

# Airworthiness and Maintenance Requirements for U.S. Registered Aircraft

State of Registry Requirements  
Designee Limits and Requirements  
Maintenance Requirements

Presented to: LACAC Members

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## Overview

- **Requirements to Maintain U.S. Registered Aircraft as a State of Registry (SOR)**
- **Maintenance Designee Limits and Requirements**
- **Maintenance Requirements for U.S. Registered Aircraft Located Outside the U.S.**



## Overview ICAO Documents

- Annex 6 - Operations of Aircraft
- Annex 8 – Airworthiness of Aircraft
- Doc. 9760 – Airworthiness Manual
- Doc. 9734 - Safety Oversight Manual



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## Overview FAA Regulations

- Part 43 – Maintenance, Preventive Maintenance, Rebuilding and Alteration
- Part 65 – Certification: Airmen Other Than Flight Crewmembers
- Part 91 – General Operating and Flight Rules



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## Responsibilities

### ICAO Doc. 9760 Airworthiness of Aircraft

Through the process of registering aircraft and the issuance of certificates and approvals...the State has the capability of ensuring the protection of the public interest...



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## SOR Safety Obligations

- The act of registering an aircraft may not, by itself, be a safety issue. This action, however, imposes on the State of Registry several Convention **OBLIGATIONS** that directly relate to the safety of the aviation system as a whole.

Doc. 9734



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## Responsibilities

### ICAO Doc. 9734 Safety Oversight Manual

#### 2.3.4.1 SOR Obligations include:

- (b) Determines that the aircraft airworthiness meets standards
- (c) Issues or validates airworthiness certificate
- (d) Ensures continued airworthiness regardless of where it operates



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## Obligations of Contracting States

- Aircraft engaged in International Navigation **SHALL** carry Registration and Airworthiness Certificate
- Certificate of Airworthiness shall be issued or rendered valid by the State in which the aircraft is registered



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## State of Registry Responsibilities for Airworthiness

- Everything Airworthiness
- Maintenance Program
- Compliance with AD's (Mandatory)
- Compliance with SB's (Voluntary)
- Weight & Balance (airworthiness)
- ETOPS (airworthiness)
- RVSM (airworthiness)
- MEL (airworthiness)
- All Annex 8 issues



## Obligations of Contracting States

- The broad standards in Annex 6 and Annex 8 provide the basis for the development of National Airworthiness Regulations and Rules
- Each State should develop its OWN Comprehensive Airworthiness Regulations and Rules
- (and) Such should be consistent with the provisions of Annex 6 and Annex 8
- (or) Adopt appropriate airworthiness regulations developed by another Contracting State.

Doc. 9760



## Obligations of Contracting States

- National AW Regulations and Rules must specify that the SOR is the SOLE authority responsible for ensuring that every aircraft on its registry conforms to TD
- SOR has the Responsibility for ensuring that every aircraft on its registry is maintained in an AW condition **throughout its service life.**
- Although some of the methods of discharging the State's AW responsibilities may vary, such do not relieve the SOR from its responsibility. Unless there is an **Article 83bis** Agreement between the States.

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## Responsibilities

**“The State of Registry shall require that the continuing airworthiness of the aircraft shall be determined by a periodical inspection at appropriate intervals...”**



Annex 8



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## Annex 6 Operation of Aircraft

- Contains **Applicable Standards** to include Aircraft: Operations, Performance, Comm/Nav Equipment, **Maintenance**, Flt Docs, Responsibilities for Flight Crew and aircraft Security
- Part I – International Air Transport
- Part II – International General Aviation
- Part III – International Helicopters



## Annex 8 Airworthiness of Aircraft

- Contains the applicable **STANDARDS** for International Airworthiness of Aircraft
- **PROCEDURES** for AW Certification and Continued Airworthiness, Large Aircraft, Small Aircraft, Helicopters, Propellers



## Aircraft Maintenance

- **Maintenance requirements vary for different types of aircraft**
- **Experience shows that most aircraft need some type of preventive maintenance every 25 hours or less of flying time, and minor maintenance at least every 100 hours**
- **This is influenced by the kind of operation, climactic conditions, storage facilities, age, and construction of the aircraft**



## Aircraft Maintenance

- **14 CFR part 91, subpart E, requires the inspection of all civil aircraft at specific intervals to determine the overall condition**
- **The interval generally depends on the type of operations in which the aircraft is engaged**
- **Some aircraft need to be inspected at least once every 12 calendar months, while inspection is required for others after each 100 hours of operation.**
- **In other instances, an aircraft may be inspected in accordance with an inspection system set up to provide for total inspection of the aircraft on the basis of calendar time, time in service, number of system operations, or any combination of these factors**





## Aircraft Maintenance

- While the requirements for maintaining the aircraft are contained in Title 14 of the Code of Federal Regulations (14 CFR), it is essential for every aircraft owner or operator to remember that specific maintenance requirements are available from the aircraft manufacturer



## FAA Requirements

- **Part 43 Maintenance, Preventive Maintenance, Rebuilding and Alterations**
- § 43.1(a)(1) – Applies to Aircraft having a U.S. Airworthiness Certificate
- § 43.3 Persons **AUTHORIZED** to **PERFORM** maintenance, preventive maintenance, rebuilding, and alterations.
- § 43.3(b)(c)(d)(e) – Holder of a Mechanic Certificate, Repairman Certificate, Person under **DIRECT** supervision of A&P or Repairman and a Repair Station
- this paragraph does not authorize the performance of any inspection required by Part 91 or Part 125 of this chapter or any inspection performed after a major repair or alteration



## FAA Requirements

- **§ 43.7 Persons authorized to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after maintenance, preventive maintenance, rebuilding, or alteration**
- **Administrator**
- **A&P or IA (properly certificated under Part 65)**
- **Repair Station (under Part 145)**
- **Manufacturer (under Part 43.3(j))**
- **Pilot (under Part 43.3(g))**
- **Air Carrier (under Part 121, 135)**
- **Repairman and pilot (Light Sport under limited conditions)**



## Maintenance Performance Rules

- **§ 43.13 Performance rules (general)**
- **(a) Each person performing maintenance, shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the FAA, except as noted in §43.16**
- **He shall use the tools, equipment, and test equipment necessary to assure completion of the work in accordance with accepted industry practices**
- **If special equipment or test apparatus is recommended by the manufacturer, he must use that equipment or apparatus or its equivalent acceptable to the FAA**



## Maintenance Performance Rules

- § 43.13 Performance rules (continuation)
- (b) Each person maintaining or altering, or performing preventive maintenance, **SHALL** do that work in such a manner and use materials of such a quality, that the **CONDITION** of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be **AT LEAST EQUAL TO ITS ORIGINAL** or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).



## Maintenance Records

- Proper management of aircraft operations begins with a good system of maintenance records
- A properly completed maintenance record provides the information needed by the owner and maintenance personnel to determine when scheduled inspections and maintenance are to be performed



## Maintenance Records

- An aircraft owner or operator is required to keep aircraft maintenance records for the airframe, engine, propeller, and appliances
- Records must contain a description of the work performed, the date the work was completed, the certificated mechanic's signature, type of FAA certificate, and the certificate number and signature of the person approving the aircraft for return to service



## Maintenance Records

- Recordkeeping is primarily the responsibility of the aircraft owner or operator
- The airframe and powerplant (A&P) mechanic is responsible for the work he or she performs
- The owner or operator of an aircraft must also ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service



## Maintenance Responsibility

- 14 CFR part 91, section 91.403, places primary responsibility on the owner or operator for maintaining an aircraft in an airworthy condition
- The owner or operator must maintain the airworthiness of the aircraft between the required inspections by having any defects corrected



## FAA Airworthiness Designees

Requirements

Qualifications

Limits



## FAA Designee Requirements

- **14 CFR Part 183 – Representatives of the Administrator**
- **Order 8100.8D – Designee Management Handbook**
- **Order 8900.1 – Flight Standards Information Management System (FSIMS)**



## Requirements and Qualifications

- **Highly Experienced**
- **Appropriately Qualified (A&P)**
- **Meet ALL Eligibility Requirements for Requested Functions – (ie- 60 months)**
- **Need for Designee (Geographic Responsibility)**



## Requirements and Qualifications

- **1401. General Qualifications**
- Current and thorough working knowledge of pertinent regulations, directives, and related material
- Current and specific technical knowledge and experience commensurate with that required for the particular function (aircraft under 90,000 lbs. gross weight)
- High degree of integrity, cooperative attitude, and ability to exercise sound judgment
- Ability to maintain the highest degree of objectivity while performing authorized functions on behalf of the FAA.
- Satisfactory experience, within the preceding 24 months of the application, working directly in the type of work to be covered in the authorized function(s).
- Good command of the English language, both oral and written.



## Requirements and Qualifications

- DAR applicants must meet the specialized experience for each function sought
- For example:
- Function Code 23 – Issue Recurrent AW Certificate – 60 months experience managing AW Cert. Programs



# FAA Designee Program Procedures

## Order 8100.8D Designee Management Handbook

- **FAA Roles and Responsibilities**
- **Initial Selection and Appointment**
- **Orientation (including Authority and Responsibilities)**
- **Training**
- **Oversight**
- **Renewal**
- **Termination and Appeals**



# Designee Selection and Appointment

- **Complete Acceptable Application Package (previous slides)**
- **Selected and Approved by Approving Panel**
  - (WHOLE) Review, Interview and Verification
- **Assign Certificate Number**
- **Issue Certificate of Authority**





## Designee Selection and Appointment

- **Certificate Designation Number**
  - Specialty – **DAR**
  - Function – **(T)** – Maintenance
  - ID number- (**six digits**) DIN-generated
  - Geographic Region Code – **(SW)** Southwest Region

**DART123456SW**



## Designee Selection and Appointment

- **Issue Certificate of Authority**
  - Certificate Number – (DART123456SW)
  - Fixed Base of Operation – (Panama City, Panama)
  - Date of Initial Designation – (May 30, 2012)
  - Expiration Date – (October 31, 2013)
  - Authority Limits – (Aircraft 90,000 lbs or less)
  - Function Codes Authorized to Perform – (Function Code 23 Issue Recurrent AW Certificate)



## Certificate Duration and Renewal

- DAR appointments may be issued for 12 to 36 months
- Normally for new appointees is 12 months at the discretion of the managing FAA advisor
- DAR submits Renewal Request (60 days in advance)
- Advisor review of past performance and surveillance
- DAR must be current on ALL required Training (recurring)
- DAR must have performed at least 1 activity function per year
- Advisor review of completed documentation packages
- Advisor conduct face-to-face interview or witness surveillance



## DAR Geographical Restrictions

- The FAA's intention that designees perform their authorized function(s) within the geographical boundaries of their managing office
- However, a managing office may authorize a designee to perform authorized function(s) outside the geographic boundaries (including other countries) on a case-by-case basis
- Written Permission Required
- If permission is granted by the geographically responsible FSDO/IFO, the designee's managing FAA office will provide the designee with written permission to conduct the expanded geographic activity
- The written permission will contain the specific location, functions authorized, and duration (not to exceed 30 days) of the geographic expansion
- **NOTE: Strongly suggest to notify CAA of GEO Expansion**



## Maintenance Requirements Outside The U.S

- 14 CFR part 91, section 91.403, places primary responsibility on the owner or operator for maintaining an aircraft in an airworthy condition
- The owner or operator must maintain the airworthiness of the aircraft between the required inspections by having any defects corrected
- 14 CFR Part 43, 65 and 91 Applies and are **Enforceable**
- As required other rules apply (ie. Part 121, 129.14)



## Conclusion

- Requirements to Maintain U.S. Registered Aircraft as a State of Registry (SOR)
- Maintenance Designee Limits and Requirements
- Maintenance Requirements for U.S. Registered Aircraft located Outside the U.S.



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