

FAA part 135 Airworthiness Requirements

Presented to: STL-FSDO part 135 Certificate Holders

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Federal Aviation
Administration



OBJECTIVES

- **Applicable Regulations for Airworthiness**
- **Definitions related to Airworthiness**
- **Preflight and Postflight Airworthiness requirements**
- **Maintenance and Inspection Rules review**



Applicable Regulations

- **Part 1**
 - Maintenance, Preventive Maintenance
- **Part 3**
 - Definitions; Airworthiness, Product, Records (§ 3.5a)
- **Part 39**
 - § 37.7
- **Part 43**
 - Maintenance and Inspection records

Applicable Regulations

- **Part 91**
 - Civil Aircraft Airworthiness (§ 91.7)
 - Subpart E Maintenance, Preventive Maintenance, and Alterations
 - Required maintenance; Maintenance records
- **Part 135**
- Flight Operations
 - Reporting Mechanical Irregularities
 - Airworthiness Check
- Subpart J Maintenance, Preventive Maintenance, and Alterations

Caution

- **Regulations don't necessarily stand alone**
- **Many regulations within a part will mimic and are linked to regulations in other parts**
 - **Example- Maintenance Records: § 91.405/91.417 and § 43.9/43.11**
 - **Example- Inspections: § 91.409 and § 135.411**

DEFINITIONS

Or singing from the same music sheet



§ 1.1 Definitions

- **Preventive Maintenance:**
 - Simple or minor preservation operation and the replacement of small standard parts not involving complex assembly operations
- **Maintenance:**
 - Inspection, overhaul, repair, preservation, and the replacement of parts, but excluding preventive maintenance

§ 1.1 Definitions

- ***Person* means:**
 - an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

§ 3.5 Definitions

- **Airworthiness:**
 - The aircraft conforms to its type design and is in a condition for safe operation.
- **Record:**
 - Any writing, drawing, map, recording, tape, film, photograph or other documentary material which information is preserved or conveyed [with]...attached to or inscribed on any product, part, appliance or material.
- **Product:**
 - An aircraft, aircraft engine, or aircraft propeller.

Supplementary

- **Return to service:**
 - Commonly applied to the PIC or the Certificate Holder who accepts the aircraft as being in an airworthy state for operation.
- **Approve for return to service**
 - Applies to the person who has performed maintenance or preventive maintenance IAW part 43, including the requirement to record the work

Maintenance Requirements



PART 91: SUBPART E

- **Maintenance, Preventive Maintenance, and Alterations [rules]**
 - 11 sections,
 - 9 enforceable,
 - 8 directed at owners or operators (not maintenance personnel)

PART 135 SUBPART J

- **Maintenance, Preventive Maintenance, and Alterations**
 - Some rules for 9 or less passengers - some rules for 10 or more passengers
 - 18 sections
 - 16 enforceable on the Certificate Holder
 - 6 enforceable on 9 or less passenger aircraft
 - 13 enforceable on 10 or more passenger aircraft

Part 135 Maintenance Requirements

- **9 or less passengers**
 - Part 91 subpart E requirements
 - §'s 91.207 & 91.213
 - § 135.411(a) Inspection Program
 - Service Difficulty reporting
 - Mechanical Interruption Summary reporting
 - Multiengine aircraft
 - Additional Maintenance requirements
 - Aging Aircraft Inspections for multiengine airplanes

Part 135 Maintenance Requirements

- **10 or more passengers:**
- **Part 91 subpart E requirements**
 - §'s 91.207 & 91.213
 - § 135.411(b) Maintenance Program
 - § 135.169 Additional Airworthiness Requirements
 - Service Difficulty reporting
 - Mechanical Interruption Summary reporting
 - Maintenance organization
 - Aircraft Maintenance program w/Inspection program
 - Required Inspection Personnel (RII)
 - Continuing Analysis and Surveillance (CASS)
 - Maintenance training program
 - Maintenance recording requirements
 - Aircraft Airworthiness Release



Rules Review



Responsible Party

- **§ 91.403:** The owner or operator of an aircraft is primarily responsible for *maintaining that aircraft in an airworthy condition...*
- **§ 135.413:** Each certificate holder is *primarily responsible for the airworthiness* of its aircraft...

Aircraft Airworthiness

Preflight

- **§ 91.7: Civil Aircraft Airworthiness**
 - (a) No *person* may operate an aircraft unless it is in an airworthy condition.
 - (b) The *pilot in command*... is responsible for determining whether that aircraft is in condition for safe flight.

Aircraft Airworthiness

Preflight

- **§ 91.405- Operation after maintenance, preventive maintenance, rebuilding, or alteration.**
- **(a) No person may operate** any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless--
 - (1) It has been approved for return to service by a person authorized under Sec. 43.7 of this chapter; and
 - (2) The maintenance record entry required by Sec. 43.9 or Sec. 43.11, as applicable, of this chapter has been made.

Required Maintenance

- **§ 91.405: Each owner or operator**
 - (a) “...shall between required inspections...have discrepancies repaired...”
 - (b) “Shall ensure that maintenance personnel make appropriate entries...indicating the aircraft has been approved for return to service.”

Required Maintenance

- **§ 91.405: Each owner or operator**
 - (c) Shall have inoperative [equipment] permitted to be inoperative per § 91.213(d)(2) repaired, replaced, removed, or inspected at the next required inspection; and
 - (d) “When listed discrepancies include inoperative [equipment]...shall ensure that a placard has been installed...”

Reporting Mechanical Irregularities

Preflight/Postflight

- **§ 135.65:**
 - (a) Each Cert. holder shall provide an aircraft maintenance log onboard each aircraft...
 - (b) The pilot in command shall enter or have entered...each mechanical irregularity. Before each flight each PIC shall determine the status of each irregularity entered in the maintenance log
 - (c) Each person who takes or defers corrective action...shall record the action taken

Airworthiness Check

Preflight

- **§ 135.71:**
 - The pilot in command may not begin a flight unless the pilot determines that the airworthiness inspections have been made
 - Annual inspection, and
 - 100 hour inspection, or
 - Progressive inspection, or
 - AAIP

Maintenance Records

- **§ 91.417**
 - Must keep and maintain the following records until the aircraft is transferred:
 - TOTAL TIME of each aircraft, aircraft engine, propeller, rotor.
 - Current status of all life limited parts.
 - Time since last overhaul of equipment that are required to be overhauled on a specified time basis.

Maintenance Records

- **§ 91.417**
 - The following records must be retained until the work is repeated or superseded or for 1 year
 - Inspection records
 - Maintenance records
 - A list of defects furnished under § 43.11 until the defects are repaired and the aircraft is approved for returned to service.

Maintenance Records

- **§ 91.417**

- The records must include:

- A description of the work performed or a reference acceptable to the Administrator of acceptable data; and
- The date of completion of the work; and
- The signature of the person approving the aircraft for return to service with a signature, certificate number



Maintenance Records

- **§ 91.417: Airworthiness Directives (AD's)**
 - AD records must include:
 - The current status of applicable AD's
 - The method of compliance
 - The AD number and revision date
 - If a recurring AD, the time and date when the next action is required

Part 39 Airworthiness Directives

- **FAA's airworthiness directives are legally enforceable rules on the following ...**
 - **aircraft, aircraft engines, propellers, and appliances**
- **FAA issues an airworthiness directive addressing a product when we find that:**
 - **(a) An unsafe condition exists in the product; and**
 - **(b) The condition is likely to exist or develop in other products of the same type design**
- **Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of § 39.7.**

Maintenance Records

- **§ 43.9**

- Each person performing preventive maintenance, maintenance, rebuilds or alters...shall make an entry in the maintenance record...containing the following information:
 - A description of the work performed or a reference acceptable to the Administrator of acceptable data; and
 - The date of completion of the work; and
 - The name of the person completing the work if other than the person approving the [work] for return to service
 - The signature of the person approving the [work] for return to service with a signature, certificate number and kind of certificate

Advisory Circular 43-9C

Maintenance Records

- **Paragraph 5 Maintenance Record Requirements**
- (d) Section 91.417(a)(1)(i). Requires the maintenance record entry to include “a description of the work performed.”
 - The description should be in sufficient detail to permit a person unfamiliar with the work to understand what was done, and the methods and procedures used in doing it.

Inspection Record

- **§43.11:** The person approving or disapproving for return to service...after any inspection required by part 91, 125, § 135.411(a)(1), and § 135.419 shall make an entry...containing the following:
 - The type of inspection and a brief description of the extent of the inspection
 - The date of the inspection and the aircraft **TOTAL TIME**
 - The signature of the person approving or disapproving for return to service the inspection with their certificate number and kind of certificate

Inspection Record

- **§ 43.11**
 - Except for progressive Inspections a declaration of airworthiness or unairworthiness must be made in the aircraft record
 - For a progressive inspection a statement indicating a routine inspection of the aircraft or component of such (identify the components) and a detailed inspection of (identify components)

Review

- **Applicable Regulations**
 - Parts 1, 3, 39, 43, 91, 135
- **Definitions**
 - Parts 1 & 3
- **Preflight and Postflight airworthiness requirements**
 - Parts 91 & 135
- **Maintenance and Inspection Rules review**
 - Parts 39, 43, 91, & 135