

CHAPTER 105. EVALUATE PART 125 AIRPLANE INSPECTION PROGRAM AND MAINTENANCE

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 3341, 3342

B. Avionics: 5341, 5342

3. OBJECTIVE. This chapter provides guidance on how to evaluate and approve an operator/applicant submitted Airplane Inspection Program (AIP) and engine maintenance program or revision.

5. GENERAL. This job task provides for interaction between the applicant and the Federal Aviation Administration (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. The FAA must approve an inspection program selected by an operator/applicant under Title 14 of the Code of Federal Regulations (14 CFR) part 125. Section 125.247(e) lists inspection programs that may be approved for use under this part. The FAA reviews the program to ensure that it meets regulatory requirements, is complete, and is appropriate for the intended operation.

B. Airworthiness aviation safety inspectors (ASI) should have as much knowledge of the operator/applicant's operation as possible. This includes areas of operation, type of equipment, operating history, and maintenance/inspection organization(s).

NOTE: An AIP is authorized for use in operations specifications (OpSpecs) and cannot be transferred.

7. AIRPLANE INSPECTION PROGRAM.

A. A part 125 operator may use a continuous inspection program that is a part of a current continuous airworthiness maintenance program (CAMP) approved for use under 14 CFR part 121 or 135.

(1) A CAMP is an all-encompassing program that includes maintenance, inspections, continuing analysis and surveillance, and so forth.

(2) All elements are closely related and may not be as effective as "stand-alone" programs. Lack of maintenance and quality control in the airworthiness maintenance program could have negative effects.

B. The operator may use inspection programs currently recommended by the manufacturer of the airplane, aircraft engines, propellers, appliances, or survival and emergency equipment. The manufacturer's inspection program might not cover survival equipment and avionics equipment. Additionally, the inspector should consider aircraft use before approving a manufacturer's program. Many manufacturers offer a low-use program if the normal aircraft use falls below certain parameters.

C. The operator/applicant may use an inspection program developed by a certificate holder operating under part 125.

9. ENGINE MAINTENANCE. The operator/applicant must maintain engines in accordance with (IAW) the overhaul intervals that the manufacturer recommends or a program that the Administrator approves.

NOTE: The current version of Advisory Circular (AC) 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulation Part 125, defines proration as a procedure for determining the overhaul time expended under one maintenance system and to establish the time remaining to overhaul under a new program. Thus, proration permits further use of an affected item without need for immediate overhaul.

A. If the manufacturer does not have a recommended overhaul interval, the Administrator may approve a maintenance program that the

manufacturer recommends as an on-condition program/trend analysis program.

B. The operator/applicant may develop an on-condition or overhaul program for approval by the Administrator.

11. 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 use, and other data necessary to substantiate changes.

(2) Teardown reports, manufacturer recommendations, and the operator's experience may justify engine maintenance programs and overhaul intervals.

(3) Operator-initiated time changes require revisions to both the AIP and OpSpecs.

NOTE: Limitations specified for life-limited items and Airworthiness Directives (AD) shall

not be amended or extended unless authorized in writing by the appropriate FAA Aircraft Certification Office (ACO).

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 AIP. The manufacturer's recommendation must accompany the request.

(2) ASIs should not automatically approve a time escalation the manufacturer recommends, but should consider the operator's airplane use and experience to ensure that the escalation will not compromise safety. For example, the operator could consider sampling programs to justify time escalation requests.

13. POLICIES AND PROCEDURES MANUAL. The operator's policies and procedures manual must include the AIP. The operator should submit a manual revision (IAW manual revision procedures) at the same time the AIP/revision is submitted for approval. This allows the FAA to approve the AIP/revision and accept the manual concurrently, thus expediting the implementation of the program.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Knowledge of the regulatory requirements of part 125
- Previous experience with complex maintenance/inspection programs
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent

B. Coordination. This task may require coordination with and/or assistance from Operations ASIs and/or regional specialists.

3. REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- 14 CFR parts 25, 39, 43, 45, 47, 65, and 91
- Aircraft maintenance inspection notes
- AC 20-42, Hand Fire Extinguishers for Use in Aircraft
- AC 20-53, Protection of Airplane Fuel Systems Against Fuel Vapor Ignition Due to Lightning
- AC 20-136, Protection of Aircraft Electrical/Electronic Systems Against the Indirect Effects of Lightning
- AC 91-56, Continuing Structural Integrity Program for Large Transport Category Airplanes
- AC 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulation Part 125

B. Forms:

- FAA Form 8400-7, Operations Specifications

C. Job Aids:

- JTAs: 2.3.49, 3.3.83, 3.3.201

5. PROCEDURES.

A. Schedule and Conduct a Preliminary Meeting with Operator/Applicant, if Necessary.

(1) Advise the applicant of regulatory requirements and policies.

(2) For an existing operator, remind the operator that the policies and procedures manual must include the AIP/revision.

B. Plan and Coordinate the Task.

(1) Determine if the airplane meets eligibility requirements.

(2) Review the operator file to identify any information concerning the AIP/revision and to determine its effect on other programs or procedures that the operator/applicant uses.

(3) If this task is performed as part of an original certification, review the Schedule of Events to ensure that the task can be accomplished IAW the schedule.

NOTE: When evaluating the program, ensure that all information is clear and easy to understand. It must identify the scope of each task and provide detailed, step-by-step procedures.

C. Evaluate the Proposed Program/Revision.

(1) Evaluate the instructions, procedures, and standards for conducting inspections.

(a) The inspection program must include:

- Airframe
- Aircraft engines
- Propellers
- Appliances
- Survival and emergency equipment
- Component parts for the above items

(b) When establishing an inspection program, for an aircraft to comply with § 125.247, the program should include installed avionics and instrument systems (appliances). These systems are not always installed by the aircraft manufacturers and may not be included in their recommended inspection programs.

(c) Inspection standards, procedures, methods, instructions, or other technical data may be included in the program by reference, eliminating the need to reprint them. Such references may be either the airframe manufacturer's or the appliance manufacturer's service data. However, when both the airframe manufacturer and the appliance manufacturer provide inspection data, that of the airframe manufacturer should be used. In this case, the inspector should ensure that the airframe manufacturer's

inspection data is applicable to the actual systems and equipment (make and model) installed on the aircraft.

(d) The avionics and instrument systems inspection should include a visual and functional check. Therefore, these definitions should be included in the program:

i. *Visual Check.* Using acceptable methods, techniques, and practices to determine physical condition and safety items.

ii. *Operational Check.* An operational test to determine whether a system or component is functioning properly in all aspects, conforming with minimum acceptable manufacturer design specifications.

iii. *Functional Check.* This test may require the use of appropriate test equipment.

(e) The avionics and instrument systems inspections should be incorporated into the basic airframe program. The visual inspection of the avionics and instrument systems should be accomplished at an interval corresponding to the airframe inspection interval (e.g., inspect avionics and instrument equipment, wiring, connectors, bonding straps, circuit breakers, and switches forward of the instrument panel) at the same interval that flight controls and other structural inspections are performed in that area.

(f) Functional checks of the avionics and instrument systems, using appropriate ramp test equipment, should be performed at intervals as a function of the aircraft operating environment (i.e., one year of the manufacturer's design specifications). The term "avionics" means aviation electronics and includes the following systems:

- Communications
- Navigation
- Electrical
- Instrument
- Lights
- Autopilot/flight director system

(g) The program should include maintenance/inspection requirements for protection of applicable electric/electronic systems from High Intensity Radio Frequency (HIRF) and lightning hazards. Such systems include, but are not limited to, power distribution and generating equipment and electromechanical devices, systems that use data buses for critical functions, and electronic engine and flight

controls (including Full Authority Digital Engine Control (FADEC)), as well as associated interconnecting wiring or cables.

(h) All required tests and checks recommended by the aircraft or equipment manufacturer must be addressed.

(2) Identify the individuals responsible for performing the work.

(3) Ensure that the instructions, procedures, and standards are 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 that established standards are met.

D. Evaluate the Procedures for Controlling Life-Limited Parts. The program must contain provisions to ensure that records are current. Life limits must be expressed by one of the following measures:

- Length of time-in-service
- Number of cycles
- Number of landings
- Calendar time
- A combination of the above measures

E. Evaluate the Procedures for Scheduling Inspections. The program must list inspection intervals and describe personnel responsibilities for scheduling and performing inspections.

F. Evaluate the Procedures to Ensure that Inspections Are Performed by Properly Certificated Personnel. 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 that inspection personnel meet FAA requirements. The manual must list those persons whom the operator has arranged for inspection performance under part 125. The list must include the names and addresses of these persons.

G. Evaluate Engine Maintenance/Overhaul Intervals. Ensure that engine overhaul periods correspond to the recommended overhaul intervals in the engine manufacturer's manuals and/or service bulletins.

H. Evaluate the 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(s) must be referenced in the maintenance manual and AIP.

NOTE: Within its manual, the operator/applicant should establish procedures to address continued operation of an aircraft with interim repairs and Structural Repair Manual (SRM) allowable damage. These procedures should also include provisions for a continuous feedback loop of timely information between the operator, FAA's principal maintenance inspector (PMI), principal avionics inspector (PAI), Aircraft Certification Office (ACO), Designated Engineering Representative (DER), and the manufacturer.

I. Evaluate the Instructions for Using the AIP. Make sure the AIP includes instructions on its use.

J. Analyze the Findings. Evaluate findings to determine if program changes are required. Coordinate with other specialties before debriefing operator.

K. 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 ASIs, regional specialists, or other FAA personnel.

(2) Brief the operator/applicant on results of evaluation. Discuss any deficiencies.

7. TASK OUTCOMES.

A. File a PTRS Data Sheet.

B. Approve or Reject the AIP/Revision.

(1) *Approval.* If the program or revision meets all regulatory requirements, proceed as follows:

(a) Ensure that the AIP or revision has been fully coordinated between maintenance and avionics and any other appropriate personnel.

(b) Indicate "Approved" by the amended OpSpecs. See FAA Order 8300.10, Airworthiness Inspector's Handbook, vol. 2, ch. 107, Evaluate Part 125 Operations Specifications.

NOTE: The date the AIP and engine maintenance program are approved must be the same as the date the OpSpecs are approved.

(c) Initial and date each page of the AIP or revision unless another approval control is used.

(d) Send the approved AIP/revision and the original and one copy of the OpSpecs to the operator, as appropriate. Request that the operator retain the original and acknowledge receipt of the OpSpecs by signing and dating the copy and returning the copy to the district office.

(e) Update the district office file with copies of the acceptance letter, the signed and dated AIP/revision, and the receipted OpSpecs.

(2) *Rejection.* If the AIP/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 that the letter accomplishes the following:

- Confirms all agreements made during the debriefing
- Identifies the date the AIP/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 AIP
- Reminds the operator not to implement the revision until it is approved

NOTE: If this review is performed as 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.

9. FUTURE ACTIVITIES.

A. Schedule of Events. In the case of original certification, review the Schedule of Events to determine if a revised schedule is necessary.

B. Policies and Procedures Manual. Ensure that the policies and procedures manual includes the approved AIP/revision.