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ADVISORY CIRCULAR



DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Washington, D.C.

FAR GUIDANCE MATERIAL

Subject: DESIGNATED ALTERATION STATION AUTHORIZATION PROCEDURES

1. PURPOSE. This advisory circular announces the Federal Aviation Administration's (FAA) Designated Alteration Station (DAS) authorization program; provides acceptable means of compliance with the DAS eligibility, personnel qualifications, and procedural requirements; provides information on FAA's participation in design change approval projects conducted under DAS procedures; and describes the FAA's DAS audit procedures.

2. RELATED FEDERAL AVIATION REGULATIONS (FAR). FAR Part 21, Subpart M; FAR Part 43, § 43.3(i); FAR Part 121; and FAR Part 145.

3. BACKGROUND.

a. The regulations related to the DAS program became effective on October 8, 1965. These regulations were promulgated to alleviate delays modifiers of aircraft and aircraft components were experiencing in obtaining supplemental type certificates (STC) under the normal FAA approval procedures. Under the DAS system, an eligible domestic repair station, air carrier (except an air taxi operator), commercial operator of large aircraft, or manufacturer may hold a DAS authorization. A DAS authorization holder has, within certain limits, the delegated authority of the Administrator to issue STCs which are official FAA design approvals for aircraft, aircraft engines, and aircraft propellers which have undergone major changes in type design. The DAS also has authority to issue experimental certificates of airworthiness for aircraft undergoing supplemental type certification. In addition, the DAS is authorized to issue amended standard airworthiness certificates for aircraft which incorporate alterations covered by an STC issued by the DAS.

b. Section 314(a) of the Federal Aviation Act (FA Act) allows the FAA to delegate certain prescribed work, business, or functions relating to issuance of certificates to a private person and provides for the FAA to participate in any delegations it makes. Section 314(b) provides that the FAA may reverse, change, or modify action taken by any person who has been given delegated authority.

NOTE: "Person", as used in § 314 of the FA Act, is defined in § 101(32) of the FA Act and means any individual, firm, copartnership, corporation, company, association, joint-stock association, or body politic; and includes any trustee, receiver, assignee, or other similar representative thereof.

c. Through the DAS program, it is the FAA's intent to give eligible manufacturers, operators, and repair stations the option of being delegated authority to approve aircraft, aircraft engine, and aircraft propeller type design changes to an extent consistent with the applicants' particular engineering capabilities, facilities, and business needs.

4. APPLICATION, ELIGIBILITY, PERSONNEL, QUALIFICATIONS, AND AUTHORITY.

a. Application. An applicant for a DAS authorization must submit an application per § 21.435 to the Aircraft Certification Directorate having geographical purview over the applicant's facility.

b. Eligibility.

(1) Each DAS is required by §§ 21.431(b) and 21.439(a) to be a domestic repair station under Part 145; an air carrier (except an air taxi operator) or a commercial operator under Part 121; or a manufacturer of a product for which it has alteration authority for the product under § 43.3(i).

(2) Each DAS is required either to maintain eligibility or to notify the FAA within 48 hours of any change that could affect its eligibility.

c. Personnel and Qualifications.

(1) The requirement of § 21.439(b) can be met by having a central certification officer as defined in paragraph 5b(1). The central certification officer should have demonstrated to the FAA the capability of obtaining compliance with the applicable airworthiness regulations and should have the following qualifications:

(i) A thorough working knowledge of the applicable regulations.

(ii) A position, on the applicant's staff, with authority to establish alteration programs that ensure that altered products meet the applicable regulations.

(iii) At least 1 year of satisfactory experience in direct contact with the FAA while processing engineering work for type certification or alteration projects.

(iv) At least 8 years of aeronautical engineering experience which may include the 1 year mentioned in paragraph 4c(1)(iii). An appropriate engineering degree from a college or university of recognized standing or a professional engineering license may be substituted for 4 years of experience.

(v) The general technical knowledge and experience necessary to determine that altered products, of the types for which a DAS authorization is requested, are in condition for safe operation.

(2) Engineering personnel required by § 21.439(a)(4) and responsible for making findings of compliance should have, but not be limited to, the following qualifications:

(i) Be employed by, or available to, the DAS as pre-named consultants. If consultants are selected, it is highly recommended that consultants who are already Designated Engineering Representatives (DERs) be used.

(ii) Have a thorough working knowledge of the applicable airworthiness regulations.

(iii) Possess integrity, sound judgement, and a cooperative attitude.

(iv) Have at least 8 years of specialized technical experience. An appropriate degree from a college or university of recognized standing or a professional engineering license may be substituted for 4 years of experience.

(3) In addition to the requirements of paragraphs 4c(2)(i) through (iii), the flight test pilot employed, or made available, as required by § 21.439(a)(4) should have:

(i) A minimum of 200 hours flight time in the conduct of experimental flight tests, including significant participation as a pilot in at least one complete type certification project or the equivalent in several partial type certification or supplemental type certification projects.

(ii) A minimum of 50 hours of experimental flight testing experience in the class of aircraft being certificated. (Single-engine airplane, multiengine airplane, helicopter, etc).

(iii) At least a currently valid commercial pilot certificate with instrument rating and with ratings appropriate to the class of aircraft being certificated.

(iv) For fixed-wing aircraft, a minimum of 1,750 hours flight time as pilot-in-command (pilot rating category) of which 50 hours were logged within the past 12 months; for rotary wing aircraft, a minimum of 1,000 hours flight time as pilot-in-command (pilot rating category) of which 50 hours were logged within the past 12 months.

(4) One DAS employee or available qualified person required by § 21.439(a)(4) should be identified as the person who can make the necessary inspections for issuance of experimental certificates and amended standard airworthiness certificates. This person should have the following qualifications:

(7) DAS Operating Procedures.

b. The Procedure Manual should include:

(1) Provisions for a central certification officer (qualified in accordance with paragraph 4c(1) and known as a DAS Coordinator or other appropriate designation) for coordination and approval of certification data, including a compliance checklist, and for providing a control point for communication with the FAA as it relates to interpretation of regulations, policies, procedures, service experience, new design concepts, and design areas critical to safety.

(2) Procedures for processing the technical data required for supplemental type certification and issuing STCs.

(3) Procedures to be followed in issuing experimental certificates and amended standard airworthiness certificates.

(4) Names, signatures, and responsibilities of officials and each required staff member, identifying those persons who - -

(i) Have authority to make changes in procedures that require a revision to the Procedure Manual; and

(ii) Conduct inspections (including conformity and compliance inspections) or approve inspection reports, prepare or approve data, plan or conduct tests, approve the results of tests, amend standard airworthiness certificates, issue experimental certificates, approve changes to the operating limitations or Aircraft Flight Manuals, and sign STCs.

(5) Procedure (including timing) for the submittal, review, and approval of revisions to the Procedure Manual.

c. The Procedure Manual (and revisions thereto) must be reviewed and approved by the Chief, Aircraft Certification Division of the Aircraft Certification Directorate having geographic purview over the DAS authorization holder's or applicant's facilities.

6. FAA PARTICIPATION IN STC PROJECTS.

a. Prior to supplemental type certification of a product, the FAA will participate, as necessary, depending on the project complexity and the DAS demonstrated capabilities from previous projects. (The applicant for an STC should show either that it has access to sufficient type design data previously approved under the type certificate being changed or that it has developed sufficient data to evaluate adequately the design change.) The FAA determines the complexity of the project from the information required by § 21.463(a)(1). That information, submitted early in the program, should be submitted with the application for STC and should contain the following:

(1) Description of the type design change, including any novel or unusual design features.

(2) Certification basis considered applicable.

(3) Program (schedule and plan) for meeting applicable airworthiness regulations.

b. The FAA will review to confirm the acceptability of the certification basis and the adequacy of the plan, and identify special considerations set forth in paragraphs 6c thru i.

c. The FAA will determine the need to apply later rules per § 21.101(b)(1). The FAA will participate in the determination of compliance to rule changes critical to safety for which the DAS does not have certification experience.

d. The FAA will participate in findings of compliance in those areas involving new design concepts as a condition for DAS issuance of the STC. The FAA will identify areas requiring formulation of special conditions per § 21.101(b)(2).

e. To ensure standardization and consistency in applying the provisions of paragraphs 6a through d, the Aircraft Certification Directorate having geographical purview of the DAS's facility will effect coordination on significant projects with the Directorate having purview over the product involved.

NOTE: "Significant project" for aircraft includes any type certificate amendment or STC that changes the make or rating of a powerplant element (engine or propeller), changes the external aerodynamic configuration (antennas excepted), penetrates or changes basic load-bearing structures, changes an avionics system (e.g., automatic flight control system, active controls, or flight management system) or modifies either kinematics or configuration of the flight control systems or surfaces including high lift and drag systems and surfaces. Additionally, a type certificate amendment or STC that modifies the dynamics or kinematics of the rotordrive system on a helicopter is a "significant project." An autopilot installation on a FAR 23 or CAR 3 airplane is not a "significant project" for the purpose of Directorate coordination.

f. The FAA is required by § 21.451(d) to review applicable noise and emission regulations to confirm the nature and extent of tests and substantiation expected from the DAS. A DAS may not issue an STC involving the acoustical change requirements of Part 36, until the FAA finds that the requirements are met.

g. The DAS is required to obtain the FAA's concurrence on the application of all equivalent safety provisions per § 21.461.

h. The FAA will participate in the determination of compliance in those areas where the DAS has had service problems.

i. The FAA will participate, when deemed necessary, in data review, tests, or technical evaluations where the DAS has not demonstrated capabilities from previous similar projects.

j. The DAS is required by § 21.475 to obtain limitations and conditions from the FAA before issuing an experimental certificate of airworthiness. An FAA representative from the Directorate needs to be consulted for each certificate issued.

k. As early in the STC project as possible, the FAA will confirm the acceptability of the program and indicate the extent of FAA involvement.

7. FAA AUDITS. An initial inspection or audit will be conducted in accordance with Appendix A to determine the ability of a new applicant to function under a DAS authorization. A reinspection or audit of the engineering facilities of the DAS will be conducted in accordance with Appendix A at a frequency established by the FAA or when changes in company policy, personnel, or management could affect the ability of the DAS to function properly under the DAS system or when deemed necessary under § 21.449. The FAA may conduct an audit before or after an STC program is completed. As a result of these audits, the FAA will require correction of noncompliance items and the correction of service difficulties.

8. FAA SURVEILLANCE. When the DAS is a manufacturer, FAA surveillance will be in accordance with the procedures applicable to holders of FAA production approvals. When the DAS is a repair station, air carrier, or commercial operator, FAA surveillance will be in accordance with appropriate maintenance procedures.

9. SERVICE DIFFICULTIES. The timely disposition of service difficulties should be given priority handling. No set process or time period can be defined in this advisory circular since each incident is unique and must be handled accordingly. Particular care should be given to properly documenting the method by which the service difficulty is resolved. Service difficulties will be reported in accordance with § 21.3.

10. POLICY AND INTERPRETATION. To assure that all DAS authorization holders have the same policy/interpretative material, the Aircraft Certification Directorates will transmit verbatim all policy/interpretative material to the DAS authorization holders.

11. RECORDKEEPING. The DAS must submit data required by §21.463, within 30 days after the date of issue of the STC. In accordance with § 21.493, the DAS must maintain at its facility, current records containing:

a. For each STC, a technical data file that includes any data and amendments thereto (including drawings, photographs, specifications, instructions, and reports) necessary for the STC. (These data must be made available upon the FAA's request. These data must also be identified and sent to the FAA if the DAS no longer operates under its authorization.)

b. A list of products by make, model and, if applicable, any FAA identification, that have been altered under the DAS authorization.

c. A file of information from all available sources on alteration difficulties of products altered under the DAS authorization.

12. ISSUANCE OF STCs. After approval of the Procedure Manual, the Aircraft Certification Directorate will issue a block of serial numbers which will be used to identify STCs issued by the DAS. The STC number will consist of the letter "S"; a letter symbol to identify the product (Airplane-A, Airship - AS, Balloon - B, Engine - E, Glider - G, Helicopter - H, and Propeller - P); one of the serial numbers assigned by the Directorate; the symbol of the Aircraft Certification Directorate; and a "-D" placed after the Directorate symbol. For example, SA227CE-D would be the number of an STC issued for an airplane by a DAS under the Small Airplane Certification Directorate.



M. C. Beard
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APPENDIX A. DAS AUDITS

A. Audit Organizations. The DAS Audit Board should consist of personnel qualified to investigate the DAS in those areas determined to be questionable by the Administrator.

B. Audit Planning. An audit should be carefully planned so that it may be conducted in an efficient and orderly manner. The following areas should be considered in the planning of the audit:

1. Service record of products including review of Maintenance Analysis Center information prior to audit.
2. Airworthiness regulations and standards selected for review.
3. Organization.
4. Areas to be evaluated.
5. Establish audit teams.
6. Procedures to be used in conducting audit.
7. Reporting of findings.
8. Audit report and follow-up actions.

C. Procedures for Audit. When the region has completed plans for an audit, the DAS Audit Board Chairman will notify the highest appropriate level of the company of the pending audit. The notification should include the starting date, scope of the audit, schedule, and any special requirements for either inspections or tests (including flight tests) deemed necessary.

1. Prior to the start of the audit, the Chairman should convene the DAS Audit Board to discuss the audit plans, personnel assignments, and any other items relative to the audit. The Chairman should emphasize to the DAS Audit Board that the audit must be conducted in an efficient and professional manner to be effective and meaningful.

2. To start an audit, the DAS Audit Board should arrange for a meeting between the DAS authorization holder's representatives and the members of the DAS Audit Board. The Chairman of the DAS Audit Board should explain the purpose of the audit, the schedule, the subjects to be investigated, the products to be inspected, and the plan for any inspections or tests.

3. The members of the DAS Audit Board, as assigned, should conduct an audit of facilities, data, and systems to ensure that the DAS has demonstrated compliance with all applicable regulations. All items should be thoroughly reviewed by DAS Audit Board members and signed prior to presentation as findings. DAS Audit Board members should maintain frequent informal contact with each other and the DAS Audit Board Chairman to ensure that problems which cross technical speciality areas are followed and handled properly.

4. Flight tests or inspections, in addition to those scheduled in advance, may be conducted if data uncovered during the audit indicate their necessity.

5. The DAS Audit Board should hold private meetings as necessary to discuss the Board's findings and to select the appropriate category for each finding.

6. The categories of the findings should be based on the relative importance of the finding. The following are suggested categories:

- a. Compliance - those items which comply with the applicable airworthiness regulations and certification procedures.
- b. Improvement - those compliance items which are presented for review and recommendations for consideration.
- c. Noncompliance - those items which do not comply with applicable airworthiness regulations or certification procedures.

7. When the DAS Audit Board has completed the audit, the findings which will be presented to the DAS (at the level at which initial notification was given) should be summarized; and the DAS Audit Board Chairman should orally advise the DAS of the findings. This will allow the DAS to undertake appropriate corrective action without delay. The DAS should also be advised that it will be notified officially by letter at a later date. The DAS Audit Board should prepare a report which will contain the final findings and recommendations. This report should be a summation of the individual reports submitted by the DAS Audit Board members and should contain supporting data for each finding.

D. Official Notification to the DAS. A formal written notification of the findings of the DAS Audit Board should be prepared and forwarded to the DAS as soon as possible, not to exceed 15 working days, following the conclusion of the audit activity at the facility. The written notification, signed by the DAS Audit Board Chairman, should cover those findings and recommendations where the region desires action or an investigation. Within 30 days after receipt of notification of findings, the DAS should submit written comments regarding corrective actions taken on each of the findings involving noncompliance with the

applicable regulations. Within 60 days after the end of the audit at the facility, all findings of noncompliance should be resolved (with the possible exception of those findings referred to an Aircraft Certification Directorate for adjudication). An attempt should be made to complete the closeout report within 90 days after the end of the audit at the facility. Reference should be made to the Compliance and Enforcement Program Handbook, Order 2150.3, to ensure consistency with current agency procedures.

E. Audit Report and Follow-up Action.

1. A follow-up system should be established by the region to ensure that appropriate corrective actions have been satisfactorily started before the closeout report. Correction of each noncompliance item should be accomplished to the satisfaction of the DAS Audit Board. If deemed necessary, the DAS Audit Board should conduct a reinspection of the facility prior to the closeout of the audit. The original closeout report should be retained by the branch/division conducting the audit.

2. The DAS will be notified by letter, signed by the Chief of the Aircraft Certification Division of the auditing Aircraft Certification Directorate, that - -

- a. All audit items have been resolved to the satisfaction of the auditing Aircraft Certification Directorate, and the DAS authorization remains in effect;
- b. The DAS authorization remains in effect; however, certain limitations are being applied; or
- c. The DAS authorization is revoked because either there are noncompliance items on which the DAS has failed to take corrective action or the DAS is otherwise failing to maintain qualifications to be a representative of the Administrator.

3. At the closeout of the audit, the Aircraft Certification Directorate will compile a report containing at least the following:

- a. DAS Audit Board recommendations as to the continued operation of the company under DAS authorization procedures.
- b. Statement of overall findings.
- c. Disposition of FAR noncompliance findings.
- d. Summary of individual findings.
- e. Corrective actions taken by the DAS and/or FAA, including date.
- f. FAA acceptance of response.
- g. Individual team reports summarizing its overall activities and general findings during the audit.

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