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HANDBOOK FOR AVIATION MECHANICS WITH INSPECTION AUTHORIZATION

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Federal Aviation Agency

ADVISORY CIRCULAR

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SUBJECT: HANDBOOK FOR AVIATION MECHANICS WITH INSPECTION AUTHORIZATION

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1. PURPOSE. This handbook is intended to provide guidance and instructional material for Authorized Inspectors in exercising their privileges and to place significance upon the relationship of the Inspection Authorization privileges to air safety.

2. REFERENCES. This handbook deals primarily with the privileges of the mechanic holding Inspection Authorization, as set forth in Part 65 of the Federal Aviation Regulations. Readers are cautioned that this handbook is advisory only; it is not regulatory. The pertinent effective Civil Air Regulations or Federal Aviation Regulations remain the final authority.

   a. REGULATION RECODIFICATION. The existing Civil Air Regulations (CARs) are being condensed and recodified. An example of recodification is evidenced by Part 65 of the Federal Aviation Regulations (FAR), which contains former Civil Aeronautics Manual 24 (CAM 24).

   References to regulatory material in this handbook may not always be current as the Agency is presently undertaking a program of recodifying the existing Civil Air Regulations. Several pertinent regulations have already been recodified and others will be recodified and renumbered while this handbook is being produced. The reader is therefore alerted to possible outdated regulatory references that may unavoidably appear in the handbook. Where a reference is made to a Civil Aeronautics Manual, which has been recodified since this handbook was prepared, readers are urged to seek out the appropriate section of the new Federal Aviation Regulations. Appendix 1, section 1, of this handbook contains a schedule that indicates the Civil Aeronautics Manuals and their new part numbers as they will appear in the Federal Aviation Regulations. It will also indicate the estimated effective dates of the recodified parts.

3. REVISIONS TO THIS PUBLICATION. This handbook and revisions will be distributed by the Federal Aviation Agency free of charge to persons who have requested changes to Part 65 of the FAR. Requests to receive changes to Part 65 of the FAR should be directed to the Federal Aviation Agency, Publishing and Graphics Branch, MS-163, Washington 25, D. C. Such requests are necessary for receipt of all revisions to this handbook.

George S. Moore
Director
Flight Standards Service

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CHAPTER 1. INTRODUCTION

1. AUTHORIZED INSPECTOR'S ROLE IN AIR SAFETY. The segment of the aviation community in the United States that falls into the category of General Aviation consists of about 79,000 active aircraft. Federal Aviation Regulations require that most of these aircraft be periodically inspected to determine airworthiness. In addition to the periodic inspection, the FAR also require that major repairs and alterations to these aircraft be inspected and approved as airworthy prior to the aircraft being returned to service. The periodic inspection and approval of major repairs and alterations are directly related to air safety by virtue of their airworthiness determination characteristics. Thus, the persons who make these determinations are in a position to directly affect air safety.

   The mechanic who holds an Inspection Authorization (Authorized Inspector or just AI) is the airman who is privileged to make the above-mentioned airworthiness determinations. There are approximately 3,000 certificated mechanics who hold Inspection Authorization. During 1961, 90 percent of all the periodic inspections were conducted by AIs, and they also approved a large percentage of repairs and alterations to the active general aviation aircraft.

2. FAA CONSIDERATION FOR THE AI. The true significance of the functions of the AI as related to air safety cannot be overstressed. The FAA considers the AI a person who definitely and directly affects the continued airworthiness of general aviation aircraft. For this reason, this handbook has been prepared as a direct source of information and assistance for AIs. It is intended that this publication will alert the AI to his important role in air safety and will help him to conscientiously exercise his privileges with utmost respect for air safety.

CHAPTER 2. ORIENTATION OF THE AI IN THE GENERAL AVIATION COMMUNITY

SECTION 1. PRIVILEGES OF THE AI

3. RELATIONSHIP OF MECHANIC PRIVILEGES. The Authorized Inspector (AI) as an individual person possesses at least three distinct categories of privileges; i.e., those of his mechanic certificate airframe rating, powerplant rating, and Inspection Authorization.

   Colloquially speaking, the AI is a person who wears two hats; one as a mechanic as he performs maintenance, and one as an AI wherein he is an inspector. The dual hats of the AI, one as mechanic and one as inspector, often cause misunderstandings in dealings with owners and operators.

   AIs should make it a point to thoroughly understand the privileges of their mechanic certificate and the special and distinct privileges their inspection authorization awards. The public, and the AI himself, sometimes confuse these privileges. Privileges are clearly set forth in Part 65 of the FAR. They are further defined in CAM 18 in those sections that identify persons who may perform and approve certain maintenance functions (sections 18.10, 18.11, 18.12). CAM 18 also sets forth the procedures and performance standards that the AI must follow.

   It is not objectionable to indicate the letters "IA" preceding the mechanic certificate number in all maintenance record entries pertinent to persons holding Inspection Authorization. This serves to more clearly identify the person as being the holder of Inspection Authorization privileges, and automatically denotes his holding a mechanic certificate with airframe and powerplant ratings.

4. SIGNIFICANCE OF AI PRIVILEGES. The privileges of an AI often constitute the basis for his livelihood and career. The FAA urges the AI to properly respect these privileges and protect them by insuring that all approvals of inspections, repairs, and alterations are executed most carefully. To properly protect his privileges, the AI should never approve repairs, alterations, or periodic inspections unless he has actually conducted the inspection himself according to FAA approved procedures, and is assured that the aircraft or component thereof is free of discrepancies and is airworthy in accordance with FAA standards. Quite often AIs have approved repairs, alterations, or inspections based on the promise of the owner or operator to have existing discrepancies cleared immediately - later to realize their privileges were jeopardized when they discovered that expedient promises were never fulfilled. The AI's stature and the respect of the general aviation community will remain at a high degree only if he assesses the proper value to his privileges and demonstrates that he will not jeopardize air safety by exercising malpractice or regulatory violation.

SECTION 2. AI RELATIONSHIPS WITH INDUSTRY AND FAA

5. EFFECTS OF REGULATIONS. Compliance with regulations often causes operators to seek the services of the AI. The AI, in exercising his privileges, must also be in compliance with pertinent regulations which are prescribed by the FAA. The following are condensed statements designed to present pertinent regulatory requirements which are the basis for AI owner/operator relationships:

   a. The owner/operator is responsible for insuring that his aircraft is maintained and inspected according to the CARs (taken from CAM 43 [OLD], Part 91 FAR [NEW]).

   b. The AI is privileged to conduct the required inspections in accordance with the safety standards and procedures as set forth by FAA (taken from Part 65 of the FAR).

   It is essentially the above-noted requirements that bring the owner/operator and AI into contact and usually establish a relationship that:

   a. Has safety as its primary objective.

   b. Is brought about by regulatory requirements.

   c. In most cases, carries economic overtones as a result of a "service needed" versus a "service available" situation.

SECTION 3. FAA RELATIONSHIPS

6. COOPERATION BETWEEN AI AND FAA. The Federal Aviation Act of 1958, as amended, charges the FAA with promoting air safety, among other things. This same Act authorizes the Administrator to promulgate reasonable rules as necessary in the interest of air safety. The FAA is therefore concerned primarily with promoting safety by obtaining compliance with these rules. The FAA stimulates compliance to a large degree through an educational process. Much effort is devoted toward helping the aviation community to be aware of the regulations. The underlying philosophy is based on the concept that most people accept the safety intent of the regulations and, therefore, are inclined to willingly foster and promote compliance. However, it is quite evident that some people are not thoroughly aware of pertinent regulatory requirements and, as a result, some noncompliance exists.

   The FAA recognizes the AI as a focal point in the general aviation community. He has the opportunity to deal directly with a large number of people and is afforded an opportunity to inform the aviation public of many regulatory requirements, especially those dealings with airworthiness. Such service as this will enhance public respect for the AI, possibly promote business relationships and, most important, foster air safety.

The FAA will help an AI with any problem with which they may be of assistance. Do not hesitate to request advice, assistance, and guidance from your local FAA maintenance inspector. He visits most maintenance facilities periodically. Seek his help when problems arise. He will advocate knowledge of, and compliance with, the safety regulations and will do his best to help you achieve this end wherever possible. If you are dubious about a situation---ask your inspector. He is usually as close as your telephone.

The FAA cannot be tolerant of complete disregard for, or intentional violation of, the applicable regulations. Make it a point to understand the regulations pertinent to maintenance functions. Promote an understanding of, and compliance with, these regulations by owners, operators, and maintenance personnel. Appendix 1, section 1 of this handbook contains information pertinent to the status and availability of most of the regulations pertinent to maintenance.

SECTION 4. AI RELATIONSHIP WITH OWNERS/OPERATORS

7. IDENTIFICATION OF MAINTENANCE FUNCTIONS. A prominent problem that causes misunderstanding between AIs and owner/operators stems from a lack of understanding and mutual agreement concerning the nature and scope of maintenance work to be done. A good practice which may be applied by an AI is to clearly establish what maintenance functions are authorized by the owner/operator. It is advisable to discuss this matter in detail prior to performing any actual work. To aid the AI in this area, we have prepared a list of items for discussion which will aid in identifying and authorizing work to be accomplished.

8. SUGGESTIONS IN DEVELOPING OWNER/OPERATOR/AI RELATIONSHIP

   a. Itemize in detail the work to be done on a work order or in some manner that will provide authorization.

   b. If a periodic inspection is involved, point out that there is some maintenance required to facilitate the inspection, such as:

      (1) Cowling, inspection plates, fairings, etc., may require removal.

      (2) Aircraft may need to be cleaned.

      (3) Wheels and other components might require minor disassembly.

      Clearly identify the charges associated with any maintenance necessarily required in connection with an inspection.

c. Determine if the owner authorizes routine servicing such as cleaning screens, cleaning spark plugs, oil change, servicing the battery, adjustments, etc. These items of maintenance may not necessarily be a part of the periodic inspection, but may conveniently be performed while conducting the inspection.

d. Resolve the disposition of any discrepancies discovered during the inspection. Some owners may want a list of the discrepancies. AIs should bear in mind that discrepancies that are listed when a periodic inspection is reported "unairworthy" may be cleared by an appropriately rated certificated mechanic or other maintenance agencies as set forth in section 18.30-18(a)(1)(xi)(b) of CAM 18. Owner/operators may authorize minor items to be repaired as long as certain cost limits are not exceeded.

e. Establish a reasonable time period in which to accomplish the inspection.

f. Establish a firm understanding about the cost or range of cost anticipated for the job.

g. Request the owner/operator to supply the aircraft records for review and entry. Point out that this is necessary in most cases to properly conduct an inspection - especially periodic inspections.

CHAPTER 3. GUIDANCE FOR AI FUNCTIONS

9. GENERAL. This chapter will concern itself with discussions of the actual functions of the AI. The various subjects have been selected as those the FAA has deemed to be areas in which insufficient emphasis has been placed or those in which the FAA has been requested to offer more specific supplementary information and guidance.

We have included a section which deals with obtaining and renewing Inspection Authorization. It is believed this chapter is the most appropriate location for it, as a definite relationship exists between the requirements for obtaining and renewing Inspection Authorization and the actual functions of the AI.

SECTION 1. INSPECTION AUTHORIZATION - CERTIFICATION, RENEWAL, AND CHANGE OF FIXED BASE

10. CERTIFICATION AND RENEWAL. The privileges of Inspection Authorization are granted to persons who meet the requirements set forth in section 65.91 of the FAR. These requirements were established with the following general intentions:

a. The length of time an applicant must have held his mechanic certificate and recency of activity requirements are based on the concept that AIs should have had recent practical aircraft maintenance experience.

b. The availability of equipment and data requirements insures that AIs are able to conduct inspections in accordance with procedures and standards which are approved by the FAA.

c. The requirment of having a fixed base of operations is to facilitate publication of AI lists for the benefit of persons who seek AI services and to afford a known place of contact for FAA administrative purposes.

d. The examination, which applicants for Inspection Authorization are required to pass, is designed to test ability to inspect and to utilize regulations, specifications, and procedures pertinent to making airworthiness determinations in the form of repair approval, alteration approval, and conducting periodic and progressive inspections.

Inspection Authorizations expire March 31 of each year. It is not required that holders of Inspection Authorization be reexamined each year to extend their privileges if the holder has during the preceding year:

a. Conducted a prescribed number of progressive or periodic inspections or approved a minimum number of repairs and/or alterations; and

b. Applies for renewal of his Inspection Authorization at an FAA General Aviation District Office or International Field Office during the month of March; and

c. Continues to meet the other requirements for original issuance of Inspection Authorization.

NOTE: Paragraph 10 is a group of generalized statements describing the basic requirements. Persons should consider sections 65.91 and 65.93 of the FAR as the official and final authority of these requirements.

11. CHANGE OF FIXED BASE. AIs are reminded of their obligation to provide written notice to the FAA office having jurisdiction over their new location when they change their fixed base of operation. They are cautioned that they may not exercise their privileges until such written notice has been supplied. This procedure applies also when the AI changes the location of his base of operation within the same area of jurisdiction as his former base.

SECTION 2. BASIC FUNCTIONS OF THE AUTHORIZED INSPECTOR

12. GENERALIZED STATEMENT OF FUNCTIONS. The primary functions of the AI are those authorized by the statement of privileges as set forth in section 65.95 of the FAR. This statement of privileges, generally speaking, allows AIs to approve major repairs, approve alterations, conduct periodic inspections, and conduct or supervise progressive inspections in accordance with the standards and procedures set forth in Civil Aeronautics Manual 18. The AI is not authorized to perform these general functions on aircraft that are operated in accordance with Parts 40, 41, and 46, of the Civil Air Regulations. These regulations pertain to domestic, overseas, and helicopter air carriers, respectively. Also, the AI cannot perform his privileged functions on large aircraft (over 12,500 lbs.) operated in accordance with Part 42 of the CAR (irregular air carrier).

The AI is allowed to perform one other function which is set forth in section 1.67(d)(2) of Civil Aeronautics Manual 1. This section allows AIs to conduct a conformity and airworthiness inspection, comparable to a 100-hour inspection as set forth in CAM 18, on a single-engine fixed-wing aircraft prior to issuance of an airworthiness certificate. The conformity inspection is a prerequisite to issuance of an airworthiness certificate and is generally requested of the AI by the owner/operator.

13. RELATIONSHIP OF AI FUNCTIONS TO APPROVED DATA. In all cases, the AI's primary responsibility is to make an airworthiness determination by inspection conducted in accordance with FAA established procedures. The inspection has one primary objective - to determine if the aircraft or component is airworthy by virtue of being in compliance with FAA requirements. These requirements are set forth in the form of material commonly referred to as FAA-approved data. Exactly what constitutes FAA-approved data is often a problem the AI faces.

With the advent of Fiberglas, bonded metal structures, honeycomb construction, and various other new developments, it becomes obvious that CAM 18 does not suffice as approved data for all repairs. The rapid development of structural methods and materials, coupled with the absence of standard repair data, often requires that the manufacturer be petitioned to provide some form of FAA-approved instruction and technical data for his product.

The AI should determine that some form of FAA-approved or acceptable data is utilized as the basis for each airworthiness determination inspection he conducts or supervises in the case of progressive inspections.

The following list is offered as guidance in identifying some common forms of FAA-approved or acceptable data.

a. FAA Publications. CARs, FARs, CAMs, specifications, certification data sheets, etc.

b. Supplemental Type Certificate Data. Specifications, drawings, instructions, etc., for alterations.

c. Parts Manufacturing Approval. Identification of FAA-approved parts.

d. Technical Standard Orders. Conformity to TSOs indicates FAA approval of materials and processes.

e. Airworthiness Directives. FAA-approved data for mandatory action concerning design deficiencies.

f. Manufacturer's Instructions. Such instructions must bear indication of being FAA-approved when pertaining to major alterations.

14. MAINTENANCE RECORDS. The Authorized Inspector and other maintenance personnel and agencies are required to record maintenance that they perform or approve. CAM 43, section 43.23 [OLD], Part 91 FAR [NEW], requires the owner/operator to keep maintenance records and present such records each time an inspection or maintenance is performed. The Authorized Inspector should, in addition, be thoroughly familiar with the requirements of sections 18.20, 18.21, 18.22, 18.23, and 18.30-18 (a)(1)(xi)(a) and (b) of the Civil Air Regulations. These sections,

along with the illustrations and instructions referred to therein, clearly set forth the procedures and forms utilized for the proper recordation of all maintenance activities. Appendix 2 of this handbook contains illustrations of forms and typical entries commonly used by AIs.

a. Significance of Maintenance Record Entries. Responsibility for maintenance performed rests with the person who enters his name on the appropriate maintenance records and/or forms. The responsibility for periodic and progressive inspections and for approval and return to service of repairs or alterations is assumed by the AI whose signature appears on the appropriate maintenance records.

b. Completion of Form FAA-337 by AIs. The Form FAA-337 serves two purposes; one purpose is to provide owners/operators with a record of major repairs and alterations indicating details and approval, and the other is to provide the FAA with a copy for the records. The FAA copy of Form FAA-337 is retained by the Agency's Control Systems Division, 5300 South Portland Avenue, Oklahoma City 19, Oklahoma. Copies of these forms may be obtained for established fees.

Figures 1 and 2, in Appendix 2 of this handbook, show typical entries on Form FAA-337. The original preparation of Form FAA-337 (two copies) is accomplished by the person who performed or supervised the repair or alteration. The AI then further processes the forms when they are presented to him for approval. The official instructions for the completion of the form appear in CAM 18, Appendix A. The following instructions concerning item 6 are a reflection of those appearing in Appendix A of CAM 18 concerning AI entries on Form FAA-337. The entries will consist of checking the block "other" and entering the words "Inspection Authorization", indicating approval, entering the date in the space provided, and affixing the AI's signature and mechanic certificate number in the appropriate space. All entries should be identical and legible on both copies of the form.

c. Disposition of Form FAA-337. After the AI has found the alteration or repair to be in accordance with FAA-approved data, reviewed the Form FAA-337 for completeness, and completed item 6, he transmits the original Form FAA-337 to the owner/operator and should then forward the copy to the FAA office having jurisdiction over the area in which his fixed base of operation is located. AIs should insure that the copy is an exact and legible reproduction of the original.

In the event the Form FAA-337 has been executed for spare parts or components, both copies of the AI approved Form FAA-337 shall be attached to the part or component until such time as it is returned to service. Certain items will be left blank on the form. The installing mechanic will complete the form by filling in the blank items. The original copy of the completed Form FAA-337 is then transmitted to the owner/operator of the aircraft upon which the component was installed. The duplicate copy is forwarded to the FAA office having jurisdiction over the area in which the mechanic is operating.

Upon receipt, an FAA inspector will review all Forms FAA-337, for completeness and accuracy. In the event he finds discrepancies in the execution of the form, he will return it to the approving AI and request that it be corrected. This usually entails considerable time and effort in locating the owner/operator's copy of the form and making corrections. To avoid these hardships the AI should review the form at the time it is presented for approval. The most common causes for FAA return of the form are:

(1) Item 8 (reverse of the form) lacks sufficient information to specifically locate and describe the repair or alteration. The information given in this block should be extremely specific in identifying the FAA-approved or acceptable data that was utilized in making the repair or alteration. A general reference to CAM 18 for repairs is not sufficient. Identify specific drawings or sections in CAM 18. A general reference to manufacturer's instructions is not sufficient. Be specific in identifying any manufacturer's instruction.

(2) Omission of, or incorrect reference to, model and serial number. Transfer this information direct from the nameplate or registration form of the item concerned.

(3) Weight and balance entries are not accurate and do not coincide with limits set forth on the aircraft specification.

(4) Signatures missing, either mechanic or AI.

(5) The Form FAA-337 was unnecessarily executed for a minor repair or alteration solely for the purpose of creating a weight and balance report. Weight and balance reports, in most cases, are separate documents and usually incorporate equipment list and loading schedule. However, when a repair or alteration involves a weight and balance change, the resulting effect should be computed on the reverse of Form FAA-337. This serves to alert the owner/operator of possible needed changes to placards, weight and balance reports, or loading schedule.

15. APPROVAL OF MAJOR REPAIRS. This function consists primarily of two operations as follows:

a. Inspection of the repair to determine that it was performed in accordance with FAA-approved or acceptable data and standards. The AI should actually conduct the inspection himself and determine that the materials, workmanship, and parts utilized conform to FAA-approved or acceptable data.

Quite often repairs are executed that are eventually covered by fabric, metal skin, or other structure. AIs should insist upon complete access to the repair so that a valid determination of compliance with FAA-approved data can be made. The commonly accepted practice for repairs that are to be covered allows the AI to inspect the repair before it is obscured and to make a note to this effect on the reverse of the Repair and Alteration Form FAA-337. When the repair is then finally completed, the final inspecting AI can determine that the inaccessible portions of the repair were accomplished in accordance with FAA-approved methods and have been properly inspected.

The notation on the reverse of Form FAA-337 regarding inspection of a repair prior to its final completion should identify the work inspected, the date of inspection, and the signature and mechanic certificate number of the inspecting AI. An example of this type of entry appears in figure 2, Appendix 2, of this handbook.

b. Completion and disposition of Form FAA-337 is the final operation in AI approval of repairs. The form should be executed and disposed of in accordance with the general procedures and instructions appearing in paragraphs 14b and 14c of this handbook.

16. APPROVAL OF ALTERATIONS. The "approval of alterations" by Authorized Inspectors is often a misunderstood term. The approval of data for major alterations cannot be accomplished by AIs; rather, the AI may inspect and return to service an aircraft or component thereof which has been altered in accordance with FAA-approved data. In reality, the AI merely conducts a configuration and workmanship (conformity) inspection when concerned with alterations. If these items conform to FAA-approved data and standards, then he may approve and return the aircraft or component thereof to service. The following note, as taken from section 18.11 of CAM 18, will further clarify the approval function of major alterations:

NOTE: "A major repair or major alteration whose design has not previously been approved by the Administrator may require the submittal of technical data and/or flight tests in order to establish compliance with the applicable airworthiness provisions. Examples of such major alterations for which it

would be desirable to contact a representative of the Administrator prior to accomplishment of the alteration are given in Civil Aeronautics Manual 18. Also see section 1.25 of this subchapter."

The AI's role in inspecting altered aircraft or component thereof consists of four basic operations as follows:

a. Determine that the alteration has FAA approval. This means that appropriate FAA-approved data was followed in performing the alteration. Supplemental Type Certificate specifications and instructions constitute a source of FAA-approved data. The usual procedure for the performance of an alteration is to obtain the instructions and procedures for performing the alteration from the holder of the Supplemental Type Certificate. This data should be clearly identified in all maintenance recordation entries pertaining to the alteration.

Another source of FAA-approved data that may be utilized is a Form FAA-337 indicating that some person has obtained previous FAA engineering approval for the alteration. This is a type of alteration that has been approved by the FAA, but for which no Supplemental Type Certificate has been issued. All forms FAA-337 being utilized as the FAA alteration approval basis, must contain sufficient information to provide for exact duplication of the alteration.

Such Form FAA-337 is valid only if it was issued prior to August 25, 1955. After this date, the FAA instituted the issuance of Supplemental Type Certificates for alterations. However, it is still possible to obtain FAA approval on a Form FAA-337 for an alteration that is to be performed on one airplane only. Such approval carries limitations and conditions for the use of the form as an approval basis for the same alteration to other aircraft.

Airworthiness Directives, which are issued by the FAA to correct unsafe conditions, are FAA-approved data. If an airworthiness directive demands work that can be classified as a major alteration, Form FAA-337 must be executed.

A manufacturer's instruction for changing the design of a product for which he holds a type certificate is considered FAA-approved data if it contains a statement or indication that such data has been approved by the FAA.

b. Inspection of the alteration to determine that it conforms to approved data in regard to configuration and workmanship standards.

c. Indicate approval on Form FAA-337 and dispose of both copies in accordance with paragraph 14c of this handbook.

d. Changes to Aircraft Maintenance Records. If the alteration resulted in removal or addition of equipment and/or weight and balance change, insure that the Form FAA-337 reflects this information and any weight and balance computation. As a further service, AIs may remind the owner/operator of these changes so that he may be alerted to possibly change placards, the equipment list, weight and balance report, or loading schedule, as applicable. The directions or specifications in the approval data for alteration may require such document changes.

17. CONDUCT OF PERIODIC INSPECTION. The procedures and scope of the periodic inspection are set forth in section 18.30-18 of CAM 18 (pages 104, 105, and 106) and should be followed exactly. Particular attention is called to section (xi) on page 106, regarding the specific required maintenance record entries concerning the 100-hour and periodic inspections. Also note that the 100-hour and periodic inspections are identical in scope and general procedures.

Specific attention is brought to the requirements set forth in section 18.30-18(a)(1) of CAM 18 (page 104). Note that basically the aircraft inspection techniques are set forth and prescribe standard inspection practices. The basic objective of the inspection is to determine that the aircraft is in safe condition for continued use.

The scope of the inspection is established by requiring the use of a checklist as illustrated in Appendix D of CAM 18, or use of a similar one developed by the manufacturer, AI, mechanic, or repair station. Note that the inspection procedures and items include operational checks for systems.

The Authorized Inspector should personally conduct the periodic inspections and determine that all applicable procedures and items in section 18.30-18(a)(1) of CAM 18 are included.

The following list of items will be helpful in reminding the AI of the various steps and responsibilities in conducting a periodic inspection:

a. Configuration. Determine that the aircraft is in conformity with:

(1) FAA specifications and/or data sheets.

(2) Specifications resulting from alterations.

b. Condition. Determine the condition of the aircraft. Use the inspection procedures and checklist referenced in section 18.30-18 of CAM 18.

c. Airworthiness Directives. Determine that all applicable Airworthiness Directives are complied with and properly recorded. Proper recordation requires a chronological listing of compliance with service bulletins, and Airworthiness Directives, including a description of the method of compliance. (CAM 43.23-1(b) [OLD], Part 91 FAR [NEW]). It is recommended that owners/operators provide a separate sheet or page of the logbook for the listing and that log entries reference this listing for compliance information. Provision must be made so that this listing will indicate a method of compliance with mandatory notes. This serves as a reminder when further action is needed at forthcoming time periods such as inspections required at 25-hour intervals.

d. Paperwork Review. A periodic inspection requires an AI to determine that the documents required by the aircraft specification or data sheet are in the aircraft and current. Aircraft specifications or data sheets will generally require a weight and balance report including equipment list, a flight manual, and a loading instruction or schedule. The absence of any required document as set forth on the aircraft specification or data sheet should prompt the AI to immediately notify the owner/operator and advise him of these discrepancies.

AIs need access to Airworthiness Certificates and Registration Certificates to positively confirm the owner's/operator's name, address, and component serial numbers, model numbers, and other pertinent information necessary to conduct a periodic inspection and execute the required forms.

The fact that an owner/operator does not display an Airworthiness Certificate, Registration Certificate, FCC radio transmitter station license, state registration, flight manual, or other miscellaneous documents is not justification for reporting an aircraft "unairworthy" when conducting a periodic inspection. The owner/operator is primarily responsible for the proper display of these documents. However, the AI will be performing an appreciated service to the owner/operator by advising him of any deficiencies in the display of these documents.

e. Aircraft Markings. It is the owner/operator's responsibility to have his aircraft properly display nationality and registration marks. AIs can, and should, offer advisory service to owners/operators in regard to discrepancies in marking. However, such discrepancies are not cause to report an aircraft "unairworthy". Section 1.101 of CAM 1, sets forth nationality and registration marks display requirements.

f. In the event the Periodic Inspection is not entirely completed, the AI should indicate any discrepancies in the aircraft records. He should not indicate that a Periodic Inspection was conducted.

g. Forms and Recordation of Periodic Inspection.

(1) Logbook entry should be completed as set forth in CAM 18, section 18.30-18 (page 106). See figures 5 and 6 of Appendix 2, in this handbook for sample entries.

(2) Execution of Form FAA-2350, Aircraft Use and Inspection Report, in compliance with section 18.23-1 of CAM 18 (page 14). The instruction for completing this form appears in Appendix A of CAM 18. Figure 3, in Appendix 2 of this handbook contains examples of typical entries and errors in the execution of this form. AIs are alerted to their responsibility to forward this form to the FAA district office having jurisdiction over their fixed base of operation within 48 hours after the inspection is completed. If an "unairworthy" finding has been made, the AI must supply a list of the discrepancies to the owner/operator in accordance with CAM 18, section 18.30-18(a)(1)(xi)(b). A copy of this list is attached to the Form FAA-2350 and forwarded to the FAA.

(3) As a service to the public, the FAA has made available a sticker to remind owners/operators of the due date for the next periodic inspection. AIs are authorized to issue this sticker and may receive a supply of them from the FAA Maintenance Inspector. This form is titled "Periodic Inspection Visual Indicator", Form FAA-2912. The year and month of the next periodic inspection should be indicated by punching the form. See figure No. 4, Appendix 2 of this handbook for sample form. Owners/operators should be urged to prominently display this sticker in their aircraft.

(4) AIs are urged to report any discovered aircraft defect or malfunction by use of a Malfunction and Defect Report, Form FAA-1226. These forms are available from your FAA Maintenance Inspector, are easy to fill out, require no postage, and contribute greatly toward helping FAA discover unsafe conditions that could be adverse to air safety. See figure No. 7, Appendix 2 of this handbook for typical execution.

18. PROGRESSIVE INSPECTION. The progressive inspection system is not widely used in General Aviation. Fewer than 100 aircraft of the 79,000 active General Aviation aircraft utilize this inspection system. For this reason, we are not providing a complete coverage of the subject in this handbook. Persons who are in need of guidance and help should contact the maintenance inspector at the local FAA General Aviation District Office. However, we offer the following itemized statements for general guidance:

a. Sections 43.22 and 43.22-2 of CAM 43 [OLD], Part 91 FAR [NEW], provide for the placement of aircraft on the progressive inspection system.

b. The scope and procedures of a progressive inspection are set forth in section 18.30-19 of CAM 18 (page 106).

c. Form and disposition of progressive inspection records are set forth in section 18.23-1 of CAM 18 (page 14). Note that it is required to execute Form FAA-2350, Aircraft Use and Inspection Report, when the aircraft is initially placed on the progressive inspection system, once each year during the month of January, and any time the aircraft is removed from the progressive inspection system.

APPENDIX 1. RULES RECODIFICATION AND PUBLICATIONS INFORMATION

SECTION 1. RECODIFICATION SCHEDULE

1. REGULATIONS PERTINENT TO AI FUNCTIONS. Approximately 60 new Federal Aviation Regulations (FAR) will be issued in the next 12 to 18 months to replace all of the present Civil Air Regulations and the Regulations of the Administrator. A complete schedule of recodification appears in Part 1 of the FAR which was the first section to appear in the recodification. Part 1 of the FAR is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C.; price 25 cents.

   The Federal Aviation Agency distributes a status sheet which reflects the availability of all FAA regulations. Those persons who desire to be placed on the status sheet mailing list should address their request to the Federal Aviation Agency, Publishing and Graphics Branch, MS-163, Washington 25, D.C.

   The following list includes the regulations which the AI has occasion to work with most frequently. It indicates the Civil Aeronautics Manual (CAM) numbers and the new part numbers of the Federal Aviation Regulations which will be, or have been, assigned as a result of recodification. The estimated effective date of the recodification is also indicated.

CIVIL AERONAUTICS MANUAL (OLD) TITLE	CAM NO.	FEDERAL AVIATION REGULATIONS (NEW) TITLE	PART NO.	EFFECTIVE DATE
Mechanic and Repairman Certificates	24	Certification: Airmen Other Than Flight Crewmembers	65	11/62
Maintenance, Repair and Alteration of Airframes, Powerplants, Propellers, and Appliances	18	Maintenance and Alteration	43	8/63
Certification, Identification and Marking of Aircraft and Related Products	1	Aircraft Certification Procedures; also Identification and Registration Marking	21 45	8/63 8/63
Airplane Airworthiness - Normal, Utility, and Acrobatic Categories	3	Airworthiness Standards: Normal, Utility, and Acrobatic Category Airplanes	23	8/63
Airplane Airworthiness	4a	Appendix to the Federal Aviation Regulations		8/63
Rotorcraft Airworthiness; Normal Category	6	Airworthiness Standards: Normal Rotorcraft	27	8/63
Glider Airworthiness	5	Aircraft Certification Procedures	21	8/63
Aircraft Engine Airworthiness	13	Airworthiness Standards: Aircraft Engines	33	8/63

(listing continued next page)

Aircraft Propeller Airworthiness	14	Airworthiness Standards: Propellers	35	8/63
General Operation Rules (Maintenance Requirements)	43	General Operating Provisions	91	4/63
Part 514, Regulations of the Administrator, (ROA) Technical Standard Orders	ROA 514	Technical Standard Orders for Materials, Parts, and Appliances	37	8/63
Part 507, Regulations of the Administrator, (ROA) Airworthiness Directives	ROA 507	Airworthiness Directives	39	8/63

SECTION 2. PUBLICATIONS INFORMATION

2. FAA TECHNICAL PUBLICATIONS FOR AIs. The FAA publishes technical material available to certificated mechanics and Authorized Inspectors. These publications are used for reference purposes and constitute a major source of data approved by the Administrator.

Some of the publications listed below are sold on a subscription basis with monthly and/or annual supplements. Persons are reminded to periodically review their subscriptions and renew them as required. All changes of address should be reported promptly. Mail returned as a result of an incorrect address often results in cancellation of a subscription or removal from the mailing list.

a. Aircraft Specifications. Basic subscription consists of a set of specifications in all weight groups plus monthly supplements for about a year, the aircraft listing, and index. A renewal subscription, consisting of only the monthly supplements for about a year, is available to previous subscribers. Prices: Basic subscription - $13.00 domestic, $16.75 foreign; Renewal subscription - $6.00 domestic, $7.50 foreign. *(from GPO)

b. Engine and Propeller Specifications. Basic subscription consists of one set each of engine and propeller specifications plus monthly supplements for about a year, the listing, and index. A renewal subscription for monthly supplements is available to previous subscribers. Prices: Basic subscription - $8.00 domestic, $10.00 foreign; Renewal subscription - $2.00 domestic, $2.25 foreign. *(from GPO)

c. Airworthiness Directives. Part 507 of the Regulations of the Administrator: Basic subscription consists of all Airworthiness Directives issued prior to 1/1/62, and annual supplements. Price: $4.50 domestic, $5.50 foreign. *(from GPO)

d. Biweekly Airworthiness Directive Cards. Free mailing list service for the cards is available from FAA on request. Address requests to the Federal Aviation Agency, Publishing and Graphics Branch, MS-163, Washington 25, D.C.

e. General Aviation Inspection Aids Summary, August 1963. Basic subscription includes summary and 11 monthly supplements. Price: $1.25 domestic, $1.75 foreign. *(from GPO)

f. "C" Series Technical Standard Orders - Aircraft Components. Index and free mailing list service are furnished by the FAA on request. Address requests to the Federal Aviation Agency, Publishing and Graphics Branch, MS-163, Washington 25, D.C.

g. Civil Aeronautics Manuals and New Federal Aviation Regulations. Consult status sheet reference, section 1 of this Appendix, for prices and instructions for ordering.

*GPO - Instructions for Ordering. Your order with remittance made payable to the Superintendent of Documents should be addressed as follows:

Superintendent of Documents
U. S. Government Printing Office
Washington 25, D.C.

65.95-1
1/63

APPENDIX 2

INTENANCE RECORD FORMS AND ENTRIES COMMONLY UTILIZED BY MECHANICS HOLDING INSPECTION AUTHORIZATION

Fi ber	Reference to Instructions for use
1. Form FAA-337 - Major Repair and Alteration Form - Showing typical execution of the face.	Paragraph 14
2. Form FAA-337 - Typical execution of reverse side.	Paragraphs 14-15-16
3. Form FAA-2350 - Aircraft Use and Inspection Report - Illustration of typical execution.	Paragraphs 14-17-18
4. Form FAA-2912 - Peridoic Inspection Visual Indicator - Illustration and issuance instructions.	Paragraphs 14-17
5. Periodic inspection logbook entry - Airworthy condition.	Paragraphs 14-17
6. Periodic inspection logbook entry - Unairworthy condition.	Paragraphs 14-17
7. Form FAA-1226 - Malfunction or Defect Report - Typical execution.	Paragraphs 14-17

Form approved.
Budget Bureau No. 04-R060.

FEDERAL AVIATION AGENCY

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE: ZEPHER	MODEL: 63-1A	SERIAL NO.: 62-11046	NATIONALITY AND REGISTRATION MARK: N40023
2. OWNER	NAME (*First, middle, last*): Robert D. Timme	ADDRESS (*Street and number, city, zone and State*): 606 Elm Street, Urbana, Illinois		

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (*Check*) MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	(*As described in item 1 above*)			X	
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA (**AFTER the repairs and/or alterations described below were made.*) This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (*Pounds*)*	EMPTY CENTER OF GRAVITY (*Inches from datum*)*	USEFUL LOAD (*Pounds*)*
Normal	1100	43.6" aft of datum	590

5. CONFORMITY STATEMENT (*Complete and check*)

a. AGENCY'S NAME AND ADDRESS	b. KIND OF AGENCY	c. CERTIFICATE NO.
Lawrence M. Youngster 4207 Maple Street Danville, Illinois	☒ U. S. Certificated Mechanic. ☐ Foreign Certificated Mechanic. ☐ Certificated Repair Station. ☐ Manufacturer. ☐ (Check if repair or alteration was made under delegation option procedures.)	Airframe 52547-41

I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

2/6/63 — (Date repair and/or alteration completed)

Lawrence M. Youngster — (Signature of authorized individual)

6. APPROVAL FOR RETURN TO SERVICE (*Check and complete appropriate items*)

Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is

☒ APPROVED ☐ REJECTED } BY { ☐ FAA Designee ☐ FAA Flight Standards Inspector ☐ Manufacturer ☐ Repair Station ☐ Canadian Department of Transport Inspector of Aircraft ☒ Other (*Specify*) Inspection Authorization

2/9/63 — (Date of approval or rejection)

Robin D. Blackerton — Robin D. Blackerton, IA 682438 — (Signature of authorized individual; title or identification number)

7. TO BE COMPLETED ONLY BY FAA PERSONNEL

a. ☐ Forwarded for engineering comment ☐ See attached memorandum

b. ☐ Accepted _____ (Date) ☐ Reinspected _____ (Date) ☐ Spot Checked _____ (Date)

_____ (FAA designation number) _____ (Signature Flight Standards Inspector)

Form FAA-337 (4-57)

FIGURE 1.

Typical execution of the face of Form FAA-337. Detailed instructions for the execution of this form appear in Appendix A of CAM 18.

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, powerplant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.*

1. Removed tail surfaces from aircraft. Removed fabric from aft fuselage to a point 36" ahead of tail post. Spliced lower left longeron 18" ahead of tail post to facilitate replacement of damaged longeron between tail post and splice. Splice and replacement longeron fabricated from 4130 steel tubing in accordance with procedures recommended in CAM 18, section 18.30-4(b)(2)(vi) and figure 4-4 of Appendix C.

   Date: January 5, 1963, Inspected splice described in item 1 above and found it to be in accordance with FAA-approved or acceptable data.
   Robin D. Blackerton, IA 682438
   Robin D. Blackerton

2. Primed new steel tubing with zinc chromate and repaired and finished fabric in accordance with the procedures set forth in section 18.30-3 of CAM 18 concerning fabric repairs and covering.

3. Installed tail surfaces, rigged, and operationally checked in accordance with the manufacturer's maintenance manual.

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached. ☐

U.S. GOVERNMENT PRINTING OFFICE: 1961-0-627369 Form FAA-337 (6-62)

FIGURE 2.

Reverse of Form FAA-337 showing typical entries. Note the specific references that are made in identifying FAA-approved or acceptable data. Also note the entry regarding inspection of the repair by an AI prior to the cover being applied. Note that Robin D. Blackerton has indicated holding an inspection authorization by prefixing his certificate number with "IA".

U. S. DEPARTMENT OF COMMERCE—CIVIL AERONAUTICS ADMINISTRATION

AIRCRAFT USE AND INSPECTION REPORT

Form Approved. Budget Bur. No. 41-R1678.1

AIRCRAFT REGISTRATION NO.	N- 40023
AIRCRAFT MFR. SERIAL NO.	62-11046
NAME OF OWNER (As shown on Certificate of Registration)	Robert D. Timme
PERMANENT MAILING ADDRESS OF OWNER — Number and Street	606 Elm Street
City	Urbana
County	Champaign
State	Illinois
AIRCRAFT IS BASED AT — Airport	Skyhome
State of	Illinois
AIRCRAFT MAKE	Zepher
AIRCRAFT MODEL	63-1A
ENGINE MAKE	Zipper
ENGINE MODEL	4A-100
DATE OF PREVIOUS PERIODIC INSPECTION	1/12/62
SIGNATURE OF CONDUCTOR OF THIS INSPECTION	Robin D. Blackerton
NAME OF INSPECTING AGENCY	Robin D. Blackerton

Area within block border to be completed by Washington Office

STATE	COUNTY	A/W	A. O.	T. O.	A/C NAME	MODEL	TYPE	NO. ENG

DATE OF INSPECTION	ENG. MAKE	MODEL	HORSEPOWER	YR. MFR.
1/18/63				

AIRCRAFT TIME IN SERVICE PREVIOUS 12 MONTHS	AIRCRAFT TOTAL TIME IN SERVICE
158 HRS.	853 HRS.

PRIMARY USE OF AIRCRAFT (Check one box only)

1 ☐ Business Transportation—Corp.
2 ☒ Business Transportation—Indiv.
3 ☐ Personal Flying
4 ☐ Aerial Application
5 ☐ Instructional
6 ☐ Air Taxi, Charter, Contract
7 ☐ Patrol, Survey, Misc. Work Use
8 ☐ Other—Specify

TYPE INSPECTING AGENCY

3 ☒ Inspection Authorization
5 ☐ Manufacturer
6 ☐ Repair Station

TYPE OF INSPECTION	CONDITION OF AIRCRAFT
1 ☒ Periodic 2 ☐ Progressive	8 ☒ Airworthy 9 ☐ Unairworthy

TYPE OF CERTIFICATE AND NUMBER	CAA REGION AND DISTRICT OFFICE
IA 682438	(To be completed by CAA Inspector)

(FOR INSTRUCTIONS ON USE OF FORM, SEE CAM-18) U. S. GOVERNMENT PRINTING OFFICE: 1958 O-F-484999 Form ACA-2350 (1-58)

FIGURE 3.

Showing typical execution of Form FAA-2350 after completion of a Periodic Inspection. Detailed instructions for the completion of this form appear in CAM 18, Appendix A. This form is utilized for the annual report during the month of January for aircraft inspected according to progressive system. This form must be submitted within 48 hours after the completion of a Periodic Inspection. Most common errors committed in the execution of this form involve the omission of entries. AIs are urged to accurately and completely execute the form.

If the report on this form indicates an unairworthy condition, a copy of the list of discrepancies that was supplied the owner must accompany this form when forwarded to the FAA General Aviation District Office.

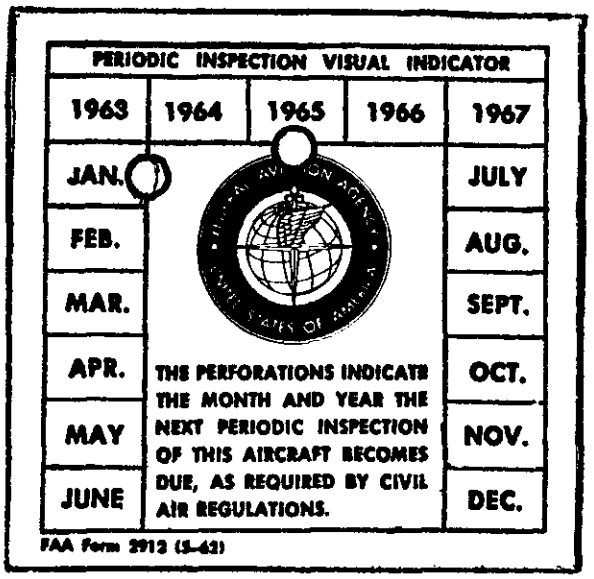


FIGURE 4. PERIODIC INSPECTION VISUAL INDICATOR
FORM FAA-2912

AIs are authorized to issue this form. It should be issued at the completion of all periodic inspections. Owners/operators should be urged to display it prominently in their aircraft. The form is issued regardless of airworthy or unairworthy findings as a result of a Periodic Inspection.

AIs should punch the month and year the next Periodic Inspection is due. The above form has been punched to indicate January of 1965 as the due date for the next Periodic Inspection.

AIs may receive a supply of these forms from the FAA field office having jurisdiction over their fixed base of operation.

Total aircraft time 853:00 hours, date January 18, 1963. I certify that this aircraft has been inspected in accordance with a periodic inspection and was determined to be in airworthy condition.
Robin D. Blackerton IA 682438

FIGURE 5.

Required logbook entry for Periodic Inspection when aircraft is found to be "airworthy". Note that total time and date are included. The mechanic has indicated he is the holder of Inspection Authorization by prefixing his certificate number with the letters "IA".

Total time 785:30 hours, date February 23, 1963. I certify that this aircraft has been inspected in accordance with a periodic inspection and a list of the discrepancies and unairworthy items dated (insert date) has been provided for the aircraft owner or lessee.
Robin D. Blackerton IA 682438

FIGURE 6.

Required logbook entry for Periodic Inspection when aircraft is found to be "unairworthy". Note that total time and date are included. The mechanic has indicated he is the holder of Inspection Authorization by prefixing his certificate number with the letters "IA".

FEDERAL AVIATION AGENCY	Budget Bureau No. 04-R003.	MALFUNCTION OR DEFECT REPORT			
1.	AIRCRAFT	ENGINE	PROPELLER	SPECIFIC PART WHICH CAUSED DIFFICULTY	
COMPLETE ALL ITEMS → MAKE AND MODEL	Zepher	Zipper	Spinfast	NAME OF PART AND PART NO.	HRS. SINCE OVERHAUL 853
SERIAL NO.	62-11046	7284-26	817-12	Pulley, AN-210-4	TOTAL TIME 853
REGISTRATION NO. N-	40023				

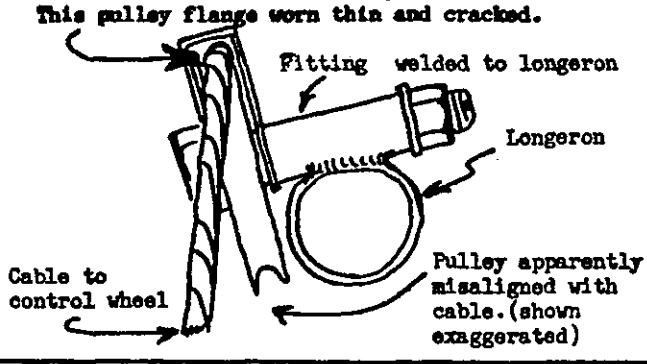
2. IDENTIFY THE MALFUNCTIONING OR DEFECTIVE PART. DESCRIBE THE MALFUNCTION OR DEFECT AND THE CIRCUMSTANCES UNDER WHICH IT OCCURRED. STATE PROBABLE CAUSE AND RECOMMENDATIONS TO PREVENT RECURRENCE.

DATE OF SUBMISSION: 3/5/63

Pulley mounted on fuselage upper longeron on right side near wing attachment point. Pulley utilized to change cable direction and route it from fuselage out to wing. Pulley was slightly misaligned and cable caused outer flange to be worn thin leading to cracks. Pulley mount fitting was apparently misaligned at the factory as no evidence of damage or replacement could be found. The deficiency was corrected by replacing the pulley mount fitting in proper alignment and replacing the pulley.

Form FAA-1226 (10-61) USE PREVIOUS EDITION

3. SKETCH OF MALFUNCTION OR DEFECT—OTHER COMMENTS



REPORT SUBMITTED BY (Name and address) Robin D. Blackerton
3406 76th Ave.
Urbana 12, Illinois

☐ REPAIR STATION ☐ OPERATOR ☒ MECHANIC ☐ FAA INSPECTOR ☐ CAB INVESTIGATOR

FEDERAL AVIATION AGENCY
WASHINGTON 25, D.C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300 (GPO)

TO:
FEDERAL AVIATION AGENCY
(FAA offices supplying this form will stamp address before distribution)

MAIL IMMEDIATELY (No postage required)

FIGURE 7.

The above illustrates the face and reverse of typically executed Form FAA-1226, Malfunction or Defect Report. AIs are urged to make use of this form for all occasions involving the discovery of malfunctions or defects that cannot be attributed to the application of poor maintenance procedures. AIs are requested to be accurate in completing the blocks in item 1 on the face of the form.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1963 O - 695-290