Treat All Former Designees as Original Designations.* If the former designee has not turned in the superseded Certificate of Authority, ensure that it is returned and destroyed. Contact AVN-144 to determine whether the former designee must retake the initial course.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Complete FAA Form 8300-10, Certificate, Authorization, or Designation Action Request. Forward the original to AVN-144 and a copy to the Regional Office.

C. *Issue Designation.* Designees who are judged to be qualified should be asked to complete FAA Form 8110-14, Statement of Qualification. Designation numbers will be the same as their respective mechanic or master parachute rigger certificate numbers.

(1) The designee and the issuing inspector should each sign FAA Form 8430-9, Certificate of Authority. Enter the jurisdictional district office number on the reverse side.

NOTE: All designations expire on October 31 of each year. Those made in October will expire the following year.

(2) Issue FAA Form 8000-5, Certificate of Designation. This certificate may be issued for display purposes.

(3) An examiner may be designated to serve outside the United States, provided such designation will serve U. S. citizens abroad and the examiner's activities can be properly supervised by the designating FAA office. Certification limitations may be placed on the examiner as provided by current FAA policy regarding certification of airmen outside the United States.

9. FUTURE ACTIVITIES

A. Provide examiners with the publications necessary to perform their duties.

B. *Cancellation or Voluntary Surrender of Examiner Designation.* Treat voluntary surrender as a cancellation. When cancellation becomes necessary, notify the designee in writing. Request surrender of FAA Form 8430-9, Certificate of Authority, and return of all supplies and documents furnished by the FAA.

(1) If the cancellation is based on deficient performance or the actions of the examiner, give the examiner an opportunity to discuss the problems with the district office. Ensure the items for proof are maintained in a file for future reference.

(2) Notify the examiner that cancellation is effective upon receipt of the written notice. The letter of cancellation may also contain a statement thanking the examiner for services rendered.

(3) Unless the supervising district office decides otherwise, allow the examiner to retain FAA Form 8000-5, Certificate of Designation.

[CHAPTERS 204 THROUGH 209 RESERVED]

CHAPTER 210 INTRODUCTION TO CONDUCTING ACCIDENT AND INCIDENT INVESTIGATIONS, PROCESSING A VIOLATION PACKAGE, AND RESPONDING TO A COMPLAINT

1. GENERAL

A. *Definitions*

(1) *Aircraft accident:* An occurrence associated with the operation of an aircraft that:

- Takes place between the time the first person boards the aircraft with the intention of flight and the last person has disembarked
- Results in death or serious injury
- Causes substantial damage to the aircraft

(2) *Aircraft incident:* An occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operations.

(3) *Serious injury:* Any injury that:

- Requires hospitalization for more than 48 hours, within 7 days from the date an injury was received
- Results in a fracture of any bone (except simple fractures of fingers, toes, or nose)
- Causes severe hemorrhages, and/or nerve, muscle, or tendon damage
- Involves second or third degree burns, or burns affecting more than 5 percent of the body surface
- Involves damage to any internal organ

(4) *Substantial damage:* Damage or failure that adversely affects the structural strength, performance, or flight characteristics of the aircraft, and that would normally require major repair or replacement of the affected component.

(a) For the purpose of this task, exceptions to this definition include:

- Engine failure or damage limited to an engine
- Bent fairings or cowling
- Dented skin or small puncture holes in the skin or fabric
- Ground damage to rotor or propeller blades
- Damage to landing gear, wheels, brakes, tires, flaps, engine accessories, or wing tips

(b) Aviation Safety Inspectors are urged to fully consider all aspects of these exceptions before making a final "substantial damage" determination that would classify the occurrence as an accident.

B. The FAA compliance and enforcement program promotes aviation safety and protects the public interest by seeking compliance with the regulatory requirements through the use of:

- Education
- Surveillance
- Enforcement

C. Agency actions, from investigation to disposition, must ensure fair and equal treatment for all involved individuals. This requires FAA employees to approach work objectively and pursue each step of the process without delay.

3. FAA COMPLIANCE AND ENFORCEMENT POLICY

A. *Compliance and Enforcement Differences.* Flight Standards is charged with the responsibility to investigate, report, and make sanction recommendations. In this connection, it is vital to keep in mind the difference between compliance and enforcement.

(1) Compliance consists of all regulations and safety standards being met. When compliance exists, there is no need for enforcement.

(2) Enforcement is the action necessary when compliance is not present. Enforcement requires legal or administrative action.

B. *Relating Compliance and Enforcement to Other Work Functions.* The FAA Compliance and Enforcement policy, as stated in the Administrator's Enforcement Policy and in Order 2150.3, Compliance and Enforcement Program, as amended, clearly relates the Compliance and Enforcement Program to the overall mission and job function of the agency.

(1) The ultimate goal of the Administrator's Enforcement Policy is to prevent the occurrence of violations, a goal primarily achieved through education and counseling designed to encourage voluntary compliance.

(a) Accident Prevention Specialists, even though they are not actively involved in enforcement, are very much involved in the compliance aspects of the program. An additional responsibility is to report any violation that comes to their attention to the appropriate Unit Supervisor for investigation.

(b) All inspectors must become involved in this educational and counseling process through:

- General contact with the aviation public
- Meetings with applicants, starting with the precertification meeting
- Day-to-day contact with certificate holders

(2) Instilling a positive attitude towards regulatory compliance and aviation safety is especially important during the certification job functions. Full understanding and compliance with the rules should be ensured before the certificate is issued. Therefore, inspectors must stress the importance of achieving the highest possible degree of safety.

(3) Surveillance is conducted to ensure continuing regulatory compliance that maintains the highest degree of safety by an air carrier. When suspected regulatory noncompliance is found during the performance of normal surveillance, the inspector must change emphasis from compliance to enforcement.

C. *Priorities.* Compliance and enforcement activities are among the highest priorities in the District Office work program because of the inflexibility of prescribed submission times. To ensure the timeliness of enforcement investigations, the following guidelines should be followed:

(1) If, after conducting an accident/incident investigation, violations are suspected, immediately initiate an enforcement investigation in order to preserve evidence and locate and interview witnesses

(2) Start the documentation of evidence as soon as the investigation begins. This includes keeping legible written records of all telephone and verbal communications to help establish the continuity necessary in any follow-up actions.

(3) When an investigation indicates a violation by an identifiable person or FAA certificate holder, send a Letter of Investigation (LOI) to that party as soon as possible. It is not necessary to wait for a response to the Letter of Investigation, as it may never come.

5. COMPLAINTS. It is FAA policy to respond to all complaints that come to the attention of the Flight Standards, whether by mail, phone, or in person.

A. Persons employed in the aviation industry, private individuals, or organizations with an interest in aviation, can contact the FAA with a specific complaint or concern regarding an element of the industry regulated by the FAA.

(1) Individuals who complain via telephone should be encouraged to submit their specific complaint(s) in writing.

(2) While information provided anonymously may be useful in planning surveillance, response to an anonymous complaint is limited to the procedures covered in the section on hotline complaints.

B. Complaints and concerns should receive prompt handling including a written FAA response. The written response, either in final form as an answer or acknowledgement, should be sent within 10 working days from the time of receipt.

(1) If the complaint investigation does not result in a finding of regulatory noncompliance, there must still be a response in writing to the complainant explaining the results of the investigation.

(2) If the complaint investigation does result in a finding of regulatory noncompliance, an EIR must be initiated. Advise the complainant in writing that the FAA has received the complaint and is investigating the matter.

(3) The complaint investigation may prompt the FAA to work with an operator or certificate holder in order to prevent a recurrence of the action or incident that brought about the complaint. Advise the complainant in writing that action is being taken to change the practice(s) in question.

(4) The final letter of reply should respond directly to the concerns or issues cited in the complaint. A final response should be courteous, concise, and free of generalities.

(5) Before replying to complaints concerning sensitive or significant issues, the responsible field office should discuss the form and manner of response with the appropriate regional office personnel.

(6) Due to the provisions of the Privacy Act, specific information regarding possible or pending enforcement actions should not be discussed within a response.

C. When investigating a complaint the inspector should:

- Gather any data or information that may be pertinent to the case
- Analyze how safety may have been affected and the possible impact on life or property
- Analyze and report any mitigating or aggravating circumstances involved in the complaint

D. The information gathered during the complaint investigation may indicate the need for an enforcement action. The methods for information gathering, spoken to in Vol. 2, Ch. 213, apply as equally well to the process of investigating complaints.

7. COMPLAINT HOTLINE. Order 1200.1, Aviation Standards Procedures for Processing FAA Hotline Action Items, identifies the procedures and guidelines to be used in responding to FAA Hotline items requiring Aviation Standards action.

A. Three hotlines are currently in operation in the FAA Hotline Center. Offices reporting to the Associate Administrator for Aviation Standards may be required to respond to action items from any of these hotlines.

(1) *Administrator's Hotline.* This hotline was established for FAA employees who find that the normal channels cannot satisfactorily resolve an issue. Use of this hotline can bring operational safety items to the attention of high-level management.

(2) *Safety Hotline.* This hotline is managed by the Office of Aviation Safety. The safety hotline receives telephone calls from public and industry sources concerning possible safety violations and allows those with knowledge of unreported violations to alert the FAA without fear of recrimination. Concerns of the aviation public, aviation organizations, aviation corporations, and others must be pursued aggressively to ensure proper action.

(3) *Consumer Hotline.* This hotline is managed by the Office of Public Affairs. Consumer problems and concerns relating to FAA services and response come in through this hotline.

B. *Hotline Operation.* Complaints are forwarded to the office of primary responsibility for evaluation and assignment to the appropriate office, region, or individual for investigation and reply.

(1) Confidentiality is a significant feature of hotline operations.

(a) Action items may be received with or without caller identity. In addition, caller identification may be given with the stipulation that it not be divulged outside the Hotline Center. When requested, confidentiality must be retained.

(b) Inspectors should guard against inadvertent exposure of confidential sources during investigation of action items.

(c) Investigative reports provided to management should be limited to objective findings and appropriate verification of complaints.

(2) Response times are established by the administrator to ensure effective and timely reaction to hotline complaints.

(a) The Administrator's Hotline has a completion time of 14 calendar days following receipt of the complaint.

(b) The Safety Hotline completion time is 30 days following receipt of the complaint.

(c) Callers to the Consumer Hotline should be contacted within 2 working days with either a reply or an

explanation for continuance. Completion time is 30 calendar days following receipt of the complaint.

C. *Responsibilities*

(1) The Office of Program and Regulation Management is the designated focal point for all Aviation Standards-oriented hotline calls.

(2) Offices reporting to the Office of the Associate Administrator for Aviation Standards are responsible for assigning hotline items and coordinating directly with the responsible offices to assure effective action.

(a) Aviation Standards managers assigned hotline action are responsible for responding in a thorough and timely manner.

(b) Identified response times are the maximum time limits. When possible, complaints should be resolved in less than the prescribed times.

(c) In lengthy or complex investigations, interim replies should be provided to the responsible office(s) in advance of the time limit.

(3) Aviation Standards shall transmit to the Office of Program and Regulation Management all reports of investigations and resolutions of hotline items received over the Administrator's or Safety Hotlines, as well as safety related complaints received through the Consumer Hotline.

(a) No formal written reply is necessary for non-safety related consumer complaints.

(b) The Aviation Standards office should correspond directly with the consumer and resolve the complaint as informally as possible, preferably by telephone. In such cases, verbal notification of resolution or contact should be provided to the Office of Program and Regulations Management.

CHAPTER 211 CONDUCT AN ACCIDENT INVESTIGATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3702/3703

B. *Avionics*: 5702/5703

3. OBJECTIVE. This chapter provides additional guidance for conducting an accident investigation in accordance with Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, as amended.

5. GENERAL

A. Since this order does not supersede Order 8020.11, it is recommended that both orders be used during the aircraft accident investigation.

B. *Pre-Accident Plan.* Each Flight Standards District Office should have a pre-accident plan that is tailored to that office's specific requirements (e.g., geographic location, climate, staffing, resources, etc.). The success of an accident investigation often depends on how well the pre-accident plan is kept current, rehearsed, and carried out.

7. RESPONSIBILITIES

A. *FAA Responsibilities.* FAA accident investigation responsibilities include the following:

(1) Ensuring that:

- All facts and circumstances leading to the accident are recorded and evaluated
- Actions are taken to prevent similar accidents in the future

(2) Determining if:

- There was a violation of the Federal Aviation Regulations
- The performance of FAA facilities or functions was a factor
- The airworthiness of U.S.-certificated aircraft was a factor
- The competency of U.S.-certificated airmen, air agencies, commercial operators, air carriers, or airports was a factor
- The Federal Aviation Regulations were adequate
- The airport certification safety standards or operations were involved
- The air carrier/airport security standards or operations were involved
- Airmen medical qualifications were involved

B. The FAA will conduct and submit factual reports of the investigation to the National Transportation Safety Board (NTSB) on accidents delegated to the FAA by the NTSB. This delegation of certain NTSB accident investigation responsibilities is exercised under Section 304(a)(1) of the Independent Safety Board Act of 1974.

(1) The FAA is obligated to supply all resources essential to producing aircraft accident reports, e.g., manpower, travel, inspection, testing, wreckage recovery, security guards, etc.

(2) Regional Flight Standards Division Managers or their delegated representatives are authorized to order such services and commit the funds for these activities.

C. The authority to conduct autopsies and tests of the remains of persons aboard the aircraft at the time of the accident may be delegated by the Administrator to a medically qualified official or medically qualified employee of the FAA. Designated aviation medical examiners are not deemed to be officials or employees for this purpose.

D. *FAA and NTSB Investigation Agreements.* NTSB and FAA agreements for accident investigations are found in Order 8020.11.

E. *Regional Divisions and Branches in Aircraft Accident Investigations.* In order to meet agency requirements, other FAA personnel may be required to participate in an accident investigation. In these situations, a representative is

designated to coordinate the division/branch responsibilities and provide assistance and required reports to the FAA Investigator-In-Charge.

F. *FAA Investigator-In-Charge's Responsibilities.* The FAA shall at all times have an Investigator-In-Charge designated as its principal representative. The designation of Investigator-In-Charge constitutes that person's authority to procure and utilize the services of all needed FAA personnel, facilities, equipment, and records.

(1) *General responsibilities.* The FAA Investigator-In-Charge directs and controls all FAA participation in the investigation until the accident investigation is complete. During the assignment as FAA Investigator-In-Charge, responsibility is direct to the Director of Aviation Safety, ASF-1, through the Manager, ASF-100.

(2) *NTSB-conducted accident investigation*

(a) The FAA Investigator-In-Charge is under the control and direction of the NTSB Investigator-In-Charge. If the FAA is the first to arrive at the accident site, then the FAA representative is in charge until the NTSB arrives.

(b) The FAA Investigator-In-Charge will be the point of contact for any information that the NTSB makes available to be used for necessary corrective action, to include the following:

- Documents
- Any other evidence obtained and developed during the investigation
- Any tentative recommendations

(3) *FAA-delegated accident investigations.* When accident investigations are delegated to the FAA by the NTSB, the FAA Investigator-In-Charge becomes an authorized representative of the NTSB. This includes all of the investigative authority prescribed in the applicable NTSB regulations. Refer to Order 8020.11, Designation of the FAA Investigator-In-Charge.

NOTE: All further references in this Section to Investigator-In-Charge will be referring to the FAA Investigator-In-Charge.

G. *FAA Participant Responsibilities*

(1) Participants are responsible to the Investigator-In-Charge in all matters related to the investigation, to include obtaining consent before:

- Withdrawing from the investigation
- Submitting requested reports
- Supplying information or reports to any person outside their assigned group

(2) Personnel representing the FAA organizational element authorized access to the accident scene are subject to the requirements of the above paragraph. These personnel shall provide the Investigator-In-Charge with reproducible copies of all reports that they have prepared or received during the investigation.

(3) FAA personnel not specifically assigned as participants or support personnel are not permitted at the scene of an accident without the knowledge and consent of the Investigator-In-Charge.

H. *Other Agency Or Organizational Responsibilities.* Detailed responsibilities for other agencies or organizations can be found in Order 8020.11.

9. TYPES OF AIRCRAFT ACCIDENT INVESTIGATIONS

A. *Military Accident Investigations*

(1) A "function of the FAA" is defined as involvement of:

- An FAA employee or designee
- An FAA facility
- FAA procedures, directives, or publications
- An FAA certificated civilian airman
- An FAA certificated joint use airport
- An aircraft and/or equipment common to both civil and military aviation
- Common interest environmental factors

(2) When a "function of the FAA" is involved, participation in military accident investigations is provided for by the FA Act. For information on procedures, see Armed Forces Regulations/DOT Order AFR 127-11.

(3) The military commander in charge of the investigation is responsible for making a determination of FAA involvement and will include this in the notification to the FAA.

(4) In a military aircraft accident (mishap) in which a mutual interest exists but no FAA function is or may be involved, the FAA can request to participate in the investigation. Requests for participation shall be forwarded to the appropriate military safety center, following coordination with the Accident Investigation Division, ASF-100.

B. *Agricultural Aircraft Accident Investigation*

(1) The Investigator-In-Charge should use extreme caution when arriving at an accident site in which an agricultural aircraft is involved, as the site may be contaminated with hazardous chemicals or "economic poisons." If this is the case, protective clothing may be required during the investigation.

(2) If there is any question as to what type of substance is on board the aircraft, the Investigator-In-Charge should make every attempt to contact the operator to identify the substance and determine whether there are any associated risks before allowing anyone on the site.

(3) Once the chemical or "economic poison" has been identified, the Investigator-In-Charge must determine what precautions, clean-up procedures, and decontamination procedures are required.

C. *Foreign Accidents*

(1) When U.S.-registered or U.S.-manufactured aircraft are involved in an accident/incident in a foreign country, they will be investigated in accordance with Order 8020.11.

(2) When foreign-registered aircraft are involved in an accident/incidents in the U.S., that accident/incident will be handled the same as a U.S. civil aircraft accident/incident investigation.

D. *Ultralight Vehicle Accidents.* Even though the FAA does not get involved in an ultralight accident investigation, it is the Investigator-In-Charge's responsibility to determine if violation of the Federal Aviation Regulations was involved in the accident. The initial telephone notification should have sufficient information for the Investigator-In-Charge to determine if an on-site investigation is required to investigate a possible violation. If necessary, refer to FAR Part 103.

E. *Public Use Aircraft.* For accident investigations of public use aircraft, refer to Order 8020.11.

11. POST-NOTIFICATION ACTIVITIES

A. *Delegated Investigation.* Certain steps have to be taken to initiate FAA delegated investigations. The facilities of the Regional Operations Center (ROC) can be used to establish the necessary contacts and coordination with the following:

(1) Law enforcement or airport authorities for:

- Wreckage and site security
- Information on accessibility of the accident site and environmental conditions
- Arrangements for local travel to the site, etc.

(2) Coroner or nearest Aviation Medical Examiner (AME), for arrangements for proper autopsies and toxicological tests, etc.

(3) Manufacturer, operator, or owner for specific assistance, such as documents, certificates, data, etc.

(4) Flight Service Station (FSS), Air Traffic Center (ATC), and tower facilities for:

- Preliminary information on flight plan and pilot's intent
- Radio communications
- Flight progress reports, etc.

(5) National Weather Service, FAA facilities, or certified observers for relevant weather information

B. *Office Coordination*

(1) Coordination will be necessary to ensure that response time to an accident investigation is as quick as possible.

(2) Coordination should be established to give local authorities the name of the Investigator-In-Charge and the expected time of arrival. Before departing, the Investigator-In-Charge should designate an initial contact point to which messages can be sent during the transient status.

C. *Investigation Equipment.* The diversity of aircraft accidents makes it difficult to have all the necessary equipment available. Certain items commonly used in every investigation should be kept in readiness. Each office must develop its own requirements. Further details are provided in Order 8020.11.

D. *Safety At The Site.* This is an area of vital importance and needs to be addressed by the Investigator-In-Charge when planning the investigation. Aspects to be considered include both inspector and bystander safety.

(1) Some items to be considered by the Investigator-In-Charge include the following:

- Shifting wreckage on steep slopes or in deep snow
- Pressurized systems and components, including hydraulic, pneumatic, and oxygen systems
- Blowout (explosion) of damaged landing gear tires
- Ejection seat cartridges in military or ex-military aircraft
- Loaded weapons, such as when law enforcement agencies or hunters were known to be aboard
- Electrically charged wreckage
- Weak ice when wreckage is located on ice
- Reactions of toxic agents present in a fire
- Hazardous agricultural chemicals

(2) Some actions to be considered by the Investigator-In-Charge include the following:

- Wearing gloves when handling wreckage and using hard hats when working inside or under wreckage
- Delaying the handling of wreckage if there is any reason to suspect the presence of hazardous cargo, including radioactive materials or chemicals, until the necessary checks have been made and the site has been declared safe
- Taking into account the advice of local experts such as forest rangers, mountain rescue teams, surveyors, and law enforcement personnel as to the type of protection and precautions needed in certain terrain
- Providing for first aid, shelter, food, water, and fuel due to unexpected weather or equipment failures that may isolate the investigational team in remote areas
- Setting up a communications system for the logging-in and logging-out of personnel operating in remote areas
- Controlling access to the site to ensure bystander safety

E. *Accident Site Preservation.* Preservation of the accident site is of primary importance to a successful accident investigation. Removal of survivors and victims, fire fighting, and removal of hazardous materials can damage the accident site, but may be necessary prior to the start of the investigation. The Investigator-In-Charge is responsible for securing the site to ensure preservation.

F. *Rotorcraft Wreckage Considerations.* The Investigator-In-Charge should be aware that the investigation of a rotorcraft accident may present problems that would not be encountered in a airplane accident investigation. When the Investigator-In-Charge is not thoroughly familiar with rotorcraft engineering and aerodynamics, assistance should be requested. Unique considerations include the following:

(1) Rotating components that separate in flight may produce unpredictable scatter patterns, while the heavy items in single rotor rotorcrafts tend to be clustered together around and beneath the mast

(2) In general, a rotorcraft is very intolerant of mechanical and maintenance deficiencies and operations outside of its performance envelope

G. *Witness Statements*

(1) If a violation is suspected there are additional requirements for the handling of witness statements. These requirements include the following:

- If a witness objects to a copy of their statement being used, they must be informed that they may be subpoenaed if enforcement action is taken
- If a witness does not object, a copy of the statement should be requested from the NTSB Investigator-In-Charge on NTSB investigated accidents. For delegated investigations, the original statement will be forwarded to the NTSB with the accident report and a copy retained for enforcement purposes, as required.

NOTE: If NTSB forms are accepted for use as witness statements, remove all NTSB references on the form before using the statement for enforcement purposes.

(2) For further guidance on witness statements, see Order 8020.11.

H. *Progress Reports.* Progress reports to AFS-100 will be done in accordance with Order 8020.11.

I. *On Site Survey.* During the time spent at the accident site there should be a continual gathering of facts by all involved inspectors. The Investigator-In-Charge should be continually evaluating this evidence for possible consideration as a contributing factor.

(1) Some evidence to be considered includes the following:

- Missing extremities such as wing or stabilizer tips, vertical stabilizer tip, propeller or rotor tips
- Missing flight control surfaces such as rudder, elevators, ailerons, flaps, stabilizers, spoilers, slats, tabs
- Missing structure
- Pre-impact versus post-crash fire evidence
- Metal fatigue versus instantaneous breaks
- In-flight versus impact breaks
- Positive versus negative G-forces
- Overloading or out of center-of-gravity evidence
- Evidence of aircraft attitude at impact
- Controlled versus uncontrolled attitude at impact
- Engine power at impact
- Systems operation prior to impact
- Evidence of G-force at impact
- Post-crash flight control positions
- Cockpit documentation
- Evidence of impact prior to final terrain contact, such as damage to trees, wires, buildings, terrain, poles, or obstructions
- Witness statements
- Fuel contamination or exhaustion

(2) NTSB probable cause statistics show that a high percentage of accidents are caused by human error. Therefore the Investigator-In-Charge must consider other elements that could have contributed to the cause of the accident. The following is a partial list of areas of consideration:

- Possible fatigue factors
- Crew qualifications
- Medical factors
- Peer group pressures
- Over extension of capabilities
- Drug and/or alcohol usage

13. AIRCRAFT ACCIDENT REPORT PACKAGE. For a complete explanation of responsibilities see Order 8020.11.

15. ACCIDENT/INCIDENT INFORMATION. For release of information, see Order 8020.11.

17. POST ON-SITE INVESTIGATION ACTIVITIES. The Investigator-In-Charge's responsibilities do not end with the conclusion of the on-site investigation. Some of the activities necessary after completion of the on-site investigation might include:

- Testing and tear-down of aircraft components and parts in accordance with the manufacturer's manuals
- Comparing the aircraft's certificated performance with the performance under the conditions existing at the time of the accident. Simulator or actual flight tests may be required.
- Reviewing all relevant certification standards (aircraft, airmen, carriers, airport facilities, schools, repair stations, etc.) for factors that may have contributed to the accident
- Documenting the pilot's flying background, experience, training, medical history, and certification
- Documenting the pilot's preparation and execution of the flight. This could entail contacting the Flight Service Station, the tower and Air Traffic Center facilities involved, and obtaining final transcripts of all recorded communications, as required.
- Documenting all pertinent weather data, such as pilot briefings, forecast weather, actual weather, PIREP's, SIGMET's, etc.
- Submitting safety proposals in the form of accident prevention recommendations

19. VIOLATIONS. If, at any time during the investigation, facts are revealed that indicate a violation of the Federal Aviation Regulations, the Investigator-In-Charge should follow the procedures in Vol. 2, Ch. 213.

21. DOWNGRADING AN ACCIDENT TO AN INCIDENT. If a determination is made that the accident should be downgraded to incident status, the Investigator-In-Charge will:

- Notify the appropriate Flight Service Station that the accident has been downgraded to incident status
- When the downgrade is subsequent to issuance of the 6120.19A, notify AVN-120 and NTSB by sending both offices a copy of the original NTSB Form 6120.19A with the word "Downgraded" written across the form
- Follow the procedures outlined in Vol. 2, Ch. 212

23. ACCIDENT INVESTIGATION RECORDS DISPOSAL. Accident investigation records shall be disposed of in accordance with Order 8020.11.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of the Federal Aviation Regulations
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with unit supervisors, the Regional Operations Center (ROC), the appropriate Flight Service Station, and the NTSB Investigator-In-Charge, as applicable.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Office Procedures/Policy Manual
- Order 1200.23, Public Availability of Information, as amended
- Order 2150.3, Compliance and Enforcement, as amended
- Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, as amended

- Order 8300.10, Airworthiness Safety Inspector's Handbook, Vol. 2, Chs. 210, 212, and 213

B. *Forms.* See Order 8020.11, Appendix 1, for complete listing.

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive Initial Notification*

(1) Record the initial accident information.

(a) If notification is made by the Flight Service Station, verify that the they have enough information to initiate an FAA Form 8020-9, Aircraft Accident/Incident Preliminary Notice.

(b) If notification is made by an operator, call the Flight Service Station and give them the information required to initiate an FAA Form 8020-9.

(c) If notification is made by Regional Operations Center, call the Flight Service Station and give them the information required to initiate an FAA Form 8020-9.

(2) Determine the type of accident, such as:

- Air Carrier
- Agricultural
- Military

(3) Ensure that the Flight Service Station initiates FAA Form 8020-9.

(4) Notify the Regional Operations Center to contact the appropriate personnel and agencies as required by the category of accident.

(5) If the NTSB conducts the investigation, respond to the type of investigation as determined by the NTSB, to include the following:

- Initiate the preparation of the FAA effort
- Determine FAA responsibility in accordance with office policy

(6) If the investigation is delegated to the FAA, contact the appropriate office personnel according to office policy and request the following:

(a) Assignment of FAA Investigator-In-Charge

(b) Determination of whether the investigation will be accepted as a delegated investigation:

- If accepted, initiate the organization of investigation effort
- If not accepted, initiate the effort to determine the FAA responsibility

B. *Initiate Organization of Investigation*

(1) If the accident involves Air Traffic Center, the Investigator-In-Charge should request the following information, as required:

- Flight progress strips
- Air Traffic Center tapes
- Radar printouts
- Weather information

(2) Determine what specialties will be required based on the initial accident information submitted (e.g., operations, airworthiness, avionics, aviation medical examiner (AME), coroner, pathologist, etc.).

(3) Request technical support from the Flight Standards District Office manager or the appropriate office representative according to office policy and procedures.

(4) Brief all participants on their responsibilities and the preliminary accident information.

(5) Designate an office coordinator at the Flight Standards District Office in accordance with the office procedures/policy manual.

(6) Contact the nearest local law enforcement agency and/or airport security to:

(a) Provide accident site security until the arrival of FAA or NTSB personnel

(b) Ensure that rescue operations have been initiated

- If rescue operations have not been initiated, take the necessary steps to begin rescue operations, if necessary

- Determine if specialized personnel and/or equipment are required to begin or continue rescue operations

(7) Obtain the accident investigation kit from the Flight Standards District Office and proceed to the accident site.

C. *Perform Preliminary On Site Investigation (FAA Delegated Inspection)*

NOTE: The Investigator-In-Charge must ensure that sufficient data is gathered to complete all applicable NTSB supplemental forms.

(1) Determine if the accident site is safe for performance of investigation procedures.

(a) If it is determined that the aircraft accident site is not safe for the preliminary investigation, contact the appropriate state, local, or federal authorities for assistance in controlling the hazard.

(b) If it is determined that the aircraft accident site is safe for the investigation procedures, continue with preliminary investigation.

(2) Ensure accident site security has been properly established.

(3) Conduct an on-site briefing of participants, to include:

(a) Assigning responsibilities to each of the participants (e.g., photographic, witness statements, etc.)

(b) Assigning a time and place to meet after the preliminary investigation has been completed

(c) Passing out any forms, instructions, or other material necessary for participants to accomplish their assigned duties

(4) Determine the circumstances and factors surrounding the condition of personnel aboard aircraft, to include possible medical laboratory analysis, such as:

- Passengers - toxicity

- Crewmembers - drugs, alcohol, etc.

(5) Determine the status of fatalities and injured, if applicable, to include:

(a) Who the medical personnel working at the accident site are/were

(b) Where injured were taken

(c) Where remains have been taken and if autopsies are required. If autopsies are required:

- Make necessary arrangements

- Provide toxicology kit for crewmember autopsies

(6) Determine if mechanical laboratory analysis may be needed and how specimens will be obtained and transported, to include:

- Fuel samples

- Oil samples

- Metallurgy tests

(7) Ensure that the Emergency Locator Transmitter (ELT) has been deactivated.

(8) Ensure that Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) have been deactivated, if applicable.

(9) Obtain the aircraft type, model, N-number, and serial number.

(10) Ensure that personal items have been tagged and secured.

(11) Obtain any eyewitness and survivor statements, to include the following:

(a) Securing copies of statements made prior to the inspectors arrival

(b) Recording the names, addresses, and phone numbers of any eyewitnesses, survivors, relatives, etc., as applicable

(12) Determine the type of cargo, such as:

- Hazardous materials
- Passenger baggage
- Livestock
- General cargo

(13) If a fire was involved, determine how the fire was started.

(14) Obtain all of the required weather information.

(15) Assess the topographical features of the accident site, such as:

- Visible damage path
- Actual location of wreckage
- Obstructions

(16) Determine if engineering assistance is required.

(17) Photograph the wreckage and any area associated with the accident to obtain an overall view of the site.

(18) Prepare a wreckage distribution diagram which includes, if appropriate, body distribution.

(19) Secure the aircraft records and pilot logbooks, if available.

D. *Perform Wreckage Investigation*

(1) Record external flight control positions (e.g., rudder, elevators, ailerons, flaps, slats, spoilers, stabilizers, tabs, etc.). Tag parts as necessary.

(2) Record all of the data from the cockpit flight control indicators.

(3) Document the cockpit instrument readings.

(4) Document the condition of cabin/cockpit area.

(5) Document the burn pattern, if applicable.

(6) Identify and document any structural failures and missing components.

(7) Determine and record the amount of remaining fuel.

(8) Obtain fuel, oil, and hydraulic fluid samples, as required.

E. *Conclude Field Phase Investigation*

(1) Use NTSB Form 6120.15, Release of Aircraft Wreckage and/or Parts, to release the wreckage to the owner or the owner's designated representative.

(2) Use FAA Form 8020-2, Aircraft/Part Identification and Release Tag, to release the wreckage if the occurrence has been downgraded to an incident.

(3) Review the witness statements to determine if the following is required:

- Re-interviewing of important witnesses
- Acquiring additional witness statements

(4) Obtain preliminary findings of pathologist, coroner, or medical examiner, including crash injury information, as applicable.

(5) Obtain preliminary toxicology results by calling the FAA/CAMI laboratory.

(6) Interview injured occupants, if applicable.

NOTE: Consent of the treating physician may be required.

(7) Obtain injury status of all surviving aircraft occupants, if applicable.

(8) Request copies of the activity logs and investigative reports of involved law enforcement agencies, fire fighting, rescue services, and search and rescue organizations, as applicable.

(9) Obtain and review copies of pertinent newspaper photographs and other media recordings, to check for items that may require follow-up.

(10) Obtain appropriate local maps (city, airport, topographical, aeronautical, etc.) and/or aerial photographs.

(11) Obtain data or information from the pilot's last departure point or home base (aircraft loading, refueling, maintenance, pilot's intent, etc.).

(12) Review the NTSB Accident Form 6120.4 and all applicable report supplements to ensure that all locally available data is documented or requested. This applies especially to:

(a) Pilot training, certification, experience, background, medical condition, etc.

(b) Aircraft registration, airworthiness certificates, aircraft records, etc.

(c) Air Traffic Center communications, flight tracking radar plots, etc.

(d) Weather information

(e) Airport conditions at the time of accident

(f) Condition of pertinent NAVAIDS, ILS, etc.

(13) Invite appropriate participants to observe the tear-down or testing of retained parts and to participate in other follow-up activities, as applicable.

(14) Confirm any agreements made to forward copies of specified documents, records, and manuals directly to the Investigator-In-Charge.

(15) Obtain the necessary information and documentation needed to fulfill all of the FAA financial obligations, to include:

(a) Guard services

(b) Assistance from hired personnel

(c) Rental equipment

(d) Storage and transport of wreckage

(16) Inform the district office of the status of the investigation, to include:

- Current findings
- Additional required tasks
- Estimated time of return to the district office or next destination

(17) For delegated accidents complete NTSB Form 6120.19A within five working days from the date of the accident. Distribute the report as follows:

- Original to delegating NTSB Field Office
- Copy to National Safety Data Branch, AVN-120

(18) For NTSB conducted investigations, obtain a completed copy of NTSB Form 6120.19A from the NTSB Investigator-In-Charge and forward the form to the National Safety Data Branch, AVN-120.

(19) Debrief all FAA participants prior to their departure from the accident site.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

(1) If the accident investigation was conducted by the NTSB, completion of the reports requested by the NTSB group chairman

(2) If the accident investigation was delegated to the FAA, completion of NTSB Form 6120.4 and required supplements. Do not release the report until all FAA deficiencies uncovered in the investigation have been reviewed and comments made by the appropriate manager.

(3) A letter that includes recommendations for accident prevention. Distribution should be in accordance with Order 8020.11, as applicable.

(4) A completed FAA Form 8020-16

(5) An assembled and submitted accident investigation report package, per Order 8020.11

(6) Distribution of the accident reports in accordance with Order 8020.11

C. *Document the Task.* Place a copy of all aircraft accident investigation related material in the appropriate district office file.

9. FUTURE ACTIVITIES

A. Conduct a violation investigation (see Vol. 2, Ch. 114), as applicable.

B. Provide information to the Accident Prevention Program Manager.

CHAPTER 212 CONDUCT AN INCIDENT INVESTIGATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3711/3712

B. *Avionics*: 5711/5712

3. OBJECTIVE. This chapter provides additional guidance for conducting an incident investigation in accordance with Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, as amended.

5. GENERAL

A. Since this order does not supersede Order 8020.11, it is recommended that both orders be used during the aircraft incident investigation.

B. *Pre-Accident Plan.* A pre-accident plan should be developed by the Flight Standards District Office (FSDO) and should reflect each office's specific requirements (e.g., geographic location, climate, staffing, resources, etc.). The success of an incident investigation often depends on how well the pre-accident plan is kept current, rehearsed, and carried out.

7. RESPONSIBILITIES

A. *FAA Responsibilities.* FAA incident investigation responsibilities include the following:

(1) To ensure that:

- All facts and circumstances leading to the incident are recorded and evaluated
- Actions are taken to prevent similar incidents in the future

(2) To determine if:

- There was a violation of the Federal Aviation Regulations
- The performance of FAA facilities or functions was a factor
- The airworthiness of U.S.-certificated aircraft was a factor
- The competency of U.S.-certificated airmen, air agencies, commercial operators, air carriers, or airports was a factor
- The Federal Aviation Regulations were adequate
- The airport certification safety standards or operations were involved
- The air carrier/airport security standards or operations were involved
- Airman medical qualifications were involved

B. *FAA and National Transportation Safety Board Investigation (NTSB) Agreements*

(1) FAA procedures for participation in an NTSB investigation will be the same as in an NTSB-conducted accident investigation.

(2) NTSB and FAA agreements for incident investigations are found in Order 8020.11.

C. *Regional Divisions and Branches in Aircraft Incident Investigations.* In order to meet agency requirements, other FAA personnel may be required to participate in an incident investigation. In these situations a representative is designated to coordinate the division/branch responsibilities and provide assistance and any required reports to the FAA Investigator-In-Charge.

D. *Investigator-In-Charge's Responsibilities*

(1) The FAA shall at all times have an Investigator-In-Charge designated as the principal representative. The designation as Investigator-In-Charge constitutes that person's authority to procure and utilize the services of all needed FAA personnel, facilities, equipment, and records.

(2) The Investigator-In-Charge directs and controls all FAA participation until the incident investigation is complete. During the assignment as Investigator-In-Charge, responsibility is direct to the Director of Aviation Safety, ASF-1, through the Manager, ASF-100.

E. *FAA Participant Responsibilities*

(1) Participants are accountable to the Investigator-In-Charge in all matters related to the investigation. Participants shall not withdraw from the investigation without the concurrence of the Investigator-In-Charge. Participants shall submit reports when requested by the Investigator-In-Charge.

(2) Participants will not supply information or reports to any person outside their assigned group except with the full knowledge and consent of the Investigator-In-Charge.

(3) Personnel representing the FAA organizational element authorized access to the incident scene are subject to the requirements of paragraph (1) and (2) above. These personnel shall provide the Investigator-In-Charge with reproducible copies of all reports that they have prepared or received during the investigation.

(4) FAA personnel not specifically assigned as participants or support personnel are not permitted at the scene of an accident/incident without the knowledge and consent of the Investigator-In-Charge.

F. *Other Agency Or Organization Responsibilities*

(1) Regional Air Traffic (AT) Division Managers are responsible for the investigation and reporting of incidents that involve only air traffic functions (e.g., operational errors/deviations).

(a) The Investigator-In-Charge shall determine the extent of investigation necessary before requesting an Air Traffic package. When Air Traffic provides notification on an FAA Form 8020-11, Incident Report, the Flight Standards investigation office will inform the reporting facility of the final disposition of the incident.

(b) When Air Traffic personnel or facilities are involved, the Investigator-In-Charge will afford such parties an opportunity to provide comment and will indicate on the report that this opportunity was given.

(2) Regional Airports, Airway Facilities Divisions, and the appropriate Aircraft Certification Office shall be notified by the Investigator-In-Charge when functions of those offices are involved in the incident.

(3) Detailed responsibilities for other agencies or organizations can be found in Order 8020.11.

9. TYPES OF INCIDENT INVESTIGATIONS. The type of incident refers to the immediate circumstances of the incident, not the cause. All of these incidents will be investigated according to the procedures in Order 8020.11. The following are some of the different classifications that might be encountered:

- Aircraft that have been damaged but do not meet the definitions of an accident, including the exceptions listed under substantial damage in Vol. 2, Ch. 210
- Incidents involving military aircraft
- Foreign air carrier incidents
- Near midair collisions
- Emergency evacuations
- Parachute jumping
- Reckless flying

11. METHOD OF INVESTIGATION. The type of incident will dictate what action the Investigator-In-Charge should take (e.g., on-site investigation, desk audit).

A. *Desk Audit.* The Investigator-In-Charge can usually conduct the entire investigation from the office (desk audit). When specific airman or aircraft data is required during a desk audit, the information should be obtained from microfiche, Aviation Safety Analysis System (ASAS), or from a reputable source.

B. *On-Site Investigation.* Although most incident investigations can be handled by the use of a desk audit, there will be circumstances that require an on-site investigation. The Investigator-In-Charge determines whether an on-site investigation is necessary based on the initial information received regarding the incident. Circumstances that might preclude a desk audit can be based on the following variables:

(1) Whether the incident involves aircraft damage

(2) Whether there was an emergency evacuation

(3) Whether the office policy dictates the method based on the following:

- The geographic location

- The type of incident
- The depth of the FAA's involvement

C. *Organizing the Investigation.* Organizing an incident investigation is a process that begins with the initial notification and continues throughout the investigation. There may be occasions when the Investigator-In-Charge is the only participant in the investigation. In this instance, the Investigator-In-Charge should still formulate a plan that can be followed throughout the investigation.

13. POST-NOTIFICATION ACTIVITIES

A. *FAA Incident Investigations.* Certain steps have to be taken to initiate an FAA incident investigation. The facilities of the Regional Operations Center (ROC) can be used in establishing the necessary contacts and coordination with the following, as applicable:

(1) Law enforcement or airport authorities for:

- Wreckage and site security
- Information on accessibility of the accident site and environmental conditions
- Arrangements for local travel to the site, etc.

(2) Coroner or nearest Aviation Medical Examiner (AME), for arrangements for proper autopsies and toxicological tests, etc.

(3) Manufacturer, operator, or owner for specific assistance, such as documents, certificates, data, etc.

(4) Flight Service Station (FSS), Air Traffic Center (ATC), and tower facilities for:

- Preliminary information on flight plan and pilot's intent
- Radio communications
- Flight progress reports, etc.

(5) National Weather Service, FAA facilities, or certified observers for relevant weather information

B. *Office Coordination*

(1) Coordination will be necessary to ensure that response time to an incident investigation is done in a timely manner.

(2) Coordination should be established to give local authorities the name of the Investigator-In-Charge and the expected time of arrival. Before departing, the Investigator-In-Charge should designate an initial contact point to which messages can be sent during the transient status.

C. *Investigation Equipment.* The diversity of aircraft incidents makes it difficult to have all the necessary equipment available. Certain items commonly used in every investigation should be kept in readiness. Each office must develop their own requirements per those in Order 8020.11.

D. *Safety At The Site.* This is an area of vital importance and should be addressed by the Investigator-In-Charge when planning the investigation activities. Aspects to be considered include both inspector and bystander safety.

(1) The Investigator-In-Charge's responsibility will include planning for the following possible on site hazards:

- Pressurized systems and components, including hydraulic, pneumatic, and oxygen systems
- Blowout (explosion) of damaged landing gear tires
- Sharp, jagged pieces of metal
- Weak ice when aircraft is located on ice
- Reactions of toxic agents present in a fire
- Hazardous agricultural chemicals

(2) Additional consideration to be taken by the Investigator-In-Charge include the following:

- Delaying the handling of materials if there is the slightest reason to suspect the presence of hazardous cargo, including radioactive materials or chemicals. The delay should last until the necessary checks have been made and the site has been declared safe.
- Taking into account the advise of local experts, such as forest rangers, mountain rescue teams, surveyors, and law enforcement personnel, as to the type of protection and precautions needed in certain terrain

- Securing all critical areas to ensure bystander safety

E. *Pilot Deviations*

(1) If the incident involves a pilot deviation or operational error, certified true copies of the following should be requested from the reporting Air Traffic Facility, as applicable:

- Pertinent Air Traffic Center flight progress strips
- Communication tapes
- Radar printouts

(2) These items should be sent to the district office as soon as possible so that the Investigator-In-Charge can use them for the investigation. These items will become a part of the final report.

F. *Analysis Considerations.* During the documentation and investigation process certain evidence will require a more detailed examination. The Investigator-In-Charge should be continually evaluating evidence as a possible contributing factor.

G. *FAA Incident Reports.* The Investigator-In-Charge is responsible for the report, and if requested, providing a copy of the report to the NTSB.

(1) This report must be submitted after the completion of the investigation and must contain the facts, conditions, and circumstances disclosed by the investigation.

(2) The NTSB will determine the accident prevention recommendations from the contents of this report. Therefore, the incident report must be an accurate reflection of all pertinent data and reports collected by the FAA investigation team.

15. WITNESS STATEMENTS

A. If a violation is suspected there are additional requirements for the handling of witness statements. These requirements include the following:

- If a witness objects to a copy of their statement being used, they must be informed that they may be subpoenaed if enforcement action is taken
- When taking witness statements over the telephone, use FAA Form 1360-33, Record of Visit, Conference, or Telephone Call

B. For further guidance on witness statements, see Order 8020.11.

17. VIOLATIONS. If at any time during the investigation facts are revealed that indicate a possible violation of the Federal Aviation Regulations, the Investigator-In-Charge must follow the procedures in Vol. 2, Ch. 213.

19. UPGRADING AN INCIDENT TO AN ACCIDENT. If the investigation reveals facts that would indicate an upgrade to an accident, the Investigator-In-Charge must:

- Notify the appropriate Air Traffic facility and NTSB
- After the upgrade, follow the procedures outlined in Vol. 2, Ch. 211

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of the Federal Aviation Regulations
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with operations and airworthiness supervisors, the Regional Operations Center (ROC), and the appropriate Flight Service Station.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Federal Aviation Act, sections 313(a) and 601(b)

- Office Procedure/Policy Manual
- Order 1200.23, Public Availability of Information, as amended
- Order 2150.3, Compliance and Enforcement, as amended
- Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, as amended
- Order 8300.10, Airworthiness Inspectors Handbook, Vol. 2, Chs. 210, 211, and 213

B. *Forms*

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call
- FAA Form 8020-2, Aircraft/Part Identification and Release Tag
- FAA Form 8020-3, Facility Accident Notification Record
- FAA Form 8020-5, Aircraft Incident Record
- FAA Form 8020-9, Aircraft Accident/Incident Preliminary Notice
- FAA Form 8020-11, Incident Report

C. *Job Aids.* None.

5. PROCEDURES

A. *Receive the Initial Notification.* Record initial incident information.

(1) If the notification is made by an Air Traffic (AT) Facility, verify that the following has been initiated, as applicable:

- FAA Form 8020-9, Aircraft Accident/Incident Preliminary Notice
- Appropriate notification procedures

(2) Request from the reporting Air Traffic Facility the following data:

- Flight progress strips
- Air Traffic Center tapes
- Radar printouts
- Weather information

(3) If the incident involves an operational error and/or deviation, determine if the Air Traffic facility is going to submit an FAA Form 8020-11, Incident Report.

(a) If the Air Traffic facility indicates that an FAA Form 8020-11 will not be submitted, terminate the task.

(b) If the Air Traffic facility indicates that an FAA Form 8020-11 will be submitted, make the required notifications.

(4) If notification is made by a source other than an Air Traffic facility, accomplish the following:

(a) Provide the information from FAA Form 8020-9 to the nearest Air Traffic Facility, preferably a Flight Service Station, and verify that the appropriate notification procedures will be initiated

(b) Notify the appropriate office personnel, according to office policy

(c) Notify the Regional Operations Center (ROC), if required

(d) Notify the National Transportation Safety Board (NTSB), if required

(e) Notify the responsible Air Traffic facility and request that certified true copies of the following be submitted:

- Flight progress strips
- Air Traffic Center tapes
- Radar printouts
- Weather information

B. *Determine the FAA Involvement in the Investigation.* If incident does not involve aircraft damage or is an operational error/deviation, determine the most effective method of investigation.

C. *Classify the Occurrence.* Based on the preliminary information, determine whether the occurrence fits the definition of an incident.

(1) If the occurrence should be classified as an incident, proceed with the following steps.

(2) If the occurrence should be classified as an accident, see Order 8300.10, Vol. 2, Ch. 211.

D. *Review the Air Traffic Facility Reports and Other Related Information.* Upon receipt of the requested forms and reports, determine the FAA involvement in the investigation and review the following for statistical data:

- Location of occurrence
- Time of occurrence
- Weather conditions at time of occurrence
- Other pertinent information

E. *Determine Method of Investigation.* Base the decision regarding the method of investigation on the information obtained from the reports and personal judgment.

(1) If an on-site investigation is not necessary, conduct the investigation by telephone.

(2) If an on-site investigation is necessary, organize the investigation accordingly.

F. *Organize the Incident Investigation.* Organize the incident investigation based on the information received from the reporting facility or person.

(1) Determine what specialties or other participants are required (e.g., operations, airworthiness, avionics, etc.).

(2) Make the request for technical support from the Flight Standards District Office manager or the appropriate office representative according to office policy and procedures.

(3) Brief all participants on the preliminary incident information and their associated responsibilities.

(4) If the investigation requires an on-site investigation, make the necessary preparations per office policy.

G. *Initiate a Telephone Investigation.* Contact each of the owners and/or pilots and all identified witnesses for statements regarding the incident.

(1) Use FAA Form 1360-33, Record of Visit, Conference, or Telephone Call, to record all pertinent information concerning the witness, including the witness's name, address, and a telephone number for future contact.

(2) Document the date and time of the occurrence and request a written statement, if required and the witness is willing.

H. *Prepare for an On-Site Investigation.* Before leaving the office for the incident site, accomplish the following:

(1) Obtain office accident/incident investigation kit.

(2) Contact the appropriate designated person in the office and provide the following:

- The location of the on-site investigation
- The estimated time of arrival
- A list of all persons from the office that will be on-site
- The known background information regarding the incident
- The estimated time of return, if known

I. *Conduct the Investigation*

(1) Brief all participants, as appropriate

(2) Contact the involved parties and obtain witness statements

(3) If an on-site investigation, take pictures using the office camera or make arrangements for another participant to take the pictures, if appropriate. Reference the procedures in Vol. 2, Ch. 211, Conduct an Accident Investigation.

(4) Obtain any supporting data concerning the aircraft, pilot, weather, etc.

(5) If Air Traffic personnel or facilities are involved, request comments from the appropriate Air Traffic facility.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

(1) For an FAA investigation, completion of the appropriate sections of FAA Form 8020-5, in accordance with Order 8020.11, Chapter 6, (Figure 167-6)

(2) If Air Traffic personnel or facilities were involved:

(a) If the Air Traffic facility does not submit any comments, an indication on FAA Form 8020-5 that an opportunity for comments was afforded but refused

(b) If the Air Traffic facility does submit comments, inclusion of those comments as an attachment to FAA Form 8020-5

(3) If there was a pilot deviation, placement of the incident number, obtained from FAA Form 8020-11, in the upper right hand corner of section K (Narrative) of FAA Form 8020-5

(4) If a violation of Federal Aviation Regulations is suspected, initiation of the procedures in Order 8300.10, Vol. 2, Ch. 213

C. *Distribute the Report.* Distribute the aviation incident reports in accordance with Order 8020.11.

D. *Document the Task.* File all supporting paperwork in the operator/certificate holder's office file, as applicable.

9. FUTURE ACTIVITIES. Conduct a violation investigation, if required.

CHAPTER 213 CONDUCT VIOLATION INVESTIGATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3730

B. *Avionics:* 5730

3. OBJECTIVE. This chapter provides guidance in conducting a violation investigation in accordance with Order 2150.3, Compliance and Enforcement Program, as amended.

5. GENERAL

A. *Definitions*

(1) *Administrative action:* The action taken when compliance is not present but is attainable, providing the case meets the requirements listed in Order 2150.3.

(2) *Legal action:* The action taken when a disregard for compliance is exhibited and/or the occurrence is serious enough to affect the safety of persons and/or property.

(3) *Legal proceedings:* Any proceeding before a court of law, administrative board, commission hearing officer, or other body conducting either a legal or administrative hearing.

B. Regional review of Enforcement Investigative Reports (EIRs) reveals discrepancies that show a lack of understanding of the Compliance and Enforcement Program procedures. These discrepancies result in the Regional Counsel being unable to take appropriate action due to the following:

- Lack of sufficient evidence
- Inadequate reporting of facts and analysis.

7. COMPLIANCE AND ENFORCEMENT RESPONSIBILITIES. All FAA employees are responsible for reporting any suspected violations to the appropriate investigating District Office and cooperating in a timely manner in the resulting investigation, as required.

A. *District Office Inspectors*

(1) All inspectors are responsible for the following:

(a) Having the knowledge, skill, and ability to counsel and educate the public and aviation industry in how to comply with the Federal Aviation Regulations

(b) Preventing violations of the regulations whenever possible. This generally falls into one of two categories:

- Ensuring that airmen, agencies, and operators are in full regulatory compliance before issuing any certificates or authorizations
- Ensuring that regulatory compliance is adhered to through use of a thorough and systematic surveillance program

(2) Inspectors can only require compliance with the minimum rule, precisely as it is written.

B. *Unit Supervisors and Reviewing Principal Inspectors.* Immediate supervisors are responsible for ensuring that their subordinates are trained and given proper guidance in the investigation and reporting of violations. Their responsibilities include the following:

(1) Tracking the investigation and reporting process to ensure timely progression

(2) Assisting inspectors during the investigation and reporting process by reviewing the report to ensure:

- Completeness and accuracy
- Preparation in accordance with Order 2150.3
- Inclusion of a reference to and a paraphrase of each regulation cited in the EIR, Section B. This is absolutely essential to ensure that a violation has actually occurred and that there are items of proof to support all cited elements of the rule.

C. *District Office Manager.* District office managers have the overall responsibility for ensuring the effectiveness and suitability of the Compliance and Enforcement program in their district. This includes the quality and timeliness of each investigation and report. The District Office Manager's responsibilities include the following:

(1) During the final District Office review of the EIR, reviewing each regulation cited to ensure applicability and that items of proof are available to support it

(2) Coordinating with Regional Counsel when there are items that need clarification. A written record of this should be attached to the report.

D. *Flight Standards Division.* The Flight Standards Division is responsible for the review of all EIRs to determine their adequacy and completeness. Their options include the following:

(1) Accepting the report as submitted and forwarding it to Regional Counsel

(2) Not accepting the report and:

(a) Calling the District Office to request more information or additional items of proof

(b) Returning the report for further investigation or rewrite

(c) Recommending a downgrade to a "No Action" or "Administrative Action" report and returning it to the District Office

(d) Revising the report, with proper coordination, to:

- Provide accuracy and completeness
- Add or delete regulations
- Change the recommended action or sanction

E. *Regional Counsel.* Regional Counsel reviews the report for sufficiency of the items of proof and appropriateness of sanction. If Counsel determines that the items of proof are insufficient or that any other deficiencies exist in the report, coordination with the Division will be required. The reporting inspector may also be contacted to discuss the report and provide clarification and/or additional items of proof.

9. DETERMINING THE REGULATION VIOLATED

A. The first step in analyzing the regulations is to determine what regulation was violated.

(1) The investigating inspector must determine what subchapter(s) and Part(s) of Title 14 of the Code of Federal Regulations are appropriate to the situation.

(2) The investigating inspector must be able to determine the general applicability of the subpart(s) of the regulations to prevent citing an inappropriate section.

B. *Determining Enforceability*

(1) Sections and subsections of the regulations must be carefully analyzed to determine their enforceability. Some regulations are not enforceable because they either confer authority or responsibility, or are definitive or explanatory in nature. The rule must contain mandatory or prohibitory language to be enforceable.

(a) *Restrictive regulations.* Regulations that categorically state that something "must" be done or adhered to. These regulations can and must be enforced. Restrictive regulations must contain the following types of language:

- "Shall" and "must", because they are mandatory
- "No person may" or "A person may not", because they are prohibitory

(b) *Permissive regulations.* Regulations that do not state what must be done or adhered to. The inspector can encourage use of these regulations to airmen, air agencies, or operators, but cannot enforce them. For example, when used alone, "may" is not enforceable because it is permissive, used to state authority or permission.

(2) The four remaining types of regulations consist of the following:

- Conditionally prohibitive language, such as "no person may, except" or "unless" is enforceable only in instances that are not covered by the exceptions
- Conditionally mandatory language, such as "each person shall, except" or "unless" is enforceable only in instances that are not covered by the exceptions
- Regulatory language that simply confers authority or responsibility, such as "the aircraft owner is responsible" is used to determine assignment of responsibility

- Definitive or explanatory language, such as "this part prescribes" or "each of the following requires", is used to determine regulatory applicability

C. *Elements of Regulations That Must be Proven.* All regulations have specific elements or component words that convey important information that must be proven in order to show noncompliance. In order to determine a violation, the investigating inspector must be able to answer the following questions; who, what, when, where, how, and why.

D. *Enforcement of Other Referenced Documents.* Occasionally, due to the scope and detail involved, documents other than regulations are incorporated by reference. The legal effect is to require compliance with those documents; however, the FAR is the regulation violated, not the reference.

(1) Some regulations reference and require the use of manuals, service bulletins, specifications, Airworthiness Directives, etc. Although a person may be required to use these documents, it is the regulation which requires their use that is violated, not the referenced document.

(2) The referenced documents in this type of situation become the primary items of proof that must be referenced in EIR Sections B and D.

E. *Backup Regulations.* FAR § 91.77, ATC Light Signals, cannot be violated alone. Noncompliance with FAR § 91.77 must be cited as a backup for FAR § 91.75(b), "Compliance with ATC Clearances and Instructions." In other words, FAR § 91.75(b) is violated by reason of FAR § 91.77.

F. *Conditional Relief Regulations.* Some sections give conditional relief for other sections of the regulations. For example, FAR § 137.49, "Operations over Congested Areas," for agricultural aircraft operations relieves FAR § 91.79(c), "Minimum Safe Altitude," with conditions.

G. *Alternative Regulations.* FAR § 91.9 is an alternative type of regulation, the choices being either "careless" or "reckless". These items are not synonymous and the report should be developed to stress the appropriate one or, if applicable, both of them.

(1) The National Transportation Safety Board (NTSB) has defined "careless" as "failure to exercise ordinary or proper care."

(2) The NTSB has defined "reckless" as "wanton abandonment of concern for the consequences of an act." Additionally, the NTSB has defined that a "reckless" operation results from the operation of an aircraft conducted with a deliberate or willful disregard of the regulations or accepted standards of safety, so as to potentially or actually endanger the life or property of another.

H. *Section 609 of the Federal Aviation Act.* Section 609 of the Act is actually impossible to violate, but, on the basis of Section 609, the FAA can reinspect or reexamine and, when necessary, amend, suspend, or revoke a certificate.

(1) If, upon request for a reinspection or reexamination, a person refuses to allow or fails the retesting, an enforcement investigation report must be prepared. Only Section A is required to be completed, to include the documentation of the need or justification for the reexamination.

(2) Written justification for reexamination or reinspection may be in the form of:

- An accident report
- An incident report
- A complaint
- An inspector's personal knowledge of suspected or known incompetency

I. *Intent of the Regulation.* Preambles of Federal Aviation Regulation revisions may be of some help in determining the intent of the rule, but enforcement action can only be taken on what the rule actually says. It may be helpful to include a copy of the pertinent preamble in the Items of Proof and expound on the intent of the rule in the Facts and Analysis in Section D.

J. *Intent of the Alleged Violation.* It is very difficult, if not impossible, to prove intent. The FAA cannot normally file a violation on intent, only on the actual occurrence of a violation. The only exception to this is when the rule contains the word "intent".

K. *Preponderance of Evidence.* There must be more evidence that a violation did occur than there is evidence

that it did not occur. For example, one witness statement, even that of an inspector, does not outweigh an alleged violator's statement that there was no violation. There must be other proving or circumstantial evidence to support the violation in order for Regional Counsel to process the report.

11. FAA FORM 2150-5, ENFORCEMENT INVESTIGATION REPORT

A. When preparing the report for review, the inspector should keep in mind that there is an average time limit of 60 days for submittal. This time limit is based on the date the violation was known by the office doing the investigation to the date the report is reviewed and signed by the office manager and forwarded to the region.

B. This time limit is especially critical when submitting reports that recommend certificate action sanctions. Reports closed out with "no action" are less critical and should be ranked by the investigating inspector accordingly.

13. FAA FORM 2150-5 - SECTION A. Section A is the only section of the EIR that must be used with every violation, regardless of the type of action or sanction, to include a closing of the case with "no action".

A. The "Related Report Number" should be entered only when there is another violation by another person that was a part of the same occurrence. For example:

(1) A violation of FAR § 121.371, "Required Inspection Personnel" applies to both the certificate holder and the person performing the inspection. Therefore, both would be in violation of the same rule at the same time.

(2) When an occurrence involves more than one person, or a certificate holder and employee, prepare a master report and one or more companion reports. Items of proof common to all related reports need to be included only in the original copy of the master report. The items of proof index of the companion report need only:

- List the items unique to that report, e.g., enforcement history, airman history, etc.
- Include a statement that the other documents are in the original copy of the master report

(3) All related violations shall be forwarded to the Region at the same time, under the same cover, so that they can be reviewed and evaluated simultaneously.

B. Figure 213-1 is a sample copy of the FAA Form 2150-5, with abbreviated instructions in the appropriate blocks.

15. FAA FORM 2150-5 - SECTION B - SUMMARY OF FACTS. A good Summary of Facts is vital in assembling a quality investigation and report.

A. *Problems with Section B.* The main problem associated with Section B is the length and content of the statements. Some things to consider when writing this section include the following:

- The investigating inspector does not have to report every supporting fact in Section B. Simply state what the alleged violator did or did not do in violation of the regulations.
- Section B does have to cover all elements of the violation. Do not try to mix violations covering more than one rule or section in just one statement.
- When paraphrasing the regulation, simply paraphrase the appropriate section telling what the person did or did not do to be in violation of the rule

B. *Constructing the Summary of Facts*

(1) Make a concise statement of established facts that are essential to proving the violation of each regulation believed violated.

(2) The wording of the summary should tie directly to the wording of the regulation.

- Show what was done or not done that resulted in a violation
- Edit and paraphrase the appropriate section or subsection of the regulations

(3) Ensure that the regulation that relates to the Summary of Facts is not a definitive or explanatory regulation.

(4) Be prepared to substantiate the alleged violation with Items of Proof.

17. FAA FORM 2150-5 - SECTION C - ITEMS OF PROOF. When investigating the alleged violation, gather any data or information that may be pertinent to the case. Do not worry about "Rules of Evidence" at this point in time.

A. To coordinate the writing of the Facts and Analysis and to help readers during the review process, the following guidance should be followed:

(1) List the Items of Proof in chronological order. Start with the record of telephone notification, surveillance report, incident report, complaint, or whatever brought the occurrence to the attention of the Flight Standards District Office.

(2) Add each primary Item of Proof to the listing as the investigation progresses. Technical supporting Items of Proof should then be grouped with the primary Items of Proof to which they relate. The dates on technical supporting Items of Proof mean nothing as far as chronological listing goes, but they may be important to show the currency at the time of the violation.

B. *The Law of Evidence.* The Law of Evidence establishes whether items of proof are admissible or acceptable. In general, evidence is only admissible if it is:

- Relevant - logically related to an issue in the case
- Material - significantly related to an issue in the case
- Competent - of a generally reliable type

C. *Hearsay Evidence.* Hearsay evidence is not generally considered to be competent evidence and is not admissible to prove a fact. However, much of the evidence used in FAA civil cases is hearsay and is admissible as exceptions to the hearsay rule. Therefore, all attainable evidence should be gathered. This evidence can be sorted out later, if necessary, by the Regional Counsel.

D. *Proving and Circumstantial Evidence.* Only salient (proving) evidence should be referenced in the Summary of Facts. The FAA realizes that all evidence is submitted to support that a violation did occur, but it also is submitted for background and circumstances surrounding the event (both mitigating and aggravating). By referencing only salient evidence relied upon to establish an act contrary to a regulation, the need for communications between the Flight Standards District Office, Regional Office, and Regional Counsel may be lessened.

E. *Sufficient Versus Insufficient Evidence.* When evidence is insufficient for a legal enforcement action, it is insufficient for <u>any</u> enforcement action. Administrative actions are <u>not</u> a procedure for reporting a violation based on insufficient evidence. If there is insufficient evidence, the case must be closed out with "no action".

F. *Effectiveness of Documentary Evidence.* Make copies of pertinent information as soon as possible to prevent documentation from being altered, corrected, or "conveniently lost" after being returned to the alleged violator.

G. *Legible and Certified Copies.* All copies of items of proof must be legible, and official documents or microfilm must be certified. The person making a certified true copy must sign it. Published documents need not be certified but must be legible.

H. *Listing All Items of Proof.* All copies of items of proof, except physical evidence, must accompany the report. Each item of proof shall be numbered and tabbed consecutively. Each item of proof, including a brief statement of its content and what the item proves, shall be listed in an index to this section of the report. Keep the index in a logical sequence to aid in reviewing the report. Do not mark or deface original items of proof. If marks must be made, use plastic overlays or mark on a copy.

(1) *Notice of Investigation and Response.* In all cases, include the letter of investigation or state in the Analysis of Section D that an oral notice was given. Always include the violator's response which gives the violator an opportunity to explain, excuse, or deny the alleged violation. Document the initial notification and either the following response or lack of response.

NOTE: Oral notification may be used only when it is apparent that no legal enforcement action will be recommended.

(2) *Enforcement Information Systems (EIS) Information.* Always document the violation history of the alleged violator in the EIS. The official violation history may be obtained only through the AIDS/EIS Display and Profile.

(3) *Background Evidence.* Be sure to include any photographs, sketches, drawings, portions of the manufacturer's manual, etc., that will materially contribute to a clear technical explanation of legal evidence.

(4) *Witness Statements.* Interview and obtain written statements from all knowledgeable witnesses, or at least a representative number if more than one person witnessed the violation.

(a) Select the best witnesses based on their apparent knowledge.

(b) If an inspector witnesses a violation or becomes knowledgeable of anything pertinent that is not contained in other witness statements (such as verbal statements made by witnesses, engine teardown, etc.), the inspector should prepare and sign a personal statement.

(c) Statements should be complete and concise. They should convey what the person said, did, or perceived. Include the witness's complete name, address, telephone number, occupation, and aeronautical experience. Any opinions should be shown as such.

(d) If a witness refuses to sign a statement after it is written, the inspector should ask if they agree to the substance of the statement. If the witness agrees but still refuses to sign, the inspector should make a notation to that effect, date and sign the statement with signatures of any witnesses to the discussion.

(5) *Photographic Evidence.* When photographs are used as essential evidence, it is extremely important to include the following:

- Name(s) and address(s) of photographer(s)
- The date and time the pictures were taken
- The type of camera and focal length of camera lens
- The type of film used
- The name of the person with custody of the negatives

(6) *Charts, Maps, and Diagrams.* These can be very helpful, when pertinent, to show airports, terrain, congestion, obstructions, etc. They may also be useful in interviewing witnesses, evaluating their statements, and establishing the degree of hazard involved . Be sure to explain the intended purpose of these items in Section D of the report. Always include a copy of the Terminal Control Area chart that was current at the time of a Terminal Control Area violation.

(7) *Air Traffic Control (ATC) Records.* It can help if Flight Standards District Offices establish a written agreement with Air Traffic Control facilities regarding notification procedures and procuring of ATC records and tapes as evidence.

(a) The Flight Standards District Office must request, within 15 days following the occurrence, that all pertinent records and tapes be held if there is an indication of a violation. Air Traffic Control must be advised, within five days after the request, whether or not they need to send the records and tapes to the Flight Standards District Office.

(b) When requesting tapes, ask for only the portion pertinent to the violation. ATC can cut and preserve that portion of the original tape for transcript if needed. A transcript is not needed unless requested by Regional Counsel.

(8) *National Weather Service Records.* If weather is a factor in the violation, obtain certified copies of pertinent weather data from the National Weather Service to be included in Section D of the report.

(9) *Aircraft Flight Recorder Information*

(a) The FAA is authorized to obtain and use aircraft flight recorder information in any investigation, including enforcement actions (FAR § 13.7). However, this information can not be used to initiate an investigation when there is no other supporting evidence.

(b) Aircraft flight recorder information will not be used as evidence, but can be used to corroborate other evidence or to resolve conflicting evidence. Therefore, coordination with the Regional Office is required before use. If used, a certified readout of the information is required.

(c) If the National Transportation Safety Board has the information, request the information in accordance with Order 2150.3. During the readout of the information an FAA representative must be present to testify for authenticity.

(10) *Cockpit Voice Recorders.* The use of cockpit voice recorder records as evidence in enforcement is prohibited for use in civil penalties or certificate action.

(11) *Other Government Records.* If other Federal or local law enforcement agencies are involved, obtain pertinent records from them. If court proceedings have occurred, obtain the pertinent transcripts and certified copies of any

court orders (convictions, etc.). Include copies of any foreign, state, or local laws as applicable.

(12) *Medical Records*

(a) Medical records usually cannot be obtained without the consent of the individuals or by subpoena. One exception to this is when alcohol or drugs are involved. Under these circumstances the pilot must consent to provide the pertinent records in accordance with FAR § 91.11 (c) and (d).

(b) Airman medical information printouts may be obtained from Comprehensive Airmen Information Subsystem (CAIS), or an airman medical form from AAC-130.

(c) If the medical records can not be located through the Comprehensive Airmen Information Subsystem or AAC-130, request a "diligent search" certificate from AAC-130 and include it in the Items of Proof.

(13) *Physical Evidence.* Ensure that physical evidence is not lost, destroyed, damaged, or altered. Establish a chain of custody if necessary, or lock it up in a secure place. Be sure to take photographs of all physical evidence and include them in the Items of Proof, along with an explanation of where the evidence is located.

(14) *Submission of Additional Evidence/Material.* Any additional Items of Proof discovered during the submittal of the report by the district office should be immediately sent to the Regional Office. This should include the inspector's evaluation and recommendations concerning the material.

19. FAA FORM 2150-5 - SECTION D - FACTS AND ANALYSIS. In this section of the report the inspector provides the background to support the Summary of Facts. This narrative will include all supporting facts, circumstances, and conditions surrounding the alleged violation and the resulting investigation. The Facts and Analysis will be relied upon by the Flight Standards District Office and Regional Counsel for determining precisely what the appropriate final action and sanction should be. It is therefore essential that the Facts and Analysis be as accurate and as complete as the inspector can make it. The breakdown of Section D is as follows:

A. *Facts.* The narrative for this section is a complete, detailed, factual account of the investigation of the violation.

B. *Analysis.* This section gives the inspector the chance to express personal opinions and conjecture based on technical knowledge, skill, and expertise. It also provides the opportunity to evaluate and technically analyze the facts as presented in the Items of Proof and factual narrative. For standardization the sequence below should be followed:

(1) *Reliability of Evidence.*

(a) The inspector should have interviewed witnesses, if available, during the investigation to determine the aeronautical knowledge and experience so their reliability as witnesses could be evaluated.

(b) Some evidence is going to vary in strength. In this section, the inspector must explain the strengths and merits of all pertinent Items of Proof.

(2) *Conflicting Evidence.* Carefully review the entire factual narrative to determine if there is any conflicting evidence.

(a) This is the opportunity for the reporting inspector to discuss and reference evidence that is contradictory to the known facts. An example is an alleged violator denying being in violation after receiving a letter of investigation. This is obviously contradictory to the facts that are supporting the investigation and needs to be referenced.

(b) Review the Items of Proof to determine if there is any conflict regarding the make, model, or registration number of the aircraft involved. Conflicts in names, dates, and times may also occur. Reference and explain any conflict.

(c) If there is no conflict in evidence, then simply state that fact.

(3) *Safety Involvement and Impact.* The safety aspects of a violation are of utmost importance. Analyze how safety was or was not affected and the possible impact on life or property.

(a) The technical factors upon which the inspector bases any conclusions should be included, discussed, and referenced as an Item of Proof.

(b) Analyze any endangerment and determine whether it should be classified as actual, inherent, or potential. Actual or inherent endangerment is much more critical than potential endangerment and should be analyzed accordingly.

(c) Analyze the "careless" or "reckless" aspects and elaborate on the willfulness, intention, and deliberateness of the violation, if applicable.

(d) Consider and analyze the safety impact in regards to the certificate holder's responsibility.

(e) If airworthiness is involved, analyze and evaluate each airworthiness discrepancy with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities set by the type design or other approved data.

(4) *Mitigating and Aggravating Circumstances.* Determine if there are any mitigating or aggravating circumstances involved in the violation or in the investigation and analyze and report them. If there are no mitigating or aggravating circumstances, state it as such.

(5) *Opinions, Feelings, and Conjecture*

(a) The reporting inspector can include any narrative in the report that the inspector feels will contribute to the allegation. This includes opinions and conjectures, as long as they are labeled as such.

(b) When giving an opinion or conjecture, be specific, even when the opinion cannot be completely supported by facts. this includes giving opinions on the following subjects:

- Alleged violator's skill or judgement
- Proficiency or adequacy of training
- Lack of qualifications and/or competency
- Lack of the proper supervision
- Adequacy of the violator's recordkeeping system

(6) *History of the Alleged Violator*

(a) When possible, personally discuss the violation with the alleged violator, in person, prior to writing the report. This will allow the inspector to visually perceive attitude and gather other personal knowledge of the violator that will be helpful in determining the sanction to be imposed.

(b) The past record, attitude towards safety and compliance, the economic status of the person or organization involved, and the cooperation exhibited during the investigation should be included and taken into consideration.

(c) Consider and analyze previous violation history and how it may or may not be relevant to this report. If there is no violation history, then state it as such.

(d) In every situation in which corrective action has been taken or is in progress, a description of the action should be included along with the inspector's opinion as to its effectiveness.

(7) *Summarize a Conclusion and Recommendation.* In the conclusion and recommendation, the inspector should carefully review and analyze all information that has been included in the report. Keep in mind that this is to be the rationale for the enforcement action and sanction that will be recommended.

(a) In all situations, consider whether the sanction is to:

- Remedy
- Punish
- Make an example to discourage future noncompliance

(b) There are special factors that must be considered before recommending a sanction. For example:

- For a certificate action, how the loss of the certificate might affect the certificate holder's livelihood
- For a civil penalty, the person's economic situation

(c) After considering all other factors, the final criteria for imposing a civil penalty should be based on the following factors:

- The violator holds no certificate
- No question of qualification is involved

- The case is too serious to handle administratively
- The suspension is unfair or will create undue hardship
- Suspension is not required for aviation safety

(d) When determining what the civil penalty should be, consider the following:

- The appropriate amount of penalty should be based on the facts and circumstances of the case and current agency policy
- Multiple violations for a single act or omission may be considered one violation if a case does not involve flagrant violations or a repeat offender
- When multiple regulations are cited as a result of separate violations, a civil penalty for each separate violation may be recommended

(e) After considering all other factors, the final determination for a certificate action should be based on the following factors:

- Suspension or revocation action may be taken for punitive or remedial action
- Suspension may be recommended pending completion of remedial action (retraining, reexamination, etc.)
- Revocation of a certificate or rating is appropriate when specifically authorized by the Federal Aviation Regulation or evidence establishes lack of qualifications

(f) When determining what the certificate action should be, consider the following:

- Does safety require it?
- Do technical proficiency or qualifications warrant it?
- Did the certificate holder resist reexamination?
- Was the reexamination not satisfactorily accomplished?
- Is withdrawal of privileges warranted for punitive action?
- If action was taken by an employer or other agency, should suspension action still be recommended, if warranted? Such action may be considered in determining the extent of suspension or amount of civil penalty.

(g) If certificate action is recommended to run concurrently with a company action, include the exact dates of the company suspension.

NOTE: Remember that the "Stale Complaint Rule" for certificate suspension is six months from the date of occurrence. Remember that even a serious case can diminish in importance over a period of time.

(h) Revocation of a certificate is initiated when:

- The lack of capability is not immediately correctable
- There is repeated unwillingness or inability to comply
- There is continued use of certificate, detrimental to the public interest
- The person's conduct demonstrates lack of qualification

(i) Emergency certificate actions may be taken only when clearly needed in the public interest. The following urgent considerations apply to all recommended emergency actions:

- The Manager, Flight Standards Division must be notified by telephone immediately when emergency action is contemplated
- With Regional concurrence, action must be taken as soon as the need is recognized
- Emergency action is not to be used for punitive reasons
- The inspector must show evidence that the certificate holder lacks qualifications or will continue with noncompliance

- An EIR must be completed and processed as soon possible

(j) Other actions are available to the investigating inspector, as warranted. If these other actions are to be imposed, notify the Manager, Flight Standards Division of all facts and circumstances and complete an EIR as soon a possible. This includes any type of complex or emergency type of action mentioned in Order 2150.3. Other actions available can include the following:

- Seizure of aircraft: If removal of the aircraft is suspected to prevent payment of a civil penalty or if further flight is contemplated in noncompliance with the regulations
- Cease and Desist Orders: If a violator continues to violate the regulations after other actions have been taken
- Order of Compliance and Injunctions: To prevent a violation, when there are reasons to believe that one is about to occur

(k) Criminal prosecution is resorted to in cases of criminal actions and should be turned over to the proper authority for investigation. These criminal actions can include the following:

- Aircraft piracy
- Interference with flight crewmembers or flight attendants
- Certain crimes aboard aircraft in flight
- Carrying weapons or hazardous materials aboard an aircraft

(l) Drug related sanctions should be handled in accordance with FAR Parts 61, 65, and 91. After notifications of final conviction in a drug related case, the EIR must be processed.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of the Federal Aviation Regulations
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task may require coordination with:

- Other specialties
- The assigned principal inspectors
- If a geographic unit, with the Certificate Holding District Office

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 2150.3, Compliance and Enforcement Program, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 210

B. *Forms*

- FAA Form 2150-5, Enforcement Investigative Report

C. *Job Aids*

- Figure 213-1, Sample copy, FAA Form 2150-5

5. PROCEDURES

A. *Initiate the Investigation of the Alleged Violation*

(1) Receive notification of the violation.

(2) Write a letter of investigation. Ensure that the letter includes a statement of what the alleged violation consisted of and the assigned EIR number.

NOTE: The regulation(s) violated should not be listed in the letter of investigation

B. *Gather the Supporting Facts.* Gather all related information. This can be accomplished by:

- Reviewing records
- Taking photographs of items associated with the alleged violation
- Acquiring witness statements
- Reviewing technical documents, e.g., manufacturers maintenance manuals, aircraft flight manuals, etc.
- Interviewing the alleged violator
- Acquiring technical information from other agencies, e.g., National Weather Bureau and Air Traffic Control
- Inspecting physical evidence

C. *Analyze the Supporting Evidence*

(1) Review the data collected to ensure that it is relevant, material, and competent.

(2) Review the regulations in conjunction with the items of proof. Ensure that the following questions are answered for each relevant regulation:

- To whom does it apply?
- What does it say in its entirety?
- Where must it be complied with?
- When must it be accomplished?
- How does it apply in this occurrence?
- Are there special conditions?
- Are there exceptions or exclusions?
- Does this regulation clearly apply?
- Are any other regulations applicable to this violation?

(3) After this analysis and review, decide if the evidence warrants continuing with the violation investigation. If the evidence is insufficient or inadequate to proceed, close the case with "no action". A "no action" case still requires Sections A and B of the EIR to be completed.

D. *Initiate the EIR*

(1) *Section B, Summary Of Facts.* Make a brief and concise statement of established facts that are essential to proving the alleged regulatory violation.

(a) Ensure that the Summary Of Facts:

- Is specific, simple, and positive
- Contains only one statement for each specific violated subsection of the regulations
- Has the number of the primary Item of Proof of the violation following each statement
- Shows what was done or not done that violated the specified regulation
- Briefly identifies who, what, when, where, why, and how, as they relate to the violated regulation
- States only what is proven in the report

(b) If there is insufficient evidence to prove the violation, close the case with "no action".

(2) *Section C, Items Of Proof.* Arrange all items of proof in chronological order, including records of telephone conversations, incident reports, complaints, or whatever brought the occurrence to the attention of the FAA. Include technical supporting items of proof together with the primary items of proof to which they relate.

(a) Ensure that the following items are included, as applicable:

- The initiating document
- Copy of the Letter of Investigation or phone call
- EIS violation history of alleged violator
- EIS information on the airman or operator
- EIS information on the aircraft

- Copy of the operating certificate held by the alleged violator
- Copy of the pertinent part of the operations specifications or waiver, if provisions are believed violated
- Copy of the pertinent part of Airworthiness Directive, airman's logbook, service bulletins, maintenance manual, etc., when maintenance or operational airworthiness is involved
- City maps and/or aerial photographs when low altitude flying is involved
- A separate signed statement by inspectors when their area of expertise or experience with the alleged violation is involved
- Expert witness statements if a judgment item is involved, if available
- A copy of the appropriate en route or sectional chart, or approach chart, when controlled airspace is involved
- A copy of the accident or incident report
- All pertinent weather information when weather is involved, including area forecasts with all SIGMET/AIRMET amendments and terminal forecasts, all amendments for departure point, destination, and along the route of flight including the two hours prior to the flight beginning and the two hours after it ended
- All of the documents mentioned in Sections B and D of FAA Form 2150-5
- Airman records Diligent Search certificate, if applicable
- Witness statements from all air traffic controllers involved, as applicable
- Photographs of the physical evidence

(b) Include a numerical index of all Items of Proof with a brief statement of contents.

(c) Ensure the following:

- The names, addresses, and telephone numbers of all witnesses are listed in the report
- All Items of Proof are numbered as such
- All documents are originals, when possible
- Copies of official documents are certified
- Photographs and original documents are not marked or defaced

(3) *Section D, Facts And Analysis.* Ensure that all supporting facts, circumstances, and conditions surrounding the alleged violation and the resulting investigation are included.

(a) *Facts.* Ensure the following:

- All documents in Section C, Items of Proof, are referenced
- All documents referenced in the Facts are included as Items of Proof
- All pertinent facts and circumstances are described in an organized, chronological order, starting with Item of Proof #1 and including all pertinent facts from all Items of Proof
- The complete factual case history of what the investigation provided is stated in an orderly and logical narrative of each pertinent fact
- All related investigative actions are included, such as leads followed, what was found during the investigation, and the factual conditions and circumstances surrounding the violation and investigation
- That if these items are not documented in witness statements, technical publications, airmen logbooks, manuals, etc., a personally signed statement by the inspector documenting them is included in the Items of Proof

(b) *Analysis.* For standardization, this sequence should be followed in writing the analysis:

- Reliability of Evidence
- Conflicting Evidence

NOTE: At this point, if there is no clear preponderance of evidence, evaluate the evidence carefully to determine if the case should be closed out with "no action".

- Safety Involvement and Impact
- Mitigating and Aggravating Circumstances
- Opinions, Feelings, and Conjecture
- History of Alleged Violator
- A summarized Conclusion and Recommendation

E. *Submit Report For Review.* Submit the report within 60 days. Before submission of the report, inspect the package to ensure the following:

- A numerical index of all Items of Proof, with a brief statement of contents is included
- Each item of proof is numbered as an Item of Proof
- All items are listed in a logical order
- All originals of documents are included, if possible
- Copies are certified when appropriate
- All photographs of physical evidence are included
- All items of proof referenced in the report are included and are referenced in the Facts and Analysis

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following actions:

- Closing out the report with a "no action"
- Submitting the EIR package for review

C. *Document Task.* File all supporting paperwork in accordance with Order 2150.3.

9. FUTURE ACTIVITIES. Follow up on requests from Region, Regional Counsel, etc.

FIGURE 213-1
FAA FORM 2150-5
ENFORCEMENT INVESTIGATION REPORT

RIS: FO 2150-1

ENFORCEMENT INVESTIGATIVE REPORT
(Read Order 2150.3 for instructions)

REPORT NUMBER: 86WP090180
RELATED NUMBER: (Same occurrence-

ALLEGED VIOLATOR IDENTIFICATION

1. NAME	2. ADDRESS *(Include zip code)*
Individual's last, first & middle name. Name of legal entity shown in full, including d/b/a.	Current Mailing address. including Zip code.

TELEPHONE NUMBER *(Include area code)*	3. DATE OF BIRTH	4. SEX
714/298-2000, Ext. 26	if not appropriate	[M] MALE [ ] FEMALE

5. FAA CERTIFICATE NUMBER	6. FAA CERTIFICATE TYPE	7. AVIATION EMPLOYER
Related to violation or regulation believed violated	As referenced in Item 5. Private pilot, A&P Mechanic, etc.	If violation is related to employment-or the carrier, if passenger.

AIRCRAFT, ENGINE, PROPELLER, COMPONENT OR APPLIANCE INVOLVED

8. MAKE	9. MODEL	10. IDENTIFICATION NUMBER
Name of manufacturer when aircraft, engine component, etc. are involved	Aircraft model should be same as on aircraft computer data printout	Registration # of aircraft. Serial # of components.

11. OWNER	12. ADDRESS *(Include zip code)*
Current Registered owner of aircraft.	Current mailing address of owner.

ALLEGED VIOLATION

13. DATE OCCURRED	14. TIME	15. DATE KNOWN TO FAA	16. REGION OF DISCOVERY
*87-02-22	24 hr. clock (1435)	Investigative Office	WP09

17. LOCATION
Airport, town or city, or describe location relative to them.

18. REGULATIONS BELIEVED VIOLATED
1. Be specific, identify FAR by section and subsection (91.90(b)(i)).
2. Enter all FAR's included in Summary of Facts.
3. Cite only Regulations containing mandatory or prohibitory language.
4. Reference pertinent portion of Federal Aviation Act of 1958.
5. Be sure all Regulations cited are applicable.
6. A brief description of very flagrant violations may be given.

RELATED DATA

19. TYPE	20. SUB TYPE	21. CATEGORY	22. SOURCE	23. ACCIDENT ASSOCIATED
[ ] [ ] ENTER	APPROPRIATE TWO-DIGIT CODE FROM APPENDIX B	[ ] [ ]	[ ] [ ]	[ ] [ ]

24. SECURITY PROGRAM
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

INVESTIGATING FIELD OFFICE RECOMMENDATION

25. TYPE ACTION	26. SANCTION	REPORTING INSPECTOR *(Typed name)*
Administrative or type of Legal--C.P., Suspension Revocation, etc.	Warning Letter, Letter of Correction, $1000, 30 days	No signature needed

27. DATE	28. INVESTIGATING OFFICE	CHIEF *(Typed name and signature)*
Date signed	WP09	Office Manager's name and signature

REGIONAL DIVISION REVIEW

29. REGULATIONS BELIEVED VIOLATED	30. RECOMMENDED TYPE ACTION
	31. RECOMMENDED SANCTION

32. DATE	33. REGION	TYPED NAME/TITLE/SIGNATURE OF APPROVING OFFICIAL

FAA Form 2150-5 (4-80) SUPERSEDES FAA FORMS 1650-5, 5200-5, 8030-1 AND 8030-2 FOR OFFICIAL USE ONLY

CHAPTER 214 PARTICIPATE IN AN ACCIDENT PREVENTION PRESENTATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3920

B. *Avionics:* 5920

3. OBJECTIVE. This chapter provides guidance for assisting or conducting aviation safety presentations in accordance with the requirements of the district office, the Accident Prevention Program (APP) plan, the Accident Prevention Specialist (APS), and Order 8740.1, the Accident Prevention Handbook, as amended.

5. GENERAL

A. One of the most effective means of accident prevention is to keep the aviation community informed and up-to-date by using safety clinics, seminars, and workshops that cover the following subjects:

- Aviation safety procedures and techniques
- Accident cause factors
- New equipment updates
- Federal Aviation Administration policies, including revisions and new regulations

B. If unsure of any instructions in this chapter, consult Order 8740.1, which contains complete in-depth explanations on how to prepare a presentation.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the Federal Aviation Regulations, FAA policies and procedures, and the applicable office's Accident Prevention Program Plan
- Qualification as an Aviation Safety Inspector (Operations or Airworthiness)

B. *Coordination.* This task requires coordination with the district office manager and Accident Prevention Specialist, and may require coordination with state and local government agencies.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8740.1, Accident Prevention Program Handbook, as amended
- Appropriate resource materials

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Respond to Initial Request.* Obtain the following information from the requesting Accident Prevention Specialist:

- The date, time, and location of the presentation
- The subject matter
- The time allotted for the presentation
- The equipment available at the facility
- The number of other guest speakers and their subjects
- The method(s) of presentation by the other speakers

- The audience make-up
- Other information, as necessary

B. *Determine Subject Matter for the Presentation*

(1) If the requesting Accident Prevention Specialist supplied the subject matter for the presentation, conduct the appropriate research.

(2) If the requesting Accident Prevention Specialist did not supply the subject matter for the presentation, confer with other inspectors and the unit supervisor to decide on a subject. Contact the Accident Prevention Specialist for:

(a) Approval of selected subject matter

(b) Coordination of any audio visual aids required (e.g., transparencies, slides)

C. *Gather Appropriate Resource Material.* Review and obtain resource material and documents pertaining to or associated with the subject matter. Some suggestions for resource materials are:

- FAA Publications
- NASA Publications
- Military Publications
- Organizational Publications
- Civil Aero Medical Institute (CAMI)
- State and local government agencies
- Accident Prevention Specialist generated records and reports

D. *Determine the Method of Presentation*

(1) Use the main subject matter and the following considerations to determine the best method of presentation:

(a) The presenter's area of expertise (e.g., operations, maintenance, avionics)

(b) The subject matter content (whether statistical data, graphic arts, 35mm slides, 16mm film, etc.)

(c) Types of resource materials readily available

(d) Time allotted for presentation

(e) Type of facility

(f) Type of audience, to include the following considerations:

- The number of people expected
- Audience knowledge of the subject
- Average audience education and experience levels

(2) Review the methods of presentation of other guest speakers, if applicable.

E. *Prepare Presentation*

(1) Base the development of the presentation on the following:

- Subject matter
- Expected number of people
- Available audio/visual aids
- The size of the facility
- Available reference material
- The amount of time scheduled

(2) Ensure that the presentation includes, but is not limited to, the following:

(a) An introduction that gets the interest and attention of the audience and specifically states the subject to be discussed

(b) A content body that can be presented clearly and logically

(c) A conclusion that accomplishes the following:

- Restates the points made in the body
- Motivates the audience to act by spelling out the actions they should take

- Is not too short or too long (determined by the audience reactions to the body of the presentation)

- Does not cover material that was not contained in the body

F. *Perform the Pre-Presentation Activities.* Use the following guidelines to help in the organization of materials and equipment needed for the presentation:

(1) Rehearse the prepared presentation, with all equipment to be used, to ensure that the presentation:

(a) Is within the established time limits

(b) Has a smooth flow of equipment transitions throughout presentation

(c) Stays within the guidelines established by the Accident Prevention Program Manager

(2) Check any required audiovisual equipment the day before the presentation to ensure that it is in good working order

(3) Check all of the audiovisual aids to ensure that film or video tape is not broken, all slides are in sequence, and corresponding audio cassette tapes are working properly

(4) Check the supply of extension cords and ensure that the lengths are adequate

(5) Visualize how the equipment is going to be set up

(6) Ensure that the quantity and quality of all handout material is appropriate

G. *Conduct the Presentation*

(1) Start and stop presentation on time.

(2) Pause occasionally for emphasis and to give the audience a break.

(3) Maintain eye contact with audience.

(4) Be brief and to the point.

(5) Stay with prepared material; do not improvise.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task results in the following:

- A presentation that provided accurate and beneficial information

- A presentation that met the requirements of the Accident Prevention plan and the goals set forth by the Accident Prevention Specialist

- Increased community relations and awareness with regard to aviation safety

9. FUTURE ACTIVITIES. None.

[CHAPTERS 215 THROUGH 219 RESERVED]

CHAPTER 220 INTRODUCTION TO GENERAL FUNCTIONS

Section 1 Providing Technical Assistance

1. GENERAL

A. Providing technical assistance is an integral part of an inspector's day-to-day job function. This assistance generally falls into one of the following categories:

- Assistance to the general public
- Assistance to a certificate holder/operator
- Assistance to other government agencies/departments

B. In providing technical assistance, the inspector must remember that as a representative of the FAA, the agency will be judged by the measure of the inspector's integrity, common sense, and overall conduct. The inspector can do much to promote safety in aviation and good will for the agency by using sound technical judgment and common sense.

Section 2 MSG-2 Processes

1. GENERAL

A. *Definitions*

(1) *Industry steering committee:* The group that manages maintenance program development activities. The committee is composed of members from a representative number of operators and a representative of the prime airframe and engine manufacturer. Responsibilities of the committee include:

- Establishing policy
- Setting initial goals for scheduled maintenance check intervals
- Directing the activities of the working groups
- Carrying out all liaison with the manufacturer and other operators
- Preparing the final program recommendations
- Coordinating any future revisions
- Representing the operators during contact with the FAA

(2) *Working groups:* A group designated by the industry steering committee that consists of specialist representatives from the participating operators, the prime manufacturer, and the FAA. Any recommendations submitted by the working group must be supported by written technical data prior to consolidation into the industry steering committee's final report.

B. *Introduction*

(1) Airline and manufacturer experience in developing scheduled maintenance programs for new aircraft has shown that more efficient programs can be developed through the use of logical decision processes.

(a) In July, 1968, representatives of various airlines developed Handbook MSG-1, "Maintenance Evaluation and Program Development", which included decision logic and interairline/manufacturer procedures for developing a maintenance program for the Boeing 747 airplane.

(b) Subsequently, it was decided that the experience gained on this project should be applied to all newly developed aircraft. In order to do this, the decision logic was updated and certain specific 747 procedural information was deleted. This universal document resulted in MSG-2.

(2) Historically, the initial required maintenance program has been specified in Maintenance Review Board Documents. Nonscheduled or nonroutine maintenance is directed by the findings of the scheduled maintenance program and the normal operation of the aircraft. The remaining maintenance consists of maintenance actions to correct discrepancies noted during scheduled maintenance tasks, nonscheduled maintenance, normal operation, or condition monitoring.

B. The Industry Steering Committee, when developing a maintenance program pertinent to a specific type aircraft, is staffed by representatives of the airline operators purchasing

the equipment, the prime manufacturers of the airframe and powerplant, and a representative of the FAA.

(1) The management of the maintenance program development activities shall be accomplished by a steering group composed of members from a representative member of operators and a representative of the prime airframe and engine manufacturer. Group responsibilities include:

- Establishing policy
- Directing the activities of working groups
- Carrying out liaison with the manufacturer and other operators
- Preparing the final program recommendations
- Representing the operators in contacts with the FAA

(2) All recommendations for maintenance programs must be supported by written technical data. These analyses and recommendations shall be consolidated into a final report for presentation to the FAA.

3. DEVELOPMENT OF MAINTENANCE PROGRAMS

A. *Program Requirement.* It is necessary to develop a maintenance program for each new type of airplane prior to its introduction into airline service.

(1) The primary purpose of the maintenance program is to maintain the inherent design levels of operating safety. This program becomes the basis for the first issuance of each airlines's Operations Specifications that govern its initial maintenance policy. Upon application by the individual airlines, they are subject to operator unique revisions based on accumulated operating experience.

(2) It is desirable, therefore, to define in some detail:

- The objectives of an efficient maintenance program
- The content of an efficient maintenance program
- The process by which an efficient maintenance program can be developed

(3) The objectives of an efficient airline maintenance program are:

- To prevent deterioration of the inherent design levels of reliability and operating safety of the aircraft
- To accomplish this protection at the minimum practical costs

(4) These objectives recognize that maintenance programs, as such, cannot correct deficiencies in the inherent design levels of flight equipment reliability. The maintenance program can only prevent deterioration of such inherent levels. If the inherent levels are found to be unsatisfactory, engineering action is necessary to obtain improvement.

(5) The maintenance program itself consists of two types of tasks:

(a) A group of scheduled tasks to be accomplished at specified intervals. The objective of these tasks is to prevent deterioration of the inherent design levels of aircraft reliability.

(b) A group of nonscheduled tasks which result from:

- The scheduled tasks accomplished at specified intervals
- Reports of malfunctions (usually originated by the flight crew)
- Condition Monitoring

(6) The objective of these nonscheduled tasks is to restore the equipment to its inherent level of reliability.

(7) Nonscheduled maintenance results from scheduled tasks, normal operation, or Condition Monitoring.

B. *The Maintenance Program.* Maintenance programs generally include one or more of the following primary maintenance processes:

- Hard Time Limit: A maximum interval for performing maintenance tasks. These intervals usually apply to overhaul, but also apply to total life parts or units.

- On Condition: Repetitive inspections or tests to determine the condition of units, systems, or portions of structure

- Condition Monitoring: For items that have neither hard time limits nor on condition maintenance as their primary maintenance process. Condition Monitoring is accomplished by appropriate means available to an operator for finding and resolving problem areas. The means can range from notices of unusual problems to special analysis of unit performance.

(1) The maintenance program results in scheduled tasks that fit the hard time limit or on condition maintenance programs. If no tasks are specified, the item is included in condition monitoring.

(2) The tasks in a scheduled maintenance program may include:

- Servicing
- Inspection
- Testing
- Calibration
- Replacement

(3) An efficient program is one which schedules only those tasks necessary to meet the stated objectives. It does not schedule additional tasks which will increase maintenance costs without a corresponding increase in reliability protection.

(4) The development of a scheduled maintenance program requires a number of decisions, including the following:

- Which individual tasks are necessary
- How frequently these tasks should be scheduled
- What facilities are required to enable these tasks to be accomplished
- Which tasks should be accomplished concurrently in the interests of economy

C. *Aircraft System/Component Analysis Method.* This is a method for determining the content of a scheduled maintenance program for systems and components using decision diagrams. Decision diagrams are the basis of an evaluatory process applied to each system and its significant items using technical data provided by the manufacturer. Principally, the evaluations are based on the systems' and items' functions and failures modes. The purpose is to:

- Identify the systems and their significant items
- Identify their functions, failure modes and failure reliability
- Define scheduled maintenance tasks having potential effectiveness relative to the control of operational reliability
- Assess the desirability of scheduling those tasks having potential effectiveness.

(1) There is a difference between the "potential effectiveness" of a task versus the "desirability of including" this task in the scheduled maintenance program. The approach taken in the following procedure is to plot a path whereby a final judgment can be made as to whether those potentially effective tasks are worthy of inclusion in an initial maintenance program for a new airplane.

(2) The following guidelines encourage consideration of failure consequences and the potential effectiveness of scheduled maintenance tasks. In those cases where failure consequences are purely economic, the guidelines lead to consideration of both the cost of the scheduled maintenance and the value of the benefits which will result from the task.

(3) A decision tree diagram facilitates the definition of scheduled maintenance tasks having potential effectiveness. There are five key questions.

Note: Questions (a), (b), and (c) must be answered for each failure mode, question (d) for each function, and question (e) for the item as a whole.

(a) Is reduction in failure resistance detectable by routine flight crew monitoring?

(b) Is reduction in failure resistance detectable by in place maintenance or unit test?

(c) Does failure mode have a direct adverse effect upon operating safety?

(d) Is the function hidden from the viewpoint of the flight crew?

(e) Is there an adverse relationship between age and reliability?

(4) Each question should be answered in isolation, e.g., in question (c) all tasks which prevent direct adverse effects on operating safety must be listed. This may result in the same task being listed for more than one question.

(5) If the answer to question (a) is Yes, this means there are methods available through monitoring of the normal in-flight instrumentation to detect incipient conditions before undesirable system effects occur. A Yes answer does not require a maintenance task. If the answer is No, there is no in-flight monitoring which can detect reduction in failure resistance. This question is meant to refer to the flight crew's ability to detect deteriorating calibration or systems operation before a failure occurs.

NOTE: Tasks resulting from in-flight monitoring are part of nonscheduled maintenance.

(6) If the answer to question (b) is Yes, it means there is a maintenance task, not requiring item disassembly, that has potential effectiveness in detecting incipient conditions before undesirable system effects occur. Tasks may include inspection, servicing, testing, etc.

NOTE: Tasks resulting from a Yes answer to question (b) are part of the On Condition maintenance program.

(7) If the answer to question (c) is Yes, this failure mode has a direct, adverse effect on operating safety. It is necessary to examine the mechanism of failure and identify the single cells or simple assemblies where the failure starts.

(a) Specific total time, total flight cycle, time since overhaul, and cycle since overhaul limitations may be assigned these single cells or simple assemblies; thereby minimizing the probability of operational failures. Examples of these actions include:

- Turbine engine disc limits
- Airplane flap link life limits

(b) In many cases, these limits must be based upon manufacturer's development testing. Fortunately, there is only a small number of failure modes which have a direct, adverse effect on operating safety. This results from the fact that failure mode analyses are conducted throughout the process of flight equipment design.

(c) In most cases, it is possible after identification of such a failure mode to make design changes (redundancy, incorporation of protective devices, etc.) which eliminate its direct adverse effect upon operating safety. If no potentially effective task exists, then the deficiency in design must be referred back to the manufacturer.

NOTE: Tasks resulting from a Yes answer to question (c) are part of either the Hard Time limitation maintenance program or the On Condition maintenance program.

(8) If the answer to question (d) is Yes, periodic ground test or shop tests may be required if there is no other way of ensuring that there is a high probability of the hidden function being available when required. The frequencies of these tests are associated with failure consequences and anticipated failure probability. A component cannot be considered to have a hidden function if failure of that function results in a system malfunction which is evident to the flight crew during normal operations. In this case, the answer must be No.

NOTE: Tasks resulting from a Yes answer to question (d) may be part of either the Hard Time limitation or the On Condition maintenance program.

(9) If the answer to question (e) is Yes, periodic overhaul may be an effective way of controlling reliability. Whether or not a fixed overhaul time limit will indeed be effective can be determined only by actuarial analysis of operating experience.

NOTE: Tasks resulting from a Yes answer to question (e) are part of the Hard Time limitation maintenance program.

(10) It has been found that overhaul measures of reliability of complex components, such as the premature removal rate, usually are not functions of the age of these components. In most cases, therefore, the answer to question (e) is No. In this event, scheduled overhaul cannot improve operating reliability. Engineering action is the only means of improving reliability. Therefore, these components should be operated without scheduled overhaul.

NOTE: Systems or items which require no scheduled tasks are included in Condition Monitoring.

(11) Paragraph (10) is contrary to the common belief that each component has an unique requirement for scheduled maintenance in order to protect its inherent level of reliability. The validity of this belief was first challenged by actuarial analyses of the life histories of various components. More recently, the validity of the preceding paragraph has been demonstrated by the operational experience of airlines with different types of components covered by Reliability Programs.

(12) It is possible that the answers to the five questions in the decision diagram will change due to improving technology. Answers could be changed by various developments in the field of nondestructive test techniques, built-in test equipment, etc.

(13) These questions are intended to determine maintenance tasks having potential effectiveness for possible inclusion in a scheduled maintenance program. However, it is probable that many of these "potentially" beneficial scheduled tasks would not be "desirable" even though such tasks could improve reliability. Examples of this include:

- When operating safety is not affected by failure
- When the cost of the scheduled maintenance task is greater than the value of such resulting benefits, (e.g. reduced incidence of component premature removal, reduced incidence of departure delays, etc.)

(14) Additional diagrams are used to assess the "desirability" of those scheduled maintenance actions which have potential effectiveness.

D. *Aircraft Structure Analysis Method.* This a method for determining the content of the scheduled maintenance program for structures by:

- Identifying the significant structural items
- Identifying their failure modes and failure effects
- Accessing the potential effectiveness of scheduled structural inspections
- Assessing the desirability of structural inspections which have potential effectiveness

NOTE: The following information will describe the procedures for static structure, while the mechanical elements of structural components, such as doors, emergency exits, and flight control surfaces will be treated individually.

(1) The decision tree diagram, Figure 220-3, facilitates the definition of scheduled inspections of structure having potential effectiveness. There are five key questions.

(a) Is reduction in failure resistance detectable by routine flight crew monitoring?

(b) Is reduction in failure resistance detectable by in-place maintenance or unit test?

(c) Does failure mode have a direct adverse effect upon operating safety?

(d) Is the function hidden from the viewpoint of the flight crew?

(e) Is there an adverse relationship between age and reliability?

(2) The answer to question (a) is normally No. However, if in-flight instrumentation is developed which permits detection of incipient structural failures then the answer should be Yes.

(3) If the answer to question (b) is Yes, there are methods available to detect incipient conditions before undesirable conditions occur. It would be expected that all redundant external and internal structure would be in this category.

NOTE: Tasks resulting from a Yes answer to question (b) are part of the Structural Inspection program. This program is an On Condition program.

(4) If the answer to question (c) is Yes, there is a failure mode which has a direct, adverse effect on operating safety for which there is no effective incipient failure detection method. It would be expected that nonredundant primary structure would be in this category.

NOTE: Tasks resulting from a Yes answer to question (c) are part of the Hard Time limitation (usually total time or total cycle limits) maintenance program.

(5) If the answer to question (d) is Yes, there is a function required of this element of structure that is not regularly used during normal flight operations. Therefore, some inspection or test is necessary to ensure that this function has a high probability of being available when required. Tail bumper structure and structure provided for wheels-up landing are typical structural examples.

NOTE: Tasks resulting from a Yes answer to question (d) are part of the Structural Inspection program.

(6) Structures would be expected to have a Yes answer to question (e) but only in a very long total time envelope. The tasks performed as a result of Yes answers to the other questions are capable of detecting deterioration prior to failure of these items.

(7) It is probable that some of these "potentially" beneficial scheduled inspections would not be desirable, even if such tasks would improve reliability. This might be true when airworthiness is not affected by failure and the cost of the scheduled inspection is greater than the value of the resulting benefits. Therefore, additional diagrams are used to assess the desirability of those scheduled tasks which have potential effectiveness.

(a) This is accomplished by Figures 220-1, 220-2, and 220-3. A No answer to all questions is unlikely for structure. If it occurs, the item is included in Condition Monitoring.

(b) Figure 220-1, Part 2, selects those tasks that must be done because of operating safety or hidden function considerations.

(c) Figures 220-2 and 220-3 establish internal and external class numbers for structural items. The class numbers take into account vulnerability to failure and consequences of failure. The class numbers are to be used as guides for setting internal and external inspection frequencies.

(d) The items to be evaluated by Figures 220-2 and 220-3 are those termed "structurally significant."

(e) Each item is first rated for each of five characteristics per Figure 220-2, (fatigue resistance, corrosion resistance, crack propagation resistance, degree of redundancy and fatigue test rating).

(f) The items are then given an overall rating (R No.), per Figure 220-2, which considers all of the above ratings and combines them by judgment into a single overall rating (R No.) that represents a relative level of structural integrity of the item.

(8) The internal and external class numbers for each item are determined by reference to Figure 220-3.

(a) Some items have both internal and external class numbers. This occurs for those internal items which have some probability of the internal item's condition being evident by some external condition.

(b) In these cases the item as described is visible internally and the "internal" inspection of this item refers to that portion of the external structure which is adjacent to the internal item and which may yield some indication of the internal item's condition.

(c) Therefore, when an external inspection is specified for an internal item, it refers to the adjacent external structure and not the internal item itself.

E. *Aircraft Engine Analysis Method.* This is a method for determining the content of a scheduled engine maintenance program by:

- Identifying the systems and their significant items
- Identifying their functions, failure modes, and failure effects
- Defining scheduled maintenance tasks having potential effectiveness relative to the control of operational reliability
- Assessing the desirability of scheduling those tasks having potential effectiveness
- Determining initial sampling thresholds, where appropriate

(1) The decision tree diagram, Figure 220-1, facilitates the definition of scheduled inspections having potential effectiveness. There are five key questions.

NOTE: Questions (a), (b), and (c) must be answered for each failure mode, question (d) for each function, and question (e) for the item as a whole.

(a) Is reduction in failure resistance detectable by routine flight crew monitoring?

(b) Is reduction in failure resistance detectable by in place maintenance or unit test?

(c) Does failure mode have a direct adverse effect upon operating safety?

(d) Is the function hidden from the viewpoint of the flight crew?

(e) Is there an adverse relationship between age and reliability?

(2) If the answer to question (a) is Yes, there are methods available through monitoring the normal in-flight instrumentation (including computerized Flight Log Monitoring) to detect incipient conditions before undesirable system effects occur. A Yes answer does not require a maintenance task. If the answer is No, there is no in-flight monitoring which can detect reduction in failure resistance.

NOTE: Tasks resulting from in-flight monitoring are part of nonscheduled maintenance.

(3) If the answer to question (b) is Yes, there is a maintenance task, not requiring engine disassembly, that has potential effectiveness in detecting incipient conditions before undesirable system effects occur. Tasks may include inspection, servicing, testing, etc.

NOTE: Tasks resulting from Yes answers to question (b) are part of the On Condition maintenance program.

(4) If the answer to question (c) is Yes, this engine component has a failure mode with direct, adverse effect on operating safety. It is necessary to examine the mechanism of failure and identify the single cells or simple assemblies where the failure initiated. Specific total time, or total flight cycle, limitations may be assigned these components to minimize the probability of operational failures.

NOTE: Tasks resulting from a Yes answer to question (c) are part of either the Hard Time limitation maintenance program or the On Condition maintenance program.

(5) If the answer to question (d) is Yes, there is a function required of this engine component that is not evident to the flight crew when the component fails. Some scheduled task may be necessary to assure a reasonably high probability that this function is available when required.

NOTE: Tasks resulting from a Yes answer to question (d) may be part of either the Hard Time limitation or the On Condition maintenance program.

(6) It is expected that the answer to question (e) is always Yes for structural engine components, but that their expected life is very long relative to the usual engine inspection periods. If tasks defined by questions (a) through (d) are inadequate to control wear or deterioration of engine components, additional tasks should be listed here.

NOTE: Tasks resulting from a Yes answer to question (e) are part of either the Hard Time limitation or the On Condition maintenance program.

(7) Engine components for which no scheduled tasks are selected are included in Condition Monitoring.

(8) The questions in Figure 220-1, Part 1, are intended to determine maintenance tasks having potential effectiveness for possible inclusion in a scheduled maintenance program. However, it is probable that many of these "potentially" beneficial scheduled tasks would not be "desirable" even though such tasks could improve reliability. This might be true when operating safety is not affected by failure or the cost of the scheduled maintenance task is greater than the value of such resulting benefits as reduced incidence of component premature removal, reduced incidence of departure delays, etc.

(9) Additional diagrams are used to assess the "desirability" of those scheduled maintenance actions which have potential effectiveness. This is accomplished by Figure 220-1, Parts 2 and 3.

(a) Part 2 selects those tasks which must be done because of operating safety or hidden function considerations. Part 3 selects those tasks which should be done because of economic considerations.

(b) Part 2 assesses tasks listed against the Yes answers of questions (c) and (d) in Part 1, and selects those tasks which must be done.

(c) For the operating safety question, at least one task must be listed for each failure mode having a Yes answer to question (c) of Figure 1. An explanation should be given for any question (c) tasks not selected.

(d) For the hidden function question, normally at least one task must be listed for each hidden function having

a Yes answer to Part 1, question (d). If a task is not selected an explanation must be provided.

(e) Part 3 assesses tasks listed against the Yes answer in Part 1, questions (b) and (e) and selects those tasks which should be done because of economic considerations.

(f) The first question in Part 3 should be answered as a "Yes" when:

- Prior knowledge gained from other aircraft shows that the scheduled maintenance tasks are effective and economically worthwhile
- The system/component configurations of the old and new aircraft are sufficiently similar to conclude that the task will be equally effective for the new aircraft

(g) The question "Does failure prevent dispatch" refers to whether the item will be on the Minimum Equipment List (MEL). The answer to question (b) is expected to always be Yes for engine components that cause engine failure.

(h) The question "Is elapsed time for correction of failure >0.5 Hr." refers to whether corrective action can be accomplished without a delay during a normal transit stop.

(i) When a task "requires evaluation" it is important that the frequency of the failure and the cost of carrying out the task are taken into consideration.

F. *Threshold Sampling Maintenance Program.* Engine tasks are included in the Threshold Sampling maintenance program. The Threshold Sampling maintenance program is intended to recognize the On Condition design characteristics of modern Turbo-Jet engines, while sampling to control reliability.

(1) This program uses repetitive sampling to determine:

(a) The condition of engine components

(b) The advisability of continued operation to the next sampling limit

(c) The next sampling limit, threshold, or sampling band, which are based on the following:

- The design of the engine under study, the results of developmental testing, and prior service experience
- The results of previous engine programs
- The fact that samples are available from engines removed for all causes at virtually all ages. This means that knowledge of the conditions of engines is available over the complete continuum of time from start of operation to the highest time experienced.
- The fact that most engine design problems become apparent and can be controlled well within any established limits or thresholds

(2) The Threshold Sampling program establishes the initial sampling threshold. Operators are subsequently responsible for:

(a) Evaluating the samples obtained from the initial threshold

(b) Determining all sampling thresholds

(c) Ensuring the correct number is sampled at the next threshold

(3) Threshold Sampling is normally accomplished by inspecting the parts or systems of engines that are removed and accessible in the shop. These engines provide samples over a full range of ages without waiting for the threshold to be reached. The results from inspections of these samples are used to determine the future program. When samples are not available from engines that are in the shop, scheduled samples or on site inspections may be required.

G. *Program Development Administration.* It is recommended that the FAA be involved in all phases of working group activity. It is recognized that the FAA will later be asked to approve the proposed program resulting from these efforts. Therefore, FAA participation must necessarily be restricted to technical participation, contribution of technical expertise, and observing the activities of the working group. FAA approval of working group recommendations is not implied by the participation of FAA members in working group sessions. The following activity phases will apply.

(1) Phase I: Steering Group general familiarization training

(2) Phase II:

- Working Group or Working Activity Training
- Preparation of first draft Significant Items List (Ref. 2.7.1)
- Establishment of function and failure modes applicable to the Significant Items
- Preparation of Figures 1 thru 5 decision diagram replies and supporting data for each system and significant item

(3) Phase III:

- Evaluation of manufacturer's technical data and task recommendations made by the Working Groups' airline personnel
- Task revision and preparation done in conjunction with the manufacturer
- Development of task frequency recommendation

NOTE: A Steering Group member should participate in all Phase III activity.

(4) Phase IV: Presentation to Steering Group (meeting with each Working Group or Activity Chairman)

(5) Phase V: Preparation and presentation of the Steering Group's proposal to the FAA

H. *Supporting Technical Data.* The following supporting technical data will be provided in printed form, together with cross-references from the decision diagrams' records of reply:

(1) *Maintenance Significant Items List.* The list will include, for each item considered to require individual analysis, the following information:

- The item name
- Quantity per aircraft
- The prime manufacturer part number
- The vendor name and part number

(2) *Significant Items Data.* Including the following:

- Description of each significant item and its function(s)
- Listing of its failure mode(s) and effects
- Expected failure rate
- Hidden functions
- Need to be on MEL
- Redundancy (may be unit, system or system management)
- Potential indications of reduced failure resistance

(3) *System Data.* Including the following:

- Description of each system and its function(s)
- Listing of any failure modes and effects not considered in item data
- Hidden functions not considered in item data

Section 3 MSG-3

1. GENERAL

A. The development of new aircraft (e.g. 757/767) and recognized problems with MSG-2 resulted in the Air Transport Association (ATA) forming a task force to work on these problems and recommend appropriate changes. The Task Force identified 14 problems and recommended a new set of guidelines be established to cope with these problems and changes. These proposals were eventually developed into MSG-3.

B. *Scheduled Maintenance Program*

(1) MSG-3 has expanded on the objectives of a maintenance program when compared to MSG-2. The objectives of MSG-3 still emphasize safety, reliability, and economy, but have gone beyond MSG-2 by:

- Insisting upon restoring equipment to specification once it has deteriorated

- Collecting data to monitor equipment
- Providing information that may be required for redesign in order to improve reliability

(2) A well developed Scheduled Maintenance Program will ensure aircraft safety, operating efficiency, and minimize deteriorization of the inherent reliability. This level of reliability is established by the design of each item and the manufacturing processes that produced it. Scheduled maintenance can only minimize deterioration of the inherent reliability, but not improve upon it. On-aircraft failures will be minimized through preventive maintenance techniques at a minimum cost.

(3) The objectives of an efficient airline maintenance program are:

- To ensure realization of the inherent safety and reliability levels of the equipment
- To restore safety and reliability to their inherent levels when deterioration has occurred
- To obtain the information necessary for design improvement of those items whose inherent reliability proves inadequate
- To accomplish these goals at a minimum cost, including maintenance costs and of residual failures

(4) MSG-3 improves upon MSG-2 in addressing these objectives in the following areas:

- Maintenance Significant Items (MSIs) are derived using a "Top Down Approach"
- Treatment of hidden-functional failures is more thorough than MSG-2 as the logic show a distinct separation between task applicable to either hidden or evident functional failures. There is a clear separation between tasks that are economically required and those that are required for safe operation. This facilitates the determination of the reason a task was included in the initial program and the evaluation as to whether operational experience is consistent with any assumptions made in the original analysis.
- Task development questions are listed in order of preference and only those questions which pertain to the item are asked. The logic requires progressively more conservative maintenance tasks up to and including redesign as a logic default strategy; i.e., in the absence of information concerning the applicability and effectiveness of a task, the next most conservative task must be considered.
- A definite applicability and effectiveness criteria is established
- Servicing and lubrication is included as part of the logic diagram since this must be included to make a complete scheduled maintenance program
- MSG-3 is task-oriented and not maintenance process oriented. This eliminates the confusion associated with the various interpretations of Condition Monitoring, On-Condition, and Hard-Time. Instead of classifying a maintenance requirement as an HT, OC, or CM task, the specific task is identified.

(5) MSG-3 has added several types of tasks to the content of the MSG-2 maintenance program. These additions help to delineate tasks more accurately than before.

(6) An efficient program is one which schedules only those tasks necessary to meet the stated objectives. It does not schedule additional tasks which will increase maintenance costs without a corresponding increase in reliability protection. The tasks in an MSG-3 scheduled maintenance program include:

- Lubrication/Servicing
- Operational/Visual Check
- Inspection/Functional Check
- Restoration
- Discard
- Combination
- Task Selection Criteria

C. *Applicability and Effectiveness.* Every task selected must meet the criteria established for applicability and effectiveness. Selecting only those tasks which meet the

applicability and effectiveness criteria prevents selecting task based on habit or tradition. If the answers to the task selection questions are justified based on applicability and effectiveness, only the appropriate tasks will be selected.

D. *Maintenance Significant Items*

(1) Before the actual MSG-3 logic can be applied to an item, the aircraft's significant systems and components must be identified. Selection of the maintenance significant items begins at the highest manageable level. Maintenance significant items are those items identified by the manufacturer whose failure:

- Could affect safety (on ground or in flight)
- Is undetectable during operations
- Could have significant economic impact

(2) An item, as defined in the document, can be anything from an entire system to an individual part. The item to be analyzed using MSG-3 should be at the highest manageable level.

E. *Threshold Sample.* The threshold sample is an examination of a specified number of items done in order to verify design calculations while attaining inservice experience with the items. Thresholds may be established for the Maintenance Review Board defined items.

F. *ATA MSG-3 Document.* The working portions of MSG-3 are contained in three working sections, as described in the ATA document, MSG-3 as revised, and includes the following information:

- Decision logic diagrams
- Explanatory material
- Procedures

3. MSG CONVERSION. A problem exists when an operator or manufacturer desires to produce or operate an aircraft under a maintenance program developed using the MSG-3 concept when the program was initially developed under MSG-2. The primary problem in converting MSG-2 to MSG-3 is how to deal with the Condition- Monitoring items. As a response to this problem, the Maintenance Review Board Policy Board developed the following policy:

- At the manufacturer's level. Hard-time and On-Condition items will be assigned tasks. Condition Monitoring items will be reanalyzed under MSG-3 and put into the category of "task" or "no task".
- At the operator's level. Hard-time and On-Condition items will be handled the same as at the manufacturer's level. Condition Monitoring items may be retained and tracked using a reliability program as in MSG-2, or may be assigned a task or dropped as in MSG-3.

Section 4 Participation on a Maintenance Review Board (MRB)

1. GENERAL. This section provides information pertinent to the participation by an airworthiness inspector in Maintenance Review Board proceedings and the implementation of the initial or revised maintenance/inspection requirements developed by the Maintenance Review Board process. The Maintenance Review Board develops scheduled maintenance requirements on newly manufactured transport category aircraft through use of the Maintenance Steering Group (MSG) 3 process.

3. MAINTENANCE REVIEW BOARD PERSONNEL AND CONSIDERATIONS

A. Approval of proposed initial maintenance/inspection requirements will be accomplished by a board of FAA specialists. The Maintenance Review Board chairman will be the Airworthiness Maintenance Specialist (AMS) assigned by their respective region to a specific aircraft or aircraft engine manufacturer.

B. *FAA Advisors.* FAA working group advisors will be selected by the Maintenance Review Board Chairman. Throughout the proceedings, all FAA advisors shall advise the Chairman of items they consider unsatisfactory or otherwise noteworthy. Early awareness of potential controversial items will enable development of a timely solution. Each advisor will:

(1) Be assigned to a specific working group or groups by the Maintenance Review Board Chairman

(2) Attend familiarization and training courses as scheduled by the Maintenance Review Board Chairman

(3) Become thoroughly familiar with the application of the MSG decision logic process

(4) Observe working group proceedings to ensure that the working group understands and utilizes the MSG decision logic process during development of the proposal

(5) Submit a highlight report to the Maintenance Review Board Chairman at the conclusion of each meeting attended. The report should refer to the items discussed, conclusions reached, open or pending items, summary, and recommendations.

(6) Offer FAA policy guidance and assistance to the working groups whenever requested or deemed necessary

(7) Coordinate with the Maintenance Review Board Chairman in a timely fashion on matters that may affect major policy, Federal Aviation Regulations, maintenance management philosophies, and relationships with international civil aviation authorities

(8) Attend all meetings scheduled by the Maintenance Review Board Chairman and working group chairman

C. Each member of the Maintenance Review Board must apply resourcefulness and all available technical knowledge to ensure the success of the Maintenance Review Board. The Maintenance Review Board's evaluation of a new product must encompass at least the following:

(1) A review of the results of the manufacturers' static test programs. These programs furnish an indication of the behavior of structure under limit and ultimate loads, strength of the components tested, and the locations of deficiencies. The proposed maintenance and inspection programs related to these deficient areas should be carefully scrutinized and coordinated with engineering.

(2) An evaluation of all proposed maintenance instructions with particular attention given to those that relate to areas, parts, and/or components that involve unusual functional design features, new fabrication methods, and/or unique functional requirements

(3) Consideration of the recommendations of the FAA Engineering and Manufacturing Branch relating to the establishment of structure sampling programs and initial time recommendations

(4) A careful analysis of the results and reports on certification flight test and functional and reliability flight test programs that pertain to the maintenance/inspection program

(5) A comparative analysis of systems, areas, components, etc. This analysis shall be made, if possible, with similar products in use on aircraft in current operation.

(6) An assessment of the practicability of the proposed inspection and maintenance requirements by comparison with the results of structural test programs conducted by the manufacturers and made available to the FAA

(7) A comprehensive review of the frequency and scope of the structure sampling and inspection requirements proposed for the new product

(a) This review is to ensure that they provide ample coverage of the areas to which they are related.

(b) These programs require the following:

- The establishment of the importance of all parts and/or areas of the new product
- A determination as to whether external indications of incipient failure of these areas is readily discernible
- The probability and effects of failures in these areas

(c) This data, in conjunction with the expected service life of the parts, etc., should be used to judge, in part, the adaptability and value of proposed programs.

D. Fatigue test programs provide an excellent tool for associating failures with cycles of service life. However, the results of these programs may require tempering when the fatigue characteristics of the structure are supplemented by use of the fail-safe design concept. This data is approved by the FAA engineering, and, when combined with the past knowledge and experience of the Maintenance Review Board member, form a useful element for evaluating proposed maintenance/inspection requirements.

E. Replacement times for parts and/or components, and structural sampling times that are established by the manufacturers through fatigue testing, shall be evaluated by the Maintenance Review Board. The results of the tests shall be reviewed by the Maintenance Review Board and FAA Engineering for specific recommendations on required inspection times for these areas.

5. MAINTENANCE REVIEW BOARD POLICY BOARD. The Maintenance Review Board Policy Board is headquartered in the Aircraft Maintenance Division, AFS-300, to provide policy relating to Maintenance Review Board proceedings. The Chairman of the Policy Board will be a technical specialist assigned to the Air Transportation Branch of AFS-300.

7. APPROVAL OF MAINTENANCE/INSPECTION REQUIREMENTS

A. When all issues have been resolved, the material developed by the Maintenance Review Board proceedings will be recorded and approved by the Maintenance Review Board Chairman.

B. The Maintenance Review Board Report will be published as a part of the Technical Support Documents provided by the manufacturer to the operators. Technical Support Documents comprising the maintenance manual, supplied by the manufacturer, will contain a note advising the operator that the data contained in the Maintenance Review Board Reports comply with the requirements of FAR §§ 25.1529 or 29.1529.

C. In order to remain current with technology and as a result of operating experience, periodic revisions may be necessary. When necessary, a reassessment of the internal requirements shall be included.

D. Revision requests will be handled by an industry airline/manufacturer committee composed of the manufacturer and representative operators, primary airworthiness inspectors as appropriate, and Maintenance Review Board Chairman. The Maintenance Review Board Chairman will review all substantiating data to ensure that:

- Sampling data is representative
- Fleet experience is compatible
- Operating cycles are equated with flight time

9. IMPLEMENTATION/RESPONSIBILITIES OF INITIAL MAINTENANCE/INSPECTION REQUIREMENTS

A. *Operator/Applicant Implementation*

(1) A group of operators may combine their fleets for the purpose of accomplishing the maintenance/inspection requirements. The fleet may include foreign operators provided the appropriate document rules are adhered to.

(2) An operator or group of operators may submit a program in which the manufacturer is the repository for the data collection and analysis requirements. Any data submitted for use by the group must be validated by the manufacturer.

(3) If an operator participates in a program in which the manufacturer is the repository for a group of operators, any action generated by the analysis will apply to the operator. Changes to the maintenance/inspection requirements brought about by the analysis of this data will be accompanied by supporting data and logic analysis.

B. *Assigned Inspector's Responsibilities*

(1) The operator/applicant's assigned inspectors will carefully review the submitted proposed maintenance program on a new product.

(2) The inspector will ensure that the operations specifications (Aircraft Maintenance) and all phases of the program are complete and in compliance with the maintenance/inspection requirements contained in the Maintenance Review Board Report.

(3) The inspector will submit to AFS-300 for review and concurrence all subsequent changes which deviate significantly from the maintenance/inspection requirements contained in the Maintenance Review Board Report.

(4) The inspector will follow-up and ensure that the assigned operator adheres to the maintenance program as approved by the operations specifications.

11. REPORTING REQUIREMENTS

A. *Operator's Responsibilities.* The operator must document and advise the assigned inspectors of all sampling inspections, opportunity or forced powerplant inspections, and disassembly threshold inspections, if required. This data will be used to identify design and maintenance problem areas

and substantiate future revisions to the initial maintenance/inspection requirements.

B. *Inspector Responsibilities.* The inspectors will review and submit a timely report of all sampling inspections conducted by the operator to the Factory Maintenance Specialist per the requirements of the Maintenance Review Board. These reports will include significant items noted during operation, maintenance, and inspections conducted by the operator and resulting actions. The Factory Maintenance Specialist shall process these reports and provide information concerning significant service difficulties to all regions and manufacturers.

FIGURE 220-1
MSG 2 DECISION DIAGRAM

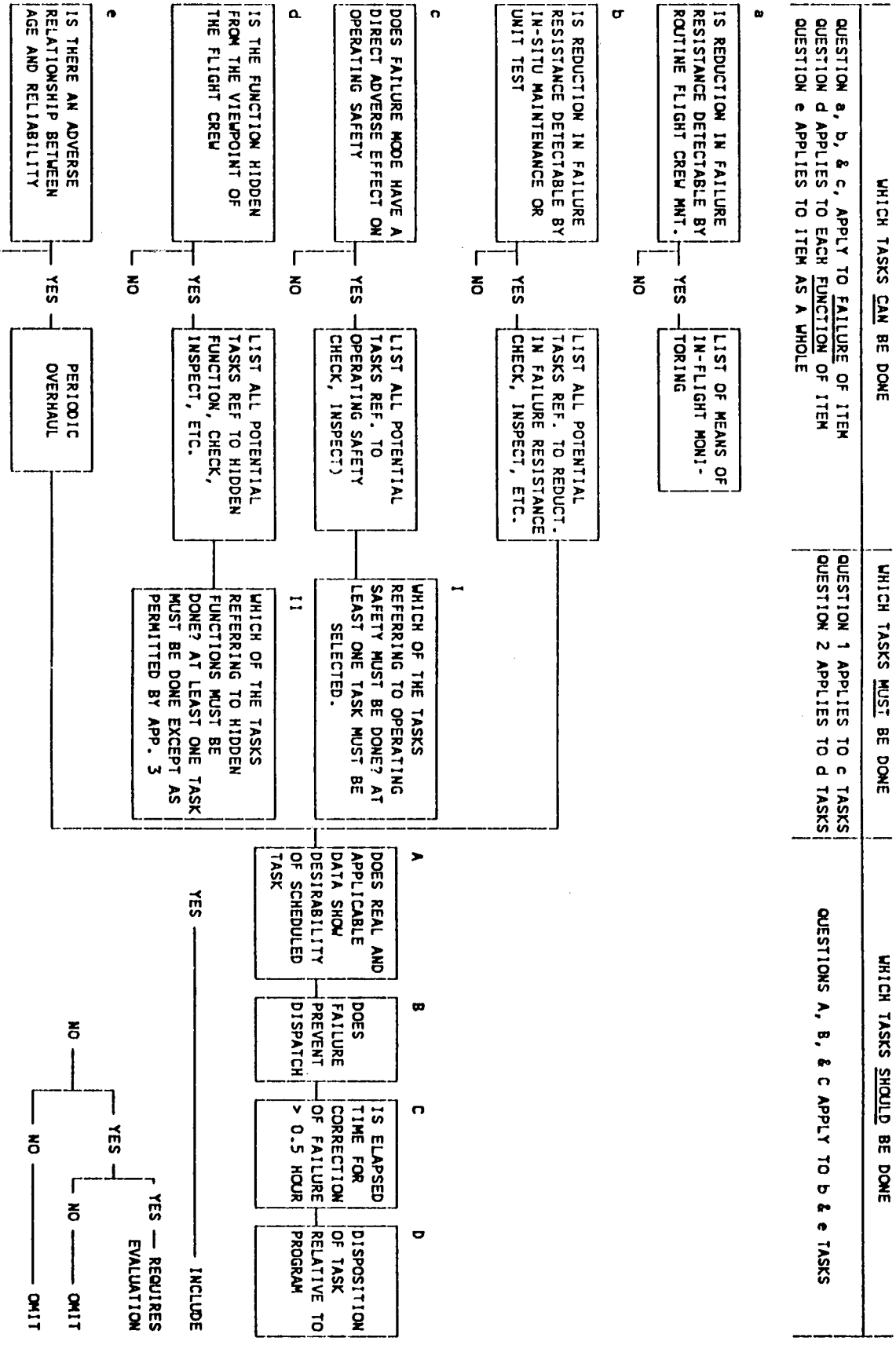


FIGURE 220-2
STRUCTURE ANALYSIS METHOD

	1	2	3	4	
FATIGUE RESISTANCE	AN INDICATION OF THE FATIGUE RESISTANCE OF THE ITEM RELATIVE TO THE FATIGUE DESIGN GOAL FOR THE OVERALL AIRCRAFT				
	SMALL MARGIN ABOVE DESIGN GOAL	FAIR MARGIN ABOVE DESIGN GOAL	CONSIDERABLE MARGIN ABOVE DESIGN GOAL	HIGH MARGIN ABOVE DESIGN GOAL	
CORROSION RESISTANCE (INCLUDING STRESS CORROSION)	AN INDICATION OF THE RELATIVE CORROSION RESISTANCE OF THE ITEM. CONSIDERING BOTH EXPOSURE AND PROTECTION.				
	LEAST MARGIN OF RESISTANCE	FAIR MARGIN OF RESISTANCE	CONSIDERABLE MARGIN OF RESISTANCE	HIGHEST MARGIN OF RESISTANCE	
CRACK PROPAGATION RESISTANCE	AN INDICATION OF THE RELATIVE ABILITY OF THE MATERIAL USED TO RESIST PROPAGATION OF CRACKS.				THIS PORTION OF CHART TO BE EXECUTED FOR EACH ITEM WHICH HAS BEEN DESIGNATED AS "STRUCTURALLY SIGNIFICANT"
	LEAST MARGIN OF RESISTANCE (HI HEAT TREAT STEEL)	FAIR MARGIN OF RESISTANCE (7000 SERIES ALUM)	CONSIDERABLE MARGIN OF RESISTANCE (TITANIUM)	HIGHEST MARGIN OF RESISTANCE (2000 SERIES ALUM)	
DEGREE OF REDUNDANCY	AN INDICATION OF THE DEGREE TO WHICH THE ITEM IS BACKED UP BY REDUNDANT STRUCTURE.				
	SMALL			HIGH	
FATIGUE TEST RATING	WILL THE LOADS APPLIED TO THE ITEM IN THE FULL SCALE FATIGUE TEST PROPERLY REPRESENT LOADS PREDICTED FOR SERVICE USAGE.				
	NO			YES	
OVERALL RATING NUMBER (R)	A RATING WHICH CONSIDERS ALL THE ABOVE RATINGS AND COMBINES THEM BY JUDGEMENT INTO A SINGLE OVERALL RATING WHICH REPRESENTS A RELATIVE LEVEL OF THE STRUCTURAL INTEGRITY OF THE ITEM				THIS RATING NO. IS ASSIGNED TO ALL OTHER PRIMARY AND SECONDARY STRUCTURE WHICH IS NOT STRUCTURALLY SIGNIFICANT
	1	2	3	4	

[THIS CHART CONVERTS OVERALL RATING (R) TO INTERNAL & EXTERNAL CLASS NUMBERS]

	A INTERNAL CLASS NO.	B EXTERNAL CLASS NO. IF>10 ABOVE GROUND IN NONE FUEL AREA	C EXTERNAL CLASS NO. IF>10 ABOVE GROUND OR IN FUEL AREA
STRUCTURALLY SIGNIFICANT ITEMS			
[EX] EXTERNAL ITEMS	NONE	R	R + 1
[IN] INTERNAL ITEMS:			
• HIGH PROBABILITY OF EXTERNAL DETECTABILITY OF ITEM'S CONDITION BY FUEL LEAK OR VISUAL CONDITION OF ADJACENT EXTERNAL ITEM	R + 1	R	R + 1
• LOW PROBABILITY OF EXTERNAL DETECTABILITY OF ITEM'S CONDITION BY FUEL LEAK OR VISUAL CONDITION OF ADJACENT EXTERNAL ITEM	R	R + 1	R + 1
• NO EXTERNAL DETECTABILITY OF ITEM'S CONDITION SINCE NO ADJACENT ITEMS ARE VISIBLE EXTERNALLY	R	NONE	NONE
ALL OTHER PRIMARY OR SECONDARY STRUCTURAL ITEMS WHICH ARE NOT STRUCTURALLY SIGNIFICANT			
[EX] EXTERNAL ITEMS	NONE	5	5
[IN] INTERNAL ITEMS	5	NONE	NONE

FIGURE 220-3
STRUCTURE DETECTABILITY EVALUATION

EXTERNAL Means there is no visual accessibility without detaching any parts (incl. access panels) from the airplane and includes control surface deflection as required

INTERNAL Means there is visual accessibility only by detaching removable parts or by radiographing means

> Where visual accessibility exists simply by removal of an access plate and no additional detachment of parts is necessary to gain visual access

CHAPTER 221 CONDUCT EVALUATION OF OPERATOR/APPLICANT'S MAIN BASE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3338

B. *Avionics:* 5378

3. OBJECTIVE. This chapter describes the process used to certificate an operator/applicant's main base facility in accordance with FAR Parts 121, 125, 133, 135, and 137, as applicable.

5. GENERAL

A. *Definitions*

(1) *Main base:* The primary location where all aspects of maintenance can be performed and records are maintained.

(2) *Sub base:* Other locations where maintenance is performed.

(3) *Line station:* A location where limited maintenance is performed.

B. The main base inspection is performed to determine if adequate housing, equipment, spare parts, technical data, and qualified personnel are available to satisfactorily complete all maintenance functions. A main base evaluation should be accomplished:

- Prior to certificating a new operator
- When an existing operator introduces a new make and model to an operation

7. MAINTENANCE TRAINING. The scope of a maintenance training program for FAR Part 121/135 (10 or more) operator/applicants must ensure that the aircraft to be operated are maintained at a high level of airworthiness.

A. The complexity of the proposed training program depends on the individual operator/applicant's experience and the type of work to be performed. The type of training necessary may range from on-the-job training to formal classroom training. The end product of the training must be an individual competent to perform the work as authorized.

B. An operator/applicant, regardless of the size of the operation, must have an effective training program. However, a small operator should not be expected to duplicate all the training facilities normally provided by a large operator. To comply with the regulatory requirements, the operator/applicant may use contract facilities or other means that will provide equivalent training.

9. PERFORMING THE INSPECTION

A. *Facilities.* The main base is required to perform maintenance in accordance with the operator/applicant's maintenance manuals. The inspector should be aware of the types of equipment and technical documentation necessary to perform the required maintenance, to include:

- Types of equipment to be operated
- Capabilities of maintenance organization, if applicable
- Staffing requirements

B. *Contract Maintenance Arrangements.* If any maintenance will be performed by a contract facility, an inspection must be performed at the contractor's facility.

C. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

D. *Rotorcraft Approved Flight Manual.* The approved flight manual for FAR Part 133 rotorcraft operator/applicants should be reviewed to determine the type of equipment being used. Based on the listed equipment, this review will help determine if the maintenance base has the necessary tools and equipment to service the aircraft and associated devices, e.g., external load devices and spraying devices.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, 133, 135, and 137, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being certificated

B. *Coordination.* This task requires coordination between the assigned Principal Airworthiness Inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43 and 65
- SFAR 36
- 49 CFR Part 173
- Operator's maintenance manual
- Approved rotorcraft flight manual, if applicable
- Order 8300.10, Airworthiness Inspector's Handbook, appropriate certification chapters, as applicable

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator/Applicant's Data.* Review the following:

(1) The district office files to determine the status of Enforcement Investigation Reports, exemptions, etc.

(2) The operator/applicant's maintenance manuals to determine the level of maintenance to be accomplished and the complexity of the proposed operation at the main base

B. *Inspect the Operator/Applicant's Technical Library.* Ensure that all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable. The data must include the following, as applicable:

- Operations specifications
- Operator/applicant's general maintenance manual
- Aircraft manufacturers' manuals
- Propeller, appliance, engine, and emergency equipment manufacturer's manuals
- Applicable Federal Aviation Regulations
- Applicable Airworthiness Directives
- Applicable type data sheets/Supplemental Type Certificates
- Approved Flight Manual

C. *Inspect the Aircraft Maintenance Record Retention System*

(1) Ensure that the system provides for the retrieval of records within a reasonable period of time.

(2) If a computer system is utilized, ensure that the following are in place:

(a) An adequate security system

(b) A continuous backup system

D. *Inspect the Maintenance Organization.* Ensure the following:

(1) Staffing meets maintenance needs based on the complexity of proposed operation

(2) Responsibilities are separated between inspection and maintenance sections

(3) Maintenance and inspection management personnel are qualified

E. *Inspect the Operator/Applicant's Training Program.* Ensure the following:

(1) Program defines training requirements

(2) Individual training records are retained and current

(3) Training facilities are appropriate for the complexity of the proposed operation

(4) Training personnel are qualified

(5) Training aids and materials are current and appropriate

(6) Special training requirements are addressed and incorporated, e.g. nondestructive testing (NDT), inspection techniques and methods, and composite material repair

(7) Inspection and Required Inspection Item (RII) personnel are trained in appropriate inspection methods and techniques

F. *Inspect the Operator/Applicant's Maintenance Facilities.* Inspect the following:

(1) Parts and storage areas, to ensure:

(a) Adequate spare parts are available to support complexity of the proposed operation

(b) Procedures for receiving inspections are in place

(c) Shelf life limits are established for items and that these items will be controlled in accordance with the operator/applicant's manual or manufacturer's recommendations

(d) Components and hardware are properly identified and protected and identified as to serviceability

(e) Segregation of serviceable and unserviceable components and hardware will be established and maintained

(f) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, to ensure:

(a) Serviceability and calibration will be accomplished in accordance with operator/applicant's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil storage and dispensing facilities, if operated and maintained by operator/applicant. Refer to Vol. 2, Ch. 227.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected:

(a) Chemical storage

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator/applicant's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that contractor meets the above requirements.

(5) Support shops (avionics, sheet metal, engine etc.), as applicable, to ensure:

(a) All required technical data is current and available. If data is on microfiche, ensure that readers are available and serviceable.

(b) Staffing reflects complexity of shop

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place

(e) All required special tooling and equipment are available, serviceable, and within calibration criteria

(f) Safety equipment is available and serviceable

(g) If applicable, individual shop storage areas are maintained to same standards as main storage area

(h) Work areas do not conflict with each other, e.g., lathe next to avionics repair area

(i) Lighting, ventilation, and general housekeeping are adequate

(6) Hangar facilities, to ensure:

(a) Facilities are adequate for work to be performed

(b) Staffing reflects the complexity of work to be performed

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place

(e) Special equipment and tooling is available, serviceable, and calibrated, if applicable

(f) Safety procedures are established

(g) Procedures will direct flow and control of all maintenance and inspection records

(h) Lighting, ventilation and general housekeeping are adequate

(7) Hangar ground support equipment, e.g., jacks, external hydraulic power units (mules), external electrical power units, and special workstands, to ensure equipment is serviceable and appropriate for work to be performed

G. *Inspect the Engineering Department, If Applicable.* Ensure the following:

(1) Staffing is adequate for complexity of assigned duties

(2) Personnel are qualified

(3) All required technical data is current and available

(4) Procedures exist for major repair reports to be retained and be made available

H. *Inspect the Inspection Department.* Ensure the following:

(1) Designated staffing is adequate for complexity of proposed operation

(2) Delegated staffing (Required Inspection Items) is at reasonable level

(3) System ensures inspection personnel are trained, qualified, and properly authorized

I. *Inspect the Maintenance Control, if Applicable.* Review the following:

(1) Staffing, to ensure that it is adequate for the complexity of the proposed operation and that personnel are trained and qualified

(2) Technical data, to ensure that it is available and current

(3) Communications system, to ensure that communications between all departments and stations will be effective

J. *Inspect the Maintenance Production/Planning Control, If Applicable.* Ensure the following:

(1) Staffing is adequate for the complexity of the proposed operation

(2) The system provides for scheduling corrections of deferred and carryover maintenance items

K. *Review the Contracted Maintenance Arrangements, If Applicable.* See Vol. 2, Ch. 69.

L. *Inspect Continuous Analysis and Surveillance Program.* See Vol. 2, Ch. 65 for evaluation.

M. *Inspect Operator/Applicant's Reliability Program, If Applicable.* See Vol. 2, Ch. 67 for evaluation.

N. *Analyze Findings.* Review deficiencies and determine appropriate corrective actions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in the following:

(1) For a new certification, continuation with certification process in accordance with the appropriate certification chapters in Order 8300.10

(2) For an operator adding new aircraft, amendment of operations specifications to reflect added aircraft

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Transfer of activities from certification process to appropriate surveillance activities.

CHAPTER 222 CONDUCT EVALUATION OF OPERATOR/APPLICANT'S SUB BASE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3340

B. *Avionics:* 5340

3. OBJECTIVE. This chapter describes the process used to certificate an operator/applicant's sub base facility for compliance to FAR Parts 121, 125, and 135 (10 or more), as applicable.

5. GENERAL

A. *Definitions*

(1) *Main base:* The primary location where all aspects of maintenance can be performed and records are maintained.

(2) *Sub base:* Other locations where maintenance is performed.

(3) *Line station:* A location where limited maintenance is performed.

B. The sub base inspection is performed to determine if adequate housing, equipment, spare parts, technical data and qualified personnel are available to satisfactorily complete all maintenance functions. A sub base inspection should be accomplished:

- Prior to certificating a new operator
- When an existing operator introduces a new make and model to its operation
- When a new station is opened up due to a route change

7. PERFORMING THE INSPECTION

A. *Facilities.* The sub base facility is required to perform the maintenance in accordance with the operator/applicant's maintenance manuals. The inspector should be aware of the types of equipment and technical documentation necessary to perform the required maintenance, to include:

- Types of equipment to be operated
- Capabilities of maintenance organization, if applicable
- Staffing requirements

B. *Contract Maintenance Arrangements.* If any maintenance will be performed by a contract facility, an inspection must be performed at the contractor's facility.

C. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being inspected

B. *Coordination.* This task requires coordination with the assigned Principal Airworthiness Inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 43 and 65
- 49 CFR Part 173
- Operator's maintenance manual
- Order 8300.10, Airworthiness Inspectors Handbook, appropriate certification chapters

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator/Applicant's Data.* Review the following:

(1) The district office files to determine status of Enforcement Investigation Reports, exemptions, etc.

(2) The operator/applicant's maintenance manuals to determine the level of maintenance to be accomplished and the complexity of the proposed operation at the main base

B. *Inspect the Operator/Applicant's Technical Library.* Ensure all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable. Ensure the data includes the following, if applicable:

- Operator/applicant's general maintenance manual
- Aircraft manufacturer's manuals
- Propeller, appliance, engine, and emergency equipment manufacturer's manuals
- Applicable Federal Aviation Regulations
- Applicable Airworthiness Directives
- Applicable type data sheets/Supplemental Type Certificates

C. *Inspect the Maintenance Records.* Ensure that transfer of records to the main base facility will be accomplished in accordance with operator's manual procedures.

D. *Evaluate the Sub Base Maintenance Organization.* Ensure the following:

(1) Staffing meets the maintenance needs based on the complexity of the proposed operation

(2) Responsibilities are separated between inspection and maintenance sections

E. *Inspect the Operator/Applicant's Maintenance Facilities.* Inspect the following:

(1) Parts and storage areas, to ensure:

(a) Adequate spare parts are available to support the complexity of the proposed operation

(b) Procedures for receiving inspections are in place

(c) Shelf life limits are established for items and that these items will be controlled in accordance with operator/applicant's manual or manufacturer's recommendations

(d) Components and hardware are properly identified, protected, and identified as to serviceability

(e) Segregation of serviceable and unserviceable components and hardware will be established and maintained

(f) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, to ensure:

(a) Serviceability and calibration will be accomplished in accordance with operator/applicant's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil dispensing and storage facilities, if operated and maintained by operator/applicant. Refer to Vol. 2, Ch. 230.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected:

(a) Chemical storage

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator/applicant's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

(5) Support shops (avionics, sheet metal, engine, etc.), if applicable, to ensure:

(a) All required technical data is current and available. If data is on microfiche, ensure that readers are available and serviceable.

(b) Staffing reflects complexity of shop

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place

(e) All required special tooling and equipment are available, serviceable, and within calibration criteria

(f) Maintenance tasks and inspection functions are being accomplished in accordance with operator's maintenance manual

(g) Safety equipment is available and serviceable

(h) Individual shop's storage areas are maintained to the same standards as main storage area

(i) Work areas do not conflict with each other, e.g., a lathe next to an avionics repair area

(j) Lighting, ventilation, and general housekeeping are adequate

(6) Hangar facilities, to ensure:

(a) Facilities are adequate for work to be performed

(b) Staffing reflects the complexity of work to be performed

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place

(e) Special equipment and tooling is available, serviceable, and calibrated, if applicable

(f) Safety procedures are established

(g) Procedures will direct flow and control of all maintenance and inspection records

(h) Lighting, ventilation, and general housekeeping are adequate

(7) Ground support equipment e.g., jacks, external hydraulic power units (mules), external electrical power units, special work stands, to ensure equipment is serviceable and appropriate for work to be performed

F. *Inspect the Inspection Department.* Ensure the following:

(1) Designated staffing is adequate for complexity of proposed operation

(2) Delegated staffing (Required Inspection Items) is at reasonable level

G. *Analyze the Findings.* Upon completion of inspection record all deficiencies noted. Determine appropriate corrective actions to be taken.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task may result in the following:

(1) For new certification, continuation with certification process in accordance with the appropriate certification chapters in FAA Order 8300.10

(2) For operator adding station or adding new aircraft, amendment of operations specifications as applicable

C. *Document the Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Transfer of certification process to appropriate surveillance activities.

CHAPTER 223 CONDUCT EVALUATION OF OPERATOR/APPLICANT'S LINE STATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3340

B. *Avionics:* 5340

3. OBJECTIVE. This chapter describes the process used to certificate an operator/applicant's line station for regulatory compliance to FAR Parts 121 or 135 (10 or more).

5. GENERAL

A. *Definitions*

(1) *Main base:* The primary location where all aspects of maintenance can be performed and records are maintained.

(2) *Sub base:* Other locations where maintenance is performed.

(3) *Line station:* A location where limited maintenance is performed.

B. The line station inspection is performed to determine if adequate housing, equipment, spare parts, technical data and qualified personnel are available to satisfactorily complete all maintenance functions performed. A line station inspection should be accomplished:

- Prior to certificating a new operator
- When an existing operator introduces a new make and model to its operation (random sampling)
- When a new station is opened due to a route change

7. PERFORMING THE INSPECTION.

A. The line station is required to perform maintenance in accordance with the operator/applicant's maintenance manuals. The inspector should be aware of the types of equipment and technical documentation necessary to perform the required maintenance, to include:

- Types of equipment to be operated
- Capabilities of maintenance organization, if applicable
- Staffing requirements

B. *Contract Maintenance Arrangements.* If any maintenance will be performed by a contract facility, an inspection must be performed at the contractor's facility.

C. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being inspected

B. *Coordination.* This task requires coordination with the assigned Principal Airworthiness Inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43 and 65
- 49 CFR Part 173
- Operator's maintenance manual
- Order 8300.10, Airworthiness Inspector's Handbook, appropriate certifications chapters

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator/Applicant's Data.* Review the following:

(1) The operator/applicant's files, to determine if any chronic or open items exist, status of Enforcement Investigation Reports, etc.

(2) The operator/applicant's maintenance manuals, to determine level of maintenance accomplished and the complexity of the proposed line station operation

B. *Evaluate the Operator/Applicant's Technical Library.* Ensure all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable.

C. *Inspect the Maintenance Records.* Ensure that the transfer of records to the main base facility will be accomplished in accordance with the operator/applicant's manual procedures.

D. *Evaluate the Line Station Maintenance Organization.* Ensure the following:

(1) Staffing meets maintenance needs based on the complexity of the proposed operation

(2) Responsibilities are separated between inspection and maintenance organizations

E. *Inspect the Operator/Applicant's Maintenance Facilities.* Inspect the facilities, to include:

(1) Parts and storage areas, to ensure:

(a) Spare parts are adequate to support complexity of the proposed operation

(b) Shelf life limits are established for items, and that these items will be controlled in accordance with operator/applicant's manual or manufacturer's recommendations

(c) Components and hardware are properly identified, protected, and identified as to serviceability

(d) Segregation of serviceable and unserviceable components and hardware will be established and maintained

(e) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, to ensure:

(a) Serviceability and calibration will be accomplished in accordance with operator/applicant's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil dispensing and storage facilities, if operated and maintained by operator. Refer to Vol. 2, Ch. 227.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected:

(a) Chemical storage

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator/applicant's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

(5) Ground support equipment e.g., jacks, external hydraulic power units (mules), external electrical power units, and special work stands, to ensure equipment is serviceable and appropriate for work to be performed

F. *Inspect the Inspection Department.* Ensure the following:

(1) Designated staffing is adequate for the complexity of the proposed operation

(2) Delegated staffing (Required Inspection Items) is at a reasonable level

G. *Analyze Findings.* Upon completion of inspection, record all deficiencies noted. Determine the appropriate corrective action(s) to be taken.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task may result in the following:

(1) For new certification, continuation with certification process in accordance with the appropriate certification chapters in Order 8300.10

(2) For an operator adding a station or new aircraft, amendment of operations specifications as applicable

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Transfer of certification process to appropriate surveillance activities.

CHAPTER 224 INSPECT CONTRACT MAINTENANCE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3339

B. *Avionics:* 5339

3. OBJECTIVE. This chapter describes the process used to inspect a contract maintenance facility during the certification of a FAR Part 121 or 135 (10 or more) operator.

5. GENERAL

A. *Definitions*

(1) *Contract maintenance facility:* The location of a certificate holder or a FAR Part 145 authorized repair station that has a contractual agreement for performing maintenance for an operator/applicant operating under FAR Parts 121 or 135 (10 or more).

(2) *Main base:* The primary location where all aspects of maintenance can be performed and records are maintained.

(3) *Sub base:* Other locations where maintenance is performed.

(4) *Line station:* A location where limited maintenance is performed.

B. *Coordination.* For inspections of a contract maintenance facility located out of the geographic boundaries of the Certificate Holding District Office, assistance should be requested from the Flight Standards District Office (FSDO) in which the facility is located.

7. INITIATION AND PLANNING. Before inspecting the facility, the inspector should:

A. Review the operator/applicant's manuals to determine the levels of maintenance performed at the contract maintenance facility

B. Determine that the contract maintenance facilities are properly certificated and rated for the scope of work performed, e.g., aircraft, power plant, propeller, components, and accessories

C. Obtain from the operator/applicant a list of contractor management personnel to be contacted

9. PERFORMING THE TASK. The inspector must determine that the contractor has adequate facilities and personnel to perform the contracted work. The inspector must keep in mind that the contract maintenance facility is an extension of the operator/applicant's overall maintenance organization. Maintenance performed by the contractor must be in accordance with the operator/applicant's approved maintenance program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation to be inspected

B. *Coordination.* This task requires coordination between the operator's Principal Airworthiness Inspectors and the contractor's Flight Standards District Office.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43, 65, and 145
- 49 CFR Part 173
- Operator's maintenance manual

- Applicable Advisory Circulars

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Schedule the Inspection.* This will be accomplished by the operator/applicant's Certificate Holding District Office principal inspectors.

B. *Determine Qualifications.* Review the operator/applicant's contract to determine the type of maintenance to be performed by the contractor. Ensure that the contract maintenance facility is properly certificated and rated for the work to be performed.

C. *Inspect Library.* Ensure that the contract maintenance facility's library:

(1) Is available for use by the facility's personnel

(2) Includes the following data:

- The contract agency's Inspection Procedures Manual
- The operator/applicant's maintenance manual
- Current applicable Advisory Circulars, Airworthiness Directives, and type data sheets
- Aircraft, engine, propeller, appliance, and emergency equipment manufacturer's manual(s)

D. *Inspect Records.* Inspect the following:

(1) *Maintenance records (Aircraft, Power Plant, Propeller, Component, Appliances, etc.).* Ensure that there are procedures to ensure that work will be accomplished and documented in accordance with the operator/applicant's manual.

(2) *Personnel training records, if applicable.* Review the contracting agency's records to ensure that personnel are trained to perform the contracted work.

E. *Inspect Quality Control System.* Ensure the following:

(1) Responsibilities for maintenance and inspection functions are separated

(2) Staffing reflects the complexity of the operation

(3) Personnel are appropriately certificated, qualified and trained to perform inspections

(4) Personnel performing Required Inspection Item (RII) functions are properly authorized

(5) Lists of authorized inspection and Required Inspection Item personnel are maintained, including the type of equipment and limitations

(6) Training records for all inspection personnel are maintained and kept current

(7) The operator/applicant's system for controlling accountability and documentation of all work being accomplished is specified in the operator/applicant's maintenance manual

(8) Incoming parts and supplies are inspected and tagged in accordance with the operator/applicant's maintenance manual

F. *Inspect the Maintenance Department.* Ensure the following:

(1) Staffing reflects the complexity of the contracted operation

(2) Personnel are trained for the complexity of work performed

(3) The facilities are adequate for the type of work performed

(4) Spare parts are available for contracted work

(5) Equipment is available to support work being performed

(6) Shift turnover procedures are in place and being utilized

(7) Space, lighting, and ventilation reflect the requirements of work being performed

(8) Special tools and test equipment are calibrated within specified time intervals

(9) Flammable and hazardous materials are properly segregated and stored

(10) Serviceable and unserviceable parts are identified and segregated

(11) Shelf life limits are controlled

G. *Analyze Findings.* Upon completion of inspection, record all deficiencies noted. If inspection was performed by the office having geographic responsibility, coordinate all findings with Certificate Holding District Office principal inspectors. Determine appropriate corrective action(s) to be taken.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- If inspection was performed by the office having geographic responsibility, a report submitted to the Certificate Holding District Office
- If inspection was performed by the Certificate Holding District Office, a letter informing the operator/applicant of the results of the inspection
- Enforcement Investigation Reports, as necessary

C. *Document Task.* File all supporting paperwork in the operator/applicant's and contracting agency's office files.

9. FUTURE ACTIVITIES. If deficiencies are noted, schedule a reinspection at later date.

CHAPTER 225 ISSUE AIRWORTHINESS CERTIFICATE FOR AN AIRCRAFT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3402

B. *Avionics:* 5402

3. OBJECTIVE. This chapter provides guidance in certificating an aircraft.

5. GENERAL. The Manufacturing Inspection District Offices (MIDOs) are responsible for the original airworthiness certification of all aircraft. Even though the Manufacturing Inspection District Offices are given this authority, they have the option, with proper coordination, of delegating this responsibility to a Flight Standards District Office having appropriately qualified airworthiness inspectors.

NOTE: Airworthiness inspectors are responsible for all recurrent certifications.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 21
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type and concept of aircraft being certificated

B. *Coordination.* This task requires coordination with the operator/applicant and Manufacturing Inspection District Office.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 45, 47, and 91
- Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended
- Aircraft manufacturer's manuals

B. *Forms*

- Certification forms, as required per Order 8130.2, Appendix 1, as amended

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Application.* Review for the following:

- Eligibility
- Completeness
- Whether the product is "new/original" or "used/recurrent"

B. *Inspect the Product*

(1) Coordinate with operator/applicant to schedule inspection of product.

(2) Ensure the aircraft conforms to the requirements of the type certificate data sheet per Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended.

(3) Review aircraft/engine records as necessary.

C. *Complete Forms.* Complete the applicable forms in accordance with the requirements of Order 8130.2, as amended.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in issuance of a certificate.

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 226 ISSUE IMPORT/EXPORT AIRWORTHINESS APPROVAL

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*

- Export Aircraft: 3421
- Export Engines/Propellers: 3448
- Export Class II: 3450

B. *Avionics:*

- Export Aircraft: 5421
- Export Engines/Propellers: 5448
- Export Class II: 5450

3. OBJECTIVE. This chapter provides guidance in processing an import/export certification project.

5. GENERAL

A. Manufacturing Inspection District Offices (MIDOs) have the responsibility for the airworthiness certification of import/export aeronautical products. Even though the Manufacturing Inspection District Offices are given this authority, they have the option, with proper coordination, of delegating this responsibility to a Flight Standards District Office having appropriately qualified airworthiness inspectors.

B. Inspectors are not authorized to issue export or conformity approvals for Class III products. Class III products are classified as generally detailed parts and minor assemblies whose failure would not jeopardize aircraft safety.

C. Only products that have been previously certificated, exported, and brought back into the U.S. are considered to be a recurrent certification.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 21
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of equipment being imported/exported

B. *Coordination.* This task requires coordination with the operator/applicant and Manufacturing Inspection District Office.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 39, 45, and 47
- Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 225
- Manufacturers manuals, as applicable
- Advisory Circular 21-2, Export Airworthiness Approval Procedures, as amended

B. *Forms*

- Import/Export forms, as required per Order 8130.2, Appendix 1, as amended

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Application.* Review for the following:

- Eligibility

- Completeness
- Whether the product is "new/original" or "used/recurrent"

B. *Inspect Product*

(1) Coordinate with operator/applicant to schedule the inspection of the product.

(2) Ensure the product conforms to the requirements of the importing/exporting country per Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended.

NOTE: The appendices of Advisory Circular 21-2, Export Airworthiness Approval Procedures, as amended, contain information concerning special requirements of foreign countries, bilateral airworthiness agreements, and International Civil Aviation Organization (ICAO) member states.

C. *Complete the Forms.* Complete the applicable forms in accordance with the requirements of Order 8130.2, as amended.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in the following:

(1) An issued certificate

(2) The operator/applicant (exporter only) accomplishing the following:

- Requesting cancellation of the U.S. registration and Airworthiness Certificate
- Returning the certificates to the FAA
- Submitting a statement certifying that the U.S. identification and registration numbers have been removed from the aircraft, if applicable

C. *Document the Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 227 EVALUATE OPERATOR'S REFUELING PROCEDURES

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3356

B. *Avionics:* 5356

3. OBJECTIVE. This chapter describes the process used to evaluate an applicant's refueling procedures and facilities.

5. GENERAL

A. An applicant must have procedures for handling and dispensing aircraft fuels. The following must be included as components of the applicant's manual:

- Dispensing equipment procedures
- Electrostatic protection procedures
- Contamination protection procedures
- Related recordkeeping procedures

B. The applicant's manuals must include procedures for vendors and contractors. Federal Aviation Regulations do not establish standards for fueling facilities, but this does not relieve the applicant of overall responsibility for conducting those operations within established industry standards.

7. FUELS

A. *Aviation Gasoline.* The naming system for the grades of aviation gasoline is derived from the general term "AVGAS," a widely used abbreviation of the words "aviation gasoline", followed by the grade marking. The grades are identified by their performance numbers, as recognized by all military and commercial specifications, e.g., 80, 100LL, and 100.

(1) The naming system for AVGAS grades is printed on all containers in white letters and numbers on a red background.

(2) Storage containers are also marked with a circular band around the piping, the color of which matches the dye in the AVGAS flowing through the line. The dyes are red for AVGAS 80, blue for AVGAS 100LL, and green for AVGAS 100. A minimum 4-inch wide band is recommended. If the pipeline is painted the color of the AVGAS, then no banding is needed.

B. *Jet Fuels.* The three classifications of aviation turbine fuels are universally referred to as "jet fuels" and generally known as JET A, JET A-1, and JET B-1.

(1) The naming system for the jet fuel is printed on all containers in white letters on a black background to distinguish it from aviation gasoline.

(2) Storage containers are marked with a single 4-inch wide (minimum) black band around the piping to identify JET A Fuel, two 4-inch wide (minimum) black bands to identify JET A-1 fuel, and three 4-inch wide (minimum) yellow bands to identify JET B-1 fuel.

9. GEOGRAPHIC CONSIDERATIONS. Inspections of contract fueling facilities by the office having the geographic responsibility must be coordinated with the Certificate Holding District Office.

11. REVIEWING THE MANUAL. Maintenance inspectors must determine that the applicant's manual contains appropriate instructions for storage and dispensing of aviation fuels. The instructions must be in accordance with current industry standards.

13. INSPECTING THE FACILITIES. The maintenance inspectors are responsible for ensuring that the applicant's facilities comply with the manual procedures and established industry standards. For contracted services, it is still the applicant's responsibility to ensure adherence to the manual procedures and standards.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with the applicant.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- 49 CFR Part 173
- Advisory Circular 150/5230, Aircraft Fuel Storage, Handling, and Dispensing on Airports, as amended
- National Fire Protection Association (NFPA) Pamphlets 407 and 70
- Order 8300.10, Airworthiness Inspectors Handbook, appropriate certification chapters

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Applicant's Manual.* Ensure that the manual indicates whether services will be performed by the operator or contracted out.

(1) Review the applicant's manual to ensure that it defines the following:

- Lines of authority and responsibilities
- The applicant's training program
- The vendor's training program, if applicable

(2) Ensure the manual contains procedures for the following:

- Inspection of incoming fuels
- Elimination of fuel contamination
- Use of dispensing equipment
- Refueling and defueling, by specific make and model of aircraft

(3) Ensure the manual includes procedures for record retention and ongoing inspections of the following:

- Fuel (millipore checks, etc.)
- Storage facilities and dispensing equipment
- Filters
- Safety equipment
- Training programs for servicing personnel
- Individual training records
- Vendors (in accordance with applicant's program)

(4) If the manual is acceptable at this point, continue on to the facilities inspection. If the manual is unacceptable, return it to the applicant for corrections and/or revisions.

B. *Inspect the Facility*

(1) Ensure the following:

- Personnel training requirements are documented and current
- Training is conducted according to the manual curriculum
- Piping is marked and color coded to identify fuel type and grade
- Control/cutoff valves are clearly marked with instructions for emergency use, e.g., on/off

(2) Ensure the fuel farm/storage area provides for the following:

- Proper security (fenced and posted)
- Proper display of "Flammable" and "No-Smoking" signs
- Markings to identify type/grade of fuel

(3) Ensure the equipment includes the following:

- A positive low point sump
- Adequate fire extinguishers

(4) Ensure that fuel filters/filter separators contain, at a minimum, the following:

- An inlet strainer
- Inflow and outflow filter/separators sized to match maximum pump flow capacity
- Differential pressure check system
- Positive water defense system
- Sump drain with outlet located to facilitate capture of outflow
- Fuel sampling (millipore or equivalent) fittings downstream of all filters and filter/separators

(5) Ensure that hoses, nozzles and outflow connectors are:

- Specifically designed and tested for delivery of aviation fuels
- Controlled by spring-loaded, non-bypassable automatic (deadman) fuel flow cutoff valves
- Equipped with dust cap or other feature that will minimize contaminant introduction into fuel/system
- Equipped with non-bypassable 100 mesh nozzle/connector screens
- Color coded to identify fuel type

(6) Ensure that electrical equipment, switches, and wiring are of a type or design approved for use in hazardous locations (explosion proof, e.g., free of exposed conductors, contacts, switches, connectors, motors, etc).

(7) Verify that grounding and bonding equipment ensures that piping, filters, tanks, and electrical components are electrically bonded together and interconnected to an adequate electrical ground. The system should have ground wires, bonding wires, and clamps adequate to facilitate prompt, definite electrical ground connection between fueler/pit/cabinet, grounding system, and aircraft being fueled.

(8) Ensure that fuel tenders and fueling pits have the following:

- Appropriate markings displayed, e.g., "DANGER", "FLAMMABLE", "NO SMOKING", fuel grade, standard hazardous material placard, filter due dates, and emergency fuel shutoff
- Appropriately placed fire extinguishers
- Air filter/spark arrestor and a leak-free exhaust system terminating in a standard baffled original equipment type muffler, if equipped with internal combustion engine

C. *Debrief Applicant.* If any deficiencies are noted, discuss possible corrective actions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will result in continuation of the certification task in accordance with the appropriate certification process.

C. *Document the Task.* File all supporting paperwork in the applicant's office file.

9. FUTURE ACTIVITIES. Transfer from certification process to normal surveillance activities.

[CHAPTERS 228 THROUGH 234 RESERVED]

CHAPTER 235 INTRODUCTION TO AVIONICS

1. GENERAL. Avionics inspectors have the primary responsibility for airworthiness program functions that involve avionics equipment and systems. The duties listed below are functions that require the specific expertise and experience related to the avionics specialty.

A. The primary avionics duties, responsibilities, and functions, based on the applicable Air Transport Association (ATA) chapter coding system, include the evaluation/monitoring/inspection of the following equipment and systems:

(1) Autopilots

(2) Communications

(3) Electrical power

(4) Instruments

(5) Lights

(6) Navigation

(7) Engine indicating

B. The secondary avionics duties, responsibilities, and functions, based on the applicable ATA chapter coding system, includes the evaluation/monitoring/inspection of the following equipment and systems:

(1) Fire protection/detection

(2) Flight control logic system - indicating

(3) Fuel/Fuel system - indicating

(4) Ice and rain protection: Pitot - static, Antennas - radome, Detection

(5) Landing gear: Position and warning, Anti skid - electronics,

(6) Airborne aux power indicating

(7) Door warnings

(8) Rotors indicating

(9) Powerplant electrical harness

(10) Engine fuel and control indicating

(11) Ignition electrical power supply

(12) Air indicating

(13) Oil indicating

CHAPTER 236 EVALUATE AVIONICS TEST EQUIPMENT

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5378/5379

3. OBJECTIVE. This chapter provides guidance for the evaluation of test equipment used during the calibration, repair, and overhaul of avionics equipment.

5. GENERAL. A repair facility certificated to maintain airborne avionics equipment must have test equipment suitable to perform that maintenance. Regardless of the type of equipment being used, the minimum test equipment necessary to perform the maintenance, as required by the manufacturer, is acceptable.

A. *Test Equipment Equivalency.* Normally, test equipment equivalent to that recommended by the appliance or aircraft manufacturer will be accepted.

(1) Before acceptance, a comparison should be made between the specifications of the test equipment recommended by the manufacturer and those proposed by the repair facility.

(2) The test equipment must be capable of performing all normal tests and checking all parameters of the equipment under test. The level of accuracy should be equal to or better than that recommended by the manufacturer.

B. *Test Equipment Updating*

(1) State-of-the-art advances often affect the modes and parameters of avionics equipment. Therefore, previously accepted test equipment may need to be modified to ensure compatibility with the new equipment to be tested.

(2) Surplus military test equipment is sometimes used by repair facilities as a primary test unit or as a backup in case of failure of the primary test unit. Modification of this equipment may be necessary to meet current industry standards and equivalency requirements.

C. *Test Equipment Calibration.* The regulations require that maintenance facilities test the test equipment at regular intervals to ensure correct calibration.

(1) National Institute of Standards and Technology traceability can be verified by reviewing test equipment calibration records for references to National Institute of Standards and Technology test report numbers. These numbers certify traceability of the equipment used in calibration.

(2) If the repair station uses a standard for performing calibration, that standard can not be used to perform maintenance.

(3) The calibration intervals for test equipment will vary with the type of equipment, environment, and use. The accepted industry practice for calibration intervals is usually one year. Considerations for acceptance of the intervals include the following:

- Manufacturer's recommendation for the type of equipment
- Repair facility's past calibration history, as applicable

(4) If the manufacturer's manual does not describe a test procedure, the repair station must coordinate with the manufacturer to develop the necessary procedures prior to any use of the equipment.

(5) Test equipment that is not used to certify items as airworthy (troubleshooting only), should be placarded as such and are excluded from the requirement for periodic calibration traceable to National Institute of Standards and Technology.

7. AUTOMATIC TEST EQUIPMENT (ATE). The following guidance should be used to determine the adequacy of maintenance procedures and programs established for the use of ATE. This criteria is intended for the application of ATE to the specific performance evaluation of line replacement units.

A. ATE is a self-contained unit configured and integrated to provide rapid and accurate testing of digital and analog avionics equipment. ATE consists of the following:

- Programmable stimulus and measurement devices
- Digital computer hardware and software

- Digital computer peripheral equipment and interface devices
- A means of providing printouts of the test results

B. ATE is generally installed at a repair facility as part of the shop test equipment. ATE can vary in size from large units at a repair station to smaller portable units used in ramp inspections.

(1) A number of avionics systems used on current aircraft are of such complexity that no manual test equipment has been designed for their testing. Even manufacturers will employ ATE for the testing of production units when no manual test equipment is available.

(2) If an ATE is to be used on different types of avionics equipment that are similar in function, it must have self-testing features that ensure that the unit is operating within acceptable tolerance limits.

9. BUILT-IN TEST EQUIPMENT (BITE)

A. BITE is characterized primarily as a self-test feature built into the airborne component system as a passive fault indicator. If the functional signal flow stops or increases beyond a maximum acceptance level, a visual/aural warning is displayed to indicate a malfunction has occurred. Warnings are either automatic or generated by the manual selection of switching devices. Some of the functions or capabilities of BITE include the following:

(1) Evaluations that include:

(a) Systems status and malfunction verification by:

- The use of go/no-go alarms
- Quantitative readouts

(b) Degraded capabilities status, including:

- Marginal circuit operation
- Degree of functional mode deterioration

(2) Continuous critical monitoring that provides:

- Continuous readout
- Sampled recorder readout
- Module and/or subassembly failure isolation

B. Prior to acceptance, the inspector must determine that the limitations, parameters, and reliability of the testing system are equal to or better than the components and/or systems to be tested. If this cannot be proven, then it is the inspector's responsibility to require a complete reevaluation of the program or, when necessary, request assistance from the FAA Regional Office or Directorate.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspector's Indoctrination course
- Completion of the Test Equipment Course

B. *Coordination.* This task may require coordination with the Principal Maintenance Inspector and the manufacturer.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, 91, 121, 125, 135, and 145
- Advisory Circular 145-3, Guide For Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 165

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Perform the Inspection*

(1) Determine which test equipment is required by reviewing the applicant and/or manufacturer's maintenance manuals.

(2) Determine if the applicant is requesting the use of equivalent test equipment. Prior to the acceptance of equivalent test equipment, accomplish the following:

(a) Ensure that the limitations, parameters, and reliability of the proposed test equipment are equivalent to the manufacturer's recommended test equipment

(b) Compare the specifications of the manufacturer's and applicant's proposed equipment

(c) Observe demonstrations of the proposed test equipment equivalency

(d) Request assistance from the appropriate FAA office, as necessary

(3) Ensure that the applicant has full control of test equipment, i.e. ownership, lease, etc.

(4) Ensure that the applicant's manual includes procedures for the following:

- Identification of the test equipment
- Inspection and calibration of test equipment
- Recording of the date and identification of the person accomplishing the calibration

(5) Inspect all evaluation and test equipment, including precision tools and measuring devices, to ensure the following:

(a) That all equipment has been tested at regular intervals and is within its required currency period

(b) That test equipment calibration standards are derived from and traceable to one of the following:

- The National Institute of Standards and Technology
- Standards established by the test equipment manufacturer
- If foreign manufactured test equipment, the standards of the country where it was manufactured, if approved by the Administrator

B. *Evaluate ATE/BITE*

(1) Ensure the following:

(a) That the ATE/BITE testing programs provide an in-depth analysis that ensures that the aircraft components are functionally tested within the prescribed manufacturer's limits

(b) That all required checks are accomplished

(c) That the applicant has established procedures that outline and describe the total program and related management control for the ATE unit, to include the following:

- Limits and standards
- Performance evaluation checks and tests
- Identification of individual ATE, by test number
- Maintenance programs
- The source of the ATE program tapes, (either in-house programming or approved purchase)
- The method of controlling and identifying the revision status of software programs

(2) Determine if the applicant's purchasing maintenance service ensures that all services are accomplished in accordance with the applicant's approved maintenance program.

(3) Ensure that whenever a BITE examination is substituted for a manual check, it performs the required qualitative and quantitative tests and analyses to substantiate the component and/or system performance.

(4) Ensure that when approving BITE as a substitute for actual manual checks, that the self-check is of sufficient depth to perform the required task.

NOTE: Inspectors should not be misled by such statements as "confidence factor" which have no specific meaning unless defined.

(5) Ensure that the analysis of BITE includes the limitations and shows whether it checks the component and its associated plugs and wiring.

NOTE: Some quantitative BITE may not be capable of checking a total system, such as ILS, unless a signal is introduced into the antenna.

C. *Analyze Results.* Review inspection results and discuss any discrepancies with the applicant.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

(1) Coordination of inspection results with the certification project manager, if part of a certification project

(2) Acceptance/approval or non-acceptance/disapproval of the test equipment

(3) Issuance of a letter to the operator/applicant detailing the results of the inspection

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 237 EVALUATE AVIONICS EQUIPMENT APPROVAL

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5446

3. OBJECTIVE. This chapter provides guidance for evaluating the approval of avionics equipment and instruments.

5. GENERAL. The Federal Aviation Regulations require that certain avionics instruments and equipment be approved regardless of whether the aircraft is operated as an air carrier or under general aviation.

A. *Approval of Instruments and/or Equipment*

(1) The certification process for FAR Parts 121/135 and 125 must include verification that the required instruments and equipment are approved. The instrument or equipment approval can be accomplished by the following:

- Use of a Technical Standard Order (TSO)
- Acceptance as part of the aircraft on the original Type Certificate (TC) or Supplemental Type Certificate (STC)
- Parts Manufacturing Approval (PMA)
- Field approval (FAA Form 337)

(2) Verification of approval can be accomplished by various means, such as visual inspection of the equipment manufacturer's data plate and/or review of applicable records, such as flight manual equipment lists or maintenance records.

B. *Requirements for Air Carriers Operating under a Continuous Maintenance Program.* The major components of instruments and equipment listed in the Air Transportation Association systems (22, 23, 24, 31, 33, 34, and 77) must be identified by one of the following methods:

- By name and manufacturer on the operations specifications
- On an approved document referenced and identified by the operations specifications

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination Course
- Knowledge of FAR Parts 91, 121/135, and 125, as applicable
- Knowledge of the equipment/instruments to be approved

B. *Coordination*

(1) Coordination with FAA engineering personnel and/or the equipment manufacturer may be required when previous equipment approval has not been issued or operating limitations cannot be determined (reference Vol. 2, Ch. 1).

(2) Equipment approvals for air carriers may require coordination with Principal Operations or Principal Maintenance Inspectors in situations involving lower landing minimums, long range navigation systems, flight control systems, etc.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 21, 23, 25, 27, 29, and 43
- Advisory Circular 121, Standard Operation Specifications, as amended
- Advisory Circular 135, Air Taxi Operators and Commercial Operators, as amended

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Applicable Regulations.* Determine which instruments and/or equipment require approval.

B. *Verify Approval*

(1) If the equipment data plate does not indicate the appropriate approval status, determine through the operator's records the method by which the equipment received approval.

(2) Ensure that all avionics equipment requiring FAA approval has the appropriate documentation for that approval. If FAA approval cannot be substantiated, the equipment and/or aircraft can not be used until substantiated by the owner/operator.

(3) Ensure that the equipment is used only on the aircraft for which it is approved.

(4) Ensure that any spare instruments/equipment are approved. If substitutes (i.e. military) are to be used as spares, verify their approval and the authority to install them on the aircraft.

NOTE: Instruments and equipment that have not been maintained or altered in accordance with accepted practices and procedures could affect the approval basis. Changes to the basic design of avionics equipment may render the approval invalid.

C. *Review Air Carrier Documents, as Appropriate.* Ensure instruments and equipment are appropriately identified by one of the following methods:

- Make and model on the operations specifications
- An approved document referenced and identified on the operations specifications

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task could result in a letter describing any limitation(s) on the use of the instrument or equipment until deficiencies are corrected or approval is obtained.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Follow-up activity, as required.

CHAPTER 238 EVALUATE AIRBORNE MICROWAVE LANDING SYSTEMS

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5434

3. OBJECTIVE. This chapter provides guidance in evaluating airborne Microwave Landing Systems for approval.

5. GENERAL

A. The present generation of VHF/UHF/ILS is precluded from widespread use due to congestion, siting, fiscal, and other industry problems. The need for a system to satisfactorily replace the VHF/ILS has prompted industry to develop a number of wide angle, scanning microwave landing systems. These systems have been approved for some operators as a landing aid during Instrument Flight Rules (IFR) conditions.

B. Tactical Landing Approach Radar (TALAR) is an early microwave landing system used by some air carriers. Recently, the International Civil Aviation Organization (ICAO) selected the Time Reference Scanning Beam (TRSB) Microwave Landing System as the standard precision landing system to replace the ILS, and has adopted a plan for transition to this system.

C. A particular advantage of a microwave landing system is that it will increase the number of Cat II/III airports and expand the horizontal approach angles available.

7. APPROVALS. The installation and operational approval of airborne microwave landing systems require extensive evaluation and flight testing. Therefore, approval of such systems must be defined through Type Certificate (TC) or Supplemental Type Certificate (STC).

9. MAINTENANCE PROGRAM REQUIREMENTS. The operator must provide a complete maintenance program acceptable to the assigned Principal Avionics Inspector. The program must include inspection and maintenance schedules appropriate to any lower landing minimum from which the application was derived. (See Vol. 2, Ch. 3, Evaluate Category I/II/III/IIIA Landing Minimum Maintenance/Inspection Programs.)

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination Course
- Knowledge of the regulatory requirements of FAR Parts 91, 121/135, 125, and 129, as applicable

B. *Coordination.* This task may require coordination with FAA engineering and will require coordination with the air carrier's Principal Operations Inspector.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 171
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 3, Evaluate Category I/II/III/IIIA Landing Minimum Maintenance/Inspection Programs

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Initiate the Approval Process*

(1) Determine aircraft acceptability.

(a) Coordinate with the operations inspector and the Aircraft Certificating Office of the aircraft Type Certificate, if applicable.

(b) Review the operator submitted supporting approval data, if available.

(2) Accomplish the following, as applicable:

(a) If the operator applies for an original Supplemental Type Certificate, arrange for the operator to coordinate with FAA Engineering for the approval

(b) If the operator selects a microwave landing system with a Supplemental Type Certificate that has been approved for the operator's type of aircraft, ensure the system is installed in compliance with the Supplemental Type Certificate

(c) If the operator selects a microwave landing system that is an approved option for the applicable aircraft, ensure the operator complies with the manufacturer's installation instructions

B. *Review the Maintenance/Inspection Program (FAR Part 91).* Review the applicant's maintenance/inspection program to ensure that it contains control and accountability of the following:

(1) All maintenance accomplished on lower minimum required systems and equipment

(2) All alterations to systems and equipment

(3) The continuous approach status of each aircraft

(4) The evaluations of self test, maintenance calibration, use of test equipment, and records/reporting requirements

(5) Repetitive and chronic discrepancies, to ensure the affected aircraft remains out of lower minimums approach status until positive corrective actions are taken

C. *Review the Existing Maintenance/Inspection Programs (FAR Parts 121/135 and 125)*

(1) Ensure that the existing maintenance/inspection program has procedures for the following:

(a) Performing initial evaluation checks on existing aircraft and for new aircraft added to the fleet prior to authorizing microwave operation

(b) Identifying all components used in the microwave landing system for use in the control of the existing parts pool and parts borrowing procedure

(c) Ensuring that calibration standards for all test equipment used for maintaining microwave landing systems and equipment are met

(2) Ensure that the existing maintenance/inspection program contains control and accountability of the following:

(a) All maintenance accomplished on lower minimum required systems and equipment

(b) All alterations to systems and equipment

(c) The continuous approach status of each aircraft

(d) The evaluations of self test, maintenance calibration, use of test equipment, and records/reporting requirements

(e) Repetitive and chronic discrepancies, to ensure the affected aircraft remains out of lower minimums approach status until positive corrective actions are taken

D. *Review the Minimum Equipment List.* Ensure that the appropriate sections of the Minimum Equipment List (MEL) have been revised to identify microwave landing systems and special procedures, if applicable.

E. *Review Personnel Training Requirements.* Ensure adequate procedures exist for the training of maintenance personnel.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task will consist of coordinating the results of the evaluation and approval of the avionics requirements and associated support programs with the operations inspector.

C. If the operator proposes Cat II/III landing minimums, ensure compliance with the procedures of Vol. 2, Ch. 3.

9. FUTURE ACTIVITIES. None.

CHAPTER 239 APPROVE ALTIMETER SETTING SOURCES

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5451

3. OBJECTIVE. This chapter provides guidance for the initial approval of an altimeter setting source.

5. GENERAL

A. Order 8260.3, U.S. Standard for Terminal Instrument Procedures, provides for the use of remote altimeter setting sources and gives guidance in procedural development involving precipitous terrain and/or non-homogeneous weather characteristics.

B. The Flight Procedures Branch controls all matters pertaining to altimeter setting sources used in instrument approach procedure development.

(1) Upon receipt of a request for an instrument approach procedure, the Flight Procedures Branch will advise the applicant of the need (if required) of a local altimeter setting source and provide a copy of the current Advisory Circular for such sources.

(2) The Flight Procedures Branch will advise the appropriate Flight Standards District Office of any location requiring the approval of their altimeter setting sources.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination course
- Completion of Altimeter and Barometry Course

B. *Coordination.* This task requires coordination with the Regional Flight Procedures Branch, through the Flight Standards Branch.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 91-14, Altimeter Setting Sources, as amended
- Order 8260.3, U.S. Standard for Terminal Instrument Procedures

B. *Forms*

- Regional forms, as applicable

C. *Job Aids.* None.

5. PROCEDURES

A. *Respond to the Request*

(1) Notify the Regional Flight Procedures Branch if the request is initially received by the Flight Standards District Office.

(2) Ensure that the applicant has read and understands Advisory Circular 91-14, Altimeter Setting Sources, as amended.

B. *Inspect the Facility Location*

NOTE: Applicants should select two altimeters that display the same scale error on each altimeter at the elevation where they will be used.

(1) Ensure the following:

(a) That the applicant has provided the following:

- Two aircraft type sensitive altimeters which meet the systems test and inspection requirements of FAR Part 43, Appendix E, Technical Standards Order-C10b if new altimeters, and/or

Advisory Circular 91-14, as amended, as applicable

- Altimeters that have been calibrated within 30 days by an FAA-approved facility

- A facility that is maintained at a reasonably consistent temperature, free from drafts

NOTE: If the altimeters are located in a room heated or cooled by forced air systems, the effect of these systems upon the altimeters should be evaluated.

- Proper venting to ensure that if an error in excess of 10 feet is induced by the use of forced air systems, an outside vent (static source) is in use

(b) That altimeters are mounted in a box or rack that precludes damage from mishandling and ensures a reasonable, permanent location

(c) That the facility has established a known height above mean sea level $\pm$ 1 foot that is marked on the instruments or posted immediately adjacent to them

NOTE: Height may be determined and certified by a surveyor.

(2) Evaluate the method to be used in communicating the altimeter setting information to the pilot.

C. *Analyze Results.* Brief the applicant, as required.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

(1) An inspection report that contains at least the following information:

- The shelf height of instruments and how this was obtained

- The calibration dates, serial numbers, and scale error of altimeters at shelf height

- The Unicom frequency and the hours operated

- A list of the personnel in charge and their phone numbers

- A statement of satisfactory compliance or discrepancies found

(2) Distribution of inspection report to the following:

- Regional Flight Procedures Branch

- Local Flight Standards District Office file

9. FUTURE ACTIVITIES. Transfer of certification activities to normal surveillance activities.

CHAPTER 240 APPROVE USE OF MANUFACTURER'S AVIONICS RENTAL/ EXCHANGE PROGRAMS FOR COMMUTER AIRLINES

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5458

3. OBJECTIVE. This chapter provides guidance for approving the use of manufacturers' avionics rental/exchange programs by commuter airline operators.

5. GENERAL

A. Avionics rental/exchange programs are designed to provide operators a low cost method of obtaining new/overhauled replacement units. The program begins when an operator requests a rental/exchange unit. The manufacturer locates a new/overhauled unit and sends it to the operator in exchange for the old unit. After the old unit is overhauled back to original specifications, it is placed in the manufacturer's inventory to be made available as a replacement unit.

B. *Requirements*

(1) *Records.* Records supporting any work accomplished on the units are retained at the manufacturer's maintenance facility or the repair station where the work was performed. However, the maintenance release documents and all other required records, including records requested by the carrier, must accompany the unit.

(2) *Contract.* The rental/exchange program requires an agreement between the operator and the manufacturer in the form of a contractual arrangement. The agreement must include a list that identifies the equipment included in the program. Although not required, it may include an expiration date.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task may require coordination with the legal department.

3. REFERENCES, FORMS AND JOB AIDS

A. *References.* None.

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator's Contract or Agreement*

(1) Ensure the air carrier has control of the rental/exchange program.

(2) Ensure that the contract contains procedures for tracking the total time till overhaul for the units.

(3) Determine if a termination or expiration date exists.

(4) Review the operator's program carefully to ensure the following:

(a) That procedures for the use of replacement units are appropriate

(b) That the operator's program includes a procedure to ensure that rental/exchange units are of the same configuration as the unit(s) being replaced

(c) That if the units are of a different configuration, the operator has determined and confirmed the compatibility

B. *Review the Operator's Manual*

(1) Ensure that any changes in terms of the equipment, expiration date, or the program itself are incorporated into the operator's manual.

(2) Ensure that the name of the contractor and a general description of the contracted work are included.

(3) Ensure that the location at which the equipment records are to be maintained is identified.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

(1) If the program is satisfactory, amendment of the operations specification to show approval of the operator's use of the program

(2) If the program is unsatisfactory, return of the applicable documents to the operator along with identification of the deficiencies and/or reasons for the denial

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance of the program, to include monitoring of the contract or agreement expiration date.

CHAPTER 241 APPROVE AREA NAVIGATION SYSTEMS

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5432

3. OBJECTIVE. This chapter provides guidance in approving area navigational systems.

5. GENERAL. The inspector may need to refer to specific Advisory Circular(s) and regulations for individual systems in order to accomplish this approval.

A. *Approvals.* Field approval for an area navigation (RNAV) system should not be considered unless the applicant has provided previously approved data. This data must be in the form of a Type Certificate (TC) or Supplemental Type Certificate (STC) for an airplane or rotorcraft of like or similar configuration utilizing approved system components.

(1) For FAR Part 121 operators, Inertial Navigation Systems and Dopplers must meet the requirements specified in FAR Part 121, Appendix G prior to formal approval. Under these requirements a Supplemental Type Certificate must be obtained by the applicant.

(2) Installation approvals of other types of area navigation equipment should be obtained with a Supplemental Type Certificate. However, approval can also be obtained by submission of substantiating data with either an FAA Form 337 or an air carrier engineering authorization.

(3) The applicant must furnish all of the installation data necessary to determine the adequacy of the installation. Such data should include the following:

- Manufacturer's instructions
- Electrical schematics and failure protection
- Installation information and/or photographs
- Substantiation of structural changes
- Determination of capability of electrical system and failure protection to handle additional load
- Any other data determined necessary for approval

(4) FAA-approved manufacturer service bulletins which list approved instructions for the installation of certain Area Navigation Systems may be used.

(a) In some cases, the facility making the installation has demonstrated its ability to install this equipment on a representative number of similar type installations through field approvals.

(b) References to previous approvals on FAA Form 337 would constitute previously-approved data and may not require a separate field approval. In this case, a letter from the Flight Standards District Office or General Aviation District Office authorizing the installation facility to perform similar installations would be appropriate.

(c) Alterations which do not differ appreciably from previously approved changes may not require new or additional approval.

B. An installation may be approved for Visual Flight Rules (VFR) operation after meeting the provisions discussed above. The aircraft should be placarded to limit the use of the Area Navigation System to VFR only, unless the aircraft itself is limited to VFR.

C. Systems do not require VFR approval prior to Instrument Flight Rules (IFR) approval. An application for IFR approval should contain data substantiating that the equipment and installation meet the criteria in Advisory Circular 90-45, Appendix A, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, as amended.

D. *Original VFR Approval Changes to IFR Approval.* Operators have installed area navigation systems in a variety of aircraft for use in VFR operations only. Operators have the option of upgrading these systems to allow for IFR operations as well.

(1) When such a request is received, an FAA Form 337 should be prepared on which the approval for Instrument Flight Rule operations will be properly documented. Item 8 of FAA Form 337 should provide at least the following information:

- Reference to the FAA Form 337 which recorded the original VFR Area Navigation System installation

- Data to confirm that the requirements of Advisory Circular 90-45, Appendix A, as amended, paragraphs 2 and 3, have been met

- If a flight test is conducted, a statement to document the modes of IFR operation for which the system is being approved

(2) The data approval stamp, properly completed, should be placed in Block 3 of FAA Form 337.

(3) If the aircraft has an FAA-approved flight manual, a supplement to the manual may be prepared and submitted for approval, in accordance with regional procedures.

(a) An additional copy of the FAA Form 337 detailing the original installation must accompany the flight manual supplement approval request.

(b) The date of the flight manual supplement must not be later than the approval for return-to-service date, as shown on the FAA Form 337.

(4) If the aircraft does not have an FAA-approved flight manual, then information on equipment operating limitations and manufacturer's operating instructions must be provided to the pilot by means of a placard.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination Course

- Identification and authorization to perform field approvals by the regional Flight Standards Division

B. *Coordination.* Engineering assistance should be obtained for a field approval unless the inspector has previous experience with area navigation installations and feels competent to make such approval.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 121, Appendix G

- Advisory Circular 20-101, Omega and Omega/VLF Navigation Systems Approvals for Use in the Conterminous United States and Alaska, as amended

- Advisory Circular 20-121, Airworthiness Approval of Airborne Loran-C Systems for Use in the U.S. National Airspace System, as amended

- Advisory Circular 25-4, Inertial Navigation Systems, as amended

- Advisory Circular 90-45, Appendix A, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, as amended

- Advisory Circular 120-31, Operational and Airworthiness Approval of Airborne Omega Radio Navigation Systems as a Means of Updating Self-Contained Navigation Systems, as amended

- Advisory Circular 120-33, Operational Approval of Airborne Long-Range Navigation Systems for Flight Within the North Atlantic Minimum Navigation Performance Specifications Airspace, as amended

- Advisory Circular 120-37, Operational and Airworthiness Approval of Airborne Omega Radio Navigational Systems as a Sole Means of Long Range Navigation Outside the United States, as amended

- Advisory Circular 121-13, Self-Contained Navigation Systems (Long-Range), as amended

- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 1, Perform Field Approval of Major Repairs and Major Alterations

B. *Forms*

- FAA Form 337, Major Repair and Alteration

C. *Job Aids.* None.

5. PROCEDURES

A. *Follow the Procedures Detailed in the Applicable Advisory Circular(s)*

B. *Review Operator's Data.* Review Supplemental Type Certificate(s) and installation data, as applicable. Extra consideration must be given to the following:

(1) Manufacturer's instructions and limitations, including necessary modification and calibration of all units in the system and previously installed equipment

(2) Interface with auxiliary equipment, sensor inputs, meter loading and sensitivity, etc.

(3) Any reasonable probable failure of the equipment which would cause a flight hazard or affect the normal operation of required equipment to which it is connected

(4) Display location

C. *Conduct Inspections, as Necessary*

(1) Conduct a conformity inspection to ensure the installation conforms to the approved data.

(2) Monitor the ground operational/functional check performed by the installing agency.

(3) Ensure the aircraft is appropriately placarded regarding the limitations of the equipment.

D. *Review FAA Form 337*

(1) Ensure certification dates of flight and/or bench tests are provided.

(2) Ensure limitations on types of approval are clearly stated in Block 8 of FAA Form 337 and on any required approved operations specifications.

E. *Review Air Carrier Training Programs.* Ensure the air carrier establishes training programs on the new equipment and reviews the existing programs on associated equipment. In addition, accomplish the following:

- Conduct spot checks of the training records
- Observe the actual training sessions
- Ensure that the training emphasizes the new equipment, new maintenance techniques, and new procedures and standards

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- Approval of the installation of the equipment
- If the facility making the installation has demonstrated its ability to install the equipment on a representative number of similar type installations through field approvals, an approval letter sent by the Flight Standards District Office or General Aviation District Office authorizing the installation facility to perform similar installations

9. FUTURE ACTIVITIES. None.

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FAR PART 183 REPRESENTATIVES OF THE ADMINISTRATOR

GENERAL FUNCTIONS

AVIONICS

CHAPTER 1 INTRODUCTION TO AIRCRAFT AND EQUIPMENT

1. GENERAL. The following Job Aids are provided as general guidelines for performing interior and exterior inspections. This requires a basic knowledge and familiarity of the type operation being inspected. These guidelines are not intended to be tasks unto themselves, but should be used as additional guidance while performing cockpit en routes, cabin en routes, and ramp inspections.

FIGURE 1-1

INTERIOR INSPECTION GUIDELINES

A. Examine the airworthiness and registration certificates to ensure the following:

- Both certificates are current and valid
- Both certificates contain the same model, serial, and registration numbers
- Temporary registration is current
- Signatures are in permanent-type ink

B. *Flight Deck Inspection*

(1) Inspect the following:

(a) Instrument security and range markings

(b) Windows (delamination, scratches, crazing, and general visibility)

(c) Emergency equipment

(d) Seal on medical kit (if located on flight-deck)

(e) Seat belts and shoulder harnesses (Technical Standard Order marking, metal to metal latching, and general condition)

(2) Check the following if using cockpit jumpseat:

(a) Jump seat oxygen system - turn regulator on and select 100% oxygen

(b) Interphone system - select Comm 1 and Comm 2 to ensure systems are working

NOTE: When the most forward jump seat is in the cabin, coordinate with the crew for connecting the headset and adapter cables.

(c) The jump seat to ensure the seat is serviceable and that seat belt and shoulder harnesses are available

C. *Cabin Inspection.* Inspect the cabin, to include the following:

(1) Lavatory, to ensure the following:

- Fire extinguisher system is installed in sealed trash containers
- Smoke detection system is installed
- Trash containers are sealed according to applicable Airworthiness Directive(s)
- "No Smoking" placards are posted

FIGURE 1-1

INTERIOR INSPECTION GUIDELINES (CONT'D)

- Ashtrays are available outside the lavatory

(2) Flight attendant seats, to include:

- Pulling the jump seat down to ensure seats in the path of the exits retract
- Inspecting seat belts for Technical Standard Order marking, metal to metal latching and general condition

(3) Cabin emergency equipment, to include the following:

- Flight attendant flashlight holder
- Slide containers, to ensure containers are properly marked for content. Check for last inspection date and pressure of slide inflation bottle if visible.
- Medical kit (if not checked on flight deck)
- First aid kit (seal and security)
- Emergency oxygen (proper pressure and security)
- Megaphone(s) (security and general condition)
- Fire extinguishers (security, pressure, seal, and date of last inspection)
- Life raft storage markings (if raft is required)
- Emergency briefing cards (random sample)
- General condition of emergency floor path lighting system
- Placement of all "Emergency Exit" signs
- Presence and legibility of "Emergency Exit" operation instructions
- Placarding for location of all emergency equipment
- Life preservers (vests)

(4) Passenger seats, to ensure the following:

- Seats adjacent to emergency exits do not block exit path
- Seats are secure in seat track (random sample)
- Seat breakover pressure is in accordance with operator standards (random sample)
- "Fasten Seat Belt During Flight" placards are in view from all seats

FIGURE 1-1

INTERIOR INSPECTION GUIDELINES (CONT'D)

- Seat belts have metal-to-metal latches and are in good general condition (random sample)

(5) Galleys/service centers, to include:

- Trash bin lids for fit
- Storage compartment restraints
- Stationary cart tie-downs
- Lower lobe equipment/restraints
- Lift operation
- Galley supply stowage

(6) Overhead baggage compartments for the following:

- Weight restriction placards
- Proper latching of the doors, when applicable

D. *Inspect the Cargo Compartment*

(1) Ensure the following:

- Cargo compartment fire protection is appropriate for its classification
- Cargo liner is free from tears and/or punctures. If these are noted, inspect structure behind liner for damage, e.g., stringers, circumferentials, etc. Ensure sealing tape is proper type and in good condition.
- Cargo door is free of fluid leaks and structural damage
- Fuselage door structure and sill are free of damage
- Smoke detectors are in satisfactory condition
- Lighting is operable and protective grills are installed
- Cargo flooring is free from structural or other damage
- Pallet positions/compartments are placarded for position identification and weight limitations

(2) Inspect pallet system, if applicable. Ensure the following:

- Ball mats are serviceable, e.g., no broken or missing balls
- Forward, aft, and side restraints are serviceable

FIGURE 1-1

INTERIOR INSPECTION GUIDELINES (CONT'D)

- Roller assemblies are secure and have no missing or broken rollers

(3) Ensure the 9G forward restraint net is serviceable, if applicable.

(4) Ensure that cargo restraints for bulk loaded cargo are adequate, if applicable.

(5) Inspect cabin mounted equipment.

(6) Inspect fire extinguishers for inspection due dates and pressure.

(7) Inspect load manifest for Hazardous Material. If present, determine crew knowledge of the following:

- Location and labeling of hazardous materials
- Special requirements, if required

(8) Ensure captain is aware of the following responsibilities:

- Inspection of cargo to ensure proper load distribution
- Ensuring loads do not exceed compartment or position limits
- Ensuring loads are being properly restrained

FIGURE 1-2

EXTERIOR INSPECTION GUIDELINES

NOTE: Accompany a flight crewmember during the exterior inspection, if possible.

A. Inspect the landing gear and wheel well areas for the following:

- Any indication of wear, chafing lines, chafing wires, cracks, dents, or other damage
- Structural integrity of gear and doors (cracks, dents, or other damage)
- Hydraulic leaks (gear struts, actuators, steering valves, etc.)
- Tire condition
- Tire pressure (if pressure indicators are installed)
- Wheel installation and safety locking devices
- Wear, line security, leaks, and installation of brakes
- Corrosion

B. Inspect the fuselage and pylons, to include the following:

- Structure for cracks, corrosion, dents, or other damage
- Fasteners (loose, improper, missing)
- Radome for general condition
- Pitot tubes for general condition
- Static ports (cleanliness and obstructions)
- Stall warning devices and other sensors
- Antennas (security and indications of corrosion)
- Lavatory servicing areas (evidence of fresh blue water streaks)
- Cargo compartments for integrity of fire-protective liners (no holes or unapproved tape used for repairs)
- Emergency exit identification/markings
- Registration marking (legibility)
- All lights (general condition, broken lenses, etc.)

C. Inspect the wings and pylons to include the following:

FIGURE 1-2

EXTERIOR INSPECTION GUIDELINES (CONT'D)

- Structure for cracks, corrosion, dents, or other damage
- Leading edge (dents and/or damage in line with engine inlets)
- Leading edge devices (when open, actuator leaks, general condition of lines, wires, and plumbing)
- All lights (general condition, broken lenses, etc.)
- Flaps (cracks, corrosion, dents, and delamination)
- Flap wells (general condition of lines, wires, and plumbing)
- Static eliminators (number missing)
- Ailerons and aileron tabs (cracks, corrosion, dents, delamination)
- Access door, inspection panels, and blowout panels (missing, loose, or improperly secured)

D. Inspect the engines, to include the following:

- Intake for fan blade damage and oil leaks
- Ring cowl for missing or loose fasteners
- Cowling doors for security and proper fit
- Lower cowling for evidence of fluid leaks
- Exhaust for turbine and tailpipe damage, and evidence of fluids
- Reverser doors for stowage and security, and evidence of leaks
- Access doors for security

E. Inspect the propellers, to include the following:

- Leading edge of propeller for cracks, dents, and other damage
- De-icer boots for signs of deterioration and security
- Spinners for security, cracks, and evidence of fluid leaks

F. Inspect the empennage, to include the following:

- Leading edge for dents
- All lights (general condition, broken lenses, etc.)
- Missing static discharge eliminators

FIGURE 1-2

EXTERIOR INSPECTION GUIDELINES (CONT'D)

- Elevator, rudder, and tabs (cracks, corrosion, dents, and delamination)
- Elevator and rudder power unit for evidence of hydraulic leaks

G. Inspect the ground safety, to include evaluating the following:

(1) Positioning of support vehicles

(2) Fueling of aircraft, to include the following:

- Refueling pressure
- Condition of refueling unit (leaks, filter change dates, exhaust system, etc.)
- Grounding
- Fire protection
- General fueling procedures

(3) General condition of ramp, to include the following:

- Provisions for grounding
- Foreign objects on ramp
- Fuel spills
- General housekeeping/cleanliness
- Passenger control
- Fire protection

H. Inspect the loading and unloading of baggage compartments, to include the following:

- Baggage restraining system
- Load distribution

CHAPTER 2 CONDUCT SPOT INSPECTION OF OPERATOR'S AIRCRAFT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3628

B. *Avionics:* 5628

3. OBJECTIVE. This chapter provides a means of observing and analyzing in-progress maintenance operations for compliance with specific methods, techniques, and practices in the operator's inspection and maintenance program.

5. GENERAL

A. *Definition:* Work package: Job task units developed by the operator for performing maintenance/inspections. A typical work package includes:

- Component change sheets
- Inspection work cards
- Nonroutine work cards
- Appropriate sections of the maintenance procedures manual
- Engineering Orders (EO's)

B. *FAA Inspection Personnel.* It is important that inspectors are familiar with the type of aircraft to be inspected before performing the inspection. This can be accomplished through on-the-job training.

C. *Coordination*

(1) Avionics and maintenance inspectors possess various degrees and types of expertise and experience. An inspector who needs additional information or guidance should coordinate with personnel experienced in that particular specialty.

(2) Geographic units need to establish close coordination with the Certificate Holding District Office. Coordination is required to:

- Gain access to FAA office operator file information not available to the geographic unit
- Transmit all inspection results and/or recommendations to the Certificate Holding District Office
- Receive any changes implemented by the Certificate Holding District Office as a result of geographic units recommendations

7. INITIATION AND PLANNING

A. *Initiation.* Spot inspections can be scheduled as part of the work program, but may be initiated whenever a problem is noted, including deficiencies noted during other types of inspections.

B. *Planning*

(1) *Spot inspections derived from the planned work program*

(a) The number of spot inspections in the work program depends on the type and number of aircraft operated by the operator. After determining the type of aircraft to be inspected, confirm aircraft availability and scheduled maintenance functions with operator personnel.

(b) If the maintenance to be observed is known, review the operator's maintenance procedures manual to become more familiar with the maintenance task. Review the following:

- Required Inspection Items (RII), if applicable
- Forms used to document maintenance task
- Latest manual revision and date
- Special tools and equipment used to perform maintenance task
- Any other manual requirements relating to the maintenance task

(c) For geographic units in which the maintenance procedures manuals are not in the office, the inspector should review the applicable sections of the operator's maintenance manual at its facility prior to performing this task.

(d) Examining previous inspection findings provides the inspector with background information regarding problem areas found during other spot inspections. This information can give the inspector an indication of how effective past corrective actions were in resolving previously identified problem areas.

(e) The FAA provides information such as Action Notices, Service Difficulty Report Summaries, and Maintenance Bulletins. This information should be reviewed by the inspector to become familiar with current service difficulty information. While performing the spot inspection, the inspector should ensure that these conditions do not exist on the aircraft.

(2) *Spot inspections not derived from the planned work program.* There are many situations while performing other surveillance activities that afford the inspector the opportunity to perform spot inspections. For example, if a discrepancy is found during a ramp inspection that requires maintenance, a spot inspection of that maintenance function could be performed.

9. MAINTENANCE RECORDS. During performance of the spot inspection, special attention should be paid to the following areas, as applicable:

- Airworthiness Directive compliance, including the method of compliance
- Overhaul records, including documentation containing the overhaul details and replacement time
- Major repair/alteration classifications and the use of approved data
- Replacement time of life-limited parts

11. PERFORMING SPOT INSPECTION

A. *Selecting a Maintenance Task*

(1) Discuss with the maintenance supervisor what maintenance is currently being performed to determine what portions of that current maintenance/inspection should be observed.

(2) Special emphasis should be placed on observing maintenance tasks that involve Required Inspection Items. Problem areas to look at include:

- Persons performing inspections outside of authorizations or limitations
- Required Inspection Items not being properly identified or accomplished

B. *Performance Standards*

(1) Each operator has a maintenance/inspection program for its individual maintenance operations.

(a) There are no provisions for maintenance to be performed on the operator's aircraft except as provided for in the operator's maintenance manual.

(b) An inspector must pay special attention to any maintenance performed by persons other than the operator's maintenance personnel to ensure that the procedures used were those of the operator.

(2) Each operator should have special procedures in the manual addressing training requirements, authorizations and other provisions that ensure persons outside the organization perform maintenance in accordance with the operator's maintenance manual.

C. *Discrepancies Noted During Surveillance.* When the inspector notes any deviation from accepted procedures, it must be brought to the attention of maintenance management that corrective action must be taken before the task continues. Discrepancies noted during the inspection may require follow-up at a later time.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Previous experience working with an operator with similar type aircraft
- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable

B. *Coordination*

- This task may require coordination between avionics and maintenance inspectors
- Geographic units must coordinate with the Certificate Holding District Office to obtain knowledge of the operator's maintenance procedures and any other items of concern that may surface during routine inspections

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, and 91
- Order 8310.2, Maintenance-Review Case Handbook
- Order 8340.1A, Maintenance Bulletins
- Operator's Maintenance Procedures Manual and inspection work packages
- Headquarters/Regional Action Notices

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Initiate Spot Inspection, as Applicable*

B. *Select Appropriate Aircraft For Inspection.* Determine the following from the operator's maintenance schedules:

- Aircraft availability
- Aircraft type
- Type of maintenance being performed

C. *Prepare For the Inspection.* Review the following:

(1) Maintenance manual procedures for maintenance being performed (if available)

(2) Operations specifications time limitations, when applicable to the maintenance task

(3) Previous inspection findings

(4) Applicable maintenance alert bulletins and/or action notices

(5) Service Difficulty Report Summary

(6) Any new regulation and/or Airworthiness Directive requirements affecting aircraft to be inspected

D. *Perform the Spot Inspection*

(1) Identify yourself to the maintenance supervisor and discuss the nature of your inspection.

(2) Discuss with the maintenance supervisor/person in charge the status of the selected maintenance task.

(3) Select a particular maintenance task within the work package. If possible, include a maintenance task that has been designated by the operator as a Required Inspection Item(s).

(a) Ensure that current maintenance procedures are available to the person(s) performing the work:

- Ask maintenance personnel for maintenance procedures used to accomplish the work
- Record date on maintenance procedures being used to perform the maintenance task for future comparison with the maintenance manual master copy

(b) Ensure that maintenance is performed according to established procedures by comparing actual performance

to the operator's approved maintenance/inspection manual procedures.

(c) Ensure that the proper tools are being used by accomplishing the following:

- Observing that special tools referenced in the maintenance manual are being used
- Checking calibration due dates on precision tools, measuring devices, and testing equipment requiring calibration

(d) Ensure the operator has the facilities to properly perform the maintenance task.

(e) Ensure that systems being maintained are not exposed to environmental conditions that could contaminate or damage components

(f) Ensure that maintenance recording is accomplished according to the operator's recordkeeping system.

(g) Note any maintenance task deficiencies and include any copies of the documents that revealed the deficiencies.

(h) For those maintenance tasks involving Required Inspection Item functions, determine that the persons observed performing these functions are appropriately certificated, authorized, and qualified

E. *Analyze the Findings.* Evaluate inspection findings to determine if discrepancies exist. Discuss results with the operator.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- For geographic units, a copy of inspection results transmitted to the Certificate Holding District Office
- Requested manual revisions

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Based on the analysis of inspection findings, plan increased surveillance of problem areas, as applicable.

CHAPTER 3 CONDUCT RAMP INSPECTION OF OPERATOR'S AIRCRAFT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3628

B. *Avionics:* 5628

3. OBJECTIVE. This chapter provides a means of sampling maintenance quality and the degree of compliance with the operator's maintenance procedures on in-service aircraft.

5. GENERAL

A. *FAA Inspection Personnel*

(1) It is important that the inspectors become familiar with the type of aircraft to be inspected before performing the inspection. This can be accomplished by on-the-job training.

(2) Due to the hub and spoke concept, many aircraft have less than one hour ground time. To ensure that the inspection is adequately performed, it is recommended that two inspectors perform this task in exterior and interior phases.

B. *Coordination*

(1) Avionics, maintenance, and operations inspectors possess various degrees and types of expertise and experience. An inspector who needs additional information or guidance should coordinate with personnel experienced in that particular specialty.

(2) Geographic units need to coordinate with the Certificate Holding District Office (CHDO) because they do not always have access to the operator's maintenance procedures manual. In addition, they must transmit all inspection results and necessary recommendations to the district office. The district office should report to the geographic unit regarding any changes implemented as a result of the unit's recommendations.

7. INITIATION AND PLANNING

A. *Initiation.* This task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements.

B. *Planning.* The FAA issues Action Notices and Maintenance/Airworthiness Bulletins to the field offices to inform them of significant maintenance conditions and major operational problems affecting operator safety. The ramp inspection provides the inspector with a good opportunity to ensure that the compliance dates and requirements of new Airworthiness Directives and regulatory revisions have been met.

9. MAINTENANCE LOGBOOK

A. Regulations require that maintenance be recorded whenever it is performed prior to approval for return to service. The operator's maintenance procedures manual should describe procedures for ensuring that these recording requirements are met, including specific instructions on when an airworthiness release or appropriate maintenance log entry is required.

B. All mechanical discrepancies entered in the maintenance log must either be corrected or deferred using the methods identified in the operator's maintenance procedures manual.

C. The Minimum Equipment List has certain procedures and conditions that must be met prior to deferring the item(s).

(1) These procedures are identified by "O", "M", and "O/M" and are normally contained in the operator's approved Minimum Equipment List. There are occasions in which the list references these procedures to another document.

(2) When reviewing the logbook for Minimum Equipment List compliance, the inspector must determine what procedures are required for deferral and ensure these procedures are accomplished.

(3) The inspector must ensure all applicable repetitive Minimum Equipment List procedures are accomplished for those items that are deferred and are continuing to be deferred through the station. These repetitive maintenance procedures must be signed off in the maintenance log to evidence that the procedures were accomplished.

11. DEFERRED MAINTENANCE

A. *Minimum Equipment List-Deferred Maintenance.* The operator's approved Minimum Equipment List allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the Minimum Equipment List deferral classification and the requirements for the equipment loss.

B. *Other Deferred Maintenance*

(1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy, yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leak classifications, dent limitations, and temporary (airworthy) repairs.

(2) Passenger convenience item (not safety/airworthiness related) deferrals should be handled in accordance with the operator's program.

C. The maintenance program approved for an operator must provide for prompt and orderly repairs of inoperative items.

13. CABIN INSPECTION

A. This inspection should be performed, when possible, without disturbing the loading and unloading of passengers. The inspection can still be performed when some passengers are on board during through-flights, but good judgment must be exercised by inspecting areas away from the passengers.

B. Any discrepancy should immediately be brought to the attention of the flight crew or appropriate maintenance personnel.

15. CARGO/COMBINATION CONFIGURED AIRCRAFT

A. Inspection results have disclosed instances of significant aircraft structural damage resulting from careless loading of cargo, such as:

- Torn or punctured liners, indicating hidden damage to circumferential stringers, fuselage skin, and bulkheads
- Damaged rollers, ball mats, etc., causing significant structural damage to the floors
- Improper handling of hazardous materials, causing severe corrosion, fire, structural damage, and accidents

B. The surveillance of hazardous material handling is not the primary function of the inspector. The inspector should contact the appropriate FAA Security Division if discrepancies are noted in the handling of hazardous materials.

17. PERFORMING RAMP INSPECTION

A. This inspection must be accomplished without interfering with the turnaround of the aircraft. This includes:

- Boarding and deplaning of passengers
- Servicing
- Fueling
- Maintenance
- Baggage handling
- Any other operator activity

B. Any discrepancies noted must immediately be brought to the attention of appropriate personnel to afford the operator the opportunity to take corrective action without interrupting its flight schedule. The inspector must verify that all corrective actions taken were in accordance with the requirements of the operator's maintenance procedures manual.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Experience working with similar type aircraft

B. *Coordination*

- This task may require coordination between avionics, maintenance, and operations personnel
- Geographic units must coordinate with the Certificate Holding District Office

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 23, 25, 45, 47, and 91
- Order 8310.2, Maintenance-Review Case Handbook
- Order 8340.1, Maintenance Bulletins, as amended
- Operator's Maintenance Procedures Manual
- Headquarters/Regional Action Notices

B. *Forms.* None.

C. *Job Aids*

- Vol. 3, Ch. 1, Figure 1-1
- Vol. 3, Ch. 1, Figure 1-2

5. PROCEDURES

A. *Initiate Ramp Inspection in Accordance with the District Office Work Program*

B. *Prepare For Inspection*

(1) Review operator's schedule, select the flight to be inspected, and determine type of equipment and ground time.

(2) Determine if any recent problem areas have been identified for that type of aircraft, such as:

- Emergency Airworthiness Directives
- Action Notices
- Maintenance and Airworthiness Bulletins
- Out-of-office special requests for problem follow-up

(3) Determine if recent regulatory changes and Airworthiness Directive requirements affect the aircraft to be inspected.

C. *Conduct Exterior Inspection, as Applicable.* Perform this inspection in accordance with Vol. 3, Ch. 1, Figure 1-2.

D. *Interview Flight Crew.* Introduce yourself to the flight crew and describe the purpose and scope of the inspection.

E. *Inspect Aircraft Maintenance Logbook*

(1) Ensure that all open discrepancies from the previous flight are resolved per the operator's manual, prior to departure of the aircraft.

(2) Review the logbook to determine if repetitive maintenance problems exist that might indicate a trend.

(3) Ensure that all Minimum Equipment List items are deferred in accordance with the provisions of the operator's approved Minimum Equipment List.

(a) Review the operator's approved Minimum Equipment List to determine that conditions, procedures, and placarding requirements were accomplished to correctly defer specific items.

(b) Note date when item was first deferred to determine if maximum allowed length of deferral was exceeded, by examining logbook page, deferred maintenance list, or deferred maintenance placards or stickers.

(4) Ensure that an airworthiness release, logbook entry, or appropriate approval for return to service has been made after completion of maintenance.

(5) Ensure that the maintenance record contains, for each discrepancy:

- A description of work performed or reference to acceptable data
- Name or other positive identification of person approving the work
- Name of person performing work if outside the organization

F. *Perform Interior Inspection, as Applicable.* Perform this inspection in accordance with Vol. 3, Ch. 1, Figure 1-1.

G. *Debrief Operator.* Inform flight crew or appropriate personnel that inspection has been completed. Discuss the discrepancies that were brought to the operator's attention during the inspection.

H. *Examine Maintenance Record Entries.* Ensure the operator has recorded all discrepancies noted during this inspection. If time is available, monitor the operator's corrective actions.

I. *Analyze Findings.* Analyze each finding to determine if the discrepancies are the result of improper maintenance and/or missing or inadequate maintenance/inspection procedures.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

(1) When analysis of the findings disclose improper maintenance, appropriate enforcement action

(2) When analysis of the findings disclose missing or inadequate maintenance/inspection procedures, written notification to the operator of the necessary changes to the manual. For geographic units, these results/recommendations will be forwarded to the Certificate Holding District Office.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Based on inspection findings, determine if closer surveillance, additional enforcement, other job tasks, and/or additional coordination between the Certificate Holding District Office and geographic units are required to regain compliance.

CHAPTER 4 CONDUCT COCKPIT EN ROUTE INSPECTION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3629

B. *Avionics:* 5629

3. OBJECTIVE. This chapter provides guidance in conducting a cockpit en route inspection.

5. GENERAL

A. *Inspector Qualifications*

(1) Since inspectors do not receive system training on all aircraft, it is important that the inspector become familiar with the type of aircraft being inspected before performing the inspection. This can be accomplished through on-the-job training.

(2) The FAA does not allow two FAA inspectors to perform this job task. Inspectors must therefore become familiar with en route inspection procedures before performing this task and must be authorized through their principal inspectors or unit supervisor.

B. *Inspector Conduct.* In performing this job task, the actions of the inspector are subject to the close scrutiny of airline employees and the general flying public. The inspector must be alert for leading questions from crewmembers regarding destinations, technical information, and other operators. It is imperative that tact and good judgment be exercised at all times.

C. *Inspector Expertise.* Avionics, maintenance, and operations inspectors possess various degrees and types of expertise and experience. When the inspector needs additional information or guidance, the inspector should coordinate with personnel experienced in that particular specialty.

7. INITIATION AND PLANNING

A. *Initiation.* This task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements.

B. *Planning*

(1) Where practicable, an en route inspection should be planned to preclude disruption of company scheduled flight checks by check airmen.

(2) Inspectors conducting en route inspections will make arrangements for the jump seat/forward passenger seat as far in advance of the flight as possible. The inspector will have priority for available jump seats, with the following exceptions:

- If the situation arises where a required company check is being conducted from the jump seat
- If use of jump seat is required by Secret Service Agents or National Transportation Safety Board Representatives on official duties

(3) When it is necessary to board a flight at an intermediate stop, the inspector will make every effort to advise the pilot in command, prior to boarding the flight, that an en route inspection will be conducted.

(4) Inspectors will use the headsets provided by their district office or the operator, as applicable per the Federal Aviation Regulations.

9. FAA FORM 8430-13. The inspector to whom an FAA Form 8430-13 is issued is personally responsible for its proper use and safekeeping, to include the following:

- Recording every request issued, canceled, or otherwise voided on the inside cover
- Returning it to the issuing office if the inspector transfers, retires, or has no further use for this book
- Returning the cover containing the Record of Requests Issued and the yellow copies to the issuing office when all requests have been used
- Immediately reporting to the issuing office the full set of circumstances concerning any loss of requests

11. PERFORMING THE COCKPIT EN ROUTE INSPECTION

A. *Maintenance Log Inspection.* Open discrepancies or improperly deferred Minimum Equipment List (MEL) items have been discovered in maintenance logs just prior to departure. The resulting corrective actions have resulted in lengthy delays.

(1) Regulations require that maintenance be recorded when performed. Procedures for ensuring that these recording requirements are met are described in the operator's maintenance procedures manual.

(2) The manual contains specific instructions on when an airworthiness release or log entry is required. All discrepancies entered in the log must either be corrected or deferred using the methods identified in the operator's maintenance procedures manual. The inspector must become familiar with the operator's maintenance log handling procedures.

B. *Interior Inspection.* This inspection should be performed without disturbing the loading and/or unloading of the passengers. Any discrepancies noted should be brought immediately to the attention of the flight crew. Perform the interior inspection in accordance with Vol. 3, Ch. 1, Figure 1-1.

C. *Exterior Inspection.* It is recommended that the inspector accompany a crewmember on the exterior walk-around to determine the thoroughness of the crewmember's inspection. The inspector should remain aware of the maintenance and servicing activities being accomplished. Perform the exterior inspection in accordance with Vol. 3, Ch. 1, Figure 1-2.

D. *In-Flight Monitoring*

(1) In-flight monitoring gives the inspector the opportunity to monitor aircraft systems and evaluate the effectiveness of maintenance performed to correct maintenance log discrepancies.

(2) It is recognized that inspectors have different degrees of pilot skills, but the airworthiness inspector performing an en route inspection is not there to evaluate the competency of the flight crew. However, if obvious discrepancies are noted, such as a deviation from assigned altitude or other operational procedure, they must be brought to the attention of the pilot in command and the assigned principal operations inspector.

(3) While conducting an en route inspection, the inspector shall not manipulate, operate, select or deselect, any switches, circuit breakers, or controls.

13. CARGO/COMBINATION CONFIGURED AIRCRAFT

A. Inspection results have disclosed instances of significant aircraft structural damage resulting from careless loading of cargo, such as:

- Torn or punctured liners indicating hidden damage to circumferential stringers, fuselage skin, and bulkheads
- Damaged rollers, ball mats, etc. causing significant structural damage to the floors
- Improper handling of hazardous materials causing severe corrosion, fire, structural damage, and accidents

B. The surveillance of hazardous material handling is not the primary function of the inspector. The inspector should contact the appropriate FAA Security Division if discrepancies are noted in the handling of hazardous materials.

15. INSPECTOR BAGGAGE. The inspector must conform to the operator's approved carry-on baggage program. If there is any concern that the inspector's baggage will exceed operator limitations, the baggage should be checked. The inspector's identification (FAA Forms 110A and 8430-13) is adequate documentation for the operator to check the baggage.

17. DEFERRED MAINTENANCE

A. *Minimum Equipment List-Deferred Maintenance.* The operator's approved Minimum Equipment List allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the Minimum Equipment List deferral classification and the requirements for the equipment loss.

B. *Other Deferred Maintenance*

(1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy, yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leak classifications, dent limitations, and temporary (airworthy) repairs.

(2) Passenger convenience item (not safety/airworthiness related) deferrals should be handled in accordance with the operator's program.

C. The maintenance program approved for an operator must provide for prompt and orderly repairs of inoperative items.

19. CREWMEMBER CERTIFICATES. There have been several occasions in which pilots have operated certificate holder aircraft without having in their personal possession airman certificates and current medical certificates. In some cases, pilots have operated for long periods of time with suspended certificates. Airworthiness inspectors must therefore ensure that all flight crewmembers have the proper certificates in their personal possession.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Experience in working with the aircraft being inspected
- Completion of the Airworthiness Inspectors Indoctrination and En Route Courses

B. *Coordination.* This task requires coordination between:

- The inspector and the appropriate operator personnel for reserving the jump seat
- Other maintenance/avionics inspectors

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 43, 45,47, 61, 63, and 91
- Operator's manual

B. *Forms*

- FAA Form 8430-13, Request for Access to Aircraft

C. *Job Aids*

- Vol. 3, Ch. 1, Figure 1-1
- Vol. 3, Ch. 1, Figure 1-2

5. PROCEDURES

A. *Initiate the Cockpit En Route Inspection in Accordance With the District Office Work Program*

B. *Prepare For the Inspection*

(1) Contact the operator's scheduling section to reserve jump seat/forward passenger seat, as applicable.

(2) Complete FAA Form 8430-13 in duplicate. The white copy will be given to the operator and the yellow copy is kept for FAA records.

C. *Coordinate With the Operator's Flight Operations Center One Hour Prior To Flight*

(1) Identify yourself to the operator representative and state that you are performing a cockpit en route inspection on a specific flight.

(2) Present FAA credentials (FAA Form 110A) and completed FAA Form 8430-13 to the air carrier representative.

(3) Obtain applicable operator boarding authorization. (Each operator has different boarding authorization procedures, but all have some method of accounting for the inspector being on board.) If aircraft access is denied:

- Apprise the operator representative of the regulation authorizing an inspector access to aircraft
- Request to see the appropriate supervisor if the representative still refuses access
- Make it very clear to the operator that the denial of access is contrary to regulations and that enforcement action will be taken

- Upon return to the office, describe the occurrence to the appropriate supervisors if access was still denied

(4) Proceed to the aircraft as soon as possible to review the maintenance log and to perform interior and exterior pre-departure inspections as applicable. Follow the operator's procedures for pre-boarding the aircraft.

D. *Identify Yourself To the Flight Crew*

(1) Before boarding aircraft or performing exterior inspection:

- Identify yourself to the Captain and flight crew as an airworthiness inspector
- State the purpose of the inspection

(2) If cockpit access is denied:

- Apprise the pilot in command of the regulation authorizing an inspector access to the pilot's compartment
- Accede to the pilot's wishes if the pilot in command still refuses to allow access
- Make it very clear to the pilot in command that the denial of access is contrary to regulations and that enforcement action will be taken
- Upon return to the office, describe the occurrence to the appropriate supervisors if access was still denied

E. *Inspect the Aircraft Maintenance Log*

NOTE: Notify appropriate operator personnel immediately of any discrepancies noted during this inspection.

(1) Ensure the following:

(a) Maintenance/Airworthiness releases are current

(b) No open items exist

(c) All discrepancies are corrected or properly deferred

(d) Minimum Equipment List items were deferred in accordance with the procedural and placarding requirements of the operator's approved program

(e) Length of deferrals are not exceeded, by reviewing:

- Maintenance log pages
- Deferred maintenance list
- Deferred maintenance placards/stickers

(f) Maintenance record contains for each discrepancy:

- A description of work performed or reference to acceptable data
- The name of person performing work, if outside the organization
- The name or other positive identification of person approving the work

(2) Determine if repetitive problems indicate a trend

F. *Perform Interior Inspection, as Applicable.* See Vol. 3, Ch. 1, Figure 1-1.

G. *Conduct Exterior Inspection of Aircraft, as Applicable.* See Vol. 3, Ch. 1, Figure 1-2.

(1) Note any discrepancies noted during exterior inspection and bring them to the attention of the captain or appropriate operator personnel.

(2) Evaluate the action(s) taken by the operator in response to the discrepancies

NOTE: If actions taken by the operator do not comply with regulatory requirements or the operator's manual, terminate the inspection. Advise the operator of the non-compliance and the possibility of enforcement action. If the discrepancy constitutes an unsafe condition, see Vol. III, Ch. 5, "Ground Operator Aircraft."

H. *Prior To Pushback, Accomplish the Following:*

(1) Ensure all discrepancies noted during pre-departure were corrected

(2) Request pilot certificates and medical certificates of flight crewmembers. Ensure the following:

(a) *Pilot in command.* Captain must have in possession:

- An Airline Transport Pilot certificate
- First class medical certificate, which is valid for six months
- Appropriate type rating for aircraft being operated

(b) *Second in command.* The First Officer must have in possession:

- At least a commercial pilot certificate in the appropriate category and class
- Appropriate instrument rating for aircraft being operated
- At least a second class medical certificate, which is valid for twelve months

(c) *Flight engineer.* Flight engineers must have in their possession:

- Appropriate flight engineer's certificate
- Second-class medical, which is valid for twelve months

(3) If the flight crewmembers do not have the proper, current certificates in their possession:

(a) Apprise the offending crewmembers that they will be in violation of FAR §§ 61.3 and/or 63.3

(b) If flight crewmembers still elect to operate the aircraft without having the appropriate certificates in their possession:

- Deplane
- Terminate this inspection
- Immediately notify the operator's operations center

(4) Ensure the load manifest contains the following:

- Number of passengers
- Total weight of the loaded aircraft
- Maximum allowable takeoff weight for that flight
- Center of gravity limits
- Center of gravity of loaded aircraft, unless the aircraft is loaded according to an approved loading schedule
- Registration number of the aircraft or flight number
- Origin and destination
- Identification of crewmembers and crew position assignment

(5) Ensure proper fuel load is on board by comparing fuel gages to the minimum fuel required for dispatch. This fuel requirement is normally found on the dispatch release.

I. *Monitor In-flight Operations*

NOTE: During the en route inspection, point out any potential violations prior to their occurrence and inform the crew of the possible consequences.

(1) Ensure the flight crew is using and following the operator's approved checklists for all activities.

(2) Exercise good cockpit discipline and ensure the flight crew does the same, to include:

- Sterile cockpit rule compliance
- Proper use of cockpit/personal lighting
- Compliance with the Captain's requests

(3) Monitor all gages during flight for normal operation.

(4) Monitor communications for crew compliance with air traffic control.

(5) Ensure that left and right-seat crewmembers are in compliance with oxygen requirements of the Federal Aviation Regulations.

(6) Note and record all discrepancies observed.

NOTE: To assist the crew, be alert for any conflicting air traffic

J. *Debrief Flight Crew.* At the termination of the flight, the inspector must state whether the operations were satisfactory or unsatisfactory.

(1) If irregularities were noted in the performance of any aircraft system, discuss them with the pilot in command. Ensure these discrepancies are entered in the aircraft maintenance log. If the pilot in command is unwilling to enter these discrepancies, advise the Captain that failure to record these discrepancies is contrary to regulatory requirements.

(2) Unsatisfactory operational findings should be brought to the attention of the principal operations inspector assigned to the operator.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- Satisfactory inspection
- Requirement for a follow-up inspection for a particular discrepancy

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Schedule follow-up inspections, as applicable.

CHAPTER 5 CONDUCT CABIN EN ROUTE INSPECTION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3630

B. *Avionics*: 5630

3. OBJECTIVE. This chapter provides guidance for conducting a cabin en route inspection.

5. GENERAL

A. *Inspector Qualifications*

(1) Since inspectors do not receive system training on all aircraft, it is important that the inspectors become familiar with the type of aircraft before performing the inspection. This should be accomplished through on-the-job training.

(2) The FAA does not allow two FAA inspectors to perform this job task. Inspectors must therefore become familiar with en route inspection procedures before performing this task and must be authorized through their principal inspectors or unit supervisor.

B. *Inspector Conduct.* In performing this job task, the actions of the inspector are subject to the close scrutiny of airline employees and the general flying public. The inspector must be alert for leading questions from crewmembers and passengers regarding destinations, technical information, and other operators. It is imperative that tact and good judgment be exercised at all times.

C. *Inspector Expertise.* Avionics, maintenance, and operations inspectors possess various degrees and types of expertise and experience. When the inspector needs additional information or guidance, the inspector should coordinate with personnel experienced in that particular specialty.

7. INITIATION AND PLANNING

A. *Initiation.* This task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements.

B. *Planning*

(1) Inspectors conducting cabin en route inspections should make arrangements for the inspection as far in advance of the flight as possible. Inspectors should not conduct an inspection if it becomes necessary to displace revenue passengers.

(2) When it is necessary to board a flight at an intermediate stop, the inspector will make every effort to advise the pilot in command, prior to boarding the flight, that a cabin en route inspection will be conducted.

9. FAA FORM 8430-13. The inspector to whom FAA Form 8430-13 is issued is personally responsible for its proper use and safekeeping, to include the following:

- Recording every request issued, canceled, or otherwise voided on the inside cover
- Returning it to the issuing office if the inspector transfers, retires, or has no further use for this book
- Returning the cover containing the Record of Requests Issued and the yellow copies to the issuing office when all requests have been used
- Immediately reporting to the issuing office the full set of circumstances concerning any loss of requests

11. PERFORMING THE CABIN EN ROUTE INSPECTION

A. *Interior Inspection.* This inspection should be performed without disturbing the loading and/or unloading of the passengers. Any discrepancies noted should be brought immediately to the attention of the flight crew. Perform the interior inspection in accordance with Vol. 3, Ch. 1, Figure 1-1.

B. *Exterior Inspection.* Due to the turn-around time involved with some airlines, the inspector will only be able to conduct a cursory inspection prior to departure. If the time is available, the inspector should perform the exterior inspection in accordance with Vol. 3, Ch. 1, Figure 1-2.

C. *In-Flight Monitoring*

(1) This phase of the inspection gives the inspector the opportunity to:

- Monitor passenger service/safety systems
- Evaluate the effectiveness of maintenance performed to correct maintenance log discrepancies against these systems

(2) Passenger safety during boarding, pushback, and in-flight must be closely monitored during this phase. Safety items should include:

(a) Passengers seated prior to pushback

(b) Passengers wearing safety belts during takeoff, landings, and turbulence

(c) Effective communication between cabin crew, cockpit crew, and passengers

13. CARGO/COMBINATION CONFIGURED AIRCRAFT

A. Inspection results have disclosed instances of significant aircraft structural damage resulting from careless loading of cargo, such as:

- Torn or punctured liners, indicating hidden damage to circumferential stringers, fuselage skin, and bulkheads
- Damaged rollers, ball mats, etc., causing significant structural damage to the floors
- Improper handling of hazardous materials, causing severe corrosion, fire, structural damage, and accidents

B. The surveillance of hazardous material handling is not the primary function of the inspector. The inspector should contact the appropriate FAA Security Division if discrepancies are noted in the handling of hazardous materials.

15. INSPECTOR BAGGAGE. The inspector must conform to the operator's approved carry-on baggage program. If there is any concern that the inspector's baggage will exceed operator limitations, the baggage should be checked. The inspector's identification (FAA Forms 110A, and 8430-13) is adequate documentation for the operator to check the baggage.

17. DEFERRED MAINTENANCE

A. *Minimum Equipment List-Deferred Maintenance.* The operator's approved Minimum Equipment List allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the Minimum Equipment List deferral classification and the requirements for the equipment loss.

B. *Other Deferred Maintenance*

(1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy, yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leak classifications, dent limitations, and temporary (airworthy) repairs.

(2) Passenger convenience item (not safety/airworthiness related) deferrals should be handled in accordance with the operator's program.

C. The maintenance program approved for an operator must provide for prompt and orderly repairs of inoperative items.

19. CREWMEMBER CERTIFICATES. There have been several occasions in which pilots have operated certificate holder aircraft without having in their personal possession airman certificates and current medical certificates. In some cases, pilots have operated for long periods of time with suspended certificates. Airworthiness inspectors must therefore ensure that all flight crewmembers have the proper certificates in their personal possession.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable
- Experience in working with the aircraft being inspected
- Completion of the Airworthiness Inspectors Indoctrination and En Route Courses

B. *Coordination.* This task requires coordination between the principal inspectors involved with the operator and may involve the regional office and FAA Security.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 43, 45, 47, 61, 63, and 91
- Operator's manual

B. *Forms*

- FAA Form 8430-13, Request for Access To Aircraft

C. *Job Aids*

- Vol. 3, Ch. 1, Figure 1-1
- Vol. 3, Ch. 1, Figure 1-2

5. PROCEDURES

A. *Initiate Cabin En Route Inspection in Accordance With the District Office Work Program*

B. *Prepare For Inspection*

(1) Contact the operator's scheduling section to reserve a jump/forward passenger seat, as applicable.

(2) Complete FAA Form 8430-13 in duplicate. The white copy will be presented to the operator and the yellow copy is kept for FAA records.

C. *Coordinate With Operator's Flight Operations Center One Hour Prior To Flight*

(1) Identify yourself to the operator representative and state that you are performing a cabin en route inspection on a specific flight.

(2) Present FAA credentials (FAA Form 110A) and completed FAA Form 8430-13 to the operator representative.

(3) Obtain applicable operator boarding authorization per airline procedures.

(4) Request access to the aircraft as soon as practical, (after passengers have deplaned, etc.) to meet flight and cabin crews, review maintenance log, and perform exterior and interior pre-departure inspections as applicable. If aircraft access is denied:

- Apprise the operator representative of the regulation authorizing an inspector access to aircraft
- Request to see the appropriate supervisor if the representative still refuses access
- Make it very clear to the operator that the denial of access is contrary to regulations and that enforcement action will be taken
- Upon return to the office, describe the occurrence to the appropriate supervisors if access was still denied

D. *Identify Yourself To the Flight and Cabin Crews.* Before boarding aircraft or performing any inspection:

- Identify yourself to the Captain, flight crew, and cabin crew as an airworthiness inspector
- State the purpose of the inspection

E. *Inspect Aircraft Maintenance Log if Time Permits*

NOTE: Notify appropriate operator personnel immediately of any discrepancies noted during this inspection.

(1) Ensure the following:

(a) Maintenance/Airworthiness releases are current

(b) No open items exist

(c) All discrepancies are corrected or properly deferred

(d) Minimum Equipment List items were deferred in accordance with the procedural and placarding requirements of the operator's approved program

(e) Length of deferrals are not exceeded, by reviewing:

- Maintenance log pages
- Deferred maintenance list
- Deferred maintenance placards/stickers

(f) Maintenance record contains for each discrepancy:

- A description of work performed or reference to acceptable data
- The name of person performing work, if outside the organization
- The name or other positive identification of person approving the work

(2) Determine if repetitive problems indicate a trend.

F. *Perform Interior Inspection.* If time allows, perform inspection in accordance with Vol. 3, Ch. 1, Figure 1-1.

G. *Conduct Exterior Inspection of Aircraft.* If time allows, perform inspection in accordance with Vol. 3, Ch. 1, Figure 1-2.

(1) Note any discrepancies found during exterior inspection and bring them to the attention of the captain or appropriate operator personnel.

(2) Evaluate the action(s) taken by the operator in response to the discrepancies.

NOTE: If actions taken by the operator do not comply with regulatory requirements or the operator's manual, terminate the inspection. Advise the operator of the non-compliance and the possibility of enforcement action. If the discrepancy constitutes an unsafe condition see Vol. 3, Ch. 6, "Ground Operator Aircraft."

H. *Accomplish the Following Prior To Pushback:*

(1) Ensure all discrepancies noted during predeparture were corrected

(2) Request pilot certificates and medical certificates of flight crewmembers. Ensure the following:

(a) *Pilot in command.* Captain must have in possession:

- An Airline Transport Pilot certificate
- First class medical certificate, which is valid for six months
- Appropriate type rating for aircraft being operated

(b) *Second in command.* The First Officer must have in possession:

- At least a commercial pilot certificate in appropriate category and class
- Appropriate instrument rating for aircraft being operated
- At least a second class medical certificate, which is valid for twelve months

(c) *Flight Engineer.* Flight engineers must have in their possession:

- Appropriate flight engineer's certificate
- Second-class medical, which is valid for twelve months

(3) If the flight crewmembers do not have the proper, current certificates in their possession:

(a) Apprise the offending crewmembers that they will be in violation of FAR §§ 61.3 and/or 63.3

(b) If flight crewmembers still elect to operate the aircraft without having the appropriate certificates in their possession:

- Deplane
- Terminate this inspection
- Immediately notify the operator's operations center

(4) Ensure the load manifest contains the following:

- Number of passengers

- Total weight of the loaded aircraft
- Maximum allowable takeoff weight for that flight
- Center of gravity limits
- Center of gravity of loaded aircraft unless the aircraft is loaded according to an approved loading schedule
- Registrations number of the aircraft or flight number
- Origin and destination
- Identification of crewmembers and crew position assignment

(5) Ensure proper fuel load is on board by comparing fuel gauges to the minimum fuel required for dispatch. This fuel requirement is normally found on the dispatch release.

I. *Monitor In-Flight Operations*

(1) Ensure all discrepancies noted during pre-departure inspections were addressed.

(2) Monitor carry on baggage to ensure compliance with operator's program.

(3) Ensure that all passengers are seated prior to any ground movements.

(4) Ensure that flight attendant pre-departure briefing is audible to all passengers and covers the following subjects:

- Safety belt operation and regulations
- Smoking regulations
- Location and use of floatation equipment
- Location and use of emergency exits
- Location and use of supplemental oxygen, if applicable
- Location and contents of passenger briefing cards
- Movement of passengers during flight
- Location and use of emergency escape path lighting, if applicable

(5) Ensure that the following systems are operable during the flight:

- Public address system
- No smoking/seat belt sign
- Food and beverage cart brake system

(6) Observe flight attendants' performance of duty.

(7) Debrief captain and lead flight attendant regarding any procedural problems or discrepancies/malfunctions noted during flight. Ensure discrepancies/malfunctions are entered in appropriate maintenance log.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- Satisfactory inspection
- Requirement for a follow-up inspection for a particular discrepancy

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Schedule follow-up inspection, if applicable.

CHAPTER 6 GROUND OPERATOR AIRCRAFT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3732

B. *Avionics*: 5752

3. OBJECTIVE. This chapter provides guidance for grounding an aircraft used in air transportation, under the provisions of Section 605(b) of the Federal Aviation Act of 1958.

5. GENERAL

A. An inspector will seldom have to impose the 5-day grounding provisions of Section 605(b). The knowledge that the inspector has this authority and is not reluctant to use it is usually sufficient to cause an operator to take the necessary corrective actions.

B. An inspector must be able to substantiate a grounding action with factual justification of the unsafe condition. The grounding notice must not be issued unless it is clear to the inspector that, if operated in this condition, the aircraft would be subject to the probable danger of accident and likely to cause injury/damage to persons or property.

7. INSPECTOR RESPONSIBILITY. An inspector who becomes aware of an unsafe condition in an aircraft that is being operated or about to be operated and fails to act under the provisions of Section 605(b) is in dereliction of duty. This duty is specifically placed by Congress upon the inspector rather than on the Administrator. If the inspector, after due consideration, still has any doubts regarding whether or not to ground the aircraft, the grounding notice should be issued.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination Course
- Knowledge of Section 605(b) of the Federal Aviation Act of 1958

B. *Coordination.* This task will require coordination between the inspector, district office supervisor, region, regional counsel, and the operator's principal inspector.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 2150.3, Compliance and Enforcement Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Determine Extent of Problem.* In order to issue a grounding notice, the inspector must come to the following conclusions:

- The aircraft is not in a condition for safe operation
- The operator intends to put the aircraft into revenue service in that unsafe condition
- This unsafe condition constitutes a hazard to persons and/or property

B. *Consult With Principal Maintenance Inspector/Regional Office, if Time Permits.* This coordination must not interfere with any immediate action necessary to ground an unsafe aircraft that is expected to operate.

(1) Before notifying an operator that an aircraft is being temporarily grounded, the inspector may, if circumstances permit, consult by phone with the appropriate regional office through the district office supervisor.

(2) If the inspector performing the task is not the Principal Maintenance Inspector assigned to the operator, the inspector should consult with that individual, time permitting.

C. *Notify Appropriate Personnel That the Aircraft is Grounded*

(1) Immediately after discovering the unsafe condition, verbally notify the pilot in command or other operator personnel who have the authority to keep the aircraft on the ground of the following:

(a) The aircraft shall not be operated for five days or until the unsafe condition is corrected

(b) The reasons for the grounding action

(c) That necessary precautions must be taken to ensure the aircraft is not operated

(d) The authority of 605(b) of the FA Act

(2) In the event that the operator's representative insists upon written notification of the grounding as a prerequisite to taking the aircraft out of service, provide a letter containing as much information as possible.

D. *Debrief Regional Office.* Provide details of the grounding to the appropriate regional office in accordance with regional procedures.

E. *Ensure Written Notification is Received by Appropriate Operator Personnel.* Obtain a receipt for the written notification. The word "received", date, and signature of an operator representative on a copy of the notification is sufficient.

F. *Determine if Violation Action is Necessary.* If the unsafe condition was a result of failure to comply with Federal Aviation Regulations, initiate violation action in accordance with established office procedures.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Confirm Verbal Grounding in Writing.* As soon as possible, confirm the verbal grounding in writing. Include the following information:

(1) Time and date when verbal grounding notification was given

(2) Person(s) to whom verbal grounding notification was given

(3) A statement of unsafe condition(s) that caused the temporary grounding action

(4) A statement that Section 605(b) of the Federal Aviation Act of 1958 was used as authority for the grounding action

(5) A statement that the five-day grounding period began when the inspector first verbally notified the operator

C. *File Copies with Regional Office*

(1) Mail two copies of the written grounding confirmation to the regional office.

(2) If not the Principal Maintenance Inspector assigned to the operator, provide details and send one copy of the grounding confirmation to that individual.

D. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES

A. *Inspector*

(1) Closely follow the action taken by the operator to correct the unsafe condition. If the condition is corrected and the aircraft is made safe for operation before five days elapse, notify the operator in writing that the aircraft may now be operated.

(2) If the unsafe condition is not corrected, and there is good reason to expect the operator will operate the aircraft after the five days elapse, inform the regional office of this situation. Request that a formal order be issued by regional counsel suspending or revoking the Certificate of Airworthiness. This action should be initiated in time to allow such an order to be issued effective immediately upon termination of the five-day grounding period.

B. *Regional Office*

(1) The appropriate regional office, after receiving the details of the temporary grounding, will notify the regional counsel as promptly as possible. The regional counsel will be given all pertinent details, including a copy of the written confirmation of grounding given the operator by the inspector.

(2) If there is a possibility that the operator will contest the grounding action, the Manager of the Aircraft Maintenance Division, AFS-300, should be promptly informed of the conditions and circumstances involved.

[CHAPTERS 7 THROUGH 16 RESERVED]

CHAPTER 17 MONITOR CERTIFICATED AIRFRAME AND/OR POWERPLANT MECHANIC, REPAIRMAN, PARACHUTE RIGGER, AND INSPECTION AUTHORIZATION HOLDER

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3671/3672/3674/3678

B. *Avionics*: 5671/5672/5673/5674

3. OBJECTIVE. This chapter describes procedures for conducting surveillance of mechanics, repairmen, parachute riggers, and Inspection Authorization holders.

5. GENERAL

A. Order 1800.12, Flight Standards Program Guidelines, as amended, provides guidance for surveillance of maintenance airmen. The basic objective of the surveillance of maintenance airmen is to promote aviation safety by ensuring compliance with applicable Federal Aviation Regulations. Components of such surveillance include the following:

- Observation of airmen performing or supervising maintenance
- Evaluation of completed maintenance with the airmen who performed it
- Review of maintenance records to determine compliance with the regulations

B. Inspectors should give prompt attention to any report of an alleged violation of Federal Aviation Regulations pertinent to maintenance airmen. Inspectors should concentrate their efforts in those areas where there are reasons for suspicion or evidence of noncompliance with Federal Aviation Regulations.

(1) Repeated surveillance of maintenance airmen with an acceptable record of good workmanship and compliance with the Federal Aviation Regulations does not provide for the most effective utilization of FAA manpower.

(2) The frequency of surveillance may be based on the volume of work being accomplished by a maintenance airman. It is logical to increase the frequency of surveillance on maintenance airmen who perform a comparatively high volume of work.

C. An inspector may encounter conditions or practices that, if allowed to continue, could result in the return to service of an unairworthy item and/or a violation of the Federal Aviation Regulations. The inspector should bring these conditions or practices to the immediate attention of the airman involved. The inspector should explain the cause for concern and render guidance as appropriate.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43, 65, and 91

B. *Coordination*. None.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 121, 125, 135, and 145
- Order 1800.12, Flight Standards Program Guidelines, as amended
- Order 2150.3, Compliance and Enforcement Program, as amended

B. *Forms*. None.

C. *Job Aids*. None.

5. PROCEDURES

A. *Verify Proper Certification.* Ensure airmen are properly certificated for all work for which they are responsible.

B. *Review Repairman Certificates.* Ensure repairman certificate ratings are specific and appropriate to the work being performed. Ensure certificates are kept within the immediate area. If the ratings appear inappropriate, inform the repairman that recertification may be required.

NOTE: Repairman certificates and ratings should be reserved for airmen having special talents and skills. They should not be issued to circumvent obtaining a mechanic's certificate with appropriate ratings.

NOTE: A repairman employed by an air carrier or commercial operator with a repair station certificate will need separate airman certificates for the operator and the repair station.

C. *Review Inspection Authorizations*

(1) Ensure the authorization is current as required by FAR § 65.95 and has been renewed and endorsed by an FAA inspector. Ensure the Inspection Authorization holder has a current mechanic's certificate with both airframe and powerplant ratings.

(2) Ensure the Inspection Authorization holder has the following available:

- A current and appropriate set of airworthiness directives
- A current and appropriate set of type certificate data sheets
- Current and appropriate Federal Aviation Regulations
- Manufacturers' maintenance instructions, as required by FAR Part 43
- Other data as needed. Recommended data may include maintenance alerts, service difficulty reports, etc.

D. *Review Mechanic Certificates*

(1) Determine that the ratings are appropriate to the work performed. Ensure the mechanic does not exceed the privileges and limitations of the certificate.

(2) Question the mechanic to ensure understanding of the manufacturer/maintenance manual(s) for the specific operation concerned.

(3) Determine that the mechanic meets the requirements for recent experience.

(4) Ensure the airman certificate is within the immediate area where the airman normally exercises the privileges of the certificate.

E. *Review Parachute Rigger Certificates and Seals*

(1) Determine that the ratings are appropriate to the parachutes packed. Ensure alterations are only performed by master parachute riggers on parachutes for which they are rated.

(2) Ensure the rigger meets the performance standards and currency requirements of FAR § 65.129.

(3) Review the rigger's log book to ensure records are being kept as required by FAR § 65.131.

(4) Determine that the rigger has the necessary tools and facilities to accomplish the work.

(5) Ensure the rigger is placing the seal on each parachute.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Airman Found in Noncompliance.* Handle all cases of noncompliance according to the procedures prescribed in Order 2150.3, Compliance and Enforcement Program (as amended).

9. FUTURE ACTIVITIES. Routine surveillance.

[CHAPTERS 18 THROUGH 24 RESERVED]

CHAPTER 25 MONITOR AN AIR SHOW/AIR RACE

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3685

B. *Avionics:* 5685

3. OBJECTIVE. This chapter describes the process of monitoring aircraft authorized to participate in an air show or air race to ensure regulatory compliance and the highest possible standard of safety.

5. GENERAL

A. *Air Show/Air Race Surveillance.* General aviation airworthiness inspectors will participate in the surveillance of air shows and/or races in close coordination with operations inspectors. The airworthiness inspector's primary functions are to ensure the continued airworthiness of participating aircraft and to monitor the safety practices of participating individuals.

(1) Since this is primarily an operations function, the airworthiness inspector's responsibilities are limited to the following:

- Review of the aircraft records to ensure the state of inspection is current
- Examination of the general condition of the aircraft
- Examination of the packing records of main and auxiliary/emergency parachutes to determine the status of inspection and overall condition

(2) While the show sponsor is responsible for crowd control, inspectors should keep in mind the safety of the spectators. Any safety-related deficiencies shall immediately be brought to the attention of the show/race monitor.

B. *Aircraft Used in Parachute Operations*

(1) Aircraft engaged in sport parachuting operations must be operated in accordance with the rules prescribed in FAR Part 91. Additionally, large aircraft may be subject to the applicability of FAR Part 125.

(2) Aircraft involved in parachute jumping operations may have been modified to accommodate the jumpers. Such modifications require documentation of approval by the FAA.

C. *Special Situations.* For a large or complex event the regional office may supplement these procedures to cover unique situations. Inspectors should contact the Flight Standards Division of the appropriate region for further guidance.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 65, and 91
- Completion of the Airworthiness Inspector's Indoctrination String Course

B. *Coordination.* This task requires coordination with operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 1, 61, 103, 105, and 125
- Advisory Circular 105, Sport Parachute Jumping, as amended
- Advisory Circular 91, Waivers: Aviation Events, as amended
- Advisory Circular 103, The Ultralight Vehicle, as amended
- Advisory Circular 125, Operations of Large Airplanes Subject to FAR Part 125, as amended

B. *Forms*

- FAA Form 7711-1, Certificate of Waiver or Authorization

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Certificate of Waiver or Authorization.* Review FAA Form 7711-1 to determine the type of aircraft involved in the activity.

B. *Attend the Pre-Show Briefing.* Discuss any requirements regarding scheduling, inspection of the air show/air race aircraft, and related activities.

C. *Inspect Participating Aircraft*

(1) Review the aircraft records to ensure the following:

- The state of inspection is current
- Modifications made to aircraft to accommodate sport parachutists have documentation of field approval by the FAA, or a Supplemental Type Certificate (STC)

(2) Inspect the aircraft for the following:

- The aircraft's general condition
- Modifications that may have been made for the accommodation of sport parachute jumping
- Current status of operating limitations for door removal, if applicable. Consult Advisory Circular 105, Sport Parachute Jumping, as amended, for a list of aircraft that have been flight-tested for operating limitations with the door removed.
- Airworthiness certificates, registration certificates, and operating limitations, as appropriate

D. *Inspect Parachutists' Equipment.* Inspect parachutists' equipment to ensure the following:

(1) The main parachute has been packed within the previous 120 days

(2) The auxiliary parachute has been packed by a certificated and appropriately rated rigger

(3) The equipment has been manufactured under a type certificate or technical standard order, or is a personnel-carrying military parachute

(4) The auxiliary parachute has been packed by a certificated person within the time requirements prescribed by FAR § 105.43

(5) The certificated parachute rigger's seal has been properly installed

(6) The parachute packs and harness are in good condition

E. *Brief Air Show/Air Race Inspector-in-Charge.* Bring any safety-related deficiencies to the immediate attention of the operations inspector in charge of monitoring the air show/air race.

F. *Perform Supplemental Procedures, As Required.* Contact the Flight Standards Division of the appropriate region for further guidance, as appropriate.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Document Task.* Coordinate all supporting paperwork with the operations inspector in charge of monitoring the air show/air race.

9. FUTURE ACTIVITIES. None.

CHAPTER 26 MONITOR FAR PART 91 OWNER'S INSPECTION PROGRAM

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3425 through 3429

B. *Avionics:* 5425 through 5429

3. OBJECTIVE. This chapter discusses the procedures to monitor aircraft and aircraft inspection programs under FAR Part 91.

5. INSPECTION PROGRAMS. Several types of inspection programs are available to the FAR Part 91 owner/operator.

A. *Annual and 100-Hour Inspections.* The annual and 100-hour inspections are identical in scope and detail. The only difference is in the performance and approval of the annual inspection, which must be accomplished by a person authorized under FAR §§ 43.3 and 43.7, as provided in FAR Part 65.

(1) FAR § 43.11 requires persons approving or disapproving equipment for return to service after any required inspection to make an entry in the record of that equipment. An approved repair station documenting compliance with an annual inspection in the aircraft maintenance records meets the requirements of FAR § 43.11.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

(a) An owner maintaining separate records for the airframe, powerplants, propellers, appliances, and components will make the entries for the 100-hour inspection in each record and make the entry for the annual inspection in the aircraft maintenance record (FAR §§ 91.417 {91.173} and 43.11).

(b) An owner/operator shall ensure that maintenance personnel make appropriate entries in the records for the airframe, powerplants, propellers, appliances, and components. Owner/operators keeping the required records together in a single record will make the entry of the annual inspection in that record. The entries for 100-hour inspections and other maintenance also will be made in this record, as required by FAR § 91.417 {91.173}.

(2) *Annual Inspections.* FAR § 91.409(a) {91.169(a)} requires that any person who operates aircraft must assure that the aircraft has been inspected according to the requirements of FAR Part 43.

(a) Annual inspections are designed to provide a complete and comprehensive inspection of an aircraft. They are performed at least each 12 calendar months by persons authorized under FAR § 43.3. The inspection determines the condition of the aircraft and the maintenance required to return the aircraft to an airworthy condition. Appendix D of FAR Part 43 defines the scope and detail of an annual inspection.

(b) The owner/operator of an aircraft may have annual inspections at any interval that does not exceed the maximum of 12 calendar months between inspections, as specified by FAR § 91.409(a)(1) {91.409(a)(1)}. For example, an aircraft inspected and approved upon any day of a calendar month will become due for inspection upon the last day of the same month, 12 months later.

(c) FAR § 43.15 and Appendix D provide that all systems, components, and appliances shall be checked to assure proper installation and satisfactory operation.

- Before conducting surveillance of annual inspections performed by maintenance personnel, inspectors should become familiar with the manufacturer's recommended inspection procedures, special instructions, etc.

- Inspectors also should know the acceptable degree of deterioration or defect permitted by the manufacturer, as set forth in the manufacturer's manuals or other data

(d) In all cases, persons authorized to perform inspections under FAR §§ 43.3 and 43.7 must determine from records and physical inspection that the aircraft conforms to the contents of the following:

- Aircraft Specification or Type Certificate Data Sheets
- Supplemental Type Certificate, if applicable
- Airworthiness Directives

(e) The above documents must be available to the maintenance personnel conducting an inspection. Applicability of a Supplemental Type Certificate may be determined by reference to the aircraft maintenance records.

(f) The inspection is not considered complete until the required recording procedures of FAR §§ 43.11 and 91.417 {91.173} are met.

- Under the provisions of FAR § 43.11, the agency or person approving or disapproving for return to service is responsible for recording the inspection in the maintenance records
- If the person conducting the inspection finds the aircraft to be unairworthy, appropriate entries must be made in the aircraft maintenance records. The owner/operator must be furnished a list of discrepancies or unairworthy items.
- The owner/operator must ensure that the maintenance records contain proper entries according to FAR § 91.417 {91.173}. The owner/operator must have discrepancies found during the inspection repaired, as prescribed in FAR Part 43, before the aircraft is returned to service.

(g) When conducting surveillance, airworthiness inspectors will review aircraft maintenance records to determine if the requirements of an annual inspection have been accomplished.

(3) *100-Hour Inspection.* Appendix D of FAR Part 43 defines the scope and detail of a 100-hour inspection. One-hundred-hour inspections are required in addition to annual inspections under the following situations:

- Aircraft are operated for carrying persons for compensation or hire
- Aircraft are used for flight instruction for hire, if furnished by the flight instructor

NOTE: When a flight instructor is not included in the rental agreement, a 100-hour inspection is not required on an aircraft when it is rented out.

B. *Progressive Inspections.* The progressive inspection must be a complete inspection of the aircraft, conducted in stages, with all stages to be completed in a period of 12 calendar months.

(1) An owner/operator desiring to use a progressive inspection program must submit a written request to the Flight Standards District Office (FSDO) with jurisdiction over the area in which the applicant is located.

(a) The owner/operator may develop a progressive inspection program tailored to fit the operation.

(b) Progressive inspection programs developed by the manufacturer do not automatically fit the needs of each individual operator; inspectors should review them on a case-by-case basis.

(c) The owner/operator's progressive inspection program may be more restrictive than the manufacturer's program, but it may not be less restrictive unless sufficient justification is presented to and accepted by the FAA.

(2) The inspector should not attempt to establish for the owner/operator arbitrary intervals for the inspection or overhaul of aircraft. Intervals should be based on the manufacturer's recommendations, field service experience, malfunc-

tion and defect history, and the type of operation in which the aircraft is engaged.

(3) If the progressive inspection is discontinued, the owner or operator shall notify the local FAA Flight Standards District Office in writing immediately. After the discontinuance, the first annual inspection is due within 12 calendar months after the complete inspection has been accomplished according to the progressive inspection program.

C. *Large Airplane (Over 12,500 lbs.) and Turbine Powered (Turbojet and Turbopropeller) Multiengine Airplane Inspection Programs.* These aircraft must be inspected according to the requirements of an inspection program selected by the owner/operator. FAR § 91.409(f) {91.169(f)} outlines various options available to the owner/operator.

(1) It may appear that some of the options specified in FAR § 91.409(f)(1) through (3) {91.169(f)(1) through (4)} do not involve the field inspector, as they refer to previously approved and manufacturer recommended programs. However, inspectors should recognize that these programs must be either currently recommended by the manufacturer or currently in use by the operators of FAR Parts 121, 127, or 135 who are supplying the program. The intent of this requirement is to prevent the use of obsolete programs.

(2) Reference to a manufacturer recommended program has led to several misconceptions about what precisely constitutes such a program.

(a) FAR § 91.409(f)(3) {91.169(f)(4)} refers to "A current inspection program recommended by the manufacturer." No reference is made to the aircraft manufacturer specifically. FAR § 91.409(e) {91.169(e)} however, requires inspection of the airframe, engines, propellers, appliances, survival equipment, and emergency equipment.

(b) Therefore, a complete manufacturer's recommended program consists of the program supplied by the airframe manufacturer and supplemented by the inspection programs provided by the manufacturers of the engines, propellers, appliances, survival equipment, and emergency equipment installed on the aircraft.

NOTE: Because this program addresses inspections only, it does not include service bulletins, service letters, service instructions, and other maintenance documents, unless they require an inspection to be performed.

D. *Approved Aircraft Inspection Programs (FAR §§ 91.409 and 91.415) {91.169 and 91.170}.* FAR Part 91 addresses the use of approved aircraft inspection programs in three sections. The following quotes from FAR Part 91 are cited because of frequent misinterpretation of the term "approved aircraft inspection program" by operators and FAA personnel alike.

(1) FAR § 91.409(f) {91.169(f)) states that the owner/operator must select, identify, and use one of the inspection programs. FAR § 91.409(f)(2) {91.409(f)(2)} presents as one of the options "an approved aircraft inspection program (AAIP) approved under FAR § 135.419 . . . and currently in use by a person holding an operating certificate issued under FAR Part 135."

(2) FAR § 91.409(g) {91.169(g)} states "Each operator of an airplane desiring to establish or change an approved inspection program under paragraph (f)(4) of this section must submit the program for approval to the local FAA Flight Standards District Office having jurisdiction over the area in which the airplane is based." The approved inspection program spoken to in this section is not to be confused with an *Approved Aircraft Inspection Program* (AAIP) as allowed in FAR § 91.409(f)(2) {91.409(f)(2)}.

(3) FAR § 91.415(a) {91.170(a)} states "Whenever the Administrator finds that revisions to an approved aircraft inspection program under FAR § 91.409(f)(4) {91.169(f)(5)} are necessary for the continued adequacy of the program, the owner or operator shall, after notification by the Administrator, make any changes in the program found necessary by the Administrator." The inspection program referenced in this section is not to be confused with an approved aircraft inspection program (AAIP) approved under the requirements of FAR § 135.419.

NOTE: The inspector should ensure that the program includes inspection of all systems, including avionics and emergency equipment.

7. COMPUTERIZED RECORD KEEPING AND ALERTING PROGRAMS. Computer companies have made available computer programs designed to function as maintenance tracking programs. These programs do not have the prior approval of the FAA.

A. To use one of these programs, the aircraft owner/operator must present the program to the FAA for approval. FAA approval of one of these computerized programs for one owner/operator does not constitute approval for use of the same program by all operators.

B. FAA approval of a particular computerized program for an individual operator does not grant approval of the program for the computer company.

(1) Each computerized program must be approved for the individual owner/operator. No other form of approval is acceptable.

(2) Use of the computerized companies' services is for data collection and distribution only.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION

A. *Prerequisites.* This task requires knowledge of FAR Parts 43, 65, and 91, and FAR § 135.419.

B. *Coordination.* This task requires coordination between maintenance and avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 39
- Advisory Circular 39-7, Airworthiness Directives, as amended
- Advisory Circular 43-9, Maintenance Records, as amended
- Advisory Circular 43.9-1, Instructions for Completion of FAA Form 337, Major Repair and Alteration, as amended
- Advisory Circular 43-16, General Aviation Airworthiness Alerts, as amended
- Advisory Circular 91-38, Large and Turbine Powered Multiengine Airplanes Part 91, Subpart D, as amended

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review and Accept a Progressive Inspection Program*

(1) Advise the owner/operator desiring a progressive inspection program to submit a letter of intent and a copy of the program, as required by FAR § 91.409 {91.169}.

NOTE: The inspector should carefully review FAR § 91.409(d) {91.169(d)} prior to analysis of the program.

(2) Upon receipt of the letter of intent and the program, ensure the following:

- The program includes the entire aircraft and its components
- The program will provide a complete inspection of the aircraft within 12 calendar months. Inspection intervals should be based on the manufacturer's recommendations, field service experience, malfunction or defect history, and the type of operation in which the aircraft is engaged.
- The scope of the inspection equals that of an annual-type inspection
- The progressive inspection schedule ensures that the aircraft at all times will be airworthy

and will conform to all applicable FAA aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data

- The program includes procedures for the immediate, written notification of the local FAA Flight Standards District Office upon the discontinuance of the progressive program and the assumption of an annual inspection program

(3) Analyze results of the review.

(4) Notify the operator in writing of any deficiencies found in the program.

(a) Request that the operator inform the FAA of plans for resolving deficient items.

(b) Once deficiencies have been corrected to meet the requirements of FAR § 91.409 {91.169}, notify the operator in writing that the program has been accepted.

(5) Establish and maintain an operator file according to agency orders. The file should include a copy of the program and all related correspondence.

B. *Approve an Inspection Program Under FAR § 91.409(f)(4) {91.169(f)(5)}*

(1) Advise the operator of a large airplane, multiengine turbojet or turbopropeller powered airplane desiring an approved inspection program to submit the program for approval to the appropriate Flight Standards District Office.

(2) Ensure the program is in writing and details the following:

- Instructions and procedures for conducting inspections, including necessary tests and checks

- Inspection intervals, expressed in terms of time in service, calendar time, number of system operations, or any combination of these

- The parts and areas that must be inspected

(3) Compare the submitted program with the manufacturer's recommended program. Ensure the applicant completely justifies all deletions of items and inspection period escalations. Where there is no manufacturer's recommended program, use a time-tested program for comparison purposes.

(4) Ensure that the program developed by the applicant provides a level of safety equivalent to or greater than that provided by the inspection options of FAR §§ 91.409(f)(1) through (3) {91.169(f)(1) through (4)}.

(5) Indicate approval on the cover page of the inspection program. Include the date of approval, the inspector's signature, and the office name, number, and location. Stamp each succeeding page with the district office stamp, date, and the initials of the inspector.

C. *Review Maintenance Records.* Ensure that persons approving and disapproving equipment for return to service after any required inspection have entered the inspection in the record of that equipment. Verify that when an owner maintains a single record, the entry for required inspections is made in that record. Ensure that if the owner maintains separate records for the airframe, engines, powerplants, propellers, appliances, and components, the entry for required inspections is made in each.

(1) *Annual/100-Hour Inspection.* Review records to ensure compliance with the requirements of FAR §§ 43.11 and 91.417 {91.173}. Determine that appropriate entries have been made to meet the regulatory requirements.

NOTE: The annual and 100-hour inspections are identical in scope and detail. The only difference is in the performance and approval of the annual inspection, which must be accomplished by a person authorized under FAR §§ 43.3 and 43.7.

(2) *Progressive Inspection.* Ensure records indicate the following:

- Completion of an annual inspection within the past 30 days prior to the commencement of inspections under a progressive inspection program

- Compliance with inspection intervals prescribed in the progressive program

- Completion of the inspection cycle within 12 calendar months

(3) *Large Airplane (Over 12,500 lbs.) and Turbine-Powered (Turbojet and Turbopropeller) Multiengine Airplane Inspection Programs.* Ensure the maintenance records indicate that the owner/operator has identified and is using a selected program according to FAR § 91.409(f) {91.169(f)}. Ensure that any inspection program with a computerized record keeping and alerting system has prior approval by the FAA. Verify that this system reflects the current airworthiness requirements for the individual airplane.

D. *Conduct Surveillance of the Aircraft.* Examine the aircraft to determine, to the extent possible, that it is in condition for safe operation. Ensure the inspection is accomplished either in the presence of or with specific approval from the owner/operator. The following are examples of items to be checked:

- Proper internal and external placarding

- Obvious signs of excessive wear and deterioration, including corrosion, worn places on tires, nicks in the leading edge of the propeller blades, broken windshields, etc.

- Condition of fabric on fabric-covered control surfaces, wings, or fuselages

- The interior of the aircraft for obvious deterioration

- Evidence of any other condition that would render the aircraft unsafe for flight

7. TASK OUTCOMES

A. *File a Completed PTRS Transmittal Form.*

B. Successful completion of the task will result in acceptance and/or approval of the inspection programs.

9. FUTURE ACTIVITIES. Carefully monitor inspection systems for compliance with appropriate Federal Aviation Regulations and for continued airworthiness of subject aircraft. Determine that maintenance practices are performed at an adequate level of safety. Direct particular attention to any areas where trends indicate a faulty inspection system or inadequate maintenance. Take immediate action to correct any deficiencies.

CHAPTER 27 INSPECT FAR PART 91 MAINTENANCE RECORDS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3681

B. *Avionics:* 5681

3. OBJECTIVE. This chapter describes the process used to inspect the maintenance records required by FAR Part 91.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

5. GENERAL. FAR § 91.417 {91.173} establishes the recordkeeping responsibilities and requirements for the owner/operator of the aircraft. FAR §§ 43.9 and 43.11 establish the recordkeeping responsibilities and requirements for the personnel who maintain the aircraft.

A. *Current Airworthiness Directive Status.* The owner/operator must keep a record showing the current status of applicable Airworthiness Directives.

(1) This record must include the following:

- A list of Airworthiness Directives applicable to the aircraft, to include the Airworthiness Directive numbers and revision dates
- The method of compliance
- The time when the next action is required for a recurring Airworthiness Directive

(2) An acceptable method of compliance should include a reference to one of the following:

- A specific portion of the Airworthiness Directive
- A manufacturer's service bulletin, if the bulletin is referenced in the Airworthiness Directive
- Another document generated by the person performing the maintenance that shows compliance with the Airworthiness Directive, such as an Engineering Order (EO) or Engineering Authorization (EA)

(3) When an Engineering Order/Authorization is used, the details must be retained by the person performing the maintenance. If the Engineering Order/Authorization also contains the accomplishment instructions and sign-off, it must be retained with the aircraft indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

(4) The document that contains the current status of Airworthiness Directives/method of compliance may be the same as the record of Airworthiness Directive accomplishment. This record must be retained with the aircraft indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

B. *Total Time in Service Records.* FAR Part 91 requires the total time in service records for airframes, engines, and propellers to be retained by the owner/operator. These records are used to schedule overhauls, retirement life limits, and inspections.

(1) Total time in service records may consist of the following:

- Aircraft maintenance record pages
- Designated cards or pages
- A computer listing
- Other methods accepted by the Administrator

(2) Total time in service records must be retained with

the aircraft indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

C. *Life Limited Parts Current Status Records.* FAR Part 91 requires the owner/operator to retain a current status record for each airframe, engine, propeller, rotor, and appliance component that is identified to be removed from service when the life limit has been reached.

(1) The current life limited status of the part is a record indicating the life limit remaining before the required retirement time of the component is reached. This record should include any modification of the part according to Airworthiness Directives, service bulletins, or product improvements by the manufacturer or applicant.

(2) The following are not considered current life limited status records:

- Work orders
- Purchase requests
- Sales receipts
- Manufacturers' documentation of original certification
- Other historical data

(3) Whenever the current status of life limited parts records cannot be established and the historical records are not available, the airworthiness of that product cannot be determined and it must be removed from service.

(4) Current status of life limited parts records must be retained with the aircraft indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

D. *Approval for Return to Service*

(1) Following the performance of maintenance, preventive maintenance, or alterations on an aircraft, an approval for return to service must be completed before the aircraft is operated.

(2) The person approving/disapproving the return to service on the aircraft, airframe, engine, propeller, rotor, appliance, or component must make an entry in the maintenance record that contains the following information:

- The type of inspection, with a brief description of the extent of the inspection
- The date of the inspection and the aircraft total time in service
- The signature, certificate number, and type of certificate of the person making the approval/-disapproval

E. *Overhaul Records*

(1) A record must be made by the person performing maintenance when overhauling an item of aircraft equipment. This record must include the following:

- A description of the work performed or a reference to data acceptable to the Administrator
- The date of completion of the work performed
- The name of the person performing the work
- The signature and certificate number of the individual approving the aircraft for return to service

NOTE: A return to service tag does not constitute an overhaul record, but may be used to reference the overhaul records.

(2) The owner/operator must retain the record and make it available to the Administrator upon demand. The overhaul records must be retained until the work is superseded by work of equal scope and detail.

F. *Current Aircraft Inspection Status.* The owner/operator must retain records identifying the current inspection status of each aircraft. These records must show the time in service since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

G. *Major Repair and Major Alteration Records.* The owner/operator must retain the records for each major repair/-

alteration made to an aircraft, including work done on the following:

- Airframe
- Engine
- Propeller
- Rotor
- Appliance

(1) The records for major repairs must be retained until the work is repeated or superseded, or for one year after the work has been performed.

(2) The records for major alterations must be retained with the aircraft indefinitely. If the airplane is sold, the records must be transferred to the purchaser.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Parts 43 and 91
- Successful completion of the Airworthiness Inspectors Indoctrination String Course or equivalent

B. *Coordination.* This task will require coordination with the owner/operator and the person(s) performing the maintenance.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Part 39
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 3, Ch. 1, Introduction to Aircraft and Equipment, and Ch. 3, Conduct Ramp Inspection of Operator's Aircraft
- Advisory Circular 39-7, Airworthiness Directives, as amended
- Advisory Circular 43-9, Maintenance Records, as amended

B. *Forms*

- FAA Form 8020-2, Aircraft/Parts Identification and Release

C. *Job Aids.* None.

5. PROCEDURES

A. *Contact the Owner/Operator.* Arrange to obtain the aircraft maintenance records for review. If custody of the records is to be temporarily transferred to the FAA, provide FAA Form 8020-2, Aircraft/Parts Identification and Release, to the owner/operator as a receipt.

B. *Review the Owner/Operator's Maintenance Records.* Determine whether the recordkeeping requirements of the Federal Aviation Regulations have been met.

(1) Ensure the entries for maintenance include the following:

- A description of the work performed or a reference to data acceptable to the Administrator
- The date of completion
- Signature and certificate number of the person approving the aircraft for return to service

(2) Ensure entries for inspection include the following:

- Type of inspection

- Brief description of the extent of the inspection
- Date of the inspection
- Total time in service for the aircraft
- Signature, certificate number, and type of certificate held by the person approving or disapproving the aircraft for return to service
- A statement certifying the airworthiness status of the aircraft

(3) Ensure the owner/operator has records containing the following information:

- Total time in service for the airframe
- The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance
- Total time since last overhaul for those items installed on the aircraft that are required to be overhauled on a specified time basis
- Current inspection status of the aircraft, including time since last inspection, as required by the program under which the aircraft and its appliances are maintained
- Copies of FAA Form 337, Major Repairs and Alterations, for each major alteration to airframe, engine, rotors, propellers, and appliances

(4) Ensure the owner/operator has records for the current status of each applicable Airworthiness Directive, including the following:

- A list of Airworthiness Directives applicable to the aircraft, to include the Airworthiness Directive numbers and revision dates
- The method of compliance
- The time when the next action is required for a recurring Airworthiness Directive

C. *Analyze Results.* Bring any discrepancies to the attention of the owner/operator.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Return Records to the Owner/Operator*

C. *Document the Task.* File all supporting paperwork in the owner/operator's office file.

9. FUTURE ACTIVITIES. Routine surveillance.

[CHAPTERS 28 THROUGH 35 RESERVED]

CHAPTER 36 MONITOR CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3646

B. *Avionics:* 5646

3. OBJECTIVE. This chapter provides guidance for ensuring that the operator's total continuous airworthiness maintenance program includes the maintenance/inspection tasks necessary to maintain its aircraft in an airworthy condition.

5. GENERAL

A. *Definitions*

(1) *Scheduled maintenance:* A group of tasks, accomplished at specified intervals, that prevent deterioration of the safety and reliability levels of the aircraft.

(2) *Unscheduled maintenance:* A group of tasks resulting from scheduled maintenance, reports of malfunctions, and data analysis used to restore equipment to acceptable safety and reliability levels.

(3) *Hard time (H.T.):* A maximum interval for performing maintenance tasks. This interval usually applies to overhaul, but can also apply to total life of parts or units.

(4) *On-condition (O.C.):* Scheduled inspections, tests, or measurements to determine whether an item is in, and will remain in, a satisfactory condition until the next scheduled inspection, test, or measurement.

(5) *Condition monitoring (C.M.):* A maintenance process characterized by the absence of scheduled maintenance tasks. Items remain in service until a functional failure occurs. The overall reliability levels of these items are monitored by continuing analysis and surveillance programs.

(6) *Servicing/Lubrication (SV/LU):* Any act of lubrication or servicing for the purpose of maintaining inherent design capabilities.

(7) *Operating crew monitoring (C.R.):* Any monitoring of system operation accomplished by the operating crew members during normal duties. (These tasks are not a part of the scheduled maintenance program.)

(8) *Operational check (O.P.):* A check to verify that an item is fulfilling its intended purpose. This check does not require quantitative tolerances and is strictly a failure-finding task.

(9) *Inspection/functional check (IN/FC):* An examination of an item against a specific standard, or a quantitative check to determine if one or more functions of an item performs within specified limits.

(10) *Restoration (RS):* That work (on or off the aircraft) necessary to return an item to a specific standard.

(11) *Discard (DS):* Removal of an item from service at a specified life limit. (Safe life limits/economic life limits)

(12) *Accountability:* For the purposes of this job task, "accountability" refers to the procedures established by the operator to control the issuance and return of completed job cards, non-routine coupons/sheets, and other work forms issued during any maintenance/inspection functions.

(13) *Work packages:* Work packages contain detailed instructions, standards, methods, and techniques for performing a specific maintenance inspection task. They may be comprised of work forms, job cards, and/or other approved methods. A work package satisfies accountability and recordkeeping requirements.

B. *Continuous Airworthiness Maintenance Program*

(1) Operators operating under Federal Aviation Regulations (FAR) Parts 121/135 (10 or more) are required by regulations to have a continuous airworthiness maintenance program. The total continuous airworthiness maintenance program must be detailed in the operator's manual system. The manual(s) must contain specific maintenance and inspection tasks, including methods, standards, and techniques for accomplishing these tasks.

(2) There are additional programs required by the FAR, including training programs, continuing analysis and surveillance programs, recordkeeping and reporting systems, etc. These programs are a very important part of the total continuous airworthiness maintenance program, and are used to support maintenance tasks.

(3) An approved continuous airworthiness maintenance program establishes the operator as a mainte-

nance entity, and, when followed, ensures the continued airworthiness of an aircraft and its equipment.

C. *Operations Specifications.* The scheduled maintenance program is derived from these authorized requirements. The operator must develop work forms, job cards, and other methods to accomplish the scheduled maintenance program. The operator must also develop manual procedures for implementing each special authorization.

(1) The operations specifications Aircraft Maintenance—General Requirements page authorizes the manual system, which contains all necessary instructions of the continuous airworthiness maintenance programs.

(2) The Maintenance Time Limitations Checks and Inspections page is used to identify those inspection/checks and the time intervals in which they are accomplished.

(3) The Time Limitations Inspection Frequency and Overhaul pages authorize the maintenance process/tasks, inspection and check periods, and, when applicable, the inspection process for all Air Transportation Association systems and their major components. These can be maintained on operations specification pages or may be referenced on another controlled document.

(4) Other operations specifications give authorizations and limitations unique to the operator's operation.

NOTE: All operations specifications are considered to be as legally binding as the regulations themselves.

7. PERFORMING THE INSPECTION

A. *FAA Office.* The majority of this task is performed at the FAA district office, since regulations require the operator to provide manuals containing appropriate parts of its continuous airworthiness maintenance program to the Certificate Holding District Office (CHDO). At a minimum, the Certificate Holding District Office must be provided with:

- The General Policies and Procedures Manual
- Detailed instructions for accomplishing the scheduled maintenance/inspection program
- Aircraft manufacturer's maintenance manuals incorporated by the operator, including the Illustrated Parts Catalogue (IPC).

B. *Maintenance Facility.* The Certificate Holding District Office normally does not have, and is not required to have, all repair/overhaul manuals for engines, propellers, and appliances. The inspector must therefore go to the operator's facility to ensure the operator has the appropriate instructions and standards to accomplish its repair/overhaul maintenance functions.

C. *Manual System.* The operator's manual system defines every facet of the continuous airworthiness maintenance program, and is normally divided into three distinct categories:

(1) *General Policies and Procedures (GPP).* This manual is also known as the General Maintenance Manual (GMM), General Maintenance Policies and Procedures Manual (GMPP), etc. It contains general information on how the operator conducts its business.

(2) *Manual sections detailing instructions for accomplishing the scheduled maintenance program.* These manuals contain the scheduled maintenance program requirements for a particular type of aircraft and instructions for accomplishing the scheduled maintenance program. The manuals must include provisions for accountability and for meeting the recording requirements of FAR §§ 121.380 and 135.439, and may include:

- Instructions to accomplish scheduled checks (lettered, phased, numbered, etc.), including the job cards for accomplishing these checks
- Job cards for accomplishing recurring nonroutine maintenance, i.e. engine change cards, propeller change cards, gear changes, etc.

(3) *Technical manuals for maintenance standards and methods.* These manuals contain the standards for overhaul, repair, replacement, calibration, and other requirements to return the aircraft and its components to its original or properly altered condition. They consist of current manufacturer's maintenance/overhaul manuals and/or other standards developed by the operator and accepted by the FAA.

D. *Key Areas of the Maintenance Program*

(1) *Aircraft inspection requirements.* This area includes routine inspections and tests performed on the aircraft at prescribed intervals.

(a) In the past, operators have been approved to use maintenance programs developed by operators with similar equipment but greatly different operational environments. To ensure the aircraft is maintained properly, it is imperative that each inspection is stated in terms of calendar time, cycles, and hours,

whichever comes first. This compensates for differences or changes in the operator's operational environment.

(b) For those operators that do not have calendar time requirements, equate the current aircraft utilization in hours to a calendar date. For example, an operator has operated 3,000 hours in the past twelve months and has a 3,000 hour inspection interval. The inspection requirement should therefore be 3,000 hours or twelve months, whichever comes first.

(2) *Scheduled maintenance.* This area concerns maintenance tasks performed at prescribed intervals.

(a) Some scheduled maintenance tasks are accomplished concurrently with inspection tasks, i.e., Airworthiness Directive notes, service bulletins, etc., that are a part of the inspection element and may be included on the same form. Scheduled tasks include such items as:

- Replacement of life-limited items
- Replacement of components for periodic overhaul or repair
- Special inspection such as X-rays
- Checks or tests for on-condition items
- Lubrication

(b) Special work forms can be provided for accomplishing these tasks, or they can be specified by a work order or other document. Instructions and standards for accomplishing each task must be provided to ensure the work is done in accordance with established procedures and is properly recorded.

(c) Special emphasis should be placed on recordkeeping requirements of a scheduled maintenance program, since past inspections have found that the status of a scheduled maintenance activity was not supported by adequate records. This has caused considerable problems in determining the current status of life-limited parts, Airworthiness Directives requirements, overhaul records, etc. since the Federal Aviation Regulations require each operator to keep accurate maintenance records.

(3) *Unscheduled maintenance.* This area provides procedures, instructions and standards to accomplish maintenance tasks generated by the inspection.

(a) A continuous aircraft maintenance record can be used for occurrences and resulting corrective action between scheduled inspections. Inspection discrepancy forms (non-routine coupons) process unscheduled maintenance tasks in conjunction with scheduled maintenance.

(b) Instructions and standards for unscheduled maintenance are provided in the operator's technical manuals, consisting of the aircraft structural repair manual and manufacturer's maintenance manuals for aircraft, engine, propeller, and appliances. These manuals are a part of the approved continuous airworthiness maintenance program, and must be used when performing maintenance.

(c) When there is no technical information available and maintenance is required, the operator must develop or acquire data needed to perform the maintenance. This maintenance data must be evaluated as major or minor, according to the operator's procedures.

(d) Past inspections have revealed that procedures for determining major and minor repairs have been deficient, and that some repairs have been improperly categorized. As a result, major repairs have been performed without FAA-approved data. Special emphasis must be made by FAA inspectors to ensure operators classify repairs properly.

(4) *Repair/overhaul of engine, propeller, and appliances.* This area concerns shop operations which, although they encompass scheduled and unscheduled tasks, are remote from the maintenance performed on the aircraft as a unit.

(a) Aircraft engine and propeller manuals containing instructions for installation, operation, servicing, and maintenance are accepted by the FAA. These manuals are accepted as part of type certification and are incorporated as part of the operator's manual system. They require no further review by the FAA.

(b) The appliance manufacturer's manual that the operator chooses to incorporate as a part of its maintenance manual is not formally approved. It is considered by the administrator to be acceptable data for accomplishing major or minor repairs.

- If the airframe, engine, or propeller manufacturer's instructions require special procedures, tolerances, or specifications, these instructions must prevail over the appliance manufacturer's instructions
- The FAA can formally issue supplemental information, including Airworthiness Directives, that supersedes all manufacturer's specifications

(5) *Structural inspection/airframe overhaul.* Most of the information required to develop an initial structural inspection program will be developed by the manufacturer.

(a) The scheduled inspection program provides the framework for all the scheduled maintenance packages. Structural inspections are normally integrated throughout the operator's scheduled maintenance program.

(b) The various levels of inspection must be clearly defined in the operator's program. For example, the area under consideration may require a visual inspection during pre-flight, where a higher inspection such as "B" or "C" check may require more than a visual inspection of the same area. A comprehensive inspection or airframe overhaul is usually referred to as a "D" check, and may include all, or nearly all, of the scheduled tasks in a maintenance program.

(6) *Supplemental Structural Inspection Document (SSID) requirements.* When the operator has aircraft that are identified in a particular Supplemental Structural Inspection Document, the operator must incorporate these additional age-related structural inspections into its scheduled inspection program.

(7) *Required Inspection Items (RII).* This area concerns maintenance work which, if improperly accomplished, could endanger the safe operation of the aircraft. Required Inspection Items appear in all elements of the operator's continuous airworthiness maintenance program. They receive the same consideration regardless of whether or not they are related to scheduled or unscheduled tasks. The fact that a Required Inspection Item requirement arises at an awkward time or inconvenient location has no bearing on the need to accomplish it properly.

(a) The operator must designate those items that need to be inspected, and must develop methods for performing the required inspections. The operator should include the following in determining what tasks to designate as Required Inspection Items:

- Installation, rigging, and adjustments of flight controls and surfaces
- Installation and repair of major structural components
- Installation of an aircraft engine, propeller, or rotor and overhaul or calibration of certain components, such as engines, propellers, transmissions, and gearboxes, or navigational equipment, the failure of which would affect the safe operation of the aircraft

(b) It is the responsibility of the operator to evaluate the work program and identify Required Inspection Items in a suitable manner. The FAA-assigned inspector must evaluate the proposed list of Required Inspection Items to determine if it is adequate.

(c) Required Inspection Item findings consistently represent a major portion of an inspection. The following are examples of these findings:

- No specific training programs developed for Required Inspection Item personnel
- No authorization list of Required Inspection Item inspectors
- Required Inspection Items not accomplished
- Required Inspection Items performed by unauthorized persons
- Failure to comply with Required Inspection Item procedures
- Contract personnel not properly trained/qualified/authorized
- Lack of proper Required Inspection Item-designated items
- Failure to have counterman procedures

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

(1) This task requires knowledge of the following:

- The regulatory requirements of FAR Parts 121 and 135
- The operator's maintenance procedures manual
- The operator's operations specifications

(2) FAA inspectors performing this task must be at least at the journeyman level and must have knowledge of the aircraft being inspected.

B. *Coordination.* This task requires coordination between the assigned Principle Maintenance Inspector (PMI), the Principle Avionics Inspector (PAI), and FAA supervisory personnel.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR §§ 43.13(a), and 43.13(c), Performance rules; general
- Order 8300.10, Airworthiness Inspector's Handbook
- Advisory Circular 120-16, as revised, Continuous Airworthiness Maintenance Programs
- Maintenance Steering Group (MSG) 2 and 3 documents
- Operator's operations specifications (Part D)
- Operator's Maintenance Procedures Manual
- Order 2150.3, Enforcement Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Current Operator Operations Specifications.* Obtain the file containing current operations specifications and review the following:

(1) *General Requirements page*

- Ensure the page is current and has been dated and signed by appropriate personnel designated by the FAA and the operator
- Review the contents of this page and ensure this page meets the requirements for issuance according to Order 8300.10, Airworthiness Inspector's Handbook

(2) *Maintenance Time Limitation Index*

- Ensure that the control dates on the index page agree with all operations specifications pages within the Maintenance Time Limitations Section.
- Review all pages in this section to ensure they are current and are signed by appropriate FAA and operator-designated personnel

(3) *Maintenance Time Limitations Checks and Inspections page*

- Review the page to ensure that the inspection/checks are identified
- Determine the frequency of the inspections
- Obtain the maintenance manual sections referenced on this page for each identified inspection/check. These will be used later in the inspection.
- Ensure that inspection frequency is expressed in hours, calendars, or cycles, whichever comes first
- Review this page to ensure it is current and is signed by appropriate personnel designated by the FAA and the operator

(4) *Time Limitations Inspection Frequency and Overhaul pages*

NOTE: The contents of this page may be referenced to another control document.

- Review all Air Transportation Association chapters and listed subcomponents to identify the maintenance processes/tasks, inspection and check periods, and other inspection tasks
- Review this page to ensure it is current and is signed by appropriate FAA and operator-designated personnel

B. *Document All Apparent Discrepancies, Obvious Omissions, and Formatting Inconsistencies Noted During Operations Specifications Review*

C. *Ensure the Operator's Manual System Contains Procedures For Accomplishing Key Areas*

(1) *Aircraft inspection requirements*

(a) Ensure those sections of the maintenance manual obtained during review of the operations specifications contain detailed instructions for accomplishing inspections and checks.

(b) From the Maintenance Time Limitations Checks and Inspections and Overhaul operations page(s) or other controlling document(s):

- Compare a scheduled check (lettered, phased, numbered, etc.) work package to the operations specifications inspection requirements to ensure all items are included and are scheduled at the appropriate inspection intervals

- Sample items identified for inspection/check and ensure that work packages have been developed to accomplish those items. The work packages must be appropriate to the identified maintenance process, e.g. visual inspections, detailed inspections, functional checks, etc.

NOTE: A "C" check work package is preferred due to its size and complexity.

(c) Ensure work packages include provisions for the accountability and recording of these inspection tasks.

(d) Ensure there are provisions for accountability and recording of non-routine maintenance resulting from the findings of the scheduled inspection.

(e) Document all instances in which the manual does not support the operations specifications requirements.

(2) *Scheduled maintenance requirements*

(a) Sample items requiring scheduled maintenance from the Maintenance Time Limitations Inspection Frequency and Overhaul operations specifications page(s) or other controlling documents and ensure:

- Work forms, job cards, and other methods have been developed

- Work forms, cards, and/or methods provide detailed instructions and standards for performing the scheduled maintenance, i.e. servicing/lubrication tasks, restoration tasks, replacement of parts or components with hard-time limitations, etc.

(b) Ensure there are provisions for the accountability and recording of the following:

- Scheduled maintenance tasks

- Non-routine maintenance resulting from the scheduled maintenance

(c) Document any task required by operations specifications or controlling documents for which no method of performance is available.

(d) Document any task that does not meet operations specifications or controlling document requirements, such as an on-condition check that lacks quantitative measurements.

(3) *Unscheduled maintenance requirements*

(a) Ensure the operator has procedures, instructions, and standards to accomplish maintenance that results from inspection findings, operational malfunctions, abnormal operations (hard landings, lightning strikes, etc.) or other indications of the need for maintenance, such as corrective action from failure analysis. These instructions and standards must be the operator's operations specifications. The operator may develop them, or it may incorporate manufacturer's manuals as its own.

(b) Ensure the operator has procedures for evaluating repair requirements to properly classify the repair as major or minor.

NOTE: All repairs categorized by the operator as major require FAA-approved repair data.

(c) Ensure the operator has provisions for accounting and recording all unscheduled maintenance activity, i.e., manual sections for handling unscheduled maintenance activity.

(d) Document any instances in which maintenance recording forms do not provide for the minimum recordkeeping requirements of the Federal Aviation Regulations.

(e) Document any instances in which operator procedures for classifying major repairs do not comply with Federal Aviation Regulation requirements.

(4) *Repair and overhaul of engines, propellers, and appliances*

(a) Ensure the operator has provided instructions and standards to accomplish repair and overhaul tasks for those items requiring repair and overhaul.

(b) Identify and select several aircraft components from the operations specifications or controlling documents with overhaul requirements. These components will be used during the on-site inspection to ensure that the operator has repair/overhaul specifications available.

(c) Ensure the operator has provisions for certifying and recording the work.

(d) Document those items selected for future on-site inspection.

(5) *Structural inspection/airframe overhaul*

(a) Ensure the operator has instructions and standards for performing structural inspections and airframe overhauls.

(b) Sample selected scheduled structural inspection/airframe overhaul items to ensure work forms, job cards, and/or other methods are available for performing these tasks.

(c) Ensure the operator has established provisions for accountability and recording of these tasks.

(6) *Supplemental Structural Inspection Document (SSID) requirements*

(a) Ensure the operator has identified those aircraft required to be included in the Supplemental Structural Inspection Program. Compare the operator's aircraft serial numbers with the serial numbers in the Supplemental Structural Inspection Document to ensure all required aircraft are included.

(b) Ensure the operator has instructions and standards for performing inspections on those aircraft subject to supplemental structural inspections identified in the Supplemental Structural Inspection Document.

(c) Ensure the operator has provisions for accounting and recording the work.

(d) Identify and document any aircraft not being maintained according to the Supplemental Structural Inspection Document requirements.

(7) *Required Inspection Item (RII) requirements*

(a) Ensure the operator has designated those maintenance tasks requiring additional inspection (Required Inspection Item inspections).

(b) Ensure the operator has developed procedures to meet the certification, training, qualification, and authorization requirements for Required Inspection Item personnel.

(c) Ensure the operator has procedures for ensuring the accomplishment of Required Inspection Items.

(d) Ensure the operator has procedures for buy-back of items that failed the Required Inspection Item inspection and require re-inspection after additional corrective action.

(e) Ensure the operator has procedures and standards for accepting or rejecting Required Inspection Items.

(f) Ensure the operator has procedures that prevent any person who performs an item of work from performing a Required Inspection Item inspection of that work.

(g) Ensure that the operator has procedures for ensuring that the persons performing Required Inspection Item inspections are under the control and supervision of the inspection unit.

(h) Ensure the operator has procedures for ensuring a current list of Required Inspection Item inspectors is maintained, including all names, occupational titles, and inspections they are authorized to perform.

(i) Ensure the operator has procedures to prevent any inspector's decision regarding a required inspection from being countermanded. Exceptions include supervisory personnel of the inspection unit or a person at the level of administrative control that has overall responsibility for the management of the required inspection function and other maintenance.

(j) Ensure the operator has shift-change procedures for Required Inspection Items.

(k) Document any instances in which the manual failed to provide procedures for the above Required Inspection Item requirements.

D. *Perform Inspection At the Operator's Facility.* From the components selected during the review of the repair/overhaul requirements, accomplish the following:

(1) Ensure the shop performing the repair/overhaul of these components has the overhaul manual available. Review this manual to determine:

- The manual is appropriate to the make and model of the components repaired/ overhauled
- The manual is part of the operator's manual system
- The manual is current. For manufacturer's manuals, contact manufacturer to verify date and contents of last revision.
- Special tool/test equipment requirements

(2) Ensure the shops have the specialized tools/ test equipment as required by the manuals.

(3) Determine if personnel are properly trained to perform the maintenance by reviewing the training records. These records may be found in the shop or in other locations established by the operator.

(4) Ensure the operator's procedures for approval for return to service and any other record-keeping requirements are being followed.

NOTE: If any discrepancies are noted in any of the above procedures, notify appropriate supervisory/management personnel to initiate corrective action.

(5) Document any deficiencies.

E. *Coordinate Findings.* Due to the seriousness of any finding from this job task, the inspector must discuss with appropriate FAA supervisory personnel to verify inspection findings.

(1) Discuss what changes are necessary to ensure if all key areas of the continuous airworthiness maintenance program are in place.

(2) Develop a method to notify the operator of corrective action that must be taken. This notification will always be in written form. Discuss what discrepancies require enforcement action.

F. *Analyze Findings.* Each finding was a result of a deficiency in a key area within the continuous airworthiness maintenance program. Determine which findings require enforcement action.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

(1) A follow-up letter informing the operator of all inspection findings and corrective actions, as required

(2) Engine Interruption Report, if applicable

(3) FAA Form 2150.5 Enforcement Investigative Report, if applicable

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES

A. Initiate WPMS activity code for investigating enforcement report, if applicable.

B. Follow up on corrective action taken by the operator and deficient areas noted during the inspection, if applicable.

CHAPTER 37 MONITOR CONTINUING ANALYSIS AND SURVEILLANCE PROGRAM/REVISION

Section 1 Background

1. WPMS ACTIVITY CODES

A. Maintenance: 3635

B. Avionics: 5635

3. OBJECTIVE. This inspection determines that the operator has developed a continuing analysis/surveillance program, and that the operator is using it to evaluate the overall effectiveness of the continuous airworthiness maintenance program.

5. GENERAL

A. Some operators with approved reliability programs use the reliability program to fulfill the monitoring mechanical performance functions requirement of its continuing analysis and surveillance program. Since both reliability programs and continuing analysis and surveillance programs require data collection, data analysis, and corrective action requirements, a duplication of operational data would occur.

B. Not all the elements of Advisory Circular 120–17, as amended, are required to be contained in a continuing analysis and surveillance program for monitoring mechanical performance. Advisory Circular 120–17, as amended, does not provide for the audit function of continuing analysis and surveillance programs.

7. INITIATION AND PLANNING

A. *Initiation.* This task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements. When given this assignment, the inspector must review current Federal Aviation Regulations (FAR) requirements and FAA policy.

B. *Planning*

(1) *Program requirements*

(a) The program must contain a system that determines the effectiveness of the maintenance and inspection programs and provides for timely corrective action of any deficiencies in the maintenance/inspection programs. This system must be identified in a chapter of the operator's maintenance manual and must reference FAR §§ 121.373 and/or 135.431.

(b) Any portions of the program not contained in this chapter of the manual must be referenced to their exact location. For example, an approved reliability program must be referenced in the Program if it is used to fulfill the mechanical monitoring function of the program.

(2) *Operator size.* The complexity and sophistication of the Program should be relative to the operator's operation. A small operator should not be expected to have a program suitable for a large operator; however, all programs must have, as a minimum, monitoring mechanical performance and audit functions. Procedures for administering these two functions must be identified in the operator's manual.

(3) *Monitor mechanical performance function.* This function must provide for collecting and analyzing operational data. The intent here is to identify deficiencies that require corrective action. This monitoring is done through emergency response, day-to-day monitoring, and long-term monitoring.

(a) *Emergency responding.* Emergency responding includes identifying emergency/critical situations, determining causes, and formulating a plan to ensure that similar conditions do not exist in like equipment. Typical examples of emergency/critical situations include:

- In-flight engine separations
- In-flight propeller separations
- Uncontained engine failures
- Critical structural failures
- Any life-limited part failure

(b) *Day-to-day monitoring.* Normally, large operators conduct daily meetings to discuss morning launch delays and activities of the previous day. Smaller operators conduct these meetings at less frequent intervals. Items typically discussed include:

- Daily mechanical problems of each aircraft
- Non-availability of spare parts
- Inadequate manpower to perform maintenance
- Deferred maintenance items—excessive number and time
- Safety related failures

- Recurring maintenance problems
- Excessive unscheduled maintenance
- Maintenance delays/cancellations
- Scheduled inspection results, including sufficient time to complete the check, unusual/critical findings, recurring problems, and parts/equipment/manpower availability

(c) *Long-term monitoring.* This system should include charting or some appropriate means of reporting and accounting operational data at specified intervals to reveal trend-related information. Typical examples of operational data used by the operator to monitor mechanical performance are:

- Pilot reports compiled by Air Transportation Association (ATA) code
- Inspection findings compiled by Air Transportation Association code
- Failure rates compiled by Air Transportation Association code
- Tear-down reports
- Premature removal rates (includes engines)
- Engine shut-down rates
- Confirmed failure rates
- Deferred Minimum Equipment List items
- Mechanical Interruption Summaries
- Mechanical Reliability Reports

(4) *Audit functions*

(a) Auditing is normally on-the-scene observation and should be a scheduled, on-going activity encompassing periodic audits of contract agencies. The audit also addresses adequacy of equipment and facilities, storage and protection of parts, competency of mechanics, and housekeeping.

(b) To be effective, audits should be divorced from the maintenance organization. If audits are assigned to organizational units with other duties, the audit should be accomplished as an independent activity. Under no conditions may an organizational unit perform an audit on itself. Typical audit functions ensure that:

- All publications and work forms are current and readily available to the user
- Maintenance is performed according to the methods, standards and techniques specified in the operator's manuals
- Maintenance forms are screened for completeness, proper entries, and Required Inspection Item identification
- Major repairs/alterations are properly classified and accomplished with approved data
- Records of all applicable Airworthiness Directives contain current status and method of compliance
- Airworthiness releases are executed by designated persons and according to procedures specified in the operator's manuals
- Records reveal current status of life-limited parts
- The training program syllabus is being followed
- Carryover items and deferred maintenance are properly handled
- Vendors are properly authorized, qualified, staffed, and equipped to do the contractor function according to the operator's manual

(5) *Use of contractors.* When the operator contracts with another operator and/or repair station for maintenance support, the operator is still responsible for continuing analysis and surveillance requirements. The responsibility for administering or controlling a continuing analysis and surveillance program can never be contracted out. However, contract organizations may be used to collect operational data, make analyses and recommendations, perform audits, and report information to be used by the operator in identifying deficiencies and implementing corrective action.

(6) *Scheduling inspection.* Normally, this inspection will be coordinated verbally with responsible persons of the operator. If responsible persons are not available on the agreed-upon date, reschedule the inspection with the operator and notify the operator in writing to confirm the date.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of regulatory requirements of FAR Parts 121 and 135
- Knowledge of Advisory Circulars 120–16C and 120–17, as amended
- Previous experience working with an operator required to have a continuing analysis and surveillance program

B. *Coordination.* This task requires coordination between the principal inspectors assigned to the operator. Additional coordination may be required with local, regional, and headquarters personnel, depending on the severity of the noncompliance.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 120–17, as amended, Maintenance Control By Reliability Methods
- Advisory Circular 120–16C, Continuous Airworthiness Maintenance Program
- Operator's Maintenance Procedures Manual
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Office Files.* Review the historical data of the program to include the following:

- The WPMS history of past inspections
- The Enforcement Investigative System (EIS)
- The previous six months' Mechanical Reliability Reports (MRR's)
- Mechanical Interruption Summaries (MIS's)
- Engine Utilization Reports (EIR's)
- Any other operational data that might indicate negative trends in the maintenance/inspection program

B. *Collect Items To Be Used During Inspection.* Note and collect the following:

(1) Samples of any negative trends in previous six month's Mechanical Reliability Reports, Mechanical Interruption Summaries, and Engine Utilization Reports

(2) Samples of negative trends in operational data that has been identified by the operator in previous reports

(3) Reports of all emergency/critical situations during the previous twelve months

(4) Samples of records from the day-to-day monitoring meetings in which corrective actions were deemed necessary

(5) Negative trends in the maintenance/inspection program noted during routine surveillance that have not been detected by the continuing analysis/surveillance program. Examples of situations indicating negative trends include increases in the following:

- Aircraft delays
- Premature removal rates
- The number of engine shutdown rates
- Number of short term escalations
- Deferred maintenance (Minimum Equipment List) items and length of time items remain deferred
- Repeat pilot reports

C. *Review the Operator's Manual.* Before making the on-site inspection, obtain the operator's maintenance procedures manual and review the continuing analysis and surveillance program. It is vital that the inspector obtain precise knowledge of the operator's programs, concepts, and how the program is administered. While reviewing the manual to ensure it complies with the Federal Aviation Regulations, and before making the inspection, note any unclear areas, obvious omissions, or apparent discrepancies.

(1) Review the operator's program as described in the manual. Ensure that it contains policies and procedures for determining the effectiveness of the maintenance/inspection program and for corrective action of any deficiencies in those programs as required by FAR §§ 121.373 and 135.431.

(2) Ensure that the manual contains procedures for administering the continuing analysis and surveillance program that are clear and easy to understand.

(3) Ensure that the operator's manual describes a systematic method of reviewing operational data. It should determine the effectiveness of the maintenance/inspection program through:

- Emergency responding
- Day-to-day monitoring
- Long-term monitoring

(a) *Emergency responding.* The manual must include procedures for responding to critical and/or emergency safety-related situations. Review the manual procedures to ensure:

- Critical/emergency situations are defined
- Procedures exist for the notification/ coordination process
- Procedures exist for determining if similar situations exist on other aircraft
- Procedures are used to implement corrective action
- Procedures define how the FAA is notified

(b) *Day-to-day monitoring.* Ensure that the manual contains procedures for conducting periodic meetings with required personnel to discuss mechanical performance and identify the need for corrective action. Procedures must include:

- What items are discussed
- When meetings are conducted
- Who attends meetings
- How records of these meetings are forwarded to the FAA

(c) *Long-term monitoring: data collection.* Determine how the operator is monitoring the mechanical performance function of the program. This monitoring should include, at a minimum:

- What operational data the operator is using
- What forms are used to collect the data
- Who is responsible for compiling the data
- When and how often the data is collected

(d) *Long-term monitoring: data analysis.* Ensure the manual has procedures for analyzing operational data. The procedures must include:

- When the analysis is to be performed
- Who is responsible for performing the initial analysis
- What conditions, based on performance standards, warrant corrective action
- Who is responsible for performing further analysis and making a corrective action recommendation

(5) Ensure the manual has procedures for taking corrective action based on the data analysis. The procedures must describe:

- Who has responsibility for implementing corrective action
- When the corrective action will be implemented
- How the corrective action will be phased into the maintenance program

NOTE: Some operators fulfill this long-term monitoring function through their approved reliability programs.

(6) Ensure that the operator's manual contains audit functions. Review the manual.

(a) The procedures must provide a continuous audit of the total maintenance program, including contract agencies. The procedures must state:

- Who is responsible for performing audits (normally, an independent agency that is assigned to the quality assurance/ inspection department)
- What is being audited (e.g. manuals, maintenance, record entries, Required Inspection Items, training, airworthiness releases, deferred maintenance, vendors, etc.)
- When the audits are performed
- How the audits are documented
- How records are retained

(b) Procedures for analyzing audit functions must include the following:

- Analyzing each audit to identify deficiencies

- Initiating corrective action for each deficiency
- Providing for on-the-spot corrective action, if appropriate
- Providing for further analysis to determine system breakdown
- Establishing qualifications of persons performing analysis
- Recording audit findings and subsequent actions

(c) Procedures must contain corrective action, to include:

- Timely implementation of corrective action from the data analysis
- Follow-up to determine effectiveness of the corrective action

E. *Document Findings of Review Prior To On-Site Inspection.* Document preliminary findings found during the office and manual review and discuss them with the principal inspector/supervisor. Determine with the principal inspector/supervisor those inspection findings that must be brought to the attention of the operator during the initial meeting. These findings will be used in determining the overall effectiveness of the program.

F. *Schedule Inspection.* Schedule inspection with the operator. Coordinate the inspection with the operator to determine when the operator's personnel will be available and agree upon a time for the inspection. Arrange to attend a periodic meeting.

G. *Meet With the Operator.* Contact the person who has overall responsibility for the program and discuss:

- The nature and scope of the inspection
- Negative trends discovered during manual and office review
- Organizational elements responsible for administering the program, including identifying personnel

H. *Verify Currency Of Operator's Manual.* Ensure that the organizational person responsible for the continuing analysis and surveillance program has the current manuals. This can be done by comparing the effective dates or revision dates of the master copy of the manual held by the operator with the manual held by the responsible person.

I. *Determine If Staffing Equals That Described in the Operator's Manual.* Compare the current organization to the organization described in the manual. Document any differences in staffing. These differences will be used in the final analysis in determining the effectiveness of the continuing analysis and surveillance program.

J. *Ensure Manual Is Readily Available to Personnel.* Determine that each organizational element responsible for administering the program has a current copy of the manual available.

K. *Inspect Operator System To Monitor Mechanical Performance.* During the inspection, document and photocopy any instances in which the operator did not follow the procedures identified in the manual by inspecting the following areas:

(1) *Emergency responding.* Using the previous year's reports of emergency actions gathered during the office review, determine:

- Manual procedures were followed to ensure similar situations did or did not exist on other aircraft
- Fault analysis was accomplished for each situation
- Any corrective action established was implemented and effective

(2) *Day-to-day monitoring*

(a) Establish that periodic meetings are occurring as defined in the manual.

(b) Attend a periodic meeting to determine that daily mechanical problems are being discussed and that the appropriate personnel are attending.

(c) Using day-to-day monitoring records collected during office review, determine that when the need for corrective action was recognized:

- The problem was assigned to appropriate personnel
- The plan for corrective action was established, implemented, and effective

(3) *Long-term monitoring*

(a) *Data collection.* Compare the manual procedures with the actual data collection. Ensure the following is being accomplished according to the manual:

- All operational data was collected and was entered on the appropriate forms

- The appropriate persons compiled the data
- The data was collected at the specified times

(b) *Data analysis.* Determine that data analysis is being performed in accordance with manual procedures by comparing the manual procedures to actual performance. Ensure that:

- Operational data was analyzed to identify items exceeding performance standards, indicating negative trends
- These items were further analyzed to identify cause by using the sample of negative trends reported by the operator and collected during the planning of the inspection
- Initial and further analysis was performed by trained, competent, qualified personnel
- Audit functions are accomplished when analysis has identified the need
- The need for corrective action was determined

(c) *Corrective action.* Use the same sample of the negative trends used in the data analysis to ensure that a corrective action plan was established and implemented for those items requiring corrective action. Continue to follow those items through the corrective action process.

- Determine if the plan required changes to the maintenance/inspection program
- Ensure that these changes were implemented
- Review operational data to ensure the corrective action was effective in reversing the negative trend

(d) Document all findings indicating that manual procedures were not followed. These findings will be used in determining the overall effectiveness of the continuing analysis and surveillance program

L. *Inspect the Operator System to Audit the Maintenance Program.* Document and photocopy any instances in which the operator did not follow the procedures identified in the manual. Contact the responsible person to determine what audits were accomplished in the past 12 months.

(1) Inspect audit functions by accomplishing the following:

- Sample a cross-section of audit requirements identified in the manual and have the operator provide records of audit completion
- Review the audit completion records to determine scope and detail of inspection
- Verify results of audit by performing spot-check of audited facility
- Verify that audits were performed within specified time periods
- Determine that persons who performed the audits have experience and expertise in the areas audited
- Determine that audit functions triggered by analysis are accomplished
- Discuss any other areas of concern found during surveillance that was not noted through the audit system

(2) *Analyze audit findings.* Determine if operator has performed analysis of audits. Using samples collected from audit records provided by the operator, determine the following:

- Analysis of each audit was accomplished to identify deficiencies
- On-the-spot and system corrective actions were implemented to correct deficiencies
- Personnel performing audit had necessary experience and expertise

(3) *Corrective action.* Using the same samples:

- Determine that the operator has implemented corrective action
- Perform on-site inspection to ensure that the corrective action was implemented and timely
- Determine effectiveness of corrective action by ensuring that similar deficiencies no longer exist

(4) Document all findings indicating that manual procedures were not followed. These findings will be used in determining the overall effectiveness of the program.

M. *Follow Up Negative Trends Identified During Office and Manual Review*

(1) Contact the person responsible for the negative trend.

(2) Determine whether the trend was significant.

(3) Determine why the trend was not identified by the program.

(4) Ensure corrective action is initiated.

(5) Document all findings.

N. *Determine Effectiveness of the Program.* Combine all inspection findings from the following to determine program effectiveness, including:

- The office and manual review
- On-site inspection
- Inspector-identified trends

O. *Coordination.* After assessing the program and before debriefing the operator, consult with the appropriate FAA supervisory personnel to determine which (if any) findings require official notification.

P. *Debrief Operator.* In the operator's debriefing:

- Discuss results of the inspection
- Discuss all discrepancies discovered during the inspection
- Discuss possible corrective action
- Inform the operator that official written notification of findings will follow
- Inform the operator that a plan for timely completing corrective action must be submitted

NOTE: Agree with the operator upon time limits for the corrective action plan during the debriefing. Negotiations over time limits can be done later if mitigating circumstances arise.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Letter to Operator.* Prepare a formal letter to the operator confirming inspection findings.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. At the end of the time limit for corrective action, schedule a six month follow-up inspection in the areas of deficiency to determine the effectiveness of the operator's corrective action.

CHAPTER 38 MONITOR APPROVED RELIABILITY PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*: 3636

B. *Avionics*: 5636

3. OBJECTIVE. This inspection determines the air carrier's continued compliance with operations specifications, the approved reliability document, and the operator's maintenance procedures manual. The inspection is intended to assure the reliability program is effectively controlling the maintenance program.

5. GENERAL

A. *Definitions*

(1) *Reliability program:* A method to realistically and responsibly relate operating experience to established maintenance controls.

(2) *Substantiating data:* Records identified in the approved reliability document as containing information required to support changes in a maintenance program.

(3) *Maintenance program:* A program that includes inspection, overhaul, replacement of parts, preventive maintenance, repair and restoration, alterations, maintenance processes/tasks, and any other function performed by the maintenance/inspection department.

B. An approved reliability program affords the air carrier the authority to revise maintenance in-service time limitations for overhauls, inspections, and checks of airframes, engines, propellers, components, appliances, and emergency equipment. The air carrier describes detailed procedures for revising these time limitations in its program, which is approved by the FAA. FAA surveillance ensures procedures are followed and are effective.

7. INSPECTOR RESPONSIBILITIES. The FAA principal inspector must be alert at all times for possible non-compliance with the approved procedures. If it is found that the air carrier has failed to follow approved procedures, appropriate enforcement action must be taken. The inspector must notify the air carrier, in writing, that the procedures were not followed and indicate that the maintenance time limitations revisions are not acceptable.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Knowledge of Advisory Circular 120-17, as amended
- Successful completion of the FAA Aircraft Maintenance Reliability Program Course # 21813

B. *Coordination.* This task requires coordination between the principal maintenance and avionics inspectors assigned to the operator. Additional coordination with local, regional, and headquarters personnel may be required.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operations specifications
- Advisory Circular 120-17, as amended, Maintenance Control By Reliability Methods
- Air carrier's reliability program document
- Air carrier's reliability reports
- Air carrier's maintenance manual procedures
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job* Aids. None.

5. PROCEDURES

A. *Review Operations Specifications.* Review reliability program operations specifications to under-

stand the scope, conditions, and limitations of the authorization. Ensure the operations specifications include all items controlled by the reliability program, to include the following:

- All aircraft
- Engines
- Systems
- Components

B. *Review Reliability Document*

NOTE: It is recommended the inspector develop a procedural flowchart to gain a better understanding of how the entire reliability program functions and how systems interrelate. It should be used during on-site inspections of the reliability program.

(1) Ensure the reliability document is on file in the district office.

(2) Ensure the reliability document has procedures for obtaining FAA approval before changing any of the following:

- Performance standards
- Data collection system
- Data analysis system
- Process(es)/task(s)
- Procedures/organization for administering the program
- Alert-type programs to non-alert programs or vice versa
- Before adding or deleting aircraft or components/systems

(3) Ensure reliability document includes a glossary of significant terms.

(4) Review the data collection system.

(a) Determine what operational data is used to measure the mechanical performance of the programs specified in the reliability document (aircraft, engines, appliances, systems and components, and/or structure). Examples include pilot reports, engine utilization, failure rates, shop findings, and structural inspection findings.

(b) Identify forms used to collect operational data.

(c) Determine who has responsibility for compiling the data and routing it to the responsible person(s) for review.

(d) Determine how the air carrier assures operational data is accurate and factual.

(5) Review the data analysis system.

(a) Determine who is responsible for analyzing trend-related information. Trend-related information is analyzed by comparing data to established performance standards.

(b) Determine the criteria for conducting further analysis.

(c) Determine who will conduct any further analysis for corrective action (i.e., quality control or engineering).

(6) Review procedures for instituting corrective action.

(a) Ensure the reliability document describes the criteria that requires further analysis to determine causal factors.

(b) Ensure the reliability document describes definitive conditions when corrective action will take place.

(c) Determine who implements corrective action.

(d) Ensure time limits are set for completing corrective action and that there is a chain of authority for carrying out the corrective action.

(e) Determine that follow-up procedures exist to ensure the corrective action was effective.

(7) Review performance standards.

(a) Determine who is responsible for establishing or revising performance standards.

(b) Ensure the reliability document contains the methods used to establish and revise performance standards.

(c) Determine what periodic review the air carrier has established to ensure the performance standard remains realistic.

(d) Review data display and report requirements.

(e) Determine whether the reliability document provides for data displays (such as forms, reports, and graphs) that summarize the previous

month's activities. The report must be in sufficient depth to enable the carrier or the recipient of the report to evaluate the effectiveness of the total maintenance program.

(f) Determine whether the reliability document has procedures for reporting continuing over-alert conditions and the status of ongoing corrective action.

(g) Review maintenance intervals and process/task change procedures.

(h) Identify the organizational element responsible for approving changes to the maintenance program.

(i) Determine the criteria used to substantiate each revision.

(j) Review method of distributing and implementing changes to the maintenance program (for example, job cards, shop manuals, etc.).

(k) Review established escalation limitations.

(l) Identify established procedures for changing the maintenance process/task(s).

(8) Review reliability program revision procedures.

(a) Ensure there are procedures for program revisions and that items requiring formal FAA approval are clearly identified.

(b) Review method of distributing changes to the reliability document.

C. *Review Maintenance Manual Sections Referenced in the Reliability Document*

D. *Review District Office Files*

(1) Review substantiating data to support all changes produced by the reliability program. Ensure that the changed procedures defined in the program are being followed.

(2) Review previous inspection reports, correspondence, and other documents in the office files to determine if there are open items or if any areas were identified requiring special attention.

(3) Check the Enforcement Information Subsystem (EIS) to determine if any areas require special attention.

E. *Review the Operator's Reliability Reports.* This information may display the current fleet status, information about any system that has exceeded the performance standards, and any corrective action.(

1) Ensure the reliability report required by the document has been submitted to the FAA and reflects all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action being taken.

(2) Identify trends by reviewing reliability reports for the previous six months. Determine the effectiveness of the corrective actions. Highlight areas with decreasing reliability characteristics for follow up during on-site inspection.

(3) Review Mechanical Reliability Reports (MRR), Mechanical Interruption Summaries (MIS), and Engine Utilization Reports if these reports are not included in the reliability document. Analyze reports for the previous six months to identify trends. Ensure the reliability program has also identified these trends.

F. *Document Findings.* After reviewing all air carrier data, and before coordination, ensure that any confusing areas, obvious omissions, or apparent discrepancies are documented.

NOTE: The operator's reliability document has been approved by the FAA as an effective means to control the continuous airworthiness maintenance program. If the document is not in exact compliance with AC 120-17, as amended, it should be noted. However, unless the reliability program can be proven to be ineffective in controlling the maintenance program, it should not be considered a discrepancy finding during the inspection.

G. *Contact the Operator to Schedule An On-site Inspection.* Advise the operator of the scope of the inspection. Confirm the inspection date in writing to ensure the operator's personnel are available.

H. *Brief the Operator's Personnel.* Advise personnel of the scope and detail of the inspection.

I. *Compare Operator's Documents and FAA Copies.* Compare operator's operations specifications and reliability document to the FAA copies to ensure dates and revision numbers agree.

J. *Evaluate Organization.* Compare the actual organizational structure and personnel duties and responsibilities with the requirements in the approved reliability document.

NOTE: The inspector may find that the organizational structure matches the reliability document. However, until all the elements of the reliability program are inspected, the effectiveness of the organization cannot be determined. Inspection findings may be a direct result of organizational problems (for example, unqualified personnel or personnel not following procedures).

K. *Evaluate Effectiveness of Reliability Program*

(1) *Data collection system*

(a) Determine if the data collection system in the reliability document is used in day-to-day operations and if the data collected is accurate and useful for controlling the maintenance program.

(b) Ensure all necessary data is being collected and reported on the forms identified in the reliability document.

(c) Ensure data collection duties are carried out by the personnel identified in the reliability document.

(d) Ensure data is being routed to the proper organizational element for review.

(e) Ensure data is routed to the proper organizational element in a timely manner by comparing the operational data's initiation dates, receipt dates, and final incorporation dates.

(f) Ensure data accuracy by comparing original operational data documents to the information collected by the reliability program. Reliability programs collect different types of operational data, such as pilot reports by Air Transportation Association chapter, component removal rates by Air Transportation Association chapter, engine shutdown rates, etc.

(g) Ensure data is complete. Compare operational data documents with the required procedures in the maintenance manual or reliability document.

(h) Ensure the data collected is relevant to the maintenance program and can accurately predict changes to, and determine effectiveness of, the maintenance program.

(2) *Analyzed data*

(a) Review items identified as exceeding performance standards and requiring analysis. Determine if the analysis of these items has been accomplished according to the reliability document.

(b) Check records to verify the required analysis was performed.

(3) *Corrective action system.* Corrective action is a result of the data analysis. Corrective actions usually are accomplished through product improvement, procedures improvement, time limitation revision, etc. Once authorized, the corrective action becomes mandatory.

(a) Determine if an attempt was made to find the cause of all identified areas that exceeded performance standards. Review records to verify the attempt. Determine if the attempt was made by the appropriate personnel (for example, powerplant problems assigned to propulsion engineering).

(b) If a cause was not identified, determine if the procedures specified in the reliability document for this situation were followed.

(c) If the cause was identified, determine if corrective action was initiated in accordance with the reliability document.

(d) Ensure the corrective action was performed through the chain of authority described in the reliability document.

(e) Determine if the persons responsible for executing corrective actions were notified.

(f) Determine if the time limits in the reliability document for the completing corrective action were met.

(g) Determine if follow-up procedures outlined in the reliability document were followed to ensure corrective actions taken were effective.

NOTE: A corrective action is considered effective if the out-of-limit condition is brought back to an acceptable level of performance.

(4) *Performance standards system*

(a) Examine a cross-section of performance standards revisions to ensure they were accomplished according to the reliability document.

(b) Determine if performance standards were revised by the personnel specified in the reliability document.

(c) Check records to verify performance standards are reviewed periodically.

(d) Review data display. Identify possible performance standards that are not responsive or sensitive enough to reflect changes in actual performance. For example, a data display that shows almost no change could indicate the performance standards are not sensitive or responsive.

(5) *Data display and reports*

(a) Ensure data displays and reports cited in the reliability report are being used.

(b) Ensure data displays and reports highlight systems that exceeded the established performance standards and include proposed corrective actions.

(c) Determine that continuing over-alert conditions are carried forward from previous reports and provide the status of ongoing corrective action.

(6) *Maintenance intervals and process/task changes.* Review operator's file of all maintenance program revisions. Select a representative sample to determine compliance with the revision section of the reliability document.

(a) Ensure revisions were authorized by the organizational element identified in the reliability document.

(b) Ensure all maintenance program revisions were based on the criteria in the reliability document and include the specified substantiating data.

(c) Determine if the air carrier exceeded the escalation limitations in the reliability document.

(d) Determine if all required changes to the maintenance program were distributed and implemented. Review documentation to determine if changes are distributed and implemented using methods in reliability document.

(7) *Reliability program revision system.* Ensure formal FAA approval was obtained before implementing changes to any of the following:

- Performance standards
- Data collection system
- Data analysis system
- Process(es)/task(s)
- Procedures/organization concerning program administration
- Alert-type programs to non-alert programs or vice versa
- Adding or deleting aircraft, components, or systems

L. *Review Records and Reports.* Determine if records and reports are prepared and processed in accordance with the reliability document.

M. *Evaluate Short-term Escalation Program, If Authorized*

N. *Assess Findings.* Evaluate inspection findings to get an overall picture of how well the reliability program controls the maintenance program.

(1) Determine if there has been an increase in any of the following:

- Aircraft delays
- Premature component removal rates
- The engine shutdown rates
- Inspection scheduling adjustments (short term escalations)
- Deferred maintenance or minimum equipment list items
- Pilot reports
- Aircraft inspection findings

NOTE: If any of the above circumstances are present, it could indicate the reliability program is not properly controlling the maintenance program.

(2) If there is a problem with the reliability program based on inspection findings or any of the above circumstances, accomplish the following:

(a) Determine if the deficiencies were a result of the organizational structure, lines of authority, staffing, personnel qualifications, or other problems related to the organization

(b) Determine if deficiencies were due to incomplete or ineffective methods and/or procedures in the overall program

(3) Identify findings that are contrary to the approved reliability program.

(4) Identify all findings that are in compliance with the document but are still not producing satisfactory results.

(5) Consult with the appropriate FAA supervisory personnel to determine if any findings require enforcement actions.

O. *Debrief Operator*

(1) Meet with operator to discuss discrepancies discovered during the inspection.

(2) Agree to corrective action to be taken by the operator. Advise the operator that a plan, including a schedule, must be submitted for completing the corrective action. If mitigating circumstances arise, the schedule can be renegotiated.

P. *Process Enforcement Action.* Inspectors must be alert at all times for possible non-compliance with the approved procedures. If it is found that the air carrier failed to follow approved procedures, appropriate enforcement action must be taken.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- Formal letter to operator outlining results of inspection
- Enforcement action according to Order 2150.3, Compliance and Enforcement, if applicable

9. FUTURE ACTIVITIES

A. Establish a program to ensure the operator meets the schedule for completing corrective actions.

B. Six months after being advised by the operator that corrective actions have been completed, schedule a follow-up inspection to evaluate the effectiveness of the corrective actions.

CHAPTER 39 INSPECT FAR PART 135 (9 OR LESS) AIR CARRIER

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3637

B. *Avionics:* 5637

3. OBJECTIVE. The purpose of this task is to inspect the aircraft, maintenance records, maintenance programs, and facilities of a FAR Part 135 operator.

5. GENERAL

A. This inspection can be conducted as a result of the following:

- An annual requirement
- As part of a continuous surveillance activity
- Reported problems with the carrier, e.g., complaint, Service Difficulty Report, accident, etc.
- Request by office manager, district office, or region

B. FAR § 135.411(a)(1) requires operators operating aircraft type certificated for nine or less passenger seats to comply with either the inspection and record keeping requirements of FAR Part 91 or an approved aircraft inspection program (AAIP) in accordance with FAR § 135.419. The additional maintenance requirements in FAR § 135.421 must be met in either case.

C. An operator may elect to maintain its aircraft under a continuous airworthiness maintenance program. If the operator elects to use such a program, it must be approved in accordance with the guidance in Vol. II, Ch. 64.

D. *Cargo Operations, FAR Part 135 (9 or less).* The requirements of FAR § 91.169(b) only apply to aircraft that carry revenue passengers. This allows cargo operations to function without using the 100 hr inspection.

7. APPROVED AIRCRAFT INSPECTION PROGRAM

A. An Approved Aircraft Inspection Program provides a means for a certificate holder to incorporate specific inspection requirements into an inspection program. The program can be used to control repetitive Airworthiness Directives and special inspections resulting from Mechanical Reliability Reports (MRR's) or other service experience.

B. The program must encompass the total aircraft, including all installed equipment such as communications and navigational equipment, cargo provisions, and emergency equipment. It must include a schedule of the individual tasks, or groups of tasks, that comprise the program and the frequency that these tasks are accomplished. The operator must substantiate the program and any revisions to the inspector.

C. Approved Aircraft Inspection Programs can cover a group of aircraft involved in an aircraft pool. When this occurs, each operator must maintain the required operations specifications for all pooled aircraft used. In addition, each operator involved in the pool is responsible for having procedures that determine the current maintenance status of each aircraft used from the pool.

9. ADDITIONAL MAINTENANCE REQUIREMENTS (FAR § 135.421)

A. Any operator maintaining aircraft under FAR § 135.411(a)(1) must comply with the maintenance requirements of FAR § 135.421 for engines, propellers, rotors, and emergency equipment.

B. An operator may use either the manufacturer's recommended maintenance requirements or a program developed by the operator and approved by the administrator. Any change to a program developed by an operator requires FAA approval.

11. MAINTENANCE PROGRAM APPROVAL FOR CARRY-ON OXYGEN EQUIPMENT USED FOR MEDICAL PURPOSES

A. Carry-on oxygen to be used for medical purposes must be of an approved type and must be under an approved maintenance program, if owned by the operator.

B. The maintenance program for carry-on oxygen equipment used for medical purposes is approved for use on operations specifications paragraph D-71 as an item of emergency equipment.

13. REVISING TIME LIMITATIONS

A. Revisions to inspection and overhaul time limitations for powerplants, propellers, rotors, and emergency equipment are based on service experience.

The operator may request authorization for a time increase if the request is accompanied by supporting data. The supporting data must substantiate that the increase will not adversely affect the airworthiness of the aircraft.

B. Items whose deterioration is not affected by operational hours (such as electronic units and emergency flotation equipment) should have their time limitations established in terms of calendar time.

C. Time limitation extensions are approved and authorized for use by amending the operations specifications.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course and the Air Taxi Certification Course
- Previous experience with FAR Part 135 (9 or less) certification and surveillance

B. *Coordination.* This task requires coordination between Avionics and Maintenance inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, and 91
- Order 8300.10, Airworthiness Inspector's Handbook
- Advisory Circulars 135-3b, Air Taxi Certification and 135-10, Approved Aircraft Inspection Program

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Certificate Holding District Office's Operator Files.* Review the following:

(1) *Operations specifications.* Ensure that the operator has the appropriate operations specifications for each make and model of aircraft (see Vol. II, Ch. 84, Operations Specifications Paragraph D71).

(2) *AAIP operations specifications, when applicable.* Ensure the following:

- Each make and model aircraft has separate operation specifications under the AAIP's
- All aircraft under this program are listed by make, model, serial and registration numbers
- Identification is made of the program being used

(3) *Operator's maintenance manual, if applicable.* Review the following:

- Procedures for approving an aircraft for return to service after inspections and non-routine maintenance
- Procedures for conducting inspections
- Procedures to ensure that record keeping requirements of FAR § 91.173 are met

B. *Perform On-site Inspection*

(1) *Inspect aircraft maintenance records.* Ensure that records meet the requirements of FAR § 91.173, including:

- A description of work performed or reference to acceptable data
- Signature and certificate number of person approving return to service

(2) *Inspect aircraft.* Inspect operator's aircraft to ensure that:

- Aircraft meets type design
- Aircraft is properly registered and certificated
- Aircraft is in condition for safe operation

(3) *Inspect facilities.* Inspect the maintenance facility used by the operator to ensure that operator's aircraft can be safely maintained.

(4) *Review maintenance programs.* If the operator is on a program other than a 100 hour/annual, ensure that:

- The latest revision is in the program
- The program is available to the operator's maintenance personnel

7. TASK OUTCOMES

A. File WPMS Transmittal Form

B. *Document Task.* File all supporting paperwork in the operator's file.

9. FUTURE ACTIVITIES. None.

CHAPTER 40 MONITOR FAR PART 121/135 CONTRACTUAL RELIABILITY PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3636

B. *Avionics:* 5636

3. OBJECTIVE. This chapter describes the process used to inspect/review a contractual reliability program.

5. GENERAL

A. Definitions

(1) *Operator:* An air carrier contracting with another air carrier for a maintenance program controlled by a reliability program.

(2) *Contractor:* An operator contracting out an approved maintenance program controlled by a reliability program to another operator.

(3) *Substantiating Data:* Those records that contain information identified in an approved reliability document required to support changes in a maintenance program.

(4) *Compatibility:* Air carrier daily utilization being within 75 percent of the contractor's.

B. This inspection is meant to ensure that the contractor's reliability program is effectively controlling the maintenance program. This inspection determines the operator's continued compliance with the following:

- Contractual agreement
- Operations specifications
- Reliability document
- Company's maintenance procedures manuals

C. The contractor will have detailed procedures in its reliability document for revising required time limitations. An FAA approved contracted approved reliability program allows the operator to revise these time limitations. These time limitations are for overhauls, and inspections and checks of:

- Airframes
- Engines
- Propellers
- Appliances
- Emergency equipment

D. The FAA principal inspector must be alert at all times for possible non-compliance with the approved procedures. When findings show that the operator has failed to follow these procedures, the FAA must consider this an illegal revision and appropriate enforcement actions must be taken.

E. It must be remembered that the contractor's approved reliability document has been previously approved by the FAA. In this review, if there are procedures or a lack of them required by Advisory Circular 120-17, as amended, it should be noted. However, unless the program can be proven to be ineffective, it should not be considered a discrepancy during the inspection.

F. For the contracted reliability program to be effective, the operator must have manual procedures for interfacing between both organizations. These procedures must provide a method for implementing the contractor's reliability program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Knowledge of Advisory Circular 120-17, as amended
- Experience with an operator operating on a reliability program
- Successful completion of the Airworthiness Inspectors Indoctrination Course

- Successful completion of the Reliability Course

B. *Coordination.* This task requires coordination between the principal inspectors assigned to the operator and those assigned to the contractor. Additional coordination may be required with local, regional, and headquarters personnel.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operations Specifications
- Contractual Agreement
- Advisory Circular 120–17
- Air carrier reliability document
- Air carrier reliability reports
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Operator Data.* The inspector must review the following:

(1) Contractual agreement, to ensure that:

(a) A copy of the contractual agreement is on file in the district office

(b) The contract is current, by comparing the date on the contract with the date on the Reliability Program Contractual Arrangement Authorization operations specifications

(c) The contract provides for incorporating the operator's data into the contractor's fleet data, for the purpose of reliability control

(2) Air carrier's reliability operations specifications, to ensure that:

(a) The data reflects all aircraft, engines, systems and components, etc., controlled by the reliability program

(b) Additional information includes reliability document title, approval date/revision data

(c) All information shown on the operations specifications are consistent with contractual agreement on file in the district office

(3) Reliability document, to ensure that:

(a) The reliability document is on file in the district office

(b) The document name, date, and revision number agree with the operations specifications, and the contractual agreement

(c) The program is consistent with FAA policies and procedures and Advisory Circular 120–17, as amended

(d) The reliability program provides a description and identifies the organizations responsible for the following essential systems:

- Data collection and analysis
- Corrective action
- Performance standards
- Data display and reports
- Maintenance intervals and process/task changes
- Program revision

(4) Operator's company manual procedures to ensure the following are included:

(a) Procedures for collecting and submitting required data

(b) The name of the person or department responsible for collecting and submitting required data

(c) The name of the person responsible for ensuring all required reports are received in accordance with the terms of the contract

(d) Procedures for reviewing analyzed data received from the contractor, including routine reports and those requiring immediate attention

(e) Procedures for implementing required changes to the maintenance program based on reliability program data analysis

(f) The name(s) of the person(s) responsible for implementing required changes to the maintenance program based on reliability program data analysis

(g) Procedures for ensuring the contractor is notified following changes to the maintenance program

(h) Procedures for ensuring the operator's certificate holding district office is notified of changes to the maintenance program

(5) District office files to determine reliability program history, to include:

- Records of correspondence
- Previous inspections
- Trends or problem areas
- Program revisions

(6) Air carrier's reliability reports, to determine if:

(a) The reliability reports required by the document have been submitted to the FAA and reflect all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action being taken.

(b) The reliability reports for the previous six months identify trends. Highlight areas with decreasing reliability characteristics for follow up during on-site inspection.

(7) Air carrier's Mechanical Reliability Reports (MRR), Mechanical Interruption Summaries (MIS), and Engine Utilization Reports, if applicable.

B. *Assess Reliability Program.* At this stage, combine and assess all the findings discovered during the review to get an overall picture of how well the reliability program controls the maintenance program.

(1) Determine if there has been an increase in any of the following:

- Aircraft delays
- Premature component removal rates
- The engine shutdown rates
- Inspection scheduling adjustment (e.g., short term escalations)
- Deferred maintenance (Minimum Equipment List)
- Pilot reports
- Aircraft inspection findings

(2) If there is a problem with the reliability program based upon the inspection findings, or any of the above circumstances.

(a) Determine if the deficiencies were a result of the organizational structure, lines of authority, staffing, personnel qualifications, or other problems related to the organization.

(b) Determine if deficiencies were due to incomplete or ineffective methods and/or procedures in the overall program.

(c) Compile all findings that are contrary to the approved reliability program.

(d) Compile all findings that are in compliance with the document but are still not producing satisfactory results.

(3) After compiling all findings and *before* the air carrier debriefing, consult with the appropriate FAA supervisory personnel to determine which (if any) findings require enforcement actions.

(4) If no significant findings are made, no further actions are necessary.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- Formal letter to the operator confirming results of inspection
- Enforcement action according to Order 2150.3, if applicable

C. *Document Task.* File record of inspection and all supporting paperwork in operator's file.

9. FUTURE ACTIVITIES. None.

CHAPTER 41 INSPECT FAR SECTION 135.411(a)(1) OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3358

B. *Avionics:* 5358

3. OBJECTIVE. This chapter describes the process of surveilling an operator's aircraft maintenance records under FAR § 135.411(a)(1).

5. GENERAL. Aircraft maintenance records include any record documenting the performance of work on an aircraft. Principal inspectors must surveil an operator's aircraft maintenance records to ensure that the records meet the requirements of the Federal Aviation Regulations.

7. SURVEILLANCE CRITERIA. During surveillance of an operator's aircraft maintenance records, the principal inspectors must determine that all of the work was based on instructions, procedures, or information that has previously been approved or accepted by the FAA. Such data could be in the form of:

- Manufacturer's manuals
- Service bulletins
- Service letters
- Data included in the operator's approved inspection and/or maintenance programs
- Approved engineering orders or authorizations
- Airworthiness Directives
- Other accepted documents

9. IDENTIFYING PERSONNEL

A. *Operators Operating Under Inspection Programs.* Operators operating under an inspection program are *not* authorized to approve aircraft for return to service. Therefore, the name and the certificate numbers of the person performing the work and the person approving the work must be provided.

B. *Operators Operating Under Continuous Airworthiness Maintenance Programs.* In the case of an operator operating under a continuous airworthiness maintenance program, a positive means of identification, such as employee identification number, is required for any person performing or approving work.

11. RETAINING AIRWORTHINESS RELEASES

(1) Operators operating under a continuous airworthiness maintenance program need only retain the record of each airworthiness release until the work is repeated or superceded by other work or for one year after the work is performed.

(2) Operators under an inspection program do not require airworthiness releases.

13. TOTAL TIME IN SERVICE RECORDS. Total time in service continues for the life of the aircraft. Engine rebuilding and certifying to zero time in service must not be confused with a zero time since overhaul certification. Zero time since overhaul certification does not affect the calculation of total time in service. When an engine is rebuilt to zero time, the total time in service is zero.

15. LIFE LIMITED PARTS. Operators must have current status of life limited items. This record indicates the present accumulated time in service of each life limited item. The operator must be able to verify the accumulated time in service of all life limited items. This is done by providing records for the item showing each segment of its operation in service since its manufacture. This may be accomplished by one of the following:

- A record audit trail providing a record of the time in service of the item
- A time audit trail providing a record of continuous time in service

17. RECORDS OF OVERHAUL. An operator must maintain overhaul records of any item required to be overhauled by the operator's inspection or maintenance program. These records must be maintained until the work is superceded or repeated by work of equivalent scope and detail.

19. INSPECTION STATUS. Inspection status defines the work that has been and is scheduled to be performed in accordance with the inspection or maintenance program. The inspection status records must show the following:

- Type of most recent inspection
- The time at which that inspection was performed

- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time
- The scheduled time and type of the next inspection

21. AIRWORTHINESS DIRECTIVES. The operator must maintain the current status of all applicable Airworthiness Directives for the operator's equipment. Some acceptable sources of procedures for compliance with Airworthiness Directives are:

- Service bulletins
- Service letters
- Specific instructions provided in the Airworthiness Directive
- Approved engineering orders or authorizations

23. MAJOR ALTERATIONS AND MAJOR REPAIRS. An operator is required to retain major alteration and repair records.

25. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S AIRCRAFT

A. Repair stations performing work for operators are required by regulations to accomplish the work in accordance with the operator's program.

B. Repair stations are required to retain records of work for two years. Some operators have reported that maintenance records are not always available from repair stations beyond the two year retention period. To avoid this situation, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed. The operator is always responsible for obtaining and retaining these records required by the Administrator.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 91, and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type operation being inspected

B. *Coordination*

(1) This task requires coordination between the principal inspectors and may be required with AVN-120.

(2) If a geographic unit is performing this inspection, coordination with the Certificate Holding District Office must be maintained.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, 65, and 145
- Order 8300.10, Airworthiness Inspector's Handbook

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Schedule Inspection.* Inspection schedule is determined, as applicable, by:

- Certificate Holding District Office
- Flight Standards District Office
- Office with geographic responsibility

B. *Review Office File*

C. *Inspect Maintenance Records.* Ensure the operator has retained the required maintenance/alteration/inspection records for each aircraft, including airframe, engine, propeller, rotor, and appliances.

(1) For operators operating under a continuous airworthiness maintenance program, these records must include the following:

(a) A description of the work performed (data acceptable to the Administrator), including date of completion

(b) If the person performing the work is not an employee of the operator, the following personnel data must be provided:

- Name
- Certificate number
- Kind of certificate held

(c) The signature or other positive identification of the person approving the work

(2) For operators operating under an inspection program, these records must include the following:

(a) A description of the work performed (data acceptable to the Administrator), including date of completion

(b) For the person performing the work, the following personnel data must be provided:

- Name
- Certificate number
- oKind of certificate held

(c) The signature and certificate number of the person approving the work

E. *Ensure Operator Has Maintained Records of Airworthiness Releases*

(1) For operators operating under a continuous airworthiness maintenance program, records of airworthiness releases must be maintained until the airworthiness release is repeated or superceded, or for at least one year.

(2) Operators operating under an inspection program are not required to have airworthiness releases, but are required to maintain their aircraft in accordance with FAR Parts 43 and 91.

F.*Inspect the Total Time in Service Records.* Ensure that the operator maintains records for total time in service for the airframe, engine, propeller, and rotors.

G. *Inspect Life Limited Parts Records.* Ensure that the operator maintains records for life limited parts for the following:

- Airframe
- Engine
- Propeller
- Appliances
- Rotor

H. *Inspect Overhaul Record.* Ensure that the operator has records of all parts required to be overhauled that includes the time since last overhaul (hours, cycles, or calendar date).

I. *Inspect Inspection Status Records.* Ensure that the operator has records of the current inspection status that includes the following information:

- Type, date and time (hours, cycles, or calendar date) of inspection and next due date
- Aircraft total time in service

J. *Inspect Airworthiness Directives Records.* Ensure that the operator has records of Airworthiness Directive compliance that includes the following information:

- The Airworthiness Directive number, with its latest revision number and date
- The method of compliance
- The next due date and time of a recurring Airworthiness Directive

K. *Inspect Major Alterations and Major Repairs Records.* Ensure the operator maintains a current record of all major alterations and major repairs.

L. *Inspect Record System.* Ensure that the operator's records are being maintained in accordance with a recordkeeping system.

M. *Analyze Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

N. *Debrief Operator.* Discuss the results of the inspection. Advise the operator of deficiencies discovered during the inspection and discuss how to resolve them.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- If inspection was performed by the office having geographic responsibility, a report of any deficiencies submitted to the Certificate Holding District Office
- A letter from the Certificate Holding District Office informing the operator of the results of the inspection
- Enforcement Investigation Report, as applicable

C. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 42 INSPECT FAR PART 121 OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3358

B. *Avionics:* 5358

3. OBJECTIVE. This chapter describes the process used to inspect an operator's aircraft maintenance records under FAR Part 121.

5. GENERAL

A. Aircraft maintenance records include any records that document the performance of work on an aircraft. An operator's aircraft maintenance records must be inspected periodically to ensure that they meet the requirements of the operator's approved recordkeeping system.

B. *Surveillance Criteria.* While inspecting an operator's aircraft maintenance records, principal inspectors must determine that all the work was based on instructions, procedures, or information that has been previously approved or accepted by the FAA. Such data can be in the form of:

- Manufacturer's manuals
- Service bulletins
- Service letters
- Data included in the operator's approved inspection and/or maintenance programs
- Approved Engineering Orders or Authorizations
- Airworthiness Directives
- Other accepted documents

C. *Personnel Identification Recording Requirements.* The certificate holder's manual must provide for a positive means of identification, such as an employee identification number, for any person performing or approving work.

7. RECORD REQUIREMENTS

A. *Retaining Airworthiness Releases*

(1) Airworthiness releases must be retained by the operator for two months.

(2) All of the records necessary to show that the requirements for the issuance of an airworthiness release have been met must be retained until the work is repeated or superseded, or for one year.

B. *Total Time in Service Records*

(1) The total time in service record is a record starting from the date of manufacture and continuing through the life of the aircraft.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

(2) When an engine is rebuilt and certified to zero time, total time in service becomes zero (FAR § 91.421 {91.175}).

C. *Life Limited Parts.* Operators must have a current record of the status of life limited items. This record indicates the present accumulated time in service of each life limited item.

NOTE: Life limited parts may not be rebuilt and certified to zero time.

D. *Records of Overhaul.* An operator must maintain overhaul records of any item required to be overhauled. These

records must be maintained until the work is superseded or repeated by work of equivalent scope and detail.

E. *Inspection Status.* Inspection status defines the work that has been and is scheduled to be performed per the inspection or maintenance program. The inspection status records must show the following:

- Type of most recent inspection
- The time at which that inspection was performed
- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time
- The scheduled time and type of next inspection

F. The operator must maintain a record of the current status of all applicable Airworthiness Directives for the operator's equipment. Some acceptable sources of procedures for compliance with Airworthiness Directives are:

- Service bulletins
- Service letters
- Specific instructions provided in the Airworthiness Directive
- Approved Engineering Orders or Authorizations

NOTE: Only data specifically approved for Airworthiness Directive accomplishment by the appropriate Aircraft Certification Office is authorized.

G. *Major Repair and Major Alteration Records.*

(1) An operator must prepare a report of each major repair and major alteration.

(a) The major alteration report must be sent to the Certificate Holding District Office.

(b) A copy of the major repair report must be kept available for inspection.

(2) Additionally, the operator must keep a list of all current major alterations.

NOTE: AFS-330 is developing additional clarification on the maintenance record requirements for major repairs and major alterations.

9. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S AIRCRAFT. Since repair stations only have to retain records of work performed for two years, some operators have reported that maintenance records are not always available from repair stations beyond the two year retention period. Since the operator is always responsible for obtaining and retaining the records required by the Administrator, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 121
- Successful completion of the Airworthiness Inspectors Indoctrination String Course or equivalent
- Familiarity with the type of operation being inspected

B. *Coordination*

(1) This task requires coordination between the principal inspectors, the operator, and with AVN-120, as applicable.

(2) If the task is performed by the office with geographic responsibility, coordinate with Certificate Holding District Office principal inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, 65, and 145

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Office File*

B. *Inspect the Maintenance Records.* Ensure the operator has retained the required maintenance/alteration/-inspection records for each aircraft, including airframe, engine, propeller, and appliances. These records should include the following:

(1) A description of the work performed (data acceptable to the Administrator), including the date of completion

(2) The name of the person performing the work if that person is not an employee of the operator

(3) The name or other positive identification of the person approving the work

C. *Inspect the Operator's Record System.* Inspect records to ensure manual procedures are being followed. During inspection, document and photocopy any confusing areas, obvious omissions or apparent discrepancies. Records checked should include the following:

(1) *Airworthiness releases*

(a) Ensure that the operator is retaining airworthiness releases for at least 60 days.

(b) Ensure that the airworthiness release signature is authorized by the operator.

(c) Review the signer's training record to ensure the person is trained to the level identified in the operator's manual.

(2) *Flight/Maintenance logs.* Obtain and review the flight/maintenance logs to determine the effectiveness of the airworthiness release procedures following scheduled inspections and non-routine maintenance. Review the records to ensure the following:

(a) Flight discrepancies are entered after each flight

(b) Corrective actions are related to the discrepancy

(c) Corrective actions and sign-offs are entered in the maintenance record per manual procedures

(d) Repetitive discrepancies are handled according to the manual

(e) Deferred maintenance as authorized by the Minimum Equipment List (MEL) is deferred per the operator's MEL and manual instructions

(f) Required Inspection Items (RII) are signed off per the manual instructions and the inspector was authorized by the operator to perform the inspection

(3) *Scheduled inspections.* Select or obtain work packages for scheduled inspections and ensure the following:

(a) That scheduled inspections are properly signed off

(b) That generated non-routine items are properly signed off

(c) That Required Inspection Items are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel

(d) That repairs are categorized correctly (major or minor) and that approved data is being used

(4) *Total time in service records.* Compare the manual procedures with the actual accomplishment of the total

time/cycles in service records for the airframe, engine, propeller and rotor.

NOTE: Although FAR Part 121 does not specifically call for time/cycles in-service records of engines, propellers, and rotors, it is difficult for an operator to control the maintenance program without those records.

(a) Select and obtain a total time/cycles in-service record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.

(b) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.

(c) If the operator maintains a handwritten maintenance record for engines, compare the record entries to the aircraft flight log entries for the following:

- Overall accuracy
- The possible transposition of flight time/cycles in service, numbers, etc.

(5) *Life limited parts records.* Compare the manual procedures for life limited parts with the actual recording of the current status of life limited parts. Select a random sample of records and ensure the following:

(a) All life limited parts described on type certificate data sheets or in a manual referenced on the type certificate data sheets are noted

(b) The current status of each part is provided, to include:

- Total operating hours/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(c) The time/cycles limits on the operator's list are the same as those on the type certificate data sheets

(d) Life limits have not been exceeded. Select a sample of life limited items that have been installed within the last 12 months and review records to ensure that life limited time was carried forward from the previous service record.

(e) If overhauled, the overhaul record is available

(f) The life limit of an item has not been changed as a result of the overhaul

(6) *Overhaul records.* Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.

(a) Select a random sample of overhauled items to ensure the following:

- Overhaul records are available for items selected
- The records contain a description of the overhaul
- The item was overhauled per the overhaul specifications by a qualified and authorized person
- The component was approved for return to service by an authorized person

(b) Review removal/installation records of overhauled components to determine if the overhaul was done within the authorized time limits. Current regulations require these records to be maintained until the work is superseded by work of equivalent scope and detail.

(7) *Inspection status records*

(a) Compare the manual procedures for maintaining the current aircraft inspection status with available records to ensure that the recorded daily flight hours/cycles are used to obtain the current inspection status.

(b) Take a random sample of aircraft inspection records to ensure that scheduled inspections times/cycles were not exceeded (overflown).

(8) *Airworthiness Directives.* Request a random sample of aircraft Airworthiness Directive compliance records to ensure the following:

(a) The records contain all applicable Airworthiness Directives for the sampled aircraft

(b) That Airworthiness Directive requirements were accomplished within the effective times of the Airworthiness Directive

NOTE: Special emphasis should be put on checking recurring Airworthiness Directives.

(c) The Airworthiness Directive record contains current status and method of compliance. The current status must include the following:

- A list of all Airworthiness Directives applicable to the aircraft
- Date and time of compliance
- Time and/or date of next required action (if recurring Airworthiness Directive)

(d) The record is being retained indefinitely

NOTE: If any Airworthiness Directives have an alternative method of compliance, ensure the operator has obtained prior approval for that alternative method.

(e) The method of compliance is the same as specified in the Airworthiness Directive

(f) The date of compliance is identical with the date on the current status list

(g) The mechanic/inspector was properly trained and authorized to accomplish the work

(h) The accomplishment was properly signed off

(9) *Major alteration and major repair records*

(a) Compare the manual procedures for maintaining a list of major alterations and the reports for major repairs with the actual work records.

(b) Compare a random sample of major repair and alteration records to the alteration and repair list and/or reports to ensure the following:

- List and/or reports contain the date of accomplishment and a brief description of the work
- The respective maintenance records show that the work was accomplished per approved data

NOTE: When major alterations or major repairs are identified and not recorded on the above-mentioned list or report, request the actual maintenance accomplishment record and the FAA approved data from the operator.

D. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task may result in the following:

- If the inspection was performed by the office having geographic responsibility, a report of any deficiencies submitted to the Certificate Holding District Office
- A letter from the Certificate Holding District Office informing the operator of the results of the inspection
- Enforcement Investigation Report, as applicable

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 43 MONITOR FAR PART 121 EXTENDED-RANGE OPERATIONS WITH TWO-ENGINE AIRCRAFT (ETOPS)

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3647

B. *Avionics:* 5647

3. OBJECTIVE. This chapter describes the process of monitoring a FAR Part 121 operator authorized for extended-range operations with two-engine airplanes under FAR Part 121.161(a).

5. GENERAL. Since extended range programs have such a great potential for adverse safety impact if not properly administered, inspectors dealing with ETOPS must place special emphasis on surveillance activities.

A. Surveillance should include scheduling, coordinating, and reviewing the following, as applicable:

- Trend analysis
- Problem identification and resolution
- Implementation of corrective actions

(1) During surveillance, report events or problems to the Aircraft Evaluation Group, ANM-270 or ANE-270, within 72 hours.

(2) In addition to the items required to be reported by FAR §§ 21.3 and 121.703, the following information should be included:

- In-flight shut downs
- Diversions or turnbacks
- Uncommanded power changes or surges
- Inability to control the engine or obtain desired power
- Problems in systems considered to have a fundamental influence on flight safety
- Failure to start the APU while airborne
- Uncommanded inflight shut-downs of the APU
- Any other event the inspector considers detrimental to extended-range operations

(3) Items/systems that are considered critical to flight safety include the following:

- Electrical, including batteries
- Hydraulic
- Pneumatic
- Flight instrumentation
- Fuel
- Flight control
- Ice protection
- Engine start and ignition
- Propulsion system instruments
- Navigation and communications
- Auxiliary power-units
- Air conditioning and pressurization
- Cargo fire suppression
- Emergency equipment
- Any other equipment that is required for extended range operations

(4) The event or problem reports must contain the following information:

- The type of aircraft
- The N-number of the aircraft

- The Engine type and serial number
- The total time and cycles, including the last inspection or shop visit
- The total time since overhaul or inspection of the unit or the system affected
- The phase of flight, to include climb, cruise, and descent. Coordinate with operations inspectors to acquire information such as speed, altitude, ambient temperatures, and atmospheric conditions during the event.
- The location and length of the diversion or turnback
- Any corrective actions taken
- Any other information pertinent to the event

(5) Each month, the inspector must acquire and provide to the Aircraft Evaluation Group the following information:

- A summary of in-flight shut down rates (12 month rolling average)
- Any delays and cancellations
- All ground events (aborted takeoff, power shortfall or loss, and engine removals)

B. *Approved Maintenance Program Changes.* Operator submitted maintenance program changes must meet the following criteria prior to approval:

(1) Changes must be submitted with supporting documentation

(2) Changes must be submitted at least 60 days prior to the scheduled implementation

(3) Changes must enhance the program without deleting or degrading approved program elements

NOTE: Under no circumstances should the inspector allow changes to be made to Certification Maintenance Requirements (CMR) or Configuration Maintenance Procedures document (CMP) without prior approval from FAA Engineering and/or Flight Standards Service.

C. *Trend Analysis*

(1) Surveillance should be directed toward the identification and correction of adverse trends found during APU, airframe, and propulsion systems monitoring.

(2) Other indications of adverse trends include the following:

- Repeat write-ups by the pilot
- The degradation of engine condition
- High fluid consumption rates
- The recurrence of deficient areas as identified by the carrier's continuing analysis and surveillance program
- Any patterns of irregularities, overly frequent repairs, etc.

D. *Reducing Diversion Times.* When adverse trends and/or maintenance problems have been detected, a reevaluation of the operator's program should be performed.

(1) This reevaluation should be performed by the operator and the Certificate Holding District Office with consultation from the Propulsion System Reliability Assessment Board (PSRAB).

(2) Based on the results of the reevaluation, the Principal Airworthiness Inspector will make a written recommendation to be submitted to AFS-300.

E. *Reinstating Diversion Times.* In order to reinstate an operator's diversion times the operator must first develop and submit a Corrective Action Plan to the Principal Airworthiness Inspector.

(1) When reviewing the operator-submitted Corrective Action Plan, the Principal Airworthiness Inspector should compare the Corrective Action Plan to the recommendations set forth in the Evaluation Report. The Principal Airworthiness Inspector should cooperate with the operator during the development of the Corrective Action Plan but should not become involved in the actual writing of the plan.

(2) Upon operator initiation of the corrective actions, the Principal Airworthiness Inspector must perform specific surveillance of those corrective actions in addition to the

normal surveillance of the ETOPS program.

(a) After a minimum of six months of additional surveillance the Principal Inspector must perform an in-depth audit to verify the effectiveness of the corrective actions.

(b) When the Principal Airworthiness Inspector is satisfied that the problems have been solved, a recommendation can be made to AFS-300 for reinstatement or adjustment of the diversion times. For example, a suspended diversion time of 180 minutes could be reinstated to 120 minutes.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 121
- Knowledge of Advisory Circular 120-42, Extended-Range Operation With Two-Engine Airplanes, as amended
- Successful completion of the Air Carrier Airworthiness Inspectors Indoctrination String Course
- Successful completion of the Aircraft Maintenance Reliability Program Course, when available
- Successful completion of the Aircraft Systems Training Course, when available

B. *Coordination*

(1) This task requires coordination among maintenance inspectors, avionics inspectors, Regional offices, AFS-400, and AFS-300 or the Propulsion System Reliability Assessment Board (PSRAB), as required.

(2) For questions regarding an ETOPS authorization, contact the following, as required:

- AFS-330, Maintenance Division
- Aircraft Evaluation Group (AEG)
- Aircraft/Engine Certification Directorate

(3) For questions regarding an ETOPS Minimum Equipment List, contact the following, as required:

- AFS-300, Aircraft Maintenance Division
- AFS-260, Program Management Branch

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Operator's manuals
- Operations Specifications

B. *Forms*

- FAA Form 8400.8, Operations Specifications

C. *Job Aids.* None.

5. PROCEDURES

A. *Monitor the Operators Program.* Ensure the following:

(1) The approved extended-range maintenance programs are followed as outlined in the maintenance manual sections that are referenced in the operations specifications

(2) Operator-proposed changes to the approved extended-range maintenance program are submitted to the Certificate Holding District Office for review 60 days prior to implementation

NOTE: The inspector must report events or problems to the Aircraft Evaluation Group, ANM-270, or ANE-270, within 72 hours.

B. *Submit Reports*

(1) On a monthly basis, provide to the Aircraft Evaluation Group the following information:

- A summary of in-flight shut down rates

- Any delays and cancellations
- All ground events (aborted takeoff, power shortfall or loss, and unscheduled engine removals)

(2) Respond to special events by gathering and submitting the following information to the requesting FAA authorities:

- Engine condition monitoring and oil condition monitoring program summaries
- Component removal failure summaries
- Pilot reports
- Any other information, as requested

C. *Review Trend Analysis.* Perform an immediate evaluation of the operator's program when any of the following occur:

- The propulsion system IFSD exceeds .05/1000 engine hours for a 120-minute operation (based on a 12 month rolling average)
- The propulsion system IFSD exceeds .03/1000 engine hours for a 180-minute operation (based on a 12 month rolling average)
- Any significant diversions occur due to airframe and/or powerplant induced discrepancies

NOTE: Consideration must be given to operators with small fleets due to the impact of a single event on the statistical rate. In these circumstances a review of the specific events will be more useful.

D. *Reduce Diversion Times*

(1) When adverse trends and/or maintenance problems have been detected ensure that an immediate evaluation is performed by the operator and the Certificate Holding District Office. If necessary, contact the Propulsion System Reliability Assessment Board (PSRAB) for consultation.

(2) Submit a report outlining the identified problems and any corrective actions to the Director, Flight Standards Service.

(3) Based on the results of the evaluation, make a written recommendation and submit it to AFS-300.

E. *Reinstate Diversion Times*

(1) Review and, as appropriate, approve the operator-submitted Corrective Action Plan.

(2) Schedule and conduct an in-depth audit of the ETOPS program corrective actions after a minimum of six months of additional surveillance.

(3) Upon completion of the audit make the appropriate recommendation on the reinstatement or adjustment of the diversion times, in writing, to AFS-300.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task will result in the following:

(1) For normal surveillance, submittal of required reports

(2) For reduction of diversion times, a written recommendation submitted to AFS-300

(3) For reinstatement or adjustment of diversion times, a written recommendation to AFS-300

NOTE: AFS-1, based on the Certificate Holding District Office's recommendation, will have the principal inspector amend or reissue the operations specifications.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 44 INSPECT FAR PART 135 (10 OR MORE) OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3358

B. *Avionics:* 5358

3. OBJECTIVE. This chapter describes the process used to inspect an operator's aircraft maintenance records under FAR § 135.411(a)(2).

5. GENERAL

A. Aircraft maintenance records include any records that document the performance of work on an aircraft. An operator's aircraft maintenance records must be periodically inspected to ensure that they meet the requirements of the operator's approved recordkeeping system.

B. *Surveillance Criteria.* While inspecting an operator's aircraft maintenance records, principal inspectors must determine that all the work was based on FAA approved or accepted instructions, procedures, or information. Such data can be in the form of:

- Manufacturer's manuals
- Service bulletins
- Service letters
- Data included in the operator's approved inspection and/or maintenance programs
- Approved Engineering Orders or Authorizations
- Airworthiness Directives
- Other accepted documents

C. *Personnel Identification Recording Requirements.* The certificate holder's manual must provide for a positive means of identification, such as an employee identification number, for any person performing or approving work.

7. RECORD REQUIREMENTS

A. *Retaining Airworthiness Releases.* Records for each airworthiness release must be retained until either the work is repeated or superseded by other work, or for one year after the work is performed.

B. *Total Time in Service Records*

(1) The total time in service record is a record starting from the date of manufacture and continuing through the life of the aircraft.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

(2) When an engine is rebuilt and certified to zero time, the total time in service becomes zero per FAR § 91.421 {91.175}.

C. *Life Limited Parts.* Operators must have a current record of the status of life limited items. This record shows the present accumulated time in service of each life limited item.

NOTE: Life limited parts may not be rebuilt and certified to zero time.

D. *Records of Overhaul.* An operator must maintain overhaul records of any item required to be overhauled. These records must be maintained until the work is superseded or repeated by work of equivalent scope and detail.

E. *Inspection Status.* Inspection status defines the work that has been and is scheduled to be performed according to the inspection or maintenance program. The inspection status records should show the following:

- Type of most recent inspection
- The time at which that inspection was performed
- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time
- The scheduled time and type of next inspection

F. The operator must maintain the current status of all applicable Airworthiness Directives for the operator's equipment. Some acceptable sources of procedures for compliance with Airworthiness Directives are:

- Service bulletins
- Service letters
- Specific instructions provided in the Airworthiness Directive
- Approved Engineering Orders or Authorizations

G. An operator must retain a list of all major alterations and major repairs.

NOTE: AFS-330 is developing additional clarification on the maintenance record requirements for major repairs and major alterations.

9. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S AIRCRAFT. Since repair stations only have to retain records of work performed for two years, some operators have reported that maintenance records are not always available from repair stations beyond the two year retention period. Since the operator is always responsible for obtaining and retaining the records required by the Administrator, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 135
- Successful completion of the Airworthiness Inspectors Indoctrination String Course or equivalent
- Familiarity with the type of operation being inspected

B. *Coordination*

(1) This task requires coordination between the principal inspectors and the operator.

(2) If the task is performed by the office with geographic responsibility, coordinate with Certificate Holding District Office principal inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, 65, and 145

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Office File*

B. *Inspect the Maintenance Records.* Ensure the operator has retained the required maintenance/alteration/-inspection records for each aircraft, including airframe, engine, propeller, rotor, and appliances. These records should include the following:

(1) A description of the work performed (data acceptable to the Administrator), including the date of completion

(2) The name of the person performing the work if that person is not an employee of the operator

(3) The name or other positive identification of the person approving the work

C. *Inspect the Operator's Record System.* Inspect the records to ensure that manual procedures are being followed. During the inspection, document and photocopy any problem areas, obvious omissions or apparent discrepancies. The records checked should include the following:

(1) *Airworthiness releases*

(a) Ensure that the operator retains the airworthiness release records until the airworthiness release is repeated or superseded, or for at least one year.

(b) Ensure that the airworthiness release signature is authorized by the operator.

(c) Review the signer's training record to ensure the person is trained to the level identified in the operator's manual.

(2) *Flight/Maintenance logs.* Obtain and review the flight/maintenance logs to determine the effectiveness of the airworthiness release procedures following scheduled inspections and non-routine maintenance. Review the records to ensure the following:

(a) Flight discrepancies are entered after each flight

(b) Corrective actions are related to the discrepancy

(c) Corrective actions and sign-offs are entered in the maintenance record per manual procedures

(d) Repetitive discrepancies are handled per the manual procedures

(e) Deferred maintenance as authorized by the Minimum Equipment List (MEL) is deferred per the operator's MEL and manual instructions

(f) Required Inspection Items (RII) are signed off per the manual instructions and the inspector was authorized by the operator to perform the inspection

(3) *Scheduled inspections.* Select or obtain work packages for scheduled inspections and ensure the following:

(a) That scheduled inspections are properly signed off

(b) That generated non-routine items are properly signed off

(c) That Required Inspection Items are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel

(d) That repairs are categorized correctly (major or minor) and that approved data is being used

(4) *Total time in service records.* Compare the manual procedures with the actual accomplishment of the total time/cycles in service records for the airframe, engine, propeller and rotor.

(a) Select and obtain a total time/cycles inservice record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.

(b) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.

(c) If the operator maintains a handwritten maintenance record for engines, compare the record entries to the aircraft flight log entries for the following:

- Overall accuracy

- The possible transposition of flight time/cycles in service, numbers, etc.

(5) *Life limited parts records.* Compare the manual procedures for life limited parts with the actual recording of the current status of life limited parts. Select a random sample of records and ensure the following:

(a) All life limited parts described on type certificate data sheets or in a manual referenced on the type certificate data sheets are noted

(b) The current status of each part is provided, to include:

- Total operating hours/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(c) The time/cycles limits on the operator's list are the same as those on the type certificate data sheets

(d) Life limits have not been exceeded. Select a sample of life limited items that have been installed within the last 12 months and review records to ensure that life limited time was carried forward from the previous service record.

(e) If overhauled, the overhaul record is available

(f) The life limit of an item has not been changed as a result of the overhaul

(6) *Overhaul records.* Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.

(a) Select a random sample of overhauled items to ensure the following:

- Overhaul records are available for those items selected
- The records contain a description of the overhaul
- The item was overhauled according to the overhaul specifications by a qualified and authorized person
- The component was approved for return to service by an authorized person

(b) Review the removal/installation records of overhauled components to determine if the overhaul was accomplished within the authorized time limits. Current regulations require that these records be maintained until the work is superseded by work of equivalent scope and detail or one year.

(7) *Inspection status records*

(a) Compare the manual procedures for maintaining the current aircraft inspection status with available records to ensure that daily flight hours/cycles are used to obtain the current inspection status.

(b) Take a random sample of aircraft inspection records to ensure that scheduled inspections times/cycles were not exceeded (overflown).

(8) *Airworthiness Directives.* Request a random sample of aircraft Airworthiness Directive compliance records to ensure the following:

(a) The records contain all applicable Airworthiness Directives for the sampled aircraft

(b) That Airworthiness Directive requirements were accomplished within the effective times of the Airworthiness Directive

NOTE: Special emphasis should be put on checking recurring Airworthiness Directives.

(c) The Airworthiness Directive record contains current status and method of compliance. The current status must include the following:

- A list of all Airworthiness Directives applicable to the aircraft
- The date and time of compliance
- The time and/or date of next required action (if recurring Airworthiness Directive)

(d) The record is being retained indefinitely

NOTE: If any Airworthiness Directives have an alternative method of compliance, ensure the operator has obtained prior approval for that alternative method.

(e) The method of compliance is the same as specified in the Airworthiness Directive

(f) The date of compliance is identical to the date on the current status list

(g) The mechanic/inspector was properly trained and authorized to accomplish the work

(h) The accomplishment was properly signed off

(9) *Major alteration and major repair records*

(a) Compare the manual procedures for maintaining a list of major alterations and major repairs with the actual work records.

(b) Compare a random sample of major repair and alteration work records to the major alteration and repair list to ensure the following:

- The list and/or reports contain the date of accomplishment and a brief description of the work
- The respective maintenance records show that the work was accomplished according to approved data

D. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task may result in the following:

- If the inspection was performed by the office having geographic responsibility, a report of any deficiencies submitted to the Certificate Holding District Office
- A letter from the Certificate Holding District Office informing the operator of the results of the inspection
- Enforcement Investigation Report, as applicable

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

[CHAPTERS 45 THROUGH 59 RESERVED]

CHAPTER 60 MONITOR FAR PART 125 AIRPLANE INSPECTION PROGRAM

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3343/3344

B. *Avionics:* 5343/5344

3. OBJECTIVE. This chapter provides guidance in surveilling a FAR Part 125 operator's Airplane Inspection Program (AIP) and engine maintenance program.

5. GENERAL. Airworthiness inspectors should have as much knowledge of the operator's operation as possible. This includes areas of operation, type of equipment, operating history, and maintenance/inspection organization(s) with which it arranges for the performance of maintenance.

7. MAINTENANCE REQUIREMENTS

A. The Airplane Inspection Program will be included in the operator's manual and should be referenced during the inspection.

B. FAR Part 125 operators have the option of using one of three different types of inspection programs. These include:

- The inspection portion of a current FAR Part 121 or 135 continuous airworthiness maintenance program that has been approved for use by a certificate holder under FAR Part 121 or Part 135 (Ref. FAR § 125.247(e)(1))
- An inspection program currently recommended by the manufacturer (Ref. FAR § 125.247(e)(2))
- An approved inspection program developed by the FAR Part 125 certificate holder

C. Engines must be maintained in accordance with the overhaul intervals recommended by the manufacturer or a program approved by the Administrator and the engine overhaul intervals specified in the inspection programs required by FAR § 125.247(a)(3). (Ref. FAR § 125.247(d)(2))

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 125
- Previous experience with complex maintenance/inspection programs

B. *Coordination*

- This task requires coordination between maintenance and avionics inspectors
- If a geographic unit is performing this inspection, coordination with the Certificate Holding District Office must be maintained
- It is recommended that this inspection be performed in conjunction with the maintenance records inspection. See Vol. III, Ch. 61.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 25, 43, 65, and 91
- Advisory Circular 20-42, Hand Fire Extinguishers for Use In Aircraft
- Advisory Circular 125-1, Operations of Large Airplanes Subject to FAR Part 125
- Advisory Circular 91-56, Supplemental Structural Inspection Program
- Advisory Circular maintenance inspection notes
- Operations specifications
- Operator's company manual

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the following in the operator's office file:*

(1) Operations specification Part D to ensure:

- Inspection program is referenced to a specific document, e.g., manufacturer's program
- Inspection program revisions are current

(2) Operator's manual to ensure that airplane inspection program is included and revisions are current with operations specifications.

B. *Perform Inspection at Operator's Facility*

(1) Review operator's copy of the operations specifications Part D to ensure currency with office copy.

(2) Review operator's copy of airplane inspection program to ensure currency with the following:

- Operations specifications
- Equipment list

C. *Conduct Debriefings.* Brief operator on results of evaluation. Discuss any deficiencies.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in one of the following:

- A report of any deficiencies (if inspection was performed by the office having geographic responsibility). This report must be submitted to the Certificate Holding District Office
- A letter from the Certificate Holding District Office informing the operator of the results of the inspection, as required
- Enforcement Investigation Report, as applicable

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Continued normal surveillance.

CHAPTER 61 INSPECT FAR PART 125 OPERATOR'S MAINTENANCE RECORDS

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3358

B. *Avionics:* 5358

3. OBJECTIVE. This chapter describes the process of inspecting an operator's airplane maintenance records under FAR Part 125.

5. GENERAL

A. Airplane maintenance records include any records that document the performance of work on an airplane. An operator's airplane maintenance records must be periodically inspected to ensure that they meet the requirements of the operator's approved recordkeeping system.

B. *Surveillance Criteria.* While inspecting an operator's airplane maintenance records, principal inspectors must determine that all the work was based on instructions, procedures, or information that has been previously approved or accepted by the FAA. Such data can be in the form of:

- Manufacturer's manuals
- Service bulletins
- Service letters
- Data included in the operator's approved airplane inspection program
- Airworthiness Directives
- Other accepted documents

C. *Personnel Identification Recording Requirements.* Since FAR Part 125 operators do not have the authorization to approve an airplane for return to service, the name(s), address(es), and certificate number(s) of the person(s) performing the work and the person(s) approving the work must be recorded. These personnel must be listed in the operator's manual.

7. RECORD REQUIREMENTS

A. *Retaining Airworthiness Releases.* Records for each airworthiness release must be retained for at least 60 days.

B. *Total Time in Service Records*

(1) The total time in service record is a record starting from the date of manufacture and continuing through the life of the airplane.

NOTE: Due to the renumbering of FAR Part 91, this chapter contains the old FAR Part 91 section numbers in brackets {}, following the revised section numbers.

(2) When a rebuilt engine is certified to zero time, the total time in service becomes zero (reference FAR § 91.421, {91.175}) Do not confuse this with zero time since overhaul as this is referring to the current overhaul status and does not affect total time in service.

C. *Life Limited Parts.* Operators must have a current record of the status of life limited items. This record shows the present accumulated time in service of each life limited item.

D. *Records of Overhaul.* An operator must maintain overhaul records of any item required to be overhauled by the operator's inspection program. These records must be maintained until the work is superseded or repeated by work of equivalent scope and detail.

E. *Inspection Status.* Inspection status defines the work that has been and is scheduled to be performed according to the inspection program. The inspection status records should show the following:

- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time
- The scheduled time and type of next inspection

F. *Airworthiness Directives.* The operator must maintain the current status of all applicable Airworthiness Directives for the operator's equipment. Some acceptable sources of procedures for compliance with Airworthiness Directives are:

- Service bulletins
- Service letters
- Specific instructions provided in the Airworthiness Directive

G. *Major Repair and Major Alteration Records.* Applicants are required to retain the records of each major repair/alteration to an airplane, to include the following information:

(1) *Major repair records:*

- A description of the work performed with approved data
- The date of completion of the work performed
- The signature, type of certificate, and certificate number of the person approving the airplane for return to service

(2) *Major alteration records:*

- A description of the work performed with approved data
- The date of completion of the work performed
- The signature, type of certificate, and the certificate number of the person approving the airplane for return to service

9. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S AIRPLANE. Since repair stations only have to retain records of work performed for two years, some operators have reported that maintenance records are not always available from repair stations beyond the two year retention period. Since the operator is always responsible for obtaining and retaining the records required by the Administrator, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 125
- Successful completion of the Airworthiness Inspectors Indoctrination String Course or equivalent
- Familiarity with the type of operation being inspected

B. *Coordination*

(1) This task requires coordination between the principal inspectors and with AVN-120, as applicable.

(2) If this task is performed by the office with geographic responsibility, coordinate with Certificate Holding District Office principal inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 39, 43, 65, and 145

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Office File*

B. *Inspect the Maintenance Records.* Ensure the operator has retained the required maintenance/alteration/-inspection records for each airplane, including airframe, engine, propeller, and appliances. These records must include the following:

(1) A description of the work performed (data acceptable to the Administrator), including the date of completion

(2) The name or other positive identification of the person approving the work

C. *Inspect the Operator's Record System.* Inspect the records to ensure that manual procedures are being followed. During the inspection, document and photocopy any problem areas, obvious omissions or apparent discrepancies. The records checked should include the following:

(1) *Airworthiness releases*

(a) Ensure that the operator retains the airworthiness release records for at least 60 days.

(b) Ensure that the airworthiness release signature is authorized by the operator, per FAR Part 43.

(c) Review the signer's training record to ensure the person is trained to the level identified in the operator's manual.

(2) *Flight/Maintenance logs.* Obtain and review the flight/maintenance logs to determine the effectiveness of the airworthiness release procedures following scheduled inspections and non-routine maintenance. Review the records to ensure the following:

(a) Flight discrepancies are entered after each flight

(b) Corrective actions are related to the discrepancy

(c) Corrective actions and sign-offs are entered in the maintenance record per manual procedures

(d) Repetitive discrepancies are handled according to the manual

(e) Deferred maintenance as authorized by the Minimum Equipment List (MEL) is deferred per the operator's MEL and manual instructions

(f) Required Inspection Items (RII) are signed off per the manual instructions and that the inspector was authorized by the operator to perform the inspection

(3) *Scheduled inspections.* Select or obtain work packages for scheduled inspections and ensure the following:

(a) That scheduled inspections are properly signed off

(b) That generated non-routine items are properly signed off

(c) That Required Inspection Items are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel

(d) That repairs are categorized correctly (major or minor)

(e) That approved data is being used

(4) *Total time in service records.* Compare the manual procedures with the actual accomplishment of the total time/cycles in-service records for the airframe, engine, propeller and rotor.

(a) Select and obtain a total time/cycles in service record for a sample number of airplanes to ensure that cumulative flight times/cycles are added to the record.

(b) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.

(c) If the operator maintains a handwritten maintenance record for engines, compare the record entries to the airplane flight log entries for the following:

- Overall accuracy
- The possible transposition of flight time/cycles in service, numbers, etc.

(5) *Life limited parts records.* Compare the manual procedures for life limited parts with the actual recording of the current status of life limited parts. Select a random sample of records and ensure the following:

(a) All life limited parts described on type certificate data sheets or in a manual referenced on the type certificate data sheets are noted

(b) The current status of each part is provided, to include:

- Total operating hours/cycles accumulated
- Life limit (total service life)
- Remaining time/cycles
- Modifications

(c) The time/cycles limits on the operator's list are the same as those on the type certificate data sheets

(d) Life limits have not been exceeded. Select a sample of life limited items that have been installed within the last 12 months and review the records to ensure that life limited time was carried forward from the previous service record.

(e) If overhauled, the overhaul record is available

(f) The life limit of an item has not been changed as a result of the overhaul

(6) *Overhaul records.* Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.

(a) Select a random sample of overhauled items to ensure the following:

- Overhaul records are available for those items selected
- The records contain a description of the overhaul
- The item was overhauled per the overhaul specifications by a qualified and authorized person
- The component was approved for return to service by an authorized person

(b) Review the removal/installation records of overhauled components to determine if the overhaul was accomplished within the authorized time limits. Current regulations require that these records be maintained for one year or until the work is superseded by work of equal scope and detail.

(7) *Inspection status records*

(a) Compare the manual procedures for maintaining the current airplane inspection status with available records to ensure that daily flight hours/cycles are used to obtain the current inspection status.

(b) Take a random sample of airplane inspection records to ensure that scheduled inspections times/cycles were not exceeded (overflown).

(8) *Airworthiness Directives.* Request a random sample of airplane Airworthiness Directive compliance records to ensure the following:

(a) The records contain all applicable Airworthiness Directives for the sampled airplane

(b) Airworthiness Directive requirements were accomplished within the effective times of the Airworthiness Directive

NOTE: Special emphasis should be put on checking recurring Airworthiness Directives.

(c) The Airworthiness Directive record contains current status and method of compliance. The current status must include the following:

- A list of all Airworthiness Directives applicable to the airplane
- The date and time of compliance
- The time and/or date of next required action (if recurring Airworthiness Directive)

(d) The record is being retained indefinitely

NOTE: If any Airworthiness Directives have an alternative method of compliance, ensure the operator has obtained prior approval for that alternative method.

(e) The method of compliance is the same as specified in the Airworthiness Directive

(f) The date of compliance is identical to the date on the current status list

(g) The mechanic/inspector was properly trained and authorized to accomplish the work

(h) The accomplishment was properly signed off

(9) *Major alteration and major repair records*

(a) Compare the manual procedures for maintaining the major alteration and major repair records with the actual work records to ensure consistency with the approved procedures.

(b) Select and obtain a random sample of major repair and alteration work records to ensure the following:

- The records contain the date of accomplishment and a brief description of the work
- The records show that the work was accomplished according to approved data

D. *Analyze the Findings.* Evaluate all deficiencies to determine if corrective actions will be required.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task may result in the following:

- If the inspection was performed by the office having geographic responsibility, a report of any deficiencies submitted to the Certificate Holding District Office
- A letter from the Certificate Holding District Office informing the operator of the results of the inspection
- Enforcement Investigation Report, as applicable

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

[CHAPTERS 62 THROUGH 74 RESERVED]

CHAPTER 75 MONITOR MAINTENANCE PROGRAM FOR U.S.-REGISTERED AIRCRAFT OPERATED BY A FOREIGN OPERATOR

Section 1. Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3303/3313

B. *Avionics:* 5303/5313

NOTE: The WPMS codes for evaluating maintenance programs are to be developed.

3. OBJECTIVE. This chapter provides guidance in monitoring maintenance programs for U.S. registered aircraft operated by foreign operators under FAR Part 129.

5. GENERAL

A. Aviation Safety Inspectors conduct surveillance of each foreign air carrier using U.S.-registered aircraft to ensure regulatory compliance of the approved maintenance program. The inspection is normally scheduled or requested by the FAA office with responsibility for that program. Only those offices that have responsibility for administration of the operator's maintenance program will have a regularly scheduled monitoring program.

B. Normally, the foreign air carrier should be notified when surveillance is to be conducted. Reported or suspected unsafe operations, incidents, or complaints must be promptly inspected or investigated and appropriate corrective action taken.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 65, and 129
- Completion of the Airworthiness Inspector's Indoctrination Course

B. *Coordination.* This task requires coordination between maintenance, avionics, and operations inspectors. The task may require coordination with the Regional Office and/or the appropriate Civil Air Authority and U.S. Embassy, as required.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 21, 91, and 145
- Advisory Circular 129-4, Maintenance Programs for U.S. Registered Aircraft Under Part 129, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 3, Ch. 98
- International Civil Aviation Organization, Annex 6, Part I, Chapters 8 & 11

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Notify the Foreign Air Carrier When Surveillance is to be Conducted.* Do not allow safety to be jeopardized by the notification process. Promptly investigate reported or suspected unsafe operations, incidents, or complaints.

B. *Inspect Appropriate Items*

(1) As needed, ensure compliance with the air carrier's approved maintenance program and Minimum Equipment List.

(2) Verify that the U.S. airworthiness and registration certificates are valid for the aircraft.

(3) Ensure that maintenance is performed in accordance with FAR Part 43.

C. *Analyze Results of Surveillance.* Determine whether deficiencies exist and conduct a verbal debriefing with the operator.

7. TASK OUTCOMES.

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

(1) A letter informing the operator of the results of the inspection

(2) Possible Enforcement Investigation Report

9. FUTURE ACTIVITIES. Surveillance as requested.

[CHAPTERS 76 THROUGH 79 RESERVED]

[CHAPTERS 80 THROUGH 85 RESERVED]

[CHAPTERS 86 THROUGH 90 RESERVED]

CHAPTER 91 INSPECT FAR PART 141 PILOT SCHOOL

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3650

B. *Avionics:* 5650

3. OBJECTIVE. This chapter describes how to conduct surveillance of a FAR Part 141 certificated pilot school to ensure programs and systems are in compliance with the Federal Aviation Regulations.

5. GENERAL

A. It is extremely important that training aircraft be properly maintained. Minor malfunctions that may be controlled by an experienced pilot could place the relatively inexperienced student pilot in a critical situation.

B. Training aircraft are subject to greater wear and deterioration because of frequent takeoffs and landings. This is particularly true in aircraft with retractable gear. The engines of training aircraft are also very vulnerable to overheating and rapid cooling damage.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 65, 91, and 141
- Familiarity with the type equipment to be used by applicant
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task will require coordination with maintenance, avionics, and operations inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 45, 47, 133, and 137
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. III, Chs. 38 and 98

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review General Aviation Alerts/Weekly Summaries.* Review for trends and problem areas regarding the make(s) and model(s) of aircraft the operator is using in the training program.

B. *Inspect Aircraft.* Inspect aircraft for certification, registration, and condition for safe operations. Ensure the operator's aircraft are equipped to perform functions appropriate for the course of training.

(1) Inspect special purpose equipment installed on aircraft, such as external load equipment, agricultural dispensing equipment, and modifications for handicapped students, for approved data.

(2) Ensure that the equipment installed in aircraft to be used for radio navigation and instrument training is operational and complies with the minimum requirements of FAR §§ 91.171 and 91.172.

C. *Inspect Aircraft Maintenance Records*

(1) Inspect aircraft maintenance and alteration records to determine that aircraft have a current, appropriate inspection meeting the Federal Aviation Regulations requirements. Ensure compliance with applicable Airworthiness Directives and life-limited parts requirements.

(2) Ensure that current weight and balance information is available to the pilot of the aircraft.

D. *Inspect Maintenance Facilities.* Ensure the school has access to facilities and equipment sufficient to maintain the school's aircraft.

E. *Inspect Contract Agencies.* If the operator uses contractors such as repair stations to perform maintenance, refer to Vol. III, Ch. 98.

F. *Analyze Results.* Review findings of the inspection and determine whether the operation is in compliance with the regulations.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Upon completion of this task, accomplish the following:

(1) If all aircraft are found airworthy, the records are in compliance, and the facilities are satisfactory, notify the operator or the operator's representative

(2) If deficiencies are found on aircraft and/or facilities, provide a written confirmation of the deficiencies

9. FUTURE ACTIVITIES. During future surveillance activities, direct special attention to areas in which deficiencies were found.

[CHAPTERS 92 THROUGH 96 RESERVED]

CHAPTER 97 INSPECT FAR PART 145 DOMESTIC REPAIR STATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3650

B. *Avionics:* 5650

3. OBJECTIVE. This chapter describes the process required to inspect a FAR Part 145 domestic repair station.

5. GENERAL

A. This inspection will be conducted as a result of a work program requirement, a previous surveillance effort, allegations of improper maintenance, or component failure trends. The inspection, based on these reasons, may be a comprehensive in-depth inspection or may just cover specific areas related to a specific job function.

B. The inspector should carefully review the regulations, identify the applicable sections, and proceed to conduct the inspection for compliance. While conducting the inspection, the inspector should verify that the facility and personnel are qualified to perform the maintenance functions as listed in the operations specifications.

7. CONDUCTING THE INSPECTION. Repair stations can vary from a one-man operation to a large overhaul facility. Based on the size and complexity of the repair station, the Certificate Holding District Office may need to form an inspection team capable of effectively evaluating all aspects of the operation.

A. *Repair Stations Doing Work Away From a Fixed Location.* Inspections of these stations will be conducted by the district office where the work is being performed. The inspector from the geographical office performing the inspection should maintain good communications with the parent facility's Certificate Holding District Office in matters regarding procedures, manuals, equipment, personnel, etc.

B. *Airmen Certification.* Technical supervisory personnel in propeller or instrument repair stations require repairman certification. Technical supervisory personnel in all other stations may be certificated as either airframe or powerplant mechanics, or repairmen.

C. *Parts Inspection Procedures.* All incoming parts must be inspected by the procedures in the certificate holder's manual. In addition, the procedures must ensure traceability of foreign and domestic parts.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination course
- Previous experience with FAR Part 145 operations

B. *Coordination.* This task may require coordination with other specialties or district offices and the certificate holder

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, 121, and 125
- SFAR 36
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Ch. 2

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Evaluate Certificate Holder's Documentation.* Inspect the following:

(1) Repair station certificates to ensure that:

- Certificate is displayed in the repair station and is visible to the public
- Certificates in the repair station are identical to those in Certificate Holding District Office file
- Ratings are appropriate for the work being done

(2) Personnel roster to ensure that:

- Staffing consists of enough qualified, knowledgeable personnel to perform the work for which the certificate holder is rated
- Personnel directly in charge of maintenance functions for the repair station are certificated in accordance with FAR Part 65, as required by FAR § 145.39(d)
- Certificate holder's roster of supervisory and inspection personnel is current and reflects all personnel assigned these duties
- Certificate holder's roster includes all authorized signatures for "Return to Service" and indicates the area of responsibility of each person as shown in Advisory Circular 145-3, Figure 12

(3) Technical and regulatory data used by station to ensure that:

- Technical data is appropriate for the maintenance or alterations to be performed
- Data is current, accurate, and complete
- Data is in the certificate holder's possession and easily accessible to all personnel

(4) Forms and records to ensure that:

(a) Station records are completed and retained as required

(b) Required reports have been submitted, e.g., Malfunction or Defect reports

B. *Inspect Certificate Holder's Facilities.* Inspect the following:

(1) General housing and facilities to ensure:

- Housing and facilities are sufficient for work being performed for ratings held
- Work areas are situated to protect parts and subassemblies during the work process
- General housekeeping is satisfactory

(2) Stockroom to ensure that:

- Parts and materials are protected against damage and deterioration
- Certificate holder has a system for identifying and segregating serviceable, repairable and rejected parts and materials
- Life limited components are controlled

(3) Special facilities, as applicable, to ensure that:

- Instrument shop environmental conditions are in accordance with manufacturer's standards
- Segregation of components during assembly and disassembly is accomplished using suitable trays, racks or stands

(4) Special tools and equipment to ensure:

(a) All required items are within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standard of the country where manufactured, if approved by the Administrator

(b) Special tools and equipment include those recommended by the manufacturer of the product or an FAA acceptable equivalent

C. *Review of Certificate Holder's Inspection Procedures Manual.* Evaluate the following:

(1) Inspection system to ensure that the system is in operation as described in the inspection procedures manual

(2) Manual distribution to ensure:

- All supervisory and inspection personnel are in possession of manual
- All copies of manual are current with content of the copy in the Certificate Holding District Office
- Manual is available to all repair station personnel

(3) Procedures governing any work being accomplished away from the repair station

(4) SFAR 36 authorization procedures to ensure that work is being done in accordance with the SFAR 36 letter of authorization and the inspection procedures manual

D. *Observe and Inspect Maintenance Functions*

(1) Ensure that work for FAR Part 121 and 125 operators is being performed in accordance with the specific operator's manual.

(2) Ensure that maintenance being performed is in accordance with approved procedures.

(3) Ensure that the maintenance functions being contracted to outside agencies are current with the listing required by FAR § 145.11.

NOTE: If a previously contracted function is to be done by the repair station, the repair station must be reinspected and must show the capability to meet the requirements to perform that function.

E. *Conduct Debriefings.* Brief certificate holder on results of surveillance. Discuss any deficiencies and corrective actions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- Successful inspection
- A letter to the certificate holder describing all deficiencies

C. *Document Task.* File all supporting paperwork in the certificate holder's office file.

9. FUTURE ACTIVITIES. Schedule and conduct a follow-up inspection, as applicable.

CHAPTER 98 INSPECT FAR PART 145 FOREIGN REPAIR STATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3650

B. *Avionics:* 5650

3. OBJECTIVE. This chapter describes the process required to inspect a FAR Part 145 certificated foreign repair station.

5. GENERAL

A. This inspection will be conducted as a result of a work program requirement, a previous surveillance effort, allegations of improper maintenance, or component failure trends. The inspection, based on these reasons, may be a comprehensive in-depth inspection or may just cover specific areas related to a specific job function.

B. The inspector should carefully review the regulations, identify the applicable sections, and proceed to conduct the inspection for compliance. While conducting the inspection, the inspector should verify that the facility and personnel are capable of performing the maintenance functions as listed in the operations specifications.

C. Inspection of a foreign repair station should be done in the same manner as a domestic station, but the use of uncertificated personnel may require additional attention by the inspector to the "return to service process".

D. Prior to the inspection, the Foreign Civil Air Authority (FCAA) of the country where the repair station is located should be invited to participate in the inspection if they so desire. As a courtesy, the U.S. Embassy in the country should be notified.

7. CONDUCTING THE INSPECTION. Repair stations can vary from a one-man operation to a large overhaul facility. Based on the size and complexity of the repair station, the Certificate Holding District Office may need to form an inspection team capable of effectively evaluating all aspects of the operation.

A. *Repair Stations Doing Work Away From a Fixed Location.* Inspections of these stations will be conducted by the district office where the work is being performed. The inspector from the geographical office performing the inspection should maintain good communications with the repair station's Certificate Holding District Office in matters regarding procedures, manuals, equipment, personnel, etc.

B. *Parts Inspection Procedures.* All incoming parts must be inspected by the procedures in the certificate holder's manual. In addition the procedures must ensure traceability of all foreign and domestic parts.

Section 2

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 145
- Successful completion of the Airworthiness Inspectors Indoctrination course
- Previous experience with FAR Part 145 operations

B. *Coordination.* This task may require coordination with other specialties or district offices, the certificate holder, the affected U.S. Embassy, and the CAA of the country involved.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 121, and 125
- Advisory Circulars, as applicable

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Evaluate Certificate Holder's Documentation.* Inspect the following:

(1) Repair station certificates to ensure that:

- Certificate is displayed in the repair station and is visible to the public
- Certificates in the repair station are identical to those in Certificate Holding District Office file
- Ratings are appropriate for the work being done

(2) Personnel roster to ensure that:

- Staffing consists of enough qualified, knowledgeable personnel to perform the work for which the certificate holder is rated
- Certificate holder's roster of supervisory and inspection personnel is current and reflects all personnel assigned these duties
- Certificate holder's roster includes all authorized signatures for "Return to Service"

(3) Technical and regulatory data used by station to ensure that:

- Technical data are appropriate for the maintenance or alterations to be performed
- Data are current, accurate, and complete
- Data are in the certificate holder's possession and easily accessible to all personnel

(4) Forms and records to ensure that:

(a) Station records are completed and retained as required

(b) Required reports have been submitted, e.g., Malfunction or Defect reports

B. *Inspect Certificate Holder's Facilities.* Inspect the following:

(1) General housing and facilities to ensure:

- Sufficient for work being performed for ratings held
- Work areas are situated to protect parts and subassemblies during the work process
- General housekeeping is satisfactory

(2) Stockroom to ensure that:

- Parts and materials are protected against damage and deterioration
- Certificate holder has a system for identifying and segregating serviceable, repairable, and rejected parts and materials
- Life limited components are controlled

(3) Special facilities, as applicable, to ensure that:

- Instrument shop environmental conditions are in accordance with manufacturers standards
- Segregation of components during assembly and disassembly is accomplished using suitable trays, racks or stands

(4) Special tools and equipment to ensure:

(a) All required items are within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standard of the country where the manufactured, if approved by the Administrator

(b) Special tools and equipment includes those recommended by the manufacturer of the product or an FAA acceptable equivalent

C. *Review of Certificate Holder's Inspection Procedures Manual.* Evaluate the following:

(1) Inspection system to ensure that the system is in operation as described in the inspection procedures manual

(2) Manual distribution to ensure:

- All supervisory and inspection personnel are in possession of the current manual
- All other copies of the manual must be current with content of copy in the Certificate Holding District Office
- Manual is available to all repair station personnel

(3) Procedures governing work being accomplished away from the repair station, if applicable, to ensure accomplishment per FAR § 145.51

D. *Observe and Inspect Maintenance Functions*

(1) Ensure that performance of work for FAR Parts 121 and 125 operators is being performed in accordance with the specific operator's manual, per FAR § 145.2

(2) Ensure that maintenance being performed is in accordance with approved procedures .

(3) Ensure that maintenance functions being contracted to outside agencies is current with the listing required by FAR § 145.11

NOTE: If a previously contracted function is to be done by the repair station, the repair station must be reinspected and must show the capability to meet the requirements to perform that function

E. *Conduct Debriefings.* Brief certificate holder on results of surveillance. Discuss any deficiencies and corrective actions.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

- Successful inspection
- A letter to the certificate holder describing all deficiencies

C. *Document Task.* File all supporting paperwork in the certificate holder's office file.

9. FUTURE ACTIVITIES. Schedule and conduct a follow-up inspection, as applicable.

[CHAPTERS 99 THROUGH 104 RESERVED]

CHAPTER 105 INSPECT FAR PART 147 AVIATION MAINTENANCE TECHNICIAN SCHOOL

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance:* 3650/3659/3661

B. *Avionics:* 5650/5659/5661

3. OBJECTIVE. This chapter provides guidance for conducting surveillance of certificated Aviation Maintenance Technician Schools (AMTS).

5. GENERAL

A. *Inspections.* Certificated Aviation Maintenance Technician Schools must be monitored for adherence to their curriculums and continued compliance with the certification requirements and operating rules.

B. *Inspection Scheduling.* FAR § 147.43 allows inspection of a school at any time to determine its compliance with FAR Part 147.

(1) *Formal inspections.* The purpose of a formal inspection is to determine whether the school continues to meet the requirements under which it was certificated.

(a) Generally, there will be two formal inspections per year. The actual number of formal inspections may vary depending upon the FAA staffing and workload, the particular school to be inspected, and other factors. As a minimum, each school must have one formal inspection per year.

(b) At the inspection exit briefing, the school must be provided verbal notification of discrepancies found during the formal inspection. Within five working days, the exit briefing will be followed up with a written list of areas of non-compliance. The school must initiate immediate corrective action to demonstrate regulatory compliance and must provide the district office with written notification of the action taken.

(c) Before beginning subsequent inspections and surveillance of the school, the inspector will review the district office file to verify any previous deficiencies. The inspector will inspect the school to assure compliance in these areas.

(2) *Informal inspections.* Generally, an informal inspection will be less comprehensive than a formal inspection. This inspection may be unannounced at the inspector's discretion. The purpose of the informal inspection is to evaluate a specific area of the operating rule, or to ensure the program is effective.

(a) The frequency of informal inspections will vary according to the needs of the individual school and the FAA workload. As a minimum, however, there must be no fewer than two informal inspections per school year.

(b) The school must be notified in writing of deficiencies found during the informal inspection. The discrepancies shall be recorded and the record placed in the office file for reference and followup purposes.

NOTE: The inspector must explain to the school the time period within which the discrepancies must be corrected.

7. SURVEILLANCE OBJECTIVES

A. *Instruction Time.* Based on a variety of indicators, it is apparent that some schools do not provide the number of hours of instruction specified in their approved curriculums. One of the objectives of surveillance is to ensure that typical "time-loss" items do not affect curriculum hours.

(1) The inspector must be aware of the following:

- Instructors ill or on leave. In small schools this could result in classes being dismissed or students being sent to a room to study.

- Teachers' strikes
- Weeks during which students are scheduled for private study and/or testing outside of the approved curriculum
- Class outings that take time away from instructional hours
- Student achievement days, sports days, and special event days
- Teacher's meetings and grading days
- Absences beyond those permitted in the FAA-approved curriculum
- Classroom time spent on non-instructional activities such as school administrative work and pep rallies, etc.
- Any other activity that intrudes on instructional time

(2) Published school calendars, individual student enrollment schedules, student makeup schedules, and class schedules are good sources of surveillance infor-mation.

B. *Credit for Prior Instruction or Experience*

(1) School records must show the basis for crediting previous instruction or experience, including records of tests and copies of documents. School records also must indicate the exact curriculum subjects to which previous instruction is credited.

(2) FAR §§ 147.31(c)(1) and (2) allow credit for instruction satisfactorily completed at the following:

- An accredited university, college, or junior college
- An accredited technical school, trade school, vocational school, or high school
- A military technical school
- An aviation maintenance technician school, before or after its certification, other than the crediting school

NOTE: Accreditation as referenced in FAR Part 147 refers to schools accredited within the United States. Foreign aviation maintenance technician schools are not eligible for FAA certification. Therefore, no credit may be granted for prior instruction in foreign schools.

NOTE: FAR § 147.31(c)(1)(iv) must not be interpreted as requiring a student to retake the general portion of the curriculum after successfully completing one rating and enrolling in a course of study for the other rating. The General portion is not required to be taken twice, provided that it is clearly separate from both the Airframe and Powerplant portions and conforms to the requirements of FAR Part 147, Appendices A and B.

(3) The recordkeeping requirements of FAR § 147.33 for previous experience or instruction are applicable. See Vol. 2, Ch. 187 for details.

C. *Progress Records or Charts.* Progress records or charts need not show grades for practical laboratory work if these grades are available in another record.

D. *Transcripts.* The school must make grade transcripts available to the student regardless of whether the student graduates.

(1) The transcript must be clearly distinguishable from a graduation certificate and must be limited to only those subjects required by FAR Part 147.

(2) A student shall be issued a graduation certificate or certificate of completion only if all curriculum requirements have been completed, either by taking and passing the specified courses or by being properly credited with them.

E. *Quality of Instruction.* A school must provide instruction of such quality that during any 24-calendar month period a prescribed percentage of its graduates will be able to pass the appropriate FAA written test on the first attempt. See Vol. 2, Ch. 185.

(1) Corrective action may be indicated if the levels fall below those specified in FAR § 147.38(a).

(2) While poor test performance alone may not indicate poor instruction, it may indicate that some aspects of the school operation are inadequate or ineffective.

F. *Facilities.* School space usage must allow for appropriate separation of classes as specified in FAR § 147.15(a). See Vol. 2, Ch. 188 for details.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 43, 65, and 147

B. *Coordination.* This task may require coordination with avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.5, General Aviation Job Function Reference Guide for Aviation Safety Inspectors (Airworthiness), as amended

B. *Forms*

- AC Form 8080-08, Aviation Maintenance Technician School Norms vs. National Passing Norms
- AC Form 8080-10, Aviation Maintenance Technician School Norms vs. National Passing Norms (Summary)
- AC Form 8080-13, Aviation Maintenance Test Applicant Listing
- FAA Form 8310-6, Aviation Maintenance Technician School Certificate and Ratings Application (inspection report section)

C. *Job Aids.* None.

5. PROCEDURES

A. *Review FAA Office Files Relating to the School*

(1) Review the school's approved curriculum.

(2) Check the inspection history, if applicable.

B. *Review Enrollment Records.* Determine that the number of students enrolled is not more than the number approved in the school's application. Determine that the school can effectively instruct the number of students actually enrolled.

C. *Review Student Records.* Determine whether records are available for all students. Select the records of one or two recently graduated students and one or two current students and perform a total verification ensuring:

(1) The attendance system shows the hours of absences allowed and make-up provisions for **subject material** missed

(2) The attendance system does not permit the time required to make up missed material to be deducted from regular instruction time

(3) The approved attendance system is followed

(4) Recordkeeping meets the requirements of FAR § 147.33

D. *Examine the System for Determining Final Course Grades.* Ensure the system reliably distinguishes between successful students and unsuccessful students. See Curriculum in Vol. 2, Ch. 187.

(1) Ensure all grade reports and records identified as part of the approved grading system meet the record-keeping requirements of FAR § 147.33.

(2) Ensure that the approved grading system is being followed.

E. *Ensure Maintenance of Instructor Requirements.* Determine whether instructor resources are adequate and effective, meeting the requirements of FAR § 147.36.

(1) Check the instructor/student ratio against the maximum allowable ratio of 1:25 in a shop or lab. If necessary, require a lower ratio in any shop or lab to provide adequate instruction and supervision of students.

(2) Determine that instruction given by specialized instructors is well-coordinated with aviation technical subjects, i.e., math instructors might teach weight and balance principles. Evaluate the suitability of non-certificated instructors to teach certain general courses on an individualized basis.

(3) Determine that the school has positive control over what is taught and when it is taught, in accordance with its approved curriculum.

(4) Observe classes and conduct interviews to determine individual instructor effectiveness. While it is permissible to talk to instructors and/or students in an ongoing lab or shop session, try to avoid disrupting any theory class while it is in session.

(5) As discussed in Vol. 2, Ch. 187, encourage the school to assess instructor performance regularly and provide for instructor improvement.

F. *Ensure School Space Usage Allows for Appropriate Separation of Classes in Session (FAR § 147.15(a)).* See Vol. 2, Ch. 188.

G. *Examine the Aviation Maintenance Technician School Norm Vs. National Passing Norms (AC Form 8080-08) to Identify Any Deficiencies.* Determine the cause(s) of poor test performance and discuss with the school ways of improving the overall school program. See Vol. 2, Ch. 185 for guidance in the use of the National Passing Norms. Obtain from the school records the names and graduation dates of all graduates for the 24-month period desired. Ensure the ending date of the 24-month period is at least 60 days prior to the current date.

(1) For a record search to obtain subject grades for each individual, forward the list of names and graduation dates to:

Aviation Standards National Field Office
Maintenance Support Branch, AVN-140
P.O. Box 25082
Oklahoma City, OK 73125

(2) If the record search indicates significant deviation from the norm, initiate corrective action.

(3) If the AMTS does not take corrective action, or their response is unsatisfactory, initiate enforcement action.

7. TASK OUTCOMES

A. *Notify the School in Writing of Any Deficiencies Found During the Inspection*

B. *Complete a PTRS Transmittal Form*

9. FUTURE ACTIVITIES

A. Ensure that any deficiencies have been corrected.

B. If necessary, increase surveillance.

[CHAPTERS 106 THROUGH 109 RESERVED]

CHAPTER 110 INSPECT FAR PART 149 PARACHUTE LOFT

Section 1. Background

1. WPMS ACTIVITY CODE

- *Maintenance:* 3650

3. OBJECTIVE. This chapter provides guidance for conducting surveillance of FAR Part 149 parachute lofts.

5. GENERAL

A. Based on the size and complexity of the parachute loft, the Certificate Holding District Office may need to form an inspection team capable of effectively evaluating all aspects of the operation.

B. FAR Part 65 surveillance of parachute riggers is typically accomplished in conjunction with an FAR Part 149 surveillance of the parachute loft, as prescribed by FAR §§ 149.9 and 149.13.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 65 and 149

B. *Coordination.* None.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 39 and 105
- Advisory Circular 105-2, Sport Parachute Jumping, as amended
- Technical Standard Order C23 series and referenced documents
- Manufacturers' technical data

B. *Forms.* On a national level, there are no forms designated for this activity. However, individual offices sometimes develop and use their own surveillance forms.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the District Office File.* Review the office file for this certificate holder.

B. *Conduct Inspection.* Determine that the certificate holder meets the current requirements of FAR Part 149 and FAR Part 65, Subpart F with respect to equipment, facilities, materials, records, technical data, and personnel. An inspection includes checking:

- *Certificate.* Check for proper display of air agency certificate.
- *Ratings.* Determine if facility is properly rated for work being accomplished
- *Personnel.* Check that personnel are properly certificated, rated, and qualified to perform or supervise the kind of work for which the loft is rated. When available, check that personnel records are current.
- *Recordkeeping.* Determine that the record keeping system ensures all alterations and repair files are kept as required, files are maintained to record all work performed, and records are kept for at least two years after the completion of the work.
- *Defect Reports.* If available, check that all recurring or serious defects are reported.
- *Technical Data.* Check that technical data and revisons are current and acceptable or approved for the work being accomplished.
- *Inspection System.* Ensure that the system is adequate for the work performed.

- *Facility.* Check facility for adequate space, heating, lighting, ventilation, and cleanliness.

- *Storage.* Check that the storage area is adequate for proper storage and segregation of materials and parts.

- *Equipment.* Test equipment and tools should be properly calibrated. Check that appropriate drawing and repair equipment is available.

- *Material.* Check that materials used are of proper strength and quality for the maintenance or alterations performed.

- *Drop Testing Equipment.* Check the drop testing equipment available, if rated as such.

C. *Analyze the Results of the Surveillance.* Ensure the loft is operating within the limits of its ratings.

7. TASK OUTCOMES

A. Completion of this task will result in one of the following:

- A determination of satisfactory compliance

- A letter to the certificate holder describing deficiencies. If applicable, an Enforcement Investigation Report action will be filed.

B. File documentation of the task in office files, as appropriate.

C. Complete a WPMS Transmittal Form

9. FUTURE ACTIVITIES. Ensure that any deficiencies have been corrected. Conduct follow-up surveillance, as needed.

[CHAPTERS 111 THROUGH 113 RESERVED]

CHAPTER 114 MONITOR DESIGNATED MECHANIC EXAMINER (DME) AND DESIGNATED PARACHUTE RIGGER EXAMINER (DPRE)

Section 1. Background

1. WPMS ACTIVITY CODES

- *Maintenance*: 3675/3676

3. OBJECTIVE. This chapter provides guidance and describes procedures for inspectors conducting surveillance of Designated Mechanic Examiners (DME) and Designated Parachute Rigger Examiners (DPRE).

5. GENERAL

A. Surveillance of designated examiners shall be in accordance with Order 1800.12, Flight Standards Program Guidelines, or subsequent revisions.

B. Designated examiners should be thoroughly indoctrinated in the importance of their role of administering oral and practical tests to airman applicants.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of FAR Parts 65 and 183

B. *Coordination.* None.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- Order 1800.12, Flight Standards Program Guidelines, as amended
- Order 8610.4, Aviation Mechanic Examiner Handbook, as amended
- Order 8610.5, Parachute Rigger Examiner Handbook, as amended

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Visit the Designated Examiner's Fixed Base.* Determine that there are sufficient tools, equipment, and facilities available for applicant use.

B. *Observe the Designated Examiner.* Determine that the examiner is conducting tests according to current standards and procedures. Ensure tests cover applicable subject matter.

C. *Interview Applicants to Evaluate Examiner's Performance While Not Under Overt FAA Scrutiny*

D. *Inform Examiner of Changes in Applicable Standards, Procedures, or Regulations*

E. *Review Recordkeeping.* Check records for completeness. Ensure files are forwarded as required.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Document any discrepancies and discuss them with the examiner. If the examiner fails to correct the discrepancies, take the appropriate action, which may include cancellation of the designation.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 115 MONITOR DESIGNATED AIRWORTHINESS REPRESENTATIVE (DAR)

Section 1. Background

1. WPMS ACTIVITY CODES

- *Maintenance*: 3677

3. OBJECTIVE. This chapter provides guidance and describes procedures for inspectors conducting surveillance of Designated Airworthiness Representatives (DARs).

5. GENERAL. Upon renewal, the inspector should receive from the designee the following information, as appropriate:

- The number of airworthiness certificates issued
- The number of export airworthiness approval tags issued (FAA Form 8130-3, Export and/or Conformity Certification)
- The number of conformity inspections conducted

7. DESIGNATED AIRWORTHINESS REPRESENTATIVE AUTHORITY AND RESPONSIBILITY

A. The Designated Airworthiness Representative may only perform the authorized functions within the geographic boundaries of the managing office.

(1) Authorization to perform outside those geographic boundaries may be granted by the managing office on a case-by-case basis. Such an authorization must be in writing and shall not exceed 30 days duration. Authorizations to function elsewhere may be granted a maximum of three times annually. They may not be granted on a consecutive basis.

(2) The managing office will retain monitoring and supervisory responsibility for its designees who are practicing outside the office's geographic boundaries.

(3) A managing office sending a designee to another geographic area will provide a copy of the authorization to the Flight Standards office responsible for that geographic area.

(4) If a designee needs to operate outside the geographic area for a period exceeding 30 days, responsibility for the designee will be transferred to the appropriate Flight Standards office. If the designee's residence or primary place of business is moved outside the geographical boundaries of the appointing office, the designation should be terminated. The relocating designee must return all materials supplied by the certificate holding district office.

B. The application forms for the various airworthiness certificates or approvals requesting certifications must be signed by the applicant or the agent. An organization appointed as a Designated Airworthiness Representative should be allowed to sign these certificates **only** as a repair station, **not** as a Designated Airworthiness Representative. Any irregularities or deficiencies related to the product certificated may result in termination of the designee's appointment.

9. TRAINING REQUIREMENTS

A. The managing FAA office is responsible for providing indoctrination training for newly appointed Designated Airworthiness Representatives. The managing office must also provide on-going training, as needed.

B. The managing office will prescribe the formal Designated Airworthiness Representative standardization training course for all designees within each two-year period.

Section 2. Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- This task requires knowledge of FAR Parts 65 and 183

B. *Coordination.* This task may require coordination with AVN-133.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8000.62, Designated Airworthiness Representatives Qualification Criteria, Selection, and Appointment Procedures
- Order 8130.2, Airworthiness Certification of Aircraft and Related Approvals, as amended

B. *Forms*

- AC Form 8050-72, Export Certificate of Airworthiness Number Assignment Card
- FAA Form 8130-3, Export and/or Conformity Certification

C. *Job Aids.* None.

5. PROCEDURES

A. *Review Designated Airworthiness Representative's Activity Reports.* Ensure the requirements detailed in Order 8000.62 are met.

B. *Provide Information and Materials, as Required.* Ensure materials are provided in accordance with current directives.

(1) Provide the necessary FAA forms required for the performance of the designee's authorized function(s).

(2) Ensure the designee is aware of the schedule for the required standardization course.

C. *Maintain a File of Each Assigned Designee's Accomplishments*

D. *Ensure the Designee Is Performing Only Those Functions Within the Limits of the Authorization*

(1) Ensure functions are performed in accordance with pertinent regulations and related FAA policies, practices, and procedures.

(2) Ensure designees function only within the geographical boundaries of the managing office, except when authorized in writing to function elsewhere.

(3) Ensure the designee submits all required documentation for each certification to the managing office within seven days of accomplishment. Ensure that the designee visits the managing office within seven days of completion of each certification/approval performed outside the geographic area.

E. *Accompany the Designee During an Inspection At Least Twice a Year.* Ensure that satisfactory inspection techniques, methods, and procedures are being used.

F. *Ensure That the Designee Contact the Managing Office for Direction or Instructions, as Needed.* Ensure the designee contacts the office prior to the issuance of any airworthiness certificates or export airworthiness approvals for Class One products. Ensure the designee contacts the office prior to becoming involved in any type certification or supplemental type certification activity.

(1) Ensure the designee refers to Order 8130.2, as amended, for procedures pertinent to the accountability of Export Certificate of Airworthiness Number Assignment Cards, AC Form 8050-72.

(2) Ensure that any contact with a foreign airworthiness authority or FAA Engineering is made through the FAA managing office.

7. TASK OUTCOMES

A. *File a WPMS Transmittal Form*

B. *Review Certification Files Forwarded by Designated Airworthiness Representatives*

C. *Evaluate Results of Surveillance.* Document any discrepancies and discuss them with the designee. If no steps are taken by the designee to correct the discrepancies, take the appropriate action, which may include cancellation of the authorization.

9. FUTURE ACTIVITIES. Continue surveillance and provide assistance as needed. Inform any designee requiring an undue amount of assistance that FAA resources are limited and that the designation may be terminated should the designee become too much of a burden on FAA personnel resources.

[CHAPTERS 116 THROUGH 123 RESERVED]

CHAPTER 124 ISSUE AIRCRAFT CONDITION NOTICE

Section 1 Background

1. WPMS Activity Codes

A. *Maintenance:* 3410

B. *Avionics:* 5410

3. OBJECTIVE. This chapter describes the procedures used to issue an Aircraft Condition Notice to an aircraft operated under FAR Parts 91, 133, 137, and 141, as applicable.

5. GENERAL

A. Aircraft Condition Notices are issued to aircraft when, during the normal conduct of duties, the inspector finds possible unsafe conditions that will require immediate action by the operator prior to operation.

B. When authorization from the operator can not be obtained the inspector is limited to an external inspection. Inspectors should not interfere with the normal conduct of the operator's business unless a definite possibility of an unsafe condition exists.

C. The inspector will usually issue an Aircraft Condition Notice during one of the following activities:

- Performing a scheduled aircraft inspection
- Responding to a complaint
- Investigating an aircraft noticed while performing other duties

(1) When a possible unsafe condition is noted, the Aircraft Condition Notice will be completed and the hard copy attached to the aircraft as near as possible to the aircraft entrance.

(2) If the inspector finds a general discrepancy that should be brought to the attention of the operator, the inspector has the option of using this form as a means of notification.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type aircraft being inspected

B. *Coordination.* This task may require coordination between the issuing inspector and the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 91, 133, 137, and 141

B. *Forms*

- FAA Form 8620-1, Aircraft Condition Notice

C. *Job Aids.* None.

5. PROCEDURES

A. *Determine the Status of the Aircraft.* The inspector must determine if the aircraft is capable of continued operations in a safe condition.

B. *Fill Out the Form*

(1) Complete the form, fully describing the problem areas.

(2) Attach the hard copy of the form to the aircraft at or near the entrance, or, if possible, give the form to the pilot/owner.

C. *Process the Form.* The inspector, after issuing the Aircraft Condition Notice, must accomplish the following:

(1) Determine the registered owner of the aircraft

(2) Mail the original to the registered owner

(3) Retain the final copy in the district office

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- Enforcement Investigation Report, as applicable
- Letter to the registered owner

C. *Document Task.* File all supporting paperwork in the operator's office file, if applicable.

9. FUTURE ACTIVITIES. None.

CHAPTER 125 MONITOR OPERATOR DURING STRIKE/LABOR UNREST/FINANCIAL STRESS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3644

B. *Avionics:* 5644

3. OBJECTIVE. This chapter provides guidance for monitoring an operator before, during, and after a strike, labor dispute, or financial crisis.

5. BACKGROUND. Continued airworthiness is of particular concern where a strike, labor unrest, or financial stress might cause disruption or inconsistency in an operator's maintenance program. Under these circumstances, the FAA emphasizes maintenance surveillance from anticipation of the crisis through the final settlement.

A. *Responsibility.* The Principal Maintenance Inspector is responsible for determining the extent to which additional surveillance will be required. The inspector will also decide which locations will require increased surveillance in order to arrange for necessary additional manpower.

B. *Reporting.* Strikes and labor disputes generate many inquiries, complaints, and opinions from the general public, Congress, labor unions, and other sources. Therefore it is imperative that the regional and Washington offices be kept informed at all times.

NOTE: Under no circumstances are inspectors to express opinions to any party, including the press, regarding the issues involved in a strike or labor dispute.

C. *Resumption of Activities After Strike/Labor Unrest/Financial Stress.* When aircraft have spent time in storage, the inspector should consider the following while developing the follow-up surveillance plan, prior to the operator returning the aircraft to service:

- The types of inspections the operator will conduct
- Ground run-up of engine
- Test flights of aircraft
- Personnel qualifications

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Qualifications as an Airworthiness Inspector
- Experience with the involved operation

B. *Coordination.* This task requires coordination with the Certificate Holding District Office, other regional offices, and AFS-300 (Aircraft Maintenance Division), as necessary.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References.* None.

B. *Forms*

- FS 8320-6, Air Carrier Maintenance Activities During Employee Strikes

C. *Job Aids.* None.

5. PROCEDURES

A. *Notify Regional and Washington Offices*

(1) When news that a possible strike, labor dispute, or financial emergency could occur, accomplish the following:

- Immediately inform AFS-300 (Aircraft Maintenance Division) through the regional office

- Report the extent of the possible work stoppage
- Report any tentative plans for surveillance during the crisis

(2) When the strike, labor dispute, or financial emergency actually occurs immediately inform AFS-300 by telephone.

(3) Advise the regional office by telephone of any newsworthy events or significant developments.

B. *Arrange Additional Surveillance As Needed*

C. *Submit the Weekly Report.* Throughout the course of the crisis submit a consolidated weekly report, through channels, to the regional office and AFS-300.

(1) The weekly reports must contain information from all of the inspectors involved, e.g., inspectors in other regions who have been assigned to assist in the surveillance.

(2) The principal inspector must specify the content and frequency of reports from the assigned inspectors. The following information must be included in these reports:

- The approximate number of maintenance personnel on duty at each location within the inspector's assigned area
- The approximate number of certified maintenance personnel on duty
- The number and type of inspections performed by the operator
- The number and type of inspections performed by FAA inspectors
- Deficiencies/discrepancies noted
- Corrective actions requested for minor deficiencies
- Status of previous requests for corrective actions
- Percentage of normal schedules being maintained
- Any other pertinent information

D. *Develop and Report Plans for Return to Service*

(1) Once the strike, labor dispute, or period of financial stress has been settled, decide upon the level of surveillance required to ensure that the operator is able to return the affected aircraft to service while maintaining the highest level of safety.

(2) After developing the follow-up surveillance, notify the regional office. The region must be informed of the operator's plans to return to normal service and of follow-up surveillance planned by the Certificate Holding District Office.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. *Schedule Follow-up Surveillance*

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Accomplish tasks for post-crisis surveillance as indicated in the final report.

CHAPTER 126 RESERVED

CHAPTER 127 MONITOR OPERATOR DURING MERGERS/ACQUISITIONS/BANKRUPTCY PROCEEDINGS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3644

B. *Avionics:* 5644

3. OBJECTIVE. This chapter provides guidance for monitoring operators during mergers, acquisitions, and bankruptcies.

5. BACKGROUND

A. *Definition:* Controlling certificate holder - The organization controlling the operating certificate.

B. Since deregulation, the number of operator bankruptcies, mergers, and acquisitions has increased. These actions often result in operational changes that require FAA action before they can be implemented.

(1) Bankruptcies that do not result in a complete termination of operations are often characterized by a temporary stoppage of operations. This can be followed by a significant reduction of the affected certificate holder's original operation. In some cases, this reduction in operations is followed by rapid expansion after the financial situation stabilizes.

(a) The transition plan for operations while in bankruptcy must address the reduced capabilities of the operator. It should also take into account the judgments and decisions of the bankruptcy court.

(b) Any meetings with the bankrupted certificate holder's management concerning matters associated with the bankruptcy proceedings should include a representative from Regional Counsel. All Flight Standards actions must be coordinated with Regional Counsel.

(2) Mergers and acquisitions of operational assets are often characterized by the following:

- Changes in operational control systems
- Changes in programs or subsystems that are part of the operational control system
- Revisions to manuals containing procedures for conducting various operations, and maintenance and inspection programs
- Revisions to training curriculums
- Changes in employee qualification criteria for individuals who will be conducting merged or new operations and/or programs
- Phased integration of aircraft, equipment, and parts into the merged operations

(3) *Mergers.* When two or more certificate holders merge operations there will be significant and often complex changes to the capabilities and characteristics of the merging parties. Usually, all of the merging parties' operations are changed to some extent.

(4) There are three basic types of acquisitions:

(a) *Acquisitions by holding companies.* The certificate holder continues to exist as an independent subsidiary. This form of acquisition requires little, if any, FAA action. Few operational changes are made and development of a transition plan is not necessary.

(b) *Working ownership changes.* These acquisitions change personal or corporate ownership but do not change the capabilities or characteristics of the operation. If the new ownership does not make extensive changes in required management personnel, little FAA action is required. The affected certificate, operations specifications, and manuals must be amended to show the new name of the certificate holder. A transition plan may not be necessary.

(c) *Acquisitions Similar to Mergers.* An acquisition involving the transfer of significant amounts of operational assets, including equipment and/or personnel, is similar to a merger. The transition plan must be developed in much the same way as a merger.

C. Bankruptcies, mergers, and acquisitions can have a significant impact on FAA resources. The following factors directly affect the FAA's ability to handle these situations effectively:

- The complexity of the affected operations
- The timeliness of notification to the FAA
- The FAA's early understanding of the changes that will result from the operator's changed status
- The certificate holder's comprehension of the actions that must be taken to obtain FAA approval or acceptance of the consequent changes
- The length of time available and the sequence in which changes are to be implemented

D. The regulations do not specifically require certificate holders to notify the FAA of impending bankruptcies, mergers, or acquisitions. However, FAR §§ 121.79 and 135.17 require operators to submit an application for amendment of operations specifications at least 15 days before the proposed effective date.

(1) Affected Certificate Holding District Offices may first learn of impending changes through the news media or other means. Regardless of the means of notification, affected FAA offices should initiate immediate action.

(2) Early notification is often not practical in bankruptcy situations. Therefore, it is essential that certificate holders continuing operations during bankruptcy proceedings develop and submit to the FAA an operational plan as quickly as possible.

E. *Operational Plans.* The certificate holder must continue to carry out its responsibility for maintaining the highest level of safety. The FAA has continuing responsibility for overseeing the certificate holder's operation. This responsibility can best be managed if the FAA is fully aware of the certificate holder's intentions during the transition period.

(1) In most cases, changes to documents and methods of operation will require FAA approval or acceptance. To accelerate the transition process, the controlling certificate holder's management personnel should develop a transition plan outlining all changes that may require FAA approval or acceptance.

(2) Until proposed changes can be made and approvals obtained, the controlling certificate holder must continue to operate according to FAA approvals currently in effect.

F. *In-Depth Inspection Considerations.* In complex bankruptcy, merger, or acquisition situations, principal inspectors should consider requesting an in-depth inspection of the controlling certificate holder's operation.

(1) This in-depth inspection should normally be planned towards the end or after completion of the transition period.

(2) At any time during the transition period when continued compliance with regulations or safe operating practices becomes questionable, an in-depth inspection should be requested and conducted without delay.

(3) The results of an in-depth inspection should indicate how effectively the transition plan was accomplished. The inspection should also reveal any problem areas that need further attention.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of the FAR Parts 121 and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with Regional Offices and AFS-300.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References.* None.

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Identify the Controlling Certificate Holder*

(1) Determine who the controlling certificate holder will be and where the principal base of operations will be located.

(2) The Regional Flight Standards Divisions must decide which office will be the Certificate Holding District Office during the transition period and after the bankruptcy, merger, or acquisition is completed.

B. *Meet with the Controlling Certificate Holder.* The assigned Certificate Holding District Office must schedule a meeting to brief the controlling certificate holder's key management personnel of FAA requirements. The meeting should be scheduled before a merger or acquisition is formalized so that contingency planning can be initiated, if necessary.

(1) Discuss and verify the information provided to the FAA when notified of the impending bankruptcy, merger, or acquisition.

(2) Inform the controlling certificate holder that a transition plan outlining proposed changes with estimated dates is required. Ensure the transition plan includes the following:

- An outline of changes to be made during the transition period that will require FAA approval or acceptance
- The controlling certificate holder's best estimated schedule of when changes will be implemented
- A description of the interim methods and/or procedures to be used during the transition period to ensure regulatory compliance and safe operating practices

(3) The principal inspectors should request any additional information from the certificate holder that is believed to be necessary. Airworthiness inspectors should request the following information:

- Interim methods and/or procedures
- Interim recordkeeping and scheduling
- Operations specifications and maintenance manuals
- Maintenance checklists
- Minimum Equipment Lists (MELs)
- Methods used to introduce personnel to changes
- Any planned changes to the kinds of operations and areas of en route operations
- Maintenance programs
- Weight and balance programs
- Methods to train and qualify maintenance personnel
- Changes to training record systems
- Changes in the method of monitoring personnel qualifications
- Methods to be used for maintenance control and control of contractual support
- Changes to the kinds of operations and relocations of operations, equipment, and/or facilities
- Identification of which operations specifications are to be effective for any particular operation
- Any planned changes to the authorizations and limitations in operations specifications
- Any plans to combine operations specifications

(4) Advise the controlling certificate holder that the FAA will respond to modifications to the transition plan in a timely manner if appropriate notification of these changes is provided.

C. *Review the Plan.* Ensure the transition plan provides for the following:

- A logical sequence of events and activities
- Continued regulatory compliance and safe operating practices
- How, when, and who will be responsible for completion of events or activities

D. *Evaluate the Plan.* If significant deficiencies are found, meet with the controlling certificate holder to resolve problem areas.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in one of the following:

(1) If the plan is acceptable, a letter to the certificate holder.

(2) If the plan is unacceptable:

- Return of the plan to the controlling certificate holder with a letter explaining the reasons for rejection
- Increased surveillance of all operations conducted by the controlling certificate holder
- An in-depth inspection of the certificate holder, as appropriate

NOTE: Through contact with the region, keep AFS-300 informed of the status of the transition.

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. **FUTURE ACTIVITIES.** Schedule and perform in-depth inspection, as applicable.

CHAPTER 128 PROCESS SERVICE DIFFICULTY REPORT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3325

B. *Avionics:* 5325

3. OBJECTIVE. This chapter describes the steps necessary to process an FAA Form 8070-1, Service Difficulty Report (SDR).

5. GENERAL. The completion of a Service Difficulty Report requires careful review of the reported discrepancy and supporting data. An effective evaluation of the extent of the problem and its causes is essential for determining corrective action.

A. *Evaluating Operator Report.* An operator may choose the format used for reporting a discrepancy. FAR §§ 121.703 and 135.415 list reportable discrepancies and corresponding regulatory requirements. The inspector must review the submitted report to determine if a Service Difficulty Report is necessary.

B. *Reporting of Significant Problems.* If the initial evaluation indicates a serious airworthiness problem, the inspector should immediately contact AVN-120 (Oklahoma City Safety Data Branch) and the Regional office. The FAA engineering branch responsible for the product must be informed of the equipment service difficulty and any recommendations for corrective actions. Corrective action recommendations may include the following:

- Airworthiness Directives
- Product modifications
- Revised inspection techniques
- Directed safety investigations

C. *Checking for Trends.* If the opportunity exists, the inspector should review prior reports for possible trends, e.g., vendor problems, manufacturer equipment problems, training, and/or procedural problems.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the equipment involved
- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable

B. *Coordination.* This task may require coordination with operations inspectors, other district offices, AVN-120, FAA engineering, and equipment manufacturers.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43 and 145
- Order 8010.2, Flight Standards Service Difficulty Program, as amended
- Manufacturer's and operator's manuals

B. *Forms*

- FAA Form 8070-1, Service Difficulty Report

C. *Job Aids*

- Order 8010.2, Appendix 2

5. PROCEDURES

A. *Review the Operator Report.* Review the submitted report to determine if a Service Difficulty Report is required. Examine the following:

- The level of detail provided

- Suitability of suggested corrective action
- Programs for routine and non-routine maintenance
- Contractual arrangements
- Training programs
- Enforcement of non-compliance findings

B. *Conduct an Investigation.* If the evaluation indicates that follow up action is required to determine the cause of the discrepancy, inspect the following areas, as applicable:

- Aircraft, engine, propeller, components, and accessories
- Appropriate maintenance records
- Maintenance procedures
- Training procedures and records
- Vendor sources

C. *Identify and Correct Discrepancies*

(1) If the investigation reveals inadequacies in the operator's maintenance or inspection procedures, ensure that procedures are changed to prevent a recurrence of the discrepancy.

(2) If the investigation reveals a lack of training and/or inadequate training, the training program must be evaluated and procedural changes incorporated to correct the deficient areas.

(3) If the investigation reveals a serious manufacturing defect, contact the following immediately:

- The appropriate Regional office
- AVN-120 (Oklahoma City Data Branch)
- The appropriate engineering branch

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- Follow-up action for discrepancies
- Enforcement action for regulatory non-compliance

C. *Complete FAA Form 8070-1, Service Difficulty Report.* Ensure that all related information is complete, including all recommendations and operator's data. Forward the completed package to AVN-120.

D. *Document the Task.* Retain the operator's report and a copy of the Service Difficulty Report in the operator's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 129 PROCESS MALFUNCTION OR DEFECT REPORT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3456

B. *Avionics:* 5456

3. OBJECTIVE. This chapter describes the steps necessary to process a Malfunction or Defect Report, FAA Form 8010-4.

5. GENERAL. Data provided for and included in Malfunction and Defect reports can be used for the following:

- Determining maintenance trends that may affect aviation safety
- Evaluating the overall effectiveness of an inspection and maintenance program
- Revealing possible trends, such as problems with vendors, manufacturers, training, and/or procedures

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 43, 91, 135, and 145, as applicable
- Knowledge of the equipment involved

B. *Coordination.* This task may require coordination with the Principal Airworthiness Inspectors, regional offices, AVN-120 (National Safety Data Branch), and FAA Engineering.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8010.2, Flight Standards Service Difficulty Program, as amended

B. *Forms*

- FAA Form 8010-4, Malfunction or Defect Report

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator Report.* Ensure the report includes the following item information:

- Make
- Model
- Part number
- Name
- Serial number, as applicable
- The specific problem and condition
- Corrective action, as applicable
- Diagram, as applicable

B. *Determine if a Report is Required.* If a report is required, ensure the submitted information is complete and accurate. Contact the operator for clarification, as applicable. If necessary, visit the site.

C. *Submit Malfunction or Defect Report.* Report serious airworthiness problems to AVN-120 (National Safety Data Branch) and the regional office immediately. The FAA Engineering branch responsible for the product must be informed of the equipment service difficulty along with any recommendations for corrective actions.

(1) If the airworthiness problems are critical to safe flight, report them immediately by phone. Submit a written report within 24 hours.

(2) Ensure the malfunction or defect is reported within 72 hours. If the information available within that time is

incomplete, all known conditions must be reported. The report must indicate whether follow-up action is required.

D. *Conduct Investigation.* If operator trends are identified, determine if there is a need for a change in the operator's policies or procedures.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task results in a completed report submitted to AVN-120.

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. If necessary, take appropriate action to resolve deficiencies in the operator's policies or procedures.

CHAPTER 130 REVIEW OPERATOR'S MECHANICAL INTERRUPTION SUMMARY REPORT

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3322

B. *Avionics:* 5322

3. OBJECTIVE. This chapter describes the procedures for monitoring an operator's fleet performance by tracking mechanical irregularities that occur during scheduled operations.

5. GENERAL. Operators are required by FAR §§ 121.705 and 135.417 to submit a monthly Mechanical Interruption Summary Report (MISR). This report enables the inspector to evaluate the effectiveness of the operator's maintenance and manual procedures.

A. *Requirement for Reporting Mechanical Irregularities*

(1) FAR §§ 121.563 and 135.65 require each certificate holder to provide an aircraft maintenance log for recording or deferring mechanical irregularities, as applicable, and the subsequent corrective actions performed. This log must be carried on board each aircraft.

(2) The operator's manual should provide a method where the pilot in command will inform the operator of mechanical irregularities or defects that appear before, during, and after a flight. The operator uses this information to let the maintenance personnel know of any suspected problems so that corrective action can be taken. This method of reporting is the basis for the required Mechanical Reliability Reports (MRR) and Mechanical Interruption Summary Reports (MISR).

B. *Inspector's Role.* Following receipt of an operator's Mechanical Interruption Summary Report, the inspector must evaluate the information for problem areas and significant trends. If a problem area or trend is evident, the inspector must decide on a course of action to investigate and/or correct the problem as necessary.

C. *Obtaining Additional Information.* The inspector may need to obtain more information than that available on the Mechanical Interruption Summary Report. Possible sources of information include:

- Contact with the operator
- Research of previous Mechanical Interruption Summary Reports and inspection reports
- Investigation of the operator's recent enforcement history for related violations

D. *Analysis and Findings.* Once the necessary data has been gathered, the inspector must analyze the findings to define the cause of the problem and determine a course of corrective action. Possible actions include:

- Filing a Service Difficulty Report (SDR)
- Inspecting aircraft, facilities, or products to ensure minimum standards have been met
- Investigating for possible regulatory non-compliance
- Recommending procedural changes to the operator's manual(s)
- Filing an Enforcement Investigative Report (EIR)

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Familiarity with the operator's procedures manual

- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task may require coordination with other maintenance and avionics inspectors.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8010.2, Flight Standards Service Difficulty Program, as amended
- Advisory Circular 135-3, Air Taxi Operators and Commercial Operators, as amended

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Analyze the Content of Report.* Review the Mechanical Interruption Summary Report.

(1) Coordinate with the appropriate specialty for analysis.

(2) Determine if any item on the Mechanical Interruption Summary Report requires further action.

B. *Conduct Research.* To determine the course of action and the severity of the problem, accomplish the following, as necessary:

(1) Contact the operator for additional information to help establish the following:

- Were proper maintenance procedures followed?
- Have appropriate corrective actions been taken?

(2) Review previous Mechanical Interruption Summary Reports to detect trends or irregularities that may indicate problem areas in maintenance procedures, operational procedures, or the operator's training

(3) Review previous inspection reports, correspondence, and other documents in the office files to determine if problem areas that relate to Mechanical Interruption Summary Reports have been identified

(4) Examine operator's recent enforcement history to determine if there are any related violation actions

C. *Analyze Findings.* Based on information obtained, determine an appropriate course of action.

D. *Debrief Operator.* Discuss with the operator all significant items identified on the Mechanical Interruption Summary Report. Discuss corrective actions and, if necessary, inform the operator that a letter will follow to confirm the items discussed.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of the task may result in the following:

- A formal letter to the operator, confirming the results of the analysis
- A change in the operator's maintenance or manual procedures
- An Enforcement Investigation Report

C. *Document the Task.* File the Mechanical Interruption Summary Report in the operator's district office file according to office procedures.

9. FUTURE ACTIVITIES. Follow-up inspections to ensure compliance, as required.

CHAPTER 131 INSPECT OPERATOR'S MAIN BASE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3619

B. *Avionics:* 5619

3. OBJECTIVE. This chapter describes the process used to inspect an operator's main base facility for regulatory compliance to FAR Parts 121, 125, 133, 135 and 137, as applicable.

5. GENERAL. The main base inspection is performed to ensure if adequate housing, equipment, spare parts, technical data and qualified personnel are being utilized to satisfactorily complete all maintenance functions.

7. MAINTENANCE TRAINING. The scope of a maintenance training program for FAR Part 121/135 (10 or more) operators must ensure that the aircraft operated are maintained at a high level of airworthiness.

A. The complexity of the training program depends on the individual operator's experience and the type of work performed. The type of training necessary may range from on-the-job training to formal classroom training. The end product must be an individual competent to perform the work as authorized.

B. An operator, regardless of the size of the operation, must have an effective training program. However, a small operator should not be expected to duplicate all the training facilities normally provided by a large operator. To comply with the regulatory requirements, the operator may use contract facilities or other means that will provide equivalent training.

9. PERFORMING THE INSPECTION

A. *Equipment Identification.* Inspectors should be aware of the type of aircraft being operated. The operations specifications or attached listing will identify the registration numbers of the aircraft authorized for use.

B. *Previous Inspection Reports.* Previous inspection reports, correspondence, and other documents in the district office files should be reviewed to determine if there are any open items or if any areas are identified that require special attention.

C. *Facilities.* The main base is required to perform maintenance in accordance with the operator's maintenance manuals. The inspector should use these documents to determine what special equipment, housing, and environmental conditions are necessary to perform the work. For example, the manufacturer may require special stands, hand tools, or a dust-free environment to repair a specific item.

D. *Contract Maintenance Arrangements.* If any maintenance is being performed by a contract facility, an inspection must be performed at the contractor's facility.

E. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

F. *Approved Flight Manual.* The approved flight manual for FAR Part 133 and 137 operators should be reviewed to determine the type of equipment being used. Based on the listed equipment, this review will help determine if the maintenance base has the necessary tools and equipment to service the aircraft and associated devices, e.g., external load devices (rotorcraft) and spraying devices (agricultural operators).

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 135, 125, 133, and 137, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course

- Familiarity with the type of operation being inspected

B. *Coordination.* This task requires coordination between the assigned Principal Airworthiness Inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43 and 65
- SFAR 36
- 49 CFR Part 173
- Operator's maintenance manual
- Operations specifications

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator's Data.* Review the following:

(1) The district office files to determine if any chronic or open items exist, status of Enforcement Investigation Reports, exemptions, etc.

(2) The operator's maintenance manuals to determine the level of maintenance accomplished and the complexity of operation at the main base

(3) The operator's operations specifications to determine the maintenance and inspection program content and complexity

B. *Inspect the Operator's Technical Library.* Ensure all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable. The data must include the following, as applicable:

- Operations specifications
- Operator's general maintenance manual
- Aircraft manufacturers' manuals
- Propeller, appliance, engine, and emergency equipment manufacturer's manuals
- Applicable Federal Aviation Regulations
- Applicable Airworthiness Directives
- Applicable type data sheets/Supplemental Type Certificates
- Approved Flight Manual

C. *Inspect the Aircraft Maintenance Record Retention System.* Ensure the following:

(1) Accomplishment is in accordance with operator's manual procedures

(2) System provides for the retrieval of records within a reasonable period of time

(3) If a computer system is utilized, that:

(a) An adequate security system exists

(b) A continuous backup system exists

(c) Source documents are retained as required by regulations, such as:

- Aircraft maintenance and inspection records
- Overhaul, repair and modification documents
- Records for Airworthiness Directive compliance and weight and balance control

NOTE: The inspector should sample a representative number of aircraft records to ensure integrity of system.

D. *Inspect the Maintenance Organization.* Ensure the following:

(1) Staffing meets maintenance needs based on the complexity of operation

(2) Responsibilities are separated between inspection and maintenance sections

(3) Maintenance and inspection management personnel are qualified

E. *Inspect the Operator's Training Program.* Ensure the following:

(1) Program defines training requirements

(2) Individual training records are retained and current

(3) Training facilities are appropriate for the complexity of the operation

(4) Training personnel are qualified

(5) Training aids and materials are current and appropriate

(6) Special training requirements are addressed and incorporated, e.g., nondestructive testing (NDT), inspection techniques and methods, and composite material repair

(7) Inspection and Required Inspection Item (RII) personnel are trained in appropriate inspection methods and techniques

NOTE: Inspector should review sample number of individual training records and monitor classroom training to evaluate program.

F. *Inspect the Operator's Maintenance Facilities.* Using the operator's manual as a reference, inspect the following:

(1) Parts and storage areas, to ensure:

(a) Adequate spare parts are available to support complexity of operation

(b) Receiving inspections are accomplished in accordance with operator's manual

(c) Shelf life limits are established for items, and that these items are controlled in accordance with operator's manual or manufacturer's recommendations

(d) Components and hardware are properly identified, protected, and classified as to serviceability

(e) Segregation of serviceable and unserviceable components and hardware is maintained

(f) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, to ensure:

(a) Serviceability and calibration are accomplished in accordance with operator's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil storage and dispensing facilities, if operated and maintained by operator. See Vol. 3, Ch. 135.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected to ensure compliance with the operator's manual:

(a) Chemical storage and dispensing

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

(5) Support shops (avionics, sheet metal, engine etc.), to ensure:

(a) All required technical data is current and available. If data is on microfiche, ensure that readers are available and serviceable.

(b) Staffing reflects complexity of shop

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place and properly utilized

(e) All required special tooling and equipment is available, serviceable, and within calibration criteria

(f) Maintenance tasks and inspection functions are being accomplished in accordance with operator's maintenance manual

(g) Safety equipment is available and serviceable

(h) Individual shop storage areas are maintained to same standards as main storage area

(i) Work areas do not conflict with each other, e.g., lathe next to avionics repair area

(j) Lighting, ventilation, and general housekeeping are adequate

(6) Hangar facilities, to ensure:

(a) Facilities are adequate for work being performed

(b) Staffing reflects the complexity of work being performed

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place and properly utilized

(e) Special equipment and tooling is available, serviceable, and calibrated, if applicable

(f) Safety procedures are established and adhered to

(g) Procedures direct the flow and control of all maintenance and inspection records

(h) Lighting, ventilation and general housekeeping are adequate

(7) Hangar ground support equipment, to ensure the equipment is serviceable and appropriate for the work being performed

G. *Inspect the Engineering Department, if Applicable.* Ensure the following:

(1) Staffing is adequate for complexity of assigned duties

(2) Personnel are qualified

(3) All required technical data is current and available

(4) Engineering orders are accomplished and recorded in accordance with operator's manual

(5) Major repair and alterations are accomplished in accordance with FAA approved data, (See Vol. 2, Ch. 1)

(6) Major repair reports are retained and available

(7) Major alterations are being reported per FAR § 121.707(b)

NOTE: Inspector should review all operator generated Engineering Orders to ensure that the program is being followed and items are being properly categorized (major vs. minor).

H. *Inspect the Inspection Department.* Ensure the following:

(1) Designated staffing is adequate for complexity of operation

(2) Delegated staffing (Required Inspection Items) is at reasonable level

(3) System ensures inspection personnel are trained, qualified, and properly authorized

I. *Inspect the Maintenance Control, if Applicable*

(1) Ensure the following:

(a) Staffing is adequate for the complexity of the operation and that personnel are trained and qualified

(b) Technical data is available and current

(c) Communications system provides effective communication between all departments and stations

(2) Review the activity/turnover log to look for trends and to evaluate the general effectiveness of the overall maintenance program

J. *Inspect the Maintenance Production/Planning Control, if Applicable.* Ensure the following:

(1) Staffing is adequate for the complexity of the operation

(2) Planning system is effective, e.g., inspection/overhaul scheduling, facility scheduling, parts forecast, personnel requirements, and communication with other departments

(3) The system provides for scheduling corrections of deferred and carryover maintenance items

NOTE: Inspector should randomly sample a representative number of open and completed work packages to ensure effectiveness of system.

K. *Review the Contracted Maintenance Arrangements, if Applicable.* See Vol. 2, Ch. 69.

L. *Inspect the Continuous Analysis and Surveillance Program.* See Vol. 2, Ch. 65 for evaluation or Vol. 3, Ch. 37 for surveillance.

M. *Inspect the Operator's Reliability Program, if Applicable.* See Vol. 2, Ch. 67 for evaluation or Vol. 3, Ch. 38 for surveillance.

N. *Inspect Aircraft.* Inspect any available aircraft to determine the quality of maintenance being performed. Refer to Vol. 3, Chs. 1 and 2.

O. *Analyze Findings.* Upon completion of inspection, record all deficiencies noted and determine the appropriate corrective action(s) to be taken.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- Letter to the operator confirming results of the inspection
- Enforcement Investigation Reports, as necessary

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. If deficiencies are noted during surveillance, schedule a follow-up inspection.

CHAPTER 132 INSPECT OPERATOR'S SUB BASE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3340

B. *Avionics:* 5340

3. OBJECTIVE. This chapter describes the process used to inspect an operator's sub base facility for compliance to FAR Parts 121, 125, and 135 (10 or more), as applicable.

5. GENERAL. The sub base inspection is performed to determine if adequate housing, equipment, spare parts, technical data and qualified personnel are available to satisfactorily complete all maintenance functions.

7. PERFORMING THE INSPECTION

A. If the sub base inspection is not performed by the Certificate Holding District Office, the inspector(s) performing the sub base inspection should coordinate with the Certificate Holding District Office principal inspectors for information and guidance, to include:

- Types of equipment operated
- Capabilities of maintenance organization
- Staffing requirements

B. *Performing the Inspection.* When a sub base inspection is performed, the maintenance facilities and their related activities must be evaluated. The performance of assigned tasks must fall within the limitations and the capabilities of the facility. Inspectors should be aware that equipment and activities will vary between operators due to differences in the complexity and capabilities of their respective maintenance facilities.

C. *Equipment Identification.* Inspectors should be aware of the type of aircraft being operated. The operations specifications or attached listing will identify the registration numbers of the aircraft authorized for use.

D. *Facilities.* The sub base is required to perform maintenance in accordance with the operator's maintenance manuals. The inspector should use these documents to determine what special equipment, housing, and environmental conditions are necessary to perform the work. For example, the manufacturer may require special stands, hand tools, or a dust-free environment to repair a specific item.

E. *Contract Maintenance Arrangements.* If any maintenance is being performed by a contract facility, an inspection must be performed at the contractor's facility.

F. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being inspected

B. *Coordination*

(1) This task requires coordination with the assigned Principal Airworthiness Inspectors.

(2) If the task is performed by the office with geographic responsibility, coordinate with Certificate Holding District Office principal inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Part 43 and 65

- 49 CFR Part 173
- Operator's maintenance manual

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator's Data.* Review the following:

(1) The district office files to determine if any chronic or open items exist, status of Enforcement Investigation Reports, etc.

(2) The operator's maintenance manuals to determine the level of maintenance accomplished and the complexity of the sub base operation

(3) The operator's operations specifications, to determine maintenance and inspection programs content and complexity, if applicable

B. *Inspect the Operator's Technical Library.* Ensure all required technical data is available and current. If the data is on microfiche, ensure that readers are available and serviceable. The data must include the following, as applicable:

- Operator's general maintenance manual
- Aircraft manufacturer's manuals
- Propeller, appliance, engine, and emergency equipment manufacturer's manuals
- Applicable Federal Aviation Regulations
- Applicable Airworthiness Directives
- Applicable type data sheets/Supplemental Type Certificates
- Operations Specifications

C. *Inspect the Maintenance Records.* Ensure the following:

(1) Maintenance is performed in accordance with the operator's manual procedures

(2) Transfer of records to the main base facility is accomplished in accordance with operator's manual procedures

D. *Inspect the Sub Base Maintenance Organization.* Ensure the following:

(1) Staffing meets maintenance needs based on the complexity of the operation

(2) Responsibilities are separated between inspection and maintenance sections

E. *Inspect the Operator's Maintenance Facilities.* Inspect the facilities, to include:

(1) Parts and storage areas, to ensure:

(a) Spare parts are adequate to support the complexity of the operation

(b) Receiving inspections are accomplished in accordance with operator's manual

(c) Shelf life limits are established for items and control is in accordance with operator's manual or manufacturer's recommendations

(d) Components and hardware are properly identified, protected, and classified as to serviceability

(e) Segregation of serviceable and unserviceable components and hardware is maintained

(f) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, to ensure:

(a) Serviceability and calibration are accomplished in accordance with operator's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil dispensing and storage facilities, if operated and maintained by operator. Refer to Vol. 3, Ch. 135.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected:

(a) Chemical storage and dispensing

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

(5) Support shops (avionics, sheet metal, engine, etc.), if applicable, to ensure:

(a) All required technical data is current and available. If data is on microfiche, ensure that readers are available and serviceable.

(b) Staffing reflects complexity of shop

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place and properly utilized

(e) All of the required special tooling and equipment is available, serviceable, and within calibration criteria

(f) Maintenance tasks and inspection functions are being accomplished in accordance with operator's maintenance manual

(g) Safety equipment is available and serviceable

(h) If applicable, individual shop's storage areas are maintained to same standards as main storage area

(i) Work areas don't conflict with each other, e.g., a lathe next to an avionics repair area

(j) Lighting, ventilation, and general housekeeping are adequate

(6) Hanger facilities, to ensure:

(a) Facilities are adequate for the work performed

(b) Staffing reflects the complexity of the work performed

(c) Personnel are properly trained, qualified, and authorized

(d) Procedures for shift turnover are in place and properly utilized

(e) Special equipment and tooling is available, serviceable, and calibrated, if applicable

(f) Safety procedures are established and adhered to

(g) Procedures direct the flow and control of all maintenance and inspection records

(h) Lighting, ventilation, and general housekeeping are adequate

(7) Ground support equipment, to ensure the equipment is serviceable and appropriate for the work being performed

F. *Inspect the Inspection Department.* Ensure the following:

(1) Designated staffing is adequate for the complexity of the operation

(2) Delegated staffing (Required Inspection Items) is at a reasonable level

G. *Inspect the Aircraft.* Inspect any available aircraft to determine the quality of maintenance being performed. Refer to Vol. 3, Chs. 1 and 2.

H. *Analyze Findings*

(1) Upon completion of the inspection, record all deficiencies noted.

(2) If the inspection was performed by the office having geographic responsibility, coordinate all findings with the Certificate Holding District Office principal inspectors.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- If the inspection was performed by the office having geographic responsibility, a report submitted to the Certificate Holding District Office
- If the inspection was performed by the Certificate Holding District Office, a letter informing the operator of the inspection results
- Enforcement Investigation Reports, as necessary

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. If deficiencies were noted during the surveillance, conduct follow-up inspections as required.

CHAPTER 133 INSPECT OPERATOR'S LINE STATION

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3621

B. *Avionics:* 5621

3. OBJECTIVE. This chapter describes the process used to inspect an operator's line station for regulatory compliance to FAR Parts 121 or 135 (10 or more).

5. GENERAL. The line station inspection is performed to ensure that adequate housing, equipment, spare parts, technical data and qualified personnel are available to satisfactorily complete all maintenance functions.

7. PERFORMING THE INSPECTION

A. If the line station inspection is not performed by the Certificate Holding District Office, the inspector(s) performing the line station inspection should coordinate with the Certificate Holding District Office principal inspectors for information and guidance, to include:

- Types of equipment operated
- Capabilities of maintenance organization
- Staffing requirements

B. *Performing the Inspection.* When a line station inspection is performed the maintenance facilities and their related activities must be evaluated. The performance of assigned tasks must fall within the limitations and the capabilities of the facility. Inspectors should be aware that equipment and activities will vary between operators due to differences in the complexity and capabilities of their respective maintenance facilities.

C. *Equipment Identification.* Inspectors should be aware of the type of aircraft being operated. The operations specifications or attached listing will identify the registration numbers of the aircraft authorized for use.

D. *Facilities.* The line station is required to perform maintenance in accordance with the operator's maintenance manuals. The inspector should use these documents to determine what special equipment, housing, and environmental conditions are necessary to perform the work.

E. *Contract Maintenance Arrangements.* If any maintenance is being performed by a contract facility, an inspection must be performed at the contractor's facility.

F. *Enforcement History.* Inspectors should check the Enforcement Information Subsystem (EIS) to determine if there are any areas that require special attention. If a contract maintenance organization is used, it should also be checked.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation being inspected

B. *Coordination*

(1) This task requires coordination with the assigned Principal Airworthiness Inspectors.

(2) If the task is performed by the office with geographic responsibility, coordinate with Certificate Holding District Office principal inspectors.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43 and 65

- 49 CFR Part 173
- Operator's maintenance manual

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator's Data.* Review the following:

(1) The district office files, to determine if any chronic or open items exist, status of Enforcement Investigation Reports, etc.

(2) The operator's maintenance manuals, to determine the level of maintenance accomplished and the complexity of the operation of the line station

(3) The operator's operations specifications, to determine the maintenance and inspection program's content and complexity

B. *Inspect the Operator's Technical Library, if Applicable.* Ensure that all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable.

C. *Inspect the Maintenance Records.* Ensure the following:

(1) Maintenance is accomplished in accordance with operator's manual procedures

(2) Transfer of records to the main base facility is accomplished in accordance with operator's manual procedures

D. *Inspect the Line Station Maintenance Organization.* Ensure the following:

(1) Staffing meets maintenance needs based on the complexity of the operation

(2) Responsibilities are separated between inspection and maintenance organizations

E. *Review the Maintenance and Service Personnel Training Records.* If the records are located at the line station, determine if personnel are trained in accordance with the manual requirements.

F. *Inspect the Operator's Maintenance Facilities.* Inspect the following:

(1) Parts and storage areas, to ensure:

(a) Spare parts are adequate to support the complexity of the operation

(b) Shelf life limits are established for items, and control is in accordance with operator's manual or manufacturer's recommendations

(c) Components and hardware are properly identified, protected, and classified as to serviceability

(d) Segregation of serviceable and unserviceable components and hardware is maintained

(e) Hazardous materials are suitably segregated and stored

(2) Special tools and test equipment, as applicable, to ensure:

(a) Serviceability and calibration is accomplished in accordance with the operator's manual

(b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:

- The National Bureau Of Standards
- Standard established by the item's manufacturer
- If foreign manufactured, the standards of the country where manufactured, if approved by the Administrator

(c) Appropriate types and quantities are available

(d) Proper storage and protection is utilized

(3) Fuel/oil dispensing and storage facilities, if operated and maintained by operator. Refer to Vol. 3, Ch. 135.

(4) Deicing chemical storage and dispensing equipment, if applicable. The following must be inspected to ensure compliance with the operator's manual:

(a) Chemical storage and dispensing

(b) Serviceability of equipment

(c) General condition and safety of storage areas

(d) Training of personnel in operator/applicant's deicing procedures

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

(5) Ground support equipment, to ensure equipment is serviceable and appropriate for the complexity of operation

G. *Inspect the Inspection Department, if Applicable.* Ensure the following:

(1) Designated staffing is adequate for the complexity of the operation

(2) Delegated staffing (Required Inspection Items) is at a reasonable level

H. *Inspect the Aircraft.* Inspect any available aircraft to determine the quality of maintenance being performed. Refer to Vol. 3, Chs. 1 and 2.

I. *Analyze the Findings*

(1) Upon completion of the inspection, record all deficiencies noted.

(2) If the inspection was performed by the office having geographic responsibility, coordinate all findings with the Certificate Holding District Office principal inspectors.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- If the inspection was performed by the office having geographic responsibility, a report submitted to the Certificate Holding District Office
- If the inspection was performed by the Certificate Holding District Office, a letter informing the operator of the inspection results
- Enforcement Investigation Reports, as necessary

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. If deficiencies were noted during the surveillance, conduct follow-up inspections as required.

CHAPTER 134 INSPECT CONTRACT MAINTENANCE FACILITY

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3640

B. *Avionics:* 5640

3. OBJECTIVE. This chapter describes the process used to inspect a contract maintenance facility for regulatory compliance to FAR Parts 121 and 135 (10 or more), as applicable.

5. GENERAL. For inspections of a contract maintenance facility located out of the geographic boundaries of the Certificate Holding District Office, assistance should be requested from the Flight Standards District Office (FSDO) in which the facility is located.

7. INITIATION AND PLANNING. Before inspecting the facility, the inspector should:

- Review the operator's manuals to determine the levels of maintenance performed at the contract maintenance facility
- Determine that the contract maintenance facilities are properly certificated and rated for the scope of work performed, e.g., aircraft, power plant, propeller, components, and accessories
- Obtain from the operator a list of contractor management personnel to be contacted

9. PERFORMING THE TASK. The inspector must determine that the contractor has adequate facilities and personnel to perform the contracted work. The inspector must keep in mind that the contracted maintenance facility is an extension of the operator's overall maintenance organization. Maintenance performed by the contractor must be in accordance with the operator's approved maintenance program.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course
- Familiarity with the type of operation to be inspected

B. *Coordination.* This task requires coordination between the operator's Principal Airworthiness Inspectors and the contractor's Flight Standards District Office.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 43, 65, and 145
- 49 CFR Part 173
- Operator's maintenance manual
- Applicable Advisory Circulars

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Determine Contractor Qualifications*

(1) Review the operator's contract to determine the type of maintenance being performed by the contractor.

(2) Ensure that the contract maintenance facility is properly certificated and rated for the work being performed.

B. *Inspect the Library.* Ensure that the contract maintenance facility's library:

(1) Is available for use by the facility's personnel

(2) Includes the following data:

- The contract agency's Inspection Procedures Manual
- The operator's maintenance manual
- Current applicable Advisory Circulars, Airworthiness Directives, and type data sheets
- Aircraft, engine, propeller, appliance, and emergency equipment manufacturer's manual(s)

C. *Inspect the Records.* Inspect the following:

(1) *Maintenance records (Aircraft, Power Plant, Propeller, Component, Appliances, etc.).* Sample the records to ensure that the work is accomplished and documented in accordance with the operator's manual.

(2) *Personnel training records, if applicable.* Review the contracting agency's records to ensure that personnel are trained to perform the work contracted for.

D. *Inspect the Quality Control System.* Ensure the following:

(1) Responsibilities for maintenance and inspection functions are separated

(2) Staffing reflects the complexity of the operation

(3) Personnel are appropriately certificated, qualified, and trained to perform inspections

(4) Personnel performing Required Inspection Item (RII) functions are properly authorized

(5) Lists of authorized inspection and Required Inspection Item personnel are maintained, including the type of equipment and limitations authorized

(6) All inspection personnel's training records are maintained and kept current

(7) The operator's system for controlling accountability and documentation of all work being accomplished is specified in the operator's maintenance manual

(8) Incoming parts and supplies are inspected and tagged in accordance with operator's maintenance manual

E. *Inspect the Maintenance Department.* Ensure the following:

(1) Staffing reflects the complexity of the contracted operation

(2) Personnel are trained for the complexity of work performed

(3) The facilities are adequate for the type work performed

(4) Spare parts are available for contracted work

(5) Equipment is available to support the work being performed

(6) Shift turnover procedures are in place and being utilized

(7) Space, lighting, and ventilation reflect the requirements of the work being performed

(8) Special tools and test equipment are calibrated within specified time intervals

(9) Flammable and hazardous materials are properly segregated and stored

(10) Serviceable and unserviceable parts are identified and segregated

(11) Shelf life limits are controlled

F. *Analyze Findings*

(1) Upon completion of inspection, record all deficiencies noted and determine the appropriate corrective action(s) to be taken.

(2) If inspection was performed by the office having geographic responsibility, coordinate all findings with Certificate Holding District Office principal inspectors.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

- If inspection was performed by the office having geographic responsibility, a report submitted to the Certificate Holding District Office

- If inspection was performed by the Certificate Holding District Office, a letter informing the operator of the results of the inspection
- Enforcement Investigation Reports, as necessary

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. If deficiencies are noted during surveillance, follow-up inspections as required.

CHAPTER 135 MONITOR OPERATOR'S REFUELING PROCEDURES

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:* 3638

B. *Avionics:* 5638

3. OBJECTIVE. This chapter describes the process of monitoring an operator's refueling procedures and facilities.

5. GENERAL. Federal Aviation Regulations do not establish standards for fueling facilities, but this does not relieve the operator of overall responsibility for conducting those operations within established industry standards.

A. *Geographic Considerations.* Inspections of contract fueling facilities by the office having the geographic responsibility must be coordinated with the Certificate Holding District Office.

B. The primary responsibility of the maintenance inspector is to ensure that the operator's facility for storage and dispensing of aviation fuels is operated in accordance with the operator's manual. Additionally, the operator's manual must be in accordance with current industry standards.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- 49 CFR Part 173
- Advisory Circular 150/5230, Aircraft Fuel Storage, Handling, and Dispensing on Airports, as amended
- National Fire Protection Association (NFPA) Pamphlets 407 and 70

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Inspect the Facility*

(1) Ensure the following:

- Personnel training requirements are documented and current
- Training is conducted according to the manual curriculum
- Piping is marked and color coded to identify fuel type and grade
- Control/cutoff valves are clearly marked with instructions for emergency use, e.g., on/off

(2) Ensure that the fuel farm/storage area provides for the following:

- Proper security (fenced and posted)
- Proper display of "Flammable" and "No-Smoking" signs

- Proper markings that identifies the type/grade of fuel

(3) Ensure that the equipment includes the following:

- A positive low point sump
- Adequate fire extinguishers

(4) Ensure that fuel filters/filter separators contain at least the following:

- An inlet strainer
- Inflow and outflow filter/separators sized to match maximum pump flow capacity
- A differential pressure check system
- A positive water defense system
- A sump drain with outlet located to facilitate capture of outflow
- Fuel sampling (millipore or equivalent) fittings downstream of all filters and filter/separators

(5) Ensure that hoses, nozzles and outflow connectors are:

- Specifically designed and tested for delivery of aviation fuels
- Controlled by spring-loaded, non-bypassable automatic (deadman) fuel flow cutoff valves
- Equipped with a dust cap or other feature that will minimize contaminant introduction into fuel/system
- Equipped with non-bypassable 100 mesh nozzle/connector screens
- Color coded to identify fuel type

(6) Ensure that electrical equipment, switches, and wiring are of a type or design approved for use in hazardous locations (explosion proof, e.g., free of exposed conductors, contacts, switches, connectors, motors, etc).

(7) Verify that grounding and bonding equipment ensure that piping, filters, tanks, and electrical components are electrically bonded together and interconnected to an adequate electrical ground. The system should have ground wires, bonding wires, and clamps adequate to facilitate prompt, definite electrical ground connection between fueler/pit/cabinet, grounding system, and aircraft being fueled.

(8) Ensure that fuel tenders and fueling pits have the following:

- Appropriate markings displayed, e.g., "DANGER," "FLAMMABLE", "NO SMOKING", fuel grade, standard hazardous material placard, filter due dates, and emergency fuel shutoff
- Appropriately placed fire extinguishers
- An air filter/spark arrestor and a leak-free exhaust system terminating in a standard baffled original equipment type muffler, if equipped with internal combustion engine

B. *Observe Aircraft Fueling Operation.* Ensure compliance with applicant's procedures and determine if procedures are adequate.

C. *Analyze Findings.* Evaluate any deficiencies to determine what corrections will be required. If any deficiencies are noted, discuss possible corrective actions with the operator.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in a letter informing the operator of the results of the inspection.

C. *Document the Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

[CHAPTERS 136 THROUGH 139 RESERVED]

CHAPTER 140 INSPECT FOREIGN NON-FEDERAL LOCATED GROUND NAVIGATIONAL AIDS

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5434

3. OBJECTIVE. This chapter describes the process used to inspect a foreign-located non-federal ground navigational aid used by U.S.-certificated air carriers.

5. GENERAL

A. In assessing the operational services a facility is required to provide, such as en route navigation, approach procedures, air traffic control procedures, etc., an inspector should accomplish the following:

- Evaluate the organization in charge of the maintenance and operation of the facility
- Physically inspect the facility itself, if deemed necessary

B. *Exceptions*

(1) It is not necessary to physically inspect navigational aids owned and operated by foreign governments. The adequacy, performance, and reliability of such navigational aids may be evaluated by other means, such as:

- Past performance history
- En route inspections
- Discussions with air carriers and government personnel having individual knowledge of the facilities

(2) Navigational aids owned and operated by foreign governments should not be physically inspected except by arrangement with, or permission of, the aviation officials of the government concerned.

C. *Scheduling the Inspection.* The inspector's knowledge of the operator or facility owner should help determine if advance notice should be given of a proposed inspection. Advance notice is advisable to ensure full cooperation of the licensee. In addition, where the facility is foreign-owned and operated, the inspector should contact the Foreign Civil Air Authority (FCAA) responsible for the facility, prior to the facility inspection.

D. *Performing the Inspection*

(1) To ensure the continuing reliability of the station the following criteria should be considered in determining the extent of the inspection:

- Adequacy of the station's operating and maintenance manuals
- Station records, including periodic inspection and maintenance visits, and previous station inspection reports
- Cleanliness and orderliness of the equipment

(2) Discussions with personnel in charge of the operation and/or maintenance of the facility are important to the inspector in determining the following:

- Competency of personnel
- Adequacy of maintenance equipment and supplies
- Overall reliability of the performance of the facility

(3) A review of the operator's records for the station will assist the inspector in determining the reliability of the inspection and maintenance program.

(4) During the actual facility inspection, the inspector should observe the operation to determine if the equipment is operating within dictated tolerances. A comparison should be made between the actual performance and known limitations/prescribed performance values.

(5) Accurate and reliable operation of the facility's monitor is vital to the overall effectiveness of the operation.

When making a determination as to the continuing reliability of the facility the inspector should evaluate the following:

- The type of monitor, automatic or simple receiver
- The type of malfunctions which will cause it to alarm or change over
- The location of the station
- The personnel responsible for monitoring the station
- The procedures, instructions, or actions to be taken should the station malfunction

(6) While inspecting the station, the inspector may request the operator's personnel to perform station functions, such as switching operations or adjustments, to demonstrate the proper performance of the station.

(a) Some functions that should be requested include activating standby units and auxiliary power supplies unless station records show that such switching operations and adjustments have been conducted recently.

(b) Under no circumstances should the inspector make any adjustments or perform any switching operations.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Completion of the Airworthiness Inspectors Indoctrination Course
- Experience with the equipment being inspected

B. *Coordination.* This task requires coordination with the following:

- Operations inspectors
- Regional and district offices, as appropriate
- U.S. Embassy and the Foreign Civil Air Authority (FCAA) of the country involved

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 6700.20, Non-Federal Navigational Aids and ATC Facilities

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Schedule the Inspection*

(1) Coordinate the inspection with the operator, if determined necessary.

(2) Coordinate inspection with the U.S. Embassy and the FCAA of the country involved, if applicable.

B. *Perform the Inspection*

(1) Inspect the nondirectional beacons, to include:

(a) Aurally monitoring the identification signals to ensure proper operation of the keying device

(b) Ensuring the current and modulation percentage indications are within prescribed tolerances

(c) Ensuring the equipment, antennas, and associated hardware are in acceptable operating condition

(2) Inspect the omniranges (VOR), to include:

(a) Ensuring the foliage in the immediate area of the station does not affect service area radial accuracy

(b) Determining the condition and security of transmitters, auxiliary equipment, antenna systems, monitors, and power supplies

(c) Ensuring that power/telephone lines, metal buildings, and towers or fences within 1200 feet of a VOR

facility do not affect the performance of the facility by creating scalloping or altering course alignment

(3) Inspect the Localizer and Glide Slope, to include:

(a) Ensuring foliage in the immediate area of the station does not affect the service area radial accuracy

(b) Determining the condition and security of transmitters, auxiliary equipment, antenna systems, monitors, and power supplies

(c) Ensuring that power/telephone lines, metal buildings, and towers or fences within 1200 feet of a VOR facility do not affect the performance of the facility by creating scalloping or altering course alignment

(4) Inspect the Seventy-five Megahertz Markers to include:

(a) Aurally monitoring the identification signals to ensure proper operation of the keying device

(b) Ensuring the current and modulation percentage indications are within prescribed tolerances

(c) Ensuring the equipment, antennas, and associated hardware are in acceptable operating condition

(d) Determining if deterioration or damage to the antenna array or counterpoise has occurred

(e) Determining if high weeds and foliage in the immediate area of the antenna and counterpoise are affecting the radiated pattern

(5) Inspect the Four-Course Ranges, to include:

(a) Aurally monitoring the identification signals to ensure proper operation of the keying device

(b) Ensuring the current and modulation percentage indications are within prescribed tolerances

(c) Ensuring the equipment, antennas, and associated hardware are in acceptable operating condition

(6) Inspect the Ground-Controller Approach Radar, Airport Surveillance Radar (ASR), Precision Approach Radar (PAR), and ground-controller approach ground-air-ground communication link, to include:

(a) Ensuring the equipment and housing are in acceptable operating condition

(b) Determining the condition and security of antennas, wave-guides, transmitters, receivers, control consoles, etc.

(c) Evaluating the evidence of deterioration and wear on the antennas and antenna operating mechanisms

(d) Ensuring accurate alignment of the antenna operating mechanisms

(e) Ensuring the accurate alignment of the evaluation and azimuth antennas of the Precision Approach Radar in relation to the visual presentation

C. *Analyze Discrepancies*

(1) Advise the air carrier using the facility, in writing, of any major discrepancies noted.

(2) Discuss minor discrepancies with the personnel directly in charge of the facility.

NOTE: Discrepancies noted during the inspection of a navigational aid, owned and operated by a foreign government, will normally be corrected through the air carrier using the facility. In some cases, however, it may be advisable to seek corrective action by dealing with FCAA of the government involved.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Successful completion of this task may result in the following:

(1) Coordination with the assigned operations inspector in determining whether operational restrictions or alternate procedures should be required of the air carrier pending correction of the discrepancies

(2) Distribution of a narrative report in accordance with established procedures

C. *Document Task.* File all supporting paperwork in the air carrier's office file.

9. FUTURE ACTIVITIES. None.

CHAPTER 141 INSPECT COMMUNICATION STATIONS

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5890

3. OBJECTIVE. This chapter provides guidance for inspecting an air carrier's ground communications station as used for dispatch and/or flight following purposes.

5. GENERAL. While these inspections are normally accomplished by operations inspectors, avionics inspectors may become involved in special inspections, such as accident investigations, suspected communications problems, deterioration of communications, and new system evaluation.

A. The inspection of air carrier ground communication stations ensures that the capabilities and reliability of the facilities have not deteriorated beyond the minimum requirements established by the Federal Aviation Regulations. The inspection also ensures that the stations continue to meet the standards demonstrated by the air carrier during the route approval proving flights.

B. In most cases, communications facilities may be satisfactorily assessed by en route inspections and/or inspections of flight dispatch centers.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the air carrier's communications requirements
- Completion of the Airworthiness Inspectors Indoctrination Course
- Completion of the En Route Inspection Course

B. *Coordination.* This task requires coordination with operations inspectors, air carrier dispatch and/or flight following personnel, and air carrier avionics personnel.

3. REFERENCES, FORMS AND JOB AIDS

A. *References*

- FAR Parts 121/135, 125, and 127

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Evaluate the Air Carrier's Suspected Communications Problems*

(1) Discuss with the operator the nature of the deficiency.

(2) Accomplish the following, as required:

- Review procedures, equipment records, and historical records, as available
- Conduct a physical inspection of the communications facilities
- Conduct flight and/or ground evaluations

(3) Review any communications records (FAR § 121.711)

(4) Analyze the results of the investigation. Ensure that any deficiencies found are resolved.

B. *Evaluate a New System*

(1) Discuss the requirements for the new system with the operator.

(2) Accomplish the following, as required:

- Examine the compatibility of the new system with the operator's dispatch and flight following capabilities
- Conduct a physical inspection of the new system/facility
- Conduct flight and/or ground evaluations

(3) Analyze the results of the evaluation. Ensure that the new system/facility complies with the appropriate regulations.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in the following:

(1) A narrative report outlining the source of the request for the inspection, the problem investigated, the findings, and any recommendations

(2) Filing of the original report with the office performing the inspection with a copy sent to the certificate holding district office

(3) Coordination with the operator for revisions of the operator's operations specifications, as appropriate

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 142 MONITOR FLIGHT DATA RECORDERS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance*

- Ramp Inspection: 3627
- Spot Inspection: 3628
- Cockpit En Route Inspection: 3629

B. *Avionics*

- Ramp Inspection: 5627
- Spot Inspection: 5628
- Cockpit En Route Inspection: 5629

3. OBJECTIVE.

This chapter provides guidance for monitoring flight data recorders to ensure that performance levels are maintained.

5. GENERAL

A. A review of data extracted from flight data recorders has shown a significant loss of data during takeoffs, touchdowns, flights through turbulence, and unusual vibration situations. Due to these data losses, avionics inspectors need to ensure that an air carrier's monitoring procedures and inspection frequencies will maintain the required flight data recorder performance levels.

B. State-of-the-art advancements in certain digital flight data recorders incorporate the use of continuous self-monitoring and fault condition alert capabilities. These types of digital flight data recorders are being accepted by airlines as new or direct replacements for foil recorders.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 91, 121/135, and 125, as applicable
- Experience with the equipment being inspected
- Completion of the Airworthiness Inspector's Indoctrination Course

B. *Coordination.* This task requires coordination with the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 23 and 25

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Perform the Inspection*

(1) Determine the type of flight data recorder currently in operation.

(2) Evaluate the operator's maintenance program. Accomplish the following:

- Ensure that the flight data recorder system test program is accomplished in accordance with the manufacturer's recommendations or an approved equivalent method
- Verify that the continuous self-monitoring and fault condition alert capabilities (digital flight data recorders) will detect the loss or deterioration of input signals before periodic readouts are allowed to be waived

NOTE: Periodic readouts can be waived if not required by the maintenance review board.

- Ensure that digital flight data recorder ramp equipment, if used, can detect the loss or deterioration of input signal from sensors or transducers before periodic readouts are allowed to be waived

- Ensure that the manual includes procedures that prevent the operator from destroying recorded data from the removed unit until the airplane has accumulated 25 hours of operating time

- Ensure that the performance levels for ranges, accuracies, and recording intervals are maintained

(3) Inspect the operator's record keeping system. Accomplish the following:

(a) Ensure that the most recent instrument calibration and recorder correlation is being retained, to include the recording medium from which this calibration is derived

(b) Review the operator's flight data recorder readouts and calibration records for the following:

- Missing parameters

- Data loss

- Deterioration of signals

(c) Examine the flight data recorder readouts to ensure that the actual data is within the ranges, accuracies, and recording intervals as specified in FAR Part 121, Appendix B

B. *Analyze Inspection Results.* Review the inspection results and discuss any discrepancies with the operator.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in a revision to the operator's maintenance program/manual.

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Perform follow-up as required.

CHAPTER 143 MONITOR COCKPIT VOICE RECORDERS

Section 1 Background

1. WPMS ACTIVITY CODES

A. *Maintenance:*

- Spot Inspection: 3628
- Cockpit En Route Inspection: 3629

B. *Avionics:*

- Spot Inspection: 5628
- Cockpit En Route Inspection: 5629

3. OBJECTIVE. This chapter provides guidance in monitoring the cockpit voice recorders during spot and cockpit en route inspections.

5. GENERAL. The Federal Aviation Regulations require that certain aircraft be equipped with a Cockpit Voice Recorder (CVR) that meets approved design and installation criteria. The regulations also stipulate that the data obtained from the cockpit voice recorder cannot be used in any civil penalty or certificate action.

NOTE: This does not negate the FAA inspector's authority and responsibility to monitor the recorder during the performance of airworthiness surveillance functions.

A. The avionics inspector is responsible for determining that the maintenance procedures ensure the following:

- An acceptable level of in-service operation of the cockpit voice recorder
- A quality of reproduction that will allow for the extraction of pertinent information in the event of an accident or incident

B. There are no restrictions in the regulations that preclude periodic monitoring of the cockpit voice recorder as a method of surveillance.

(1) Inspectors are cautioned against monitoring cockpit voice recorder tapes for any purpose other than determining the quality of the recording.

(2) Monitoring should be done only to the extent necessary to determine that the quality of reproduction and maintenance of the cockpit voice recorder is adequate.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 91, 121/135, and 125, as applicable
- Experience with the equipment being inspected
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with the operator.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 3, Ch. 2, Conduct Spot Inspection of Operator's Aircraft, or Ch. 4, Conduct Cockpit En Route Inspection, as applicable

B. *Forms*

- FAA Form 8430-13, Request To Access Aircraft

C. *Job Aids.* None.

5. PROCEDURES

A. *Initiate the Inspection.* Reference Vol. 3, Chs. 2 or 4, as applicable.

B. *Monitor the Cockpit Voice Recorder*

(1) If this task is being done as part of an en route inspection, obtain permission from the pilot-in-command before plugging into the cockpit voice recorder system.

(2) If this task is being done as part of a spot inspection, accomplish the following:

(a) Coordinate with the maintenance supervisor prior to conducting the inspection

(b) Monitor the in progress maintenance to ensure that the CVR is being evaluated for performance of its intended function

NOTE: Be aware that not all phone jacks on cockpit voice recorder cockpit monitors are wired for operation.

(3) Check all channels to ensure that the quality of reproduction has not deteriorated below an optimal audible level.

(4) Monitor the Cockpit Area Microphone (CAM) to ensure that it satisfactorily picks up all cockpit audio.

NOTE: Be aware that the quality of reproduction of some cockpit voice recorders can be affected by ground operation of auxiliary power units and ground power units.

C. *Analyze Results.* Refer to Vol. 3, Chs. 2 or 4, as applicable.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Refer to Vol. 3, Chs. 2 or 4, as applicable

9. FUTURE ACTIVITIES. Follow-up activities as required.

CHAPTER 144 INSPECT AVIONICS TEST EQUIPMENT

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5460/5470

3. OBJECTIVE. This chapter provides guidance in the inspection of test equipment used during the calibration, repair, and overhaul avionics equipment.

5. GENERAL. A repair facility certified to maintain airborne avionics equipment must have test equipment suitable to perform that maintenance. Regardless of the type of equipment being used the minimum test equipment necessary to perform the maintenance, as required by the manufacturer, is acceptable.

A. *Test Equipment Equivalency.* Normally, test equipment which is equivalent to that recommended by the appliance or aircraft manufacturer will be accepted.

B. *Test Equipment Updating*

(1) State-of-the-art advances often affect the modes and parameters of avionics equipment. Therefore, previously accepted test equipment may need to be modified to ensure compatibility with any new equipment used.

(2) Surplus military test equipment is sometimes used by repair facilities as a primary test unit or as a backup in case of failure of the primary test unit. Modification of this equipment to current industry standards and the equivalency requirements may be required prior to use.

C. *Test Equipment Calibration.* The regulations require that maintenance facilities test the test equipment at regular intervals to ensure correct calibration.

(1) National Institute of Standards and Technology traceability can be verified by reviewing test equipment calibration records for references to National Institute of Standards and Technology test report numbers. These numbers certify traceability of the equipment used in calibration.

(2) If the repair station uses a standard for performing calibration, that standard can not be used to perform maintenance.

(3) The calibration intervals for test equipment will vary with the type of equipment, environment, and use. The accepted industry practice for calibration intervals is usually one year.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination course

B. *Coordination.* This task may require coordination with the manufacturer.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 43, 65, 121/135, and 145
- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. 2, Ch. 165, Evaluate FAR Part 145 Repair Station's Facilities and Equipment

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Perform the Inspection*

(1) Determine what test equipment is required by reviewing the operator/manufacturer's maintenance manuals.

(2) Ensure that the agency has full control of the test equipment, i.e. ownership, lease, etc., and that the test equipment is located on the premises.

(3) Ensure that the following is accomplished according to the operator/agency's accepted manual procedures:

- Identification of equipment
- Recording of the date and person/organization calibrating each piece of test equipment

(4) Ensure that inspection and calibration of the precision tools and test equipment is done in accordance with the operator/agency's manual procedures.

B. *Inspect Automatic Test Equipment (ATE)*

(1) Ensure that the ATE testing program provides an in-depth analysis that ensures the aircraft components and testing standards are functionally tested within the prescribed manufacturer's limits.

(2) Verify that management control is accomplished in accordance with the operator/agency's accepted manual and includes procedures for the following:

- The setting of limits and standards
- The performance of evaluation checks and tests
- The updating of a listing that identifies each ATE test by number and a reference to the applicable section of the component manual
- Controlling and identifying the revision status of software programs

(3) Ensure that the operator/agency's purchasing maintenance service, including ATE programs, is accomplished in accordance with the operator/agency's approved maintenance program.

C. *Analyze Results.* Review inspection results and discuss any discrepancies with the operator/agency.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task may result in the following:

- A letter to the operator/agency detailing any discrepancies
- Enforcement Investigation Report (EIR), if applicable

C. *Document Task.* File all supporting paperwork in the operator/agency's office file.

9. FUTURE ACTIVITIES. Follow-up inspections as required.

CHAPTER 145 INSPECT ALTIMETER SETTING SOURCES

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5687

3. OBJECTIVE. This chapter provides guidance for inspecting altimeter setting sources.

5. GENERAL. It is the responsibility of the avionics inspector, through the applicable Flight Standards District Office, to inspect altimeter setting sources in coordination with the respective Regional Flight Procedures Branch.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Completion of the Airworthiness Inspectors Indoctrination course
- Completion of the Altimeter and Barometry Course

B. *Coordination.* This task requires coordination with the Regional Flight Procedures Branch.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Advisory Circular 91-14, Altimeter Setting Sources, as amended

B. *Forms*

- Regional forms, as applicable

C. *Job Aids.* None.

5. PROCEDURES

A. *Perform the Inspection*

(1) Inspect the facility to ensure the following:

(a) Two aircraft-type sensitive altimeters, which meet the system test and inspections required by FAR Part 43, Appendix E, Technical Standard Order-C10b for new altimeters, and/or Advisory Circular 91-14, as amended, are mounted in a suitable box or rack

(b) The facility has established a known height above mean sea level $\pm$ 1 foot and has this marked on the instruments or posted immediately adjacent to them

(c) The facility is maintained at a reasonably consistent temperature and is free from drafts

(d) Proper venting is being used, and if an error in excess of 10 feet is induced by the use of forced air systems, an outside vent (static source) is in use

(e) The initial requirements are still being met

(f) The altimeters have been recertified within the last 24 calendar months or when the difference between the two altimeters exceeds .05" HG on the barometric scale

(2) Verify the method and frequency used to communicate altimeter setting information to the pilot

B. *Analyze Results.* Analyze inspection results and brief the operator, as required.

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task can result in the following:

(1) Immediate notification to the Regional Flight Procedures Branch if any changes are made that:

- Affect the operation or the location of the facility
- Requires the discontinuation of operations

(2) If the inspection is found to be unsatisfactory:

- Notification to the Flight Procedures Branch by telephone followed by an inspection report detailing the deficiencies
- Notification to the operator by certified mail, not to use the altimeter setting source until the discrepancies are corrected

C. *Document Task.* File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. Follow-up, as required.

CHAPTER 146 MONITOR APPROVED AVIONICS SOFTWARE CHANGES

Section 1 Background

1. WPMS ACTIVITY CODES

- Avionics: 5414/5416

3. OBJECTIVE. This task provides guidance for the control and monitoring of avionics air carrier software changes to line replaceable units (LRU's).

5. GENERAL

A. *Definition*

- *Partitioned System:* A hardware/software system that is designed to separate safety related functions from other functions. This ensures that no action in a non-safety related function can cause a failure in a safety related function.

B. Post-certification software changes can be required when the following occurs:

- Changes to the system functional capability
- Design errors are discovered during service

(1) When making a post-certification software change care must be taken as even the smallest change can lead to "secondary errors" in the software. Secondary errors are errors that were not present or whose effects were not detected when the system was first certificated.

(2) Because only changes to safety related software will be treated as a major alteration, it is necessary to predetermine what software will be affected by the change.

(3) Most current system designs use a software program which is not partitioned. Use of a non-partitioned system makes it necessary to determine if the proposed changes affect safe aircraft operation by evaluating the functions performed by the system. Public address systems, passenger entertainment, and galleys are examples of systems which do not affect safety.

(4) Care must be taken to ensure that partitioning actually exists, especially when implemented in software. When partitioning does exist, changes may be made to non-safety related software without FAA approval of the methods used for verification and validation.

C. If an air carrier wishes to design changes to the object code (software) of a line replaceable unit, it must establish and comply with a software verification and validation program equivalent to that described by RTCA/DO-178A, Software Considerations in Airborne Systems and Equipment Certification.

(1) A software verification and validation program is not necessary if the air carrier only wishes to modify line replaceable units by incorporating software which has been previously approved by the FAA.

(2) The level of sophistication and effort needed for original design changes made to the resident software differs from that needed for the incorporation of a pre-approved software change. A pre-approved software change can be accomplished by:

- Installing a new memory device which contains the approved object code
- Loading the approved object code into a programmable device contained within the line replaceable unit

D. The Principal Avionics Inspector has responsibility for the approval of the operator's avionics maintenance program. The maintenance program must provide for the proper maintenance/inspection of all avionics equipment and components, including complete systems.

(1) Changes to the software which performs functions affecting the safe operation of the aircraft should be treated as major alterations. All other software changes should be treated as minor alterations.

(2) The operator must establish that partitioning exists prior to making changes to software which does not affect safety when such software is contained in a system which does affect safety.

(3) When a software change has been previously approved, an operator may modify equipment by incorporating the software change, even when the software change is related to aircraft safety.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Part 43
- Completion of the Airworthiness Inspectors Indoctrination Course

B. *Coordination.* This task requires coordination with the operator, Aircraft Certification Office, and the manufacturer.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- FAR Parts 21, 43, 91, and 121/135
- Order 8300.10, Airworthiness Inspector's Handbook, Vol. II, Ch. 1, Perform Field Approval of Major Repairs and Major Alterations
- Advisory Circular 20-121, Airworthiness Approval of Airborne Loran-C Navigation Systems for Use in the U.S. National Airspace System (NAS), as amended
- RTCA DO-178A, Software Considerations in Airborne Systems and Equipment Certification

B. *Forms*

- FAA Form 337, Major Repairs and Alterations

C. *Job Aids.* None.

5. PROCEDURES

A. *Review the Operator's Manual.* Review applicable manuals, including the operator's maintenance manual, to ensure the following:

(1) The manufacturer's service bulletin describing the change is FAA approved

(2) The manufacturer's recommended Automatic Test Equipment (ATE)/approved equivalent/manual test equipment and test data are current and capable of performing the required tests

(3) Procedures are described for transferring the software from the medium provided by the manufacturer to the line replaceable unit memory devices

(4) Procedures are described for checks ensuring that no errors are introduced by the transfer when memory devices are reprogrammed

(5) The manual clearly states that avionics software changes performing functions that affect the safe operation of the aircraft will be limited to the following:

- Those described in the avionics manufacturer's FAA-approved service bulletins
- Those for which the operator has obtained FAA approval

(6) Controls exist to prevent unauthorized software changes and that changes are performed in accordance with the procedures described therein

(7) Any change to software is reflected in an appropriate revision to the identification of the line replaceable unit in accordance with the criteria of RTCA Document No. DO-178A

B. *Review the Training Records.* Ensure that the operator's training records list those persons:

- Trained in the procedures, tools, and testing necessary to incorporate the new software
- Qualified to make the inspections when the work is completed and the units are returned to service

NOTE: Factory training may be necessary before using new procedures and tools to incorporate soft-

ware, depending on the complexity of the tasks involved.

C. *Approve Operator Designed Software Changes Requiring FAA Engineering Assistance*

(1) For changes that affect aircraft safety, contact the appropriate Aircraft Certification Office (ACO) and request engineering review and approval of the verification and validation methods to be used by the operator during the design and test of the new software.

(2) For changes that do not affect aircraft safety in a system which has been partitioned, accomplish the following:

- Contact the appropriate aircraft certification office and request verification to confirm that partitioning exists

- Ensure that the software changes will not affect the functions which affect aircraft safety

7. TASK OUTCOMES

A. *File WPMS Transmittal Form*

B. Completion of this task will result in coordinating the approval or the denial of the proposed change with FAA Engineering.

9. FUTURE ACTIVITIES. None.

VOLUME IV TABLE OF CONTENTS

CHAPTER 1 FAR PART 91 COMPARISON CHART

1. CHANGES TO FAR PART 91. Effective August 18, 1990, the numeration of FAR Part 91 changes. This revision reorganizes and realigns the general operating and flight rules. This change will affect all references to FAR Part 91.

A. Effects of Changes. The recodification of FAR Part 91 is just that: a renumbering. The substance of FAR Part 91 has not changed. Therefore, there is no need for FAR Part 91 operators to resubmit previously approved programs if the only purpose in doing so would be to adopt the new numbering system.

(1) *Example.* For FAR Part 91 inspection programs, FAA inspectors should inform their operators that an acceptable procedure would be to place a cover letter in front of the inspection program with a statement explaining which regulation the program is now under.

(2) The operator also has the option of changing the references to the revised FAR Part 91 numbering system.

B. FAR Part 91 Job Aid. On the following pages, this chapter provides a chart delineating the old and new FAR Part 91 references.

Comparison of Current Part 91 and Revised Part 91

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
SUBPART A - General	
§91.1 Applicability	§91.1 and §91.703
§91.2 Certificate of authorization for certain Category II operations	§91.193
§91.3 Responsibilty & authority of the pilot in command	Unchanged
§91.4 Pilot in command of aircraft requiring more than one pilot	§91.5
§91.5 Preflight Action	§91.103
§91.6 Category II and III operations: General operating rules	§91.189
§91.7 Flight crewmembers at stations	§91.105
§91.8 Prohibition against interference with crewmembers	§91.11
§91.9 Careless or reckless operation	§91.13
§91.10 Careless or reckless operation other than for the purpose of air navigation	§91.13
§91.11 Alcohol and drugs	§91.17
§91.12 Carriage of narcotic drug, marijuana, depressant or stimulant drugs or substances	§91.19
§91.13 Dropping objects	§91.15
§91.14 Use of safety belts and shoulder harnesses	§91.107
§91.15 Parachutes and parachuting	§91.307
§91.17 Towing: Gliders	§91.309
§91.18 Towing: Other than under §91.17	§91.311
§91.19 Portable electronic devices	§91.21

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
§91.20 Operations within the North Atlantic Minimum Navigation Performance Specifications Airspace	§91.705
§91.21 Flight instruction: Simulated instrument flight and certain flight tests	§91.109
§91.22 Fuel requirements for flight under VFR	§91.151
§91.23 Fuel requirements flight in IFR conditions	§91.167
§91.24 ATC transponder and altitude reporting equipment use	§91.215
§91.25 VOR equipment check IFR operations	§91.171
§91.26 Traffic alert and collision avoidance system equipment and use	§91.221
§91.27 Civil aircraft: Certifications required	§91.203
§91.28 Special flight authorizations for foreign civil aircraft	§91.715
§91.29 Civil aircraft airworthiness	§91.7
§91.30 Inoperable instruments and equipment for multiengine aircraft	§91.213

Part 91 Revisions Continued

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
§91.31 Civil aircraft flight manual, marking, and placard requirements	§91.9
§91.32 Supplemental oxygen	§91.211
§91.33 Powered civil aircraft with standard category U.S. airworthiness certificates: Instrument and equipment requirements	§91.205
§91.34 Category II manual	§91.191
§91.35 Flight recorders and cockpit voice recorders	§91.609
§91.36 Data correspondence between automatically reported pressure altitude data and the pilot's altitude reference	§91.217
§91.37 Transport category civil airplane weight limitations	§91.605
§91.38 Increased maximum certificated weights for certain airplanes operating in Alaska	§91.323
§91.39 Restricted category civil aircraft: Operating limitations	§91.313
§91.40 Limited category civil aircraft: Operating limitations	§91.315
§91.41 Provisionally certificated civil aircraft: Operation limitation	§91.317
§91.42 Aircraft having experimental certificates: Operating limitations	§91.319
§91.43 Special rules for foreign civil aircraft	§91.711
§91.45 Authorization for ferry flights with one engine inoperative	§91.611
§91.47 Emergency exits for airplanes carrying passengers for hire	§91.607
§91.49 Aural speed warning device	§91.603
§91.50 Reserved	Deleted
§91.51 Altitude altering system or device: turbojet powered civil airplanes	§91.219
§91.52 Emergency locator transmitter	§91.207
§91.53 Reserved	Deleted
§91.54 Truth in leasing clause requirement in leases and conditional sales contracts	§91.23
§91.55 Civil aircraft sonic boom	§91.817
§91.56 Agricultural and firefighting airplanes: noise operating limitations	§91.815
§91.57 Aviation Safety Reporting Program: Prohibition against using reports for enforcement purposes	§91.25
§91.58 Material for compartment interiors	§91.613
§91.59 Carriage of candidates in Federal elections	§91.321
SUBPART B - Flight Rules (General)	
§91.61 Applicability	§91.101
§91.63 Waivers	§91.903
§91.65 Operating near other aircraft	§91.111 and §91.123
§91.67 Right of way rules; except water operations	§91.113
§91.69 Right of way rules; water operations	§91.115
§91.70 Aircraft speed	§91.117
§91.71 Acrobatic flight	§91.303
§91.73 Aircraft lights	§91.209
§91.75 Compliance with ATC clearances and instructions	§91.123
§91.77 ATC light signals	§91.125
§91.79 Minimum safe altitude:	§91.119
§91.81 Altimeter settings	§91.121
§91.83 Flight plan: Information required	§91.153 and §91.169

Part 91 Revisions Continued

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
§91.84 Flights between Mexico or Canada and the U.S.	§91.707
§91.85 Operating on or in the vicinity of an airport: General rules	§91.127
§91.87 Operation at airports with operating control towers	§91.129
§91.88 Airport Radar Service Areas	§91.130
§91.89 Operation at airports without control towers	§91.127
§91.90 Terminal Control Areas	§91.131
§91.91 Temporary flight restrictions	§91.137
§91.93 Flight test areas	§91.305
§91.95 Restricted and prohibited areas	§91.133
§91.97 Positive control areas and route segments	§91.135
§91.100 Emergency air traffic rules	§91.139
§91.101 Operations to Cuba	§91.709
§91.102 Flight limitations in the proximity of space flight recovery operations	§91.143
§91.103 Operation of civil aircraft of Cuban registry	§91.713
§91.104 Flight restrictions in the proximity of the Presidential and other parties	§91.141
(Visual Flight Rules) §91.105 Basic VFR weather minimums	§91.155
§91.107 Special VFR weather minimums	§91.157
§91.109 VFR cruising altitude or flight level	§91.159
§91.111 None	
§91.113 None	
(Instrument Flight Rules) §91.115 ATC clearance and flight plan required	§91.173
§91.116 Takeoff and landing under IFR	§91.175
§91.117 Reserved	Deleted
§91.119 Minimum altitudes operations	§91.177
§91.121 IFR cruising altitude or flight level	§91.179
§91.123 Course to be flown	§91.181
§91.125 IFR radio communications	§91.183
§91.127 IFR operations: two way radio communications failure	§91.185
§91.129 Operation under IFR in controlled airspace: Malfunction reports	§91.187
§91.131-91.159 Previously not in use	
SUBPART C - Maintenance, Preventive Maintenance, and Alterations	
§91.161 Applicability	§91.401
§91.163 General	§91.403
§91.165 Maintenance required	§91.405

Part 91 Revisions Continued

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
§91.167 Operation after maintenance, preventive maintenance, rebuilding, or alteration	§91.407
§91.169 Inspections	§91.409
§91.170 Changes to aircraft inspection programs	§91.415
§91.171 Altimeter system & altitude reporting equipment tests and inspections	§91.411
§91.172 ATC transponder tests and inspections	§91.413
§91.173 Maintenance records	§91.417
§91.174 Transfer of maintenance records	§91.419
§91.175 Rebuilt engine maintenance records	§91.421
§91.177-91.179 Previously not in use	
SUBPART D - Large and Turbine-powered Multiengine Airplanes	
§91.181 Applicability	§91.501
§91.183 Flying equipment operating information	§91.503
§91.185 Familiarity with operating limitations and emergency equipment	§91.505
§91.187 Equipment requirements: Over the top or night VFR operations	§91.507
§91.189 Survival equipment for overwater operations	§91.509
§91.191 Radio equipment for overwater operations	§91.511
§91.193 Emergency equipment	§91.513
§91.195 Flight altitude rules	§91.515
§91.197 Smoking and safety belt signs	§91.517
§91.199 Passenger briefing	§91.519
§91.200 Shoulder harness	§91.521
§91.201 Carry-on baggage	§91.523
§91.203 Carriage of cargo	§91.525
§91.205 Transport category airplane weight limitations	Deleted
§91.207 None	Deleted
§91.209 Operating in icing	§91.527
§91.211 Flight engineer requirements	§91.529
§91.213 Second-in-command requirements	§91.531
§91.215 Flight attendant	§91.533
§91.217-91.299 Previously not in use	
SUBPART E - Operating Noise Limits	
§91.301 Applicability: Relation to Part 36	§91.801
§91.302 Part 125 operators: Designation of applicable regulations	§91.803
§91.303 Final compliance: Subsonic airplanes	§91.805
§91.305 Phased compliance under Parts 121 and 135: Subsonic airplanes	§91.807
§91.306 Replacement airplanes	§91.809
§91.307 Service to small communities exemption: two-engine, subsonic airplanes	§91.811

Part 91 Revisions Continued

MATERIALS IN OLD SECTIONS	MOVES TO NEW SECTIONS
§91.308 Compliance plans and status: U.S. operators of subsonic airplanes	§91.813
§91.309 Civil supersonic airplanes that do not comply with Part 36	§91.819
§91.311 Civil supersonic airplanes: Noise limits	§91.821
Appendix A - Category II operations: Manual, instruments, equipment and maintenance	
Appendix B - Authorization to exceed Mach 1 (§91.55)	
Appendix C - Operations in North Atlantic (NAT) Minimum Navigation Performance Specifications (MNPS) Airspace	
END OF OLD PART 91	

CHAPTER 2 ACTION NOTICES

1. Current Action Notices. The following chart includes Action Notices in four basic categories. The first grouping is of Action Notices that have been incorporated into the text of Order 8300.10, Airworthiness Inspector's Handbook. The second list enumerates Action Notices that are applicable to the airworthiness inspector's function and are not yet incorporated into the text of handbook chapters. The third group deals with inspection requirements, and the final set are Action Notices that provide information not appropriate for inclusion in the handbook. Action Notices from the 8130 series apply to Order 8130.2, Certification Handbook, as amended, and, with a few exceptions, are not listed and will not be incorporated into Order 8300.10.

INCORPORATED INTO THE HANDBOOK		TO BE INCORPORATED
AN#	Handbook Vol./Ch.	AN#
8000.2	Vol. 2 Chapter 162	8000.4
8000.9	Vol. 3 Chapter 142	8000.10
8000.11	Vol. 2 Chapter 22	8000.17
8000.12	Vol. 3 Chapter 115	8000.24
8000.16	Vol. 2 Chapter 241	8000.27
8000.18	Vol. 2 Chapter 241	8000.29
8000.25	Vol. 2 Chapter 84	8000.36
8000.33	Vol. 2 Chapter 76,241	8000.41
8000.34	Vol. 2 Chapter 84	
8000.35	Vol. 2 Chapter 236	8010.2
8000.37	Vol. 2 Chapter 236	8100.6
8000.40	Vol. 2 Chapter 84	8100.7
8000.42	Vol. 2 Chapter 2	8100.9
		8100.12
8010.3	Vol. 3 Chapter 128	8110.5
8020.3	Vol. 2 Chapter 210	8110.17
8110.7	Vol. 2 Chapter 1	
		8130.5
8300.1	Vol. 2 Chapter 101 thru 111	8130.6
8300.2	Vol. 2 Chapter 74	8130.7
8300.6	Vol. 3 Chapter 97	8130.15
8300.9	Vol. 3 Chapter 37	8130.17
8300.11	Vol. 3 Chapter 11	8130.20
8300.13	Vol. 3 Chapter 36	8130.28
8300.15	Vol. 2 Chapter 78	8150.3
8300.18	Vol. 3 Chapter 11	
8300.23	Vol. 2 Chapter 84	8300.X
8300.24	Vol. 3 Chapter 38	8300.4

INCORPORATED INTO THE HANDBOOK

AN#	Handbook Vol./Ch.
8300.32	Vol. 2 Chapter 78
8300.37	Vol. 2 Chapter 126
8300.44	Vol. 3 Chapter 128
8300.53	Vol. 2 Chapter 83
8300.63	Vol. 2 Chapter 71
8300.64	Vol. 3 Chapter 124
8300.73	Vol. 2 Chapter 84
8300.76	Vol. 2 Chapter 78
8300.77	Vol. 2 Chapter 82
8300.78	Vol. 3 Chapter 41
8300.81	Vol. 3 Chapter 26

TO BE INCORPORATED

AN#
8300.12
8300.14
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INSPECTION REQUIREMENT

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INFORMATION ONLY

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8080.1
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8100.4
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INSPECTION REQUIREMENT

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INFORMATION ONLY

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CHAPTER 3 COMPARISON BETWEEN OLD AND NEW HANDBOOK

1. ORDER 8300.9, AIRWORTHINESS INSPECTOR'S HANDBOOK, COMPARED TO ORDER 8300.10, AIRWORTHINESS INSPECTOR'S HANDBOOK. The following chart delineates specific chapters of Order 8300.9 and gives the equivalent chapters in Order 8300.10. Where there is a listing only for Order 8300.9, that guidance should be used until such a time as equivalent guidance is provided in Order 8300.10. Where there is a listing only for Order 8300.10, that guidance is new information that was not available in Order 8300.9. In all new cases in which there is a listing for both orders, Order 8300.10 always supersedes Order 8300.9. Concerned individuals who believe there is additional material in Order 8300.9 that should be incorporated into Order 8300.10 are encouraged to fill out and send in the Inspector Feedback Card, in Appendix 2 of Order 8300.10.

2. COMPARISON CHART

NOTE: PTRS Codes: **3xxx=Maintenance Activity**
5xxx=Avionics Activity

PTRS#	Task Description	8300.9 Chapter-Section	8300.10 Vol.-Chap.
	General Information		1-1
	FAA Regulatory Responsibility		1-2
	General Process for Approval/Acceptance		1-3
	Generic Process for Certificating Organ.		1-4
	Preparation of FAA Operating Certificates		1-5
	FAA And Flight Standards: History		1-6
	Environmental Consideration/Responsibilities		1-7
	Exemptions, Deviation, Waivers, Authorizations		1-8
	Interior Inspection Guidelines		3-1
	Exterior Inspection Guidelines		3-1
	Comparison Chart-Changes to Part 91		4-1
	Comprehensive Index Vol. II & III		Appendix 1
	Inspector Feedback		Appendix 2
x350	Ground Air Carrier AC	6-31	3-6
x410	Issue AC Condition Notice	7-3	3-124
x456	Process Malfunction/Defect Report	6-34	3-129
x322	Process 121/135 MIS Report	6-34	3-130
x325	Process Service Difficulty (SDR)	6-34	3-128
x321	Process AC/Engine Utilization Report	6-17	2-78
x346	Review Engineering Change Auth	----	2-79

PTRS#	Task Description	8300.9 Chapter-Section	8300.10 Vol.-Chap.
x812	Develop MMEL on FOEB	6-15	
x418	Evaluate MEL (91)	6-15	2-37
x312	Evaluate MEL (Air Operator)	6-15	2-37
x373	Evaluate MEL (141)	6-15	2-37
x312	Evaluate MEL (125)	6-15	2-109
x312	Evaluate MEL (129)	6-15	2-129
x399	Provide Technical Assistance	----	2-220
x402	Issue Airworthiness Cert./Standard	3-16	2-225
x406	Issue Airworthiness Cert./Special	3-16	2-225
x412	Replace/Reissue Airworthiness Cert.	3-16	2-225
x404	Issue Special Flight Permit	3-18	2-89
x404	Issue Spec.Flt./continuing authorization	6-12	2-89
x408	Authorization for Door Removal		
x501	Certificate A&P Mech./Add Rating	5-1	2-22
x508	Renew A&P Mech. Cert.	5-1	2-22
x501	Certificate Foreign A&P Mech.	5-1	2-23
x510	Certificate Repairman/Add Rating	5-5	2-24
x510	Certificate Repairmen-Experime.AC	5-6	2-25
x510	Certificate Parachute Rigger/A:R	5-8	2-28
x512	Issue Inspection Authorization(IA)	5-3	2-26
x514	Renew Inspection Authorization(IA)	5-4	2-27
x522	Certificate DME/DPRE	5-7/8	2-202
x524	Renew DME/DPRE Certificate	5-7/8	3-114
x516	Appoint Designated AW Rep.(DAR)	8000.62	2-203
x518	Renew DAR Certificate	8000.62	3-115
x530	Conduct Written Exam/Airmen Cert.	5-1	2-22
x532	Conduct Reexam for Airmen	5-1	2-22
x532	Conduct Reexam for 609	3-18	in progress
x230	Certificate Repair Sta/Satell/A:R	4-1/3	2-162
x230	Certificate Foreign Repair Station	4-7	2-163
x202	Certificate Pt. 121 Operator	6-1	2-61
x202	Certificate Pt. 125 Operator	7-2	2-101
x202	Certificate Pt. 129 Operator	6-1	2-125
x360	Certificate Pt. 133 Extl Load Oper.	6-1	2-135
x202	Certificate Pt. 137 Ag Operator	6-1	2-147
x204	Certificate Pt. 135 (9 or less) Oper.	6-2	2-68
x207	Certificate Pt. 135 (10/more) Oper.	6-2	2-61
x230	Certificate Pt. 141 Pilot School	4-12	2-156
x230	Certificate Pt. 147 Mechanic School	4-15/17	2-186
x230	Certificate Pt. 149 Parachute Loft	4-13	2-196

PTRS#	Task Description	8300.9 Chapter-Section	8300.10 Vol.-Chap.
x450	Export Class II & III Approval	3-17	2-226
x421	Export Aircraft (21)	3-17	2-226
x448	Export Engines & Propellers	3-17	2-226
x428	Evaluate 91 Insp.Prog.-Turbine	7-1	2-36
x425	Evaluate 91 Insp.Prog.-Progressive	7-5	2-36
x343	AAIP Inspection	6-2	2-83
x341	Evaluate Inspection Prog. (121,135)	6-2/3	2-73
x341	Evaluate Inspection Prog.(135)	6-2	2-91
x343	Evaluate Inspection Prog.(125)	7-2	2-105
x343	Inspect Inspection Prog. (125)	7-2	3-60
x332	Evaluate Short-Term Escalation	6-10	2-80
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x341	Inspect Inspection Prog. (121)	6-33	2-64-67
x692	Annual and 100 hour inspection	7-4	2-36
x414	Perform Routine Field Approval (21)	3-3	2-1
x416	Perform Non-Routine Field Approval	3-3	2-1
x446	Perform Field Approval (43)	3-3	2-1
x414	Approval Avionics Software	8-19	3-146
x318	Conducting Proving Flights	6-24	2-76
x308	Evaluate Emerg Evac/Ditching	----	2-77
x308	Evaluate Emerg Evac/Ditching(125)	----	2-108
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x328	Evaluate Weight & Bal (125)	7-2	2-110
x639	Approve Weight & Bal (121,125,135)	6-5	2-74
x328	Approve Weight & Bal (135, 9-less)	6-5	2-75
x215	Issuance-Waiver/Authorizations	2-21	1-8
x319	Evaluate Applica. Deviation (121.135)	2-21	1-8
x690	Issuance Deviation Pt.125 (91)	2-21	2-101
x636	Inspect Reliability Program	6-9	3-38
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APPENDIX 1
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INSPECTOR FEEDBACK SHEET

Subject: Order 8300.10, Airworthiness Inspector's Handbook

To: Manager, Technical Standards Branch, AFS-370
through Regional Handbook Standardization Representative
Telemail address: AFS370

(Please check all appropriate items.)

[] An error (procedural or typographical) has been noted in Volume _____, Chapter _____, Section _____, paragraph _____ on page _____.

[] Recommend paragraph _____ in Volume _____, Chapter _____, Section _____, page _____, be changed as follows: *(Attach separate sheets if necessary.)*

[] In a future change to this directive, please cover the following subject
(briefly describe what you want added):

[] Regional Handbook Standardization Representative recommendation:

[] I would like to discuss the above. Please contact me.

Submitted by: _____ Date:_____

FTS Telephone Number: _____ Routing Symbol: _____

Telemail Address: _____

APPENDIX 2
INSPECTOR FEEDBACK

Information Currency. AFS-370, Technical Standards Branch, has developed a revision process to ensure that the information contained in this handbook is correct and current. Any comments regarding content, whether to point out deficiencies or suggest improvements, should be directed to AFS-370. The branch will review all comments and amend the handbook as appropriate. A job aid for suggesting changes is provided on the following page for your convenience. If an issue requires immediate clarification, please feel free to phone AFS-370, but please also fill out the job aid. Your feedback is important to the success of this document.

INSPECTOR FEEDBACK SHEET

Subject: Order 8300.10, Airworthiness Inspector's Handbook

To: Manager, Technical Standards Branch, AFS-370
through Regional Handbook Standardization Representative
Telemail address: AFS370

(Please check all appropriate items.)

[] An error (procedural or typographical) has been noted in Chapter _____, Section _____, paragraph _____ on page _____.

[] Recommend paragraph _____ in Chapter _____, Section _____, page _____, be changed as follows: *(Attach separate sheets if necessary.)*

[] In a future change to this directive, please cover the following subject *(briefly describe what you want added):*

[] Regional Handbook Standardization Representative recommendation:

[] I would like to discuss the above. Please contact me.

Submitted by: _____ Date:_____

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CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8300.10 CHG 5

12/14/90

SUBJ: AIRWORTHINESS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits new and revised portions to this handbook.

2. EXPLANATION OF CHANGES.

a. This change includes minor corrections to the following chapters, which were also reorganized for clarity: Volume Two, Chapters 26, 76, 87, 88, 101, 102, 147, 156, 220; Volume Three, Chapters 26 and 105.

b. This change incorporates Action Notice 8610.1 into Volume Two, Chapter 22. It also incorporates Action Notice 8300.76 into Volume Two, Chapter 78. As these Action Notices have been made a part of this Order, they are therefore cancelled.

c. This change reissues pages from Volume Two, Chapters 68 and 163, which were included in Change 4 but inadvertently printed out of sequence.

d. This change adds Volume One, Chapter 9 on certificate numbers; Volume Three, Chapter 43 on ETOPS inspection; and, Volume Three, Chapter 44 on maintenance records.

e. This change includes the following chapters on maintenance records, which were rewritten and coordinated: Volume Two, Chapter 111; Volume Three, Chapters 27, 42, and 61. Volume Two, Chapter 82, on ETOPS, was also rewritten and coordinated.

f. Two chapters on FAR Part 91 certification were rewritten as surveillance chapters and moved to the appropriate volume. Volume Two, Chapter 36 becomes Volume Three, Chapter 26, and Volume Two, Chapter 38 becomes Volume Three, Chapter 27.

g. Two new Volume Four chapters provide reference information. Chapter 2 lists Action Notices and their status, along with PTRS codes. Chapter 3 compares Orders 8300.9 and 8300.10.

h. Appendix 1, Index, was updated, and Appendix 2, the inspector feedback sheet, was corrected for clarity.

3. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until superseded by a new basic order.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
iii through xiv	6/5/90	iii through xiv	12/14/90
Vol. 1, i through iii	12/15/89	Vol. 1, i through iii	12/14/90
		Vol. 1, 9-1 through 9-4	12/14/90
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Thomas C. Accardi
Acting Director, Flight Standards Service

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8300.10 CHG 4

6/5/90

SUBJ: AIRWORTHINESS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits new and revised portions to this handbook.

2. EXPLANATION OF CHANGES.

a. This change includes minor corrections to the following Volume 2 chapters, which were also reorganized for clarity: Chapters 23, 24, 63, 68, 78, and 202.

b. This change incorporates Action Notice A8310.3 into Volume 2, Chapters 162 and 163, which deal with repair stations.

c. This change reissues Volume 2, Chapter 235, which was included in Change 3 but inadvertently printed on the back of Volume 2, page 189-1.

d. This change adds Volume 3, Chapter 25, on air shows/air races.

e. Action Notice A8000.42 is incorporated into Volume 4, Chapter 1, which provides a chart comparing old and revised FAR Part 91 sections. Any handbook references to sections of FAR Part 91 are according to the section numbers that existed prior to the revision.

f. Two appendices are included. The first is an expanded index for all of the chapters in Volumes 2 and 3. The second is a form to encourage comments and suggestions regarding the handbook.

3. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until superseded by a new basic order.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
iii through xi	12/15/89	iii through xiv	6/5/90
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		Vol. 4, i	6/5/90
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Appendix 1, Index-1 through Index-12	12/15/89	Appendix 1, Index-1 through Index-32	6/5/90
		Appendix 2, Inspector Feedback-1	6/5/90
		Inspector Feedback Sheet (behind Inspector Feedback-1)	

D. C. Beaudette
Director, Flight Standards Service

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8300.10 CHG 3

12/15/89

SUBJ: AIRWORTHINESS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits revised and new portions to this handbook.

2. EXPLANATION OF CHANGES.

a. A cover sheet and record of changes are included as part of this change.

b. This change provides guidance for the accomplishment of certification and surveillance tasks, as applies to Avionics, FAR Part 129, and FAR Part 147.

c. This change also adds, to Volume 2, Chapters 71 and 94 on maintenance records, and a correction to the general information chapter in Volume 1.

d. Also included is page 114-1 (Chapter 114, Volume 3) which was to be included in CHG 1, dated July 21, 1989, but was inadvertently dropped during the publication process.

e. Any references to sections of FAR Part 91 are according to the section numbers that existed before FAR Part 91 was revised. The revised numbering of FAR Part 91 will be dealt with in an upcoming change.

3. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until superseded by a new basic order.

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		Cover (before Foreword page)	11/1/88
		Record of Changes (before Foreword page)	
		iii through xi (behind Foreword page)	12/15/89
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		Vol. 2, 94-1 through 94-5	12/15/89
		Vol. 2, 125-1 through 125-2	12/15/89
		Vol. 2, 126-1 through 126-6	12/15/89
		Vol. 2, 185-1 through 185-4	12/15/89
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		Vol. 2, 187-1 through 187-5	12/15/89
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		Vol. 2, 235-1	12/15/89

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		Vol. 2, 236-1 through 236-4	12/15/89
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DC Beaudette

D. C. Beaudette
Director, Flight Standards Service

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8300.10 CHG 2

9/8/89

SUBJ: AIRWORTHINESS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits revised and new portions to Order 8300.10, Airworthiness Inspector's Handbook.

2. EXPLANATION OF CHANGES. This change provides guidance for the accomplishment of certification and surveillance tasks, as applies to Accidents, Incidents, and Violations, General Functions, and FAR Part 149.

3. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until superseded by a new basic order.

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CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8300.10 CHG 1
7/21/89

SUBJ: AIRWORTHINESS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits revised and new portions to Order 8300.10, Airworthiness Inspector's Handbook.

2. EXPLANATION OF CHANGES. This change provides guidance for the accomplishment of certification and surveillance as it applies to FAR Parts 91, 65/183, and 145. It also provides guidance for the accomplishment of tasks related to Aircraft and Equipment.

3. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until superseded by a new basic order.

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