

# CHAPTER 64. EVALUATE CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM/REVISION

## SECTION 1. BACKGROUND

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

A. *Maintenance:* 3341

B. *Avionics:* 5341

**3. OBJECTIVE.** This chapter provides guidance for evaluating a continuous airworthiness maintenance program developed by an operator/applicant subject to Title 14 of the Code of Federal Regulations (14 CFR) part 121 or 135.

**5. GENERAL.** A continuous airworthiness maintenance program combines the maintenance and inspection functions used to fulfill an operator/applicant's total maintenance needs. The regulations specify that each operator/applicant must have a maintenance program adequate to perform the work and a separate inspection program adequate to perform required inspections.

#### A. *Definitions.*

(1) *Airworthiness:* A condition in which the aircraft, airframe, engine, propeller, accessories, and appliances meet their type design and are in a condition for safe operation.

(2) *Inspection:* The routine performance of inspection tasks at prescribed intervals. The inspection must ensure the airworthiness of an aircraft up to and including its overhaul or life-limits.

(3) *Scheduled (Routine) Maintenance:* The performance of maintenance tasks at prescribed intervals.

(4) *Unscheduled (Non-Routine) Maintenance:* The performance of maintenance tasks when mechanical irregularities occur. These irregularities are categorized as to whether or not they occur during flight time.

(5) *Structural Inspection:* A detailed inspection of the airframe structure that may require special inspection techniques to determine the continuous integrity of the airframe and its related parts.

B. *Program Requirements.* Basic requirements of a continuous airworthiness maintenance program include the following:

- Inspection
- Scheduled Maintenance
- Unscheduled Maintenance
- Overhaul and Repair
- Structural Inspection
- Required Inspection Items (RII)
- Reliability Program (if appropriate)

C. *Manuals.* Instructions and standards for unscheduled maintenance should be in the operator/applicant's technical manuals. The manuals must contain procedures to be followed when using these manuals and recording scheduled and unscheduled maintenance.

D. *Operations Specifications.* Continuous airworthiness maintenance programs are approved according to the operations specifications. These operations specifications describe the scope of the program and reference manuals and other technical data. Details of the program must be included in the operator/applicant's manual.

E. *Operator/Applicant's Organization.* The operator/applicant must have an organization adequate to carry out the provisions of the continuous airworthiness maintenance program. If the work is to be performed outside of the operator/applicant's organization, the contractor must meet the same requirements. In determining the adequacy of the organization, the following must be considered:

- The complexity of the organization
- The aircraft
- The experience of the personnel
- The number of personnel

## 7. INSPECTIONS.

*A. Applicability.* During the original certification process of an operator/applicant, the Aviation Safety Inspector (ASI) should ensure that the continuous airworthiness maintenance program is applicable to the operation in question. In order to do so, the ASI will inform the operator/applicant of the pertinent policies, procedures, and requirements of the regulations.

*B. Scheduling.* The operator/applicant and the ASI should develop a plan to determine a schedule for the submission of required documents.

*(1) Scheduled Maintenance.* Maintenance tasks performed at prescribed intervals are considered scheduled maintenance. Some of these tasks are performed concurrently with inspection tasks and may be included on the same work form. Work forms that include maintenance instructions must be provided for a record of the accomplishment of these tasks.

*(a)* Scheduled tasks include replacement of life-limited items and components requiring periodic overhaul, special nondestructive inspections (such as X-rays), checks or tests for on-condition items, lubrications, and weighing aircraft.

*(b)* Prime factors considered for inspection intervals are aircraft utilization, environmental conditions, and the type of operation. Examples include changes in temperature, frequency of landings and takeoffs, operation in areas of high industrial pollutants, and passenger or cargo operations.

*(c)* To ensure proper maintenance, each inspection interval must be stated in terms of calendar times, cycles, and hours, as required.

*(2) Unscheduled Maintenance.* Unscheduled maintenance takes place when mechanical irregularities occur.

*(a) Mechanical Irregularities Occurring During Flight Time (Block-to-Block).* These include operational failures and malfunctions and abnormal flight operations, such as hard or overweight landings. The aircraft maintenance record, required by §§ 121.563, 121.701, and 135.65, must be used to record each irregularity and its corrective action.

*(b) Mechanical Irregularities Not Occurring During Flight Time.* These include all other failures, malfunctions and discrepancies, including, but not limited to, inspection findings. A discrepancy form or equivalent system must be used to record each irregularity and its corrective action.

### *C. Types of Maintenance.*

*(1) Overhaul and Repair (Airframe, Engine, Propeller, and Appliance).* Maintenance for these

items, whether scheduled or unscheduled, may be independent from maintenance performed on the aircraft. The operator/applicant must provide instructions and standards for repair and overhaul, along with a method of approving and recording the work. Appropriate life-limited parts replacement requirements should be included in this portion of a continuous airworthiness maintenance program.

### *(2) Structural Inspection.*

*(a)* Each level of inspection must be clearly defined in the operator/applicant's continuous airworthiness maintenance program. For example, a specific area of the aircraft may require only a visual inspection during pre-flight A and B checks but will require a detailed, X-ray or Zyglo inspection in the same area for a "C" or "D" check.

*(b)* Some aircraft are subject to a supplemental structural inspection document, which requires additional age-related structural inspections to be incorporated into the maintenance program.

*D. Requirements.* If a certificated operator proposes changes to the continuous airworthiness maintenance program, the ASI must determine the impact of the revision on the program. Since continuous airworthiness maintenance programs vary, depending on the operator/applicant's complexity of operation, the ASI must become familiar with all of the pertinent technical and regulatory aspects of the program.

*E. Return to Service.* Through the provisions of 14 CFR parts 43, 121, and 135 operators utilizing a continuous airworthiness maintenance program are considered maintenance organizations. As such, they are authorized to approve aircraft and/or equipment for return to service and are responsible for meeting the requirements of § 43.13(a), (b), and (c).

*(1)* The persons exercising certificate privileges have always had the responsibility to show compliance with regulatory requirements and to make a determination of conformance and safety. The need to ensure that a replacement part was produced by an Federal Aviation Administration (FAA)-approved source is therefore critical.

*(2)* Principal inspectors, during the process of certification and surveillance, must ensure that the operator/applicant fully understands § 43.13 and the resulting responsibility to show that any/all parts and/or materials used, from any source, are airworthy (i.e., conform to type design), are equal to the original or properly altered condition, and have been maintained properly.

*(3)* Additionally, the principal inspector must ensure that the operator/applicant's manual contains

adequate procedures at the incoming inspection to determine the compliance with § 43.13, prior to the material being stocked or used.

*F. Part 135 (nine or Less) Operators.* An operation with an approved continuous airworthiness maintenance program must maintain its aircraft according to that program. This includes aircraft of nine or less passengers maintained under an operator's continuous airworthiness maintenance program in accordance with § 135.411(b).

*G. Maintenance Performed for Other Operators.* An operator with an approved continuous airworthiness maintenance program under part 121 or 135 may also perform maintenance for another certificate holder under the same CFR part. Such maintenance must be performed in accordance with that certificate holder's approved program, including aircraft of nine or less passenger seats. However, an operator under part 135 is not authorized to perform maintenance for an operator under part 121, and vice versa.

**9. MAINTENANCE PROGRAM.** The maintenance program must incorporate a set of procedures that ensures the following:

- Maintenance, preventive maintenance, and alterations are performed according to the operator's manual
- Competent personnel, and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations
- Each aircraft released to service is airworthy
- Airworthiness inspections and RII are performed per the operator's manual, by qualified personnel
- That a system is in place that addresses how specific RII are developed, controlled, and reviewed to ensure the continued airworthiness of aircraft

*A. Airworthiness Inspections.* Section 121.135(b)(19) and similar provisions of part 135 stipulate that each operator's manual must discuss airworthiness inspections, including instructions covering procedures, standards, responsibilities, and authority of inspection personnel. The methods and procedures established by the operator's manual must be followed as prescribed by §§ 121.367 and 135.427. Items not designated as RII will also be inspected according to the manual's instructions.

*B. RII.* Sections 121.369(b)(2) and 135.427(b)(2) discuss the designation of maintenance and alteration work that must be inspected.

(1) The manual must contain a designation of the items of maintenance and alteration that must be

inspected. These will include, at a minimum, those items that could result in failure, malfunction, or defect, endangering the safe operation of the aircraft if maintenance is not performed properly or if improper parts or materials are used. Each operator must evaluate its work program to identify RII. Such items may be identified with the abbreviation "RII," an asterisk, or any similar method.

(2) In determining the work items that are to be categorized as RII, the operator should consider the importance of the following:

- Installation, rigging, and adjustments of flight control
- Installation and repair of major structural components
- Installation of aircraft engines, propellers, and rotors
- Overhaul, calibration, or rigging of components such as engines, propellers, transmissions, gear boxes, and navigation equipment

**11. INSPECTION ORGANIZATION.** Each operator must have an organization adequate to perform required inspections. The performance of required inspections must be organized so as to separate the required inspection functions from other maintenance, preventive maintenance, and alteration functions.

*A. Personnel Considerations.* The operator/applicant must maintain a current listing of persons qualified to inspect its RII. Where such maintenance is performed by other organizations, the operator must determine that the contractor maintains such a list. Each individual must be identified by name, occupational title, and the RII that individual is authorized to inspect.

(1) To comply with these requirements, the operator's personnel roster (or the contractor's roster) may be used. This roster should include a method for positive identification of those who are trained, qualified, authorized, certificated, and current.

(2) Authorized individuals may be informed by letter or by a list showing the extent of their responsibilities, authorities, and inspection limitations. If a list is used, it should be signed by each authorized individual to confirm that the authorized person is fully aware of any inspection limitations.

*B. Maintenance and Inspections.* The separation of the operator maintenance organization from the inspection organization does not apply to the accomplishment of airworthiness inspections.

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## SECTION 2. PROCEDURES

### 1. PREREQUISITES AND COORDINATION REQUIREMENTS.

#### A. Prerequisites:

- Knowledge of the regulatory requirements of parts 121 and 135, as applicable
- Successful completion of the Airworthiness Inspectors Indoctrination Course, or previous equivalent

*B. Coordination.* This task must be coordinated between Airworthiness ASI's, Operations ASI's, and regional specialists.

### 3. REFERENCES, FORMS, AND JOB AIDS.

#### A. References:

- Maintenance Review Board Document
- 14 CFR parts 43, 65, 91, and 145
- 14 CFR part 173
- Appropriate Advisory Circulars (AC), (e.g., AC 121-22), as amended

#### B. Forms:

- FAA Form 8400-8, Operations Specifications

#### C. Job Aids. None.

### 5. PROCEDURES.

*A. Brief the Operator/Applicant.* Provide the operator/applicant with the applicable AC's and advise the operator/applicant of the current policies and regulatory requirements.

*B. Review the Schedule of Events.* If this task is performed as a part of an original certification, review the schedule of events to ensure that this task can be accomplished within the schedule.

*C. Evaluate the Organization Documentation.* The continuous airworthiness maintenance program must contain the following:

(1) A complete description of the operator's organization as it relates to the program, including the duties and responsibilities of the relevant individuals.

(2) A list of persons with whom the operator/applicant has arranged for the performance of any work, along with a general description of that work.

(3) A proper separation of maintenance and inspection functions for the performance of required inspections.

*D. Evaluate the Inspection and Maintenance Programs.* The continuous airworthiness maintenance program must contain inspection and maintenance procedures for the performance of maintenance, preventive maintenance, and alterations. These procedures must, at a minimum, include the following:

(1) The method of performing routine and non-routine maintenance, preventive maintenance, and alterations.

(2) A list of designated items that must be inspected.

(3) The method for performing required inspections.

(4) A system that addresses how specific required inspections are developed, controlled, and reviewed to ensure the continued airworthiness of aircraft.

(5) The method of designating personnel performing required inspections by occupational title, name, and authorization.

(6) Procedures for the re-inspection of work performed as a result of previous required inspection findings (buy-back procedures).

(7) Procedures, standards, and limits necessary for required inspections, including identifying RII within work forms or job cards.

(8) Procedures for the periodic inspection and calibration of precision tools, measuring devices, and test equipment.

(9) Procedures for maintaining records and control of the inspections and calibrations.

(10) Procedures to ensure that all required inspections are performed.

(11) Instructions to prevent any person who has performed any item of work from performing any required inspection of that work.

(12) Instructions and procedures to prevent any decision of an inspector regarding any required inspection from being countermanded. Only supervisory personnel of the inspection unit or an administrative person with overall responsibility for both the required inspection and other maintenance and alteration functions can override an inspector's decision.

(13) Procedures to ensure that required inspections, maintenance, and alterations that are left incomplete as a result of a work interruption are properly completed before the aircraft is returned to service.

(14) Work forms, job cards, and detailed procedures for performing inspections and other maintenance.

*E. Evaluate the Maintenance Records/System.* The continuous airworthiness maintenance program must contain a maintenance recordkeeping system. The operator/applicant must meet the requirements of § § 121.380 and 135.439. In addition, the operator must have a system for the retention and retrieval of maintenance records to provide the following:

- A description of the work performed
- The name of the person performing the work and/or the name of the organization if other than the operator/applicant's
- The name of the person approving the work

*F. Evaluate Personnel.* The continuous airworthiness maintenance program must contain the following:

(1) Procedures to determine the qualifications of personnel, including management and supervisory personnel.

(2) Procedures to ensure that only persons appropriately certificated, properly trained, authorized, qualified, and current perform any required inspections.

(3) Instructions to ensure that those persons performing required inspections are under the control of the inspection unit.

(4) Instructions to relieve any person performing maintenance for a period of at least 24 hours per a 7 day period, or the equivalent thereof, within any calendar month.

*G. Evaluate the Structural Inspection Procedures.* This part of the continuous airworthiness maintenance program must include the following:

- Corrosion control procedures
- A detailed inspection of areas where maintenance is being performed to detect cracks, distortion, and corrosion, to examine attachment of parts, and to determine the condition of the area
- Maintenance Review Board/manufacturer's routine structural inspection requirements

*H. Analyze the Findings.*

(1) Evaluate all deficiencies to determine what, if any, corrective actions will be required.

(2) If there are deficiencies in the continuous airworthiness maintenance program, schedule a meeting with the operator/applicant to discuss needed program changes and deficiency resolutions.

## **7. TASK OUTCOMES.**

*A. File PTRS Data Sheet.*

*B. Successful completion of this task will result in the following:*

(1) When all requirements for approval of the program have been met, approval of operations specifications in accordance with volume 2, chapter 84, FAR Part 121/135 Operations Specifications.

(2) Providing the operator/applicant with the original continuous airworthiness maintenance program, with instructions to provide a copy of the program to the certificate holding district office (CHDO).

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

**9. FUTURE ACTIVITIES.** Normal surveillance.