

Chapter I—Federal Aviation Agency

[Reg. Docket 1998; Amdts. 1-4; 40-42; 41-8;
42-7; 46-8; 65-2; 91-3; 145-2]

**MAINTENANCE, PREVENTIVE, MAIN-
TENANCE, REBUILDING, AND
ALTERATION**

Miscellaneous Amendments

This amendment adds Part 43 [New] to the Federal Aviation Regulations to replace Part 18 of the Civil Air Regulations and is a part of the Agency recodification program announced in Draft Release 61-25, published in the FEDERAL REGISTER on November 15, 1961 (26 F.R. 10698).

Part 43 [New] was published as a notice of proposed rule making in the FEDERAL REGISTER on November 13, 1963 (28 F.R. 12096), and given further distribution as Notice No. 63-37.

During the life of the recodification project, Chapter I of Title 14 may contain more than one part bearing the same number. To differentiate between the two, the recodified parts, such as this one, will be labeled "[New]". The label will of course be dropped at the completion of the project as all of the regulations will be new.

Recodification

Many of the comments received recommended specific substantive changes to the regulations. Although many of the recommendations appear to be meritorious, they cannot be adopted as a part of the recodification program. The purpose of the program is simply to streamline and clarify present regulatory language and delete obsolete or redundant provisions. To attempt substantive changes, other than relaxatory ones that are completely noncontroversial, would delay the project and be contrary to the ground rules specified for it in Draft Release 61-25. However, we recognize that an overall substantive review of the part is long overdue. This review is now being undertaken and all substantive comments received are being carefully studied.

A number of changes have been made in the proposal, both as a result of comments received and as a result of further review by the Agency. As proposed, amateur built aircraft would have been excluded from the applicability of Part 43 [New]. This exclusion has been broadened to include any experimentally certificated aircraft that had not previously been issued a different airworthiness certificate. These aircraft present unique maintenance requirements which can only be met on a case-by-case basis. To require compliance with Part 18 would be impractical and unnecessarily burdensome.

The maintenance authority of air carriers certificated under Part 40, 41, 42, or 46 and of commercial operators certificated under Part 42 has been transferred to those parts and consolidated with other rules relating to their basic responsibility for maintenance.

The definition of "major alteration" in Part 1 [New] is being amended to exclude alterations listed in the aircraft, aircraft engine, or propeller specifications. This makes the definition consistent with Appendix A of Part 43 [New]. In addition, the definition of "airframe" is being amended, for clarity, to specifically include rotors.

Other minor changes of a technical clarifying nature have been made. They are not substantive and do not impose any burden on regulated persons.

The definitions, abbreviations, and rules of construction contained in Part 1 [New] of the Federal Aviation Regulations apply to Part 43 [New].

Interested persons have been afforded an opportunity to participate in the making of this regulation, and due consideration has been given to all relevant matter presented. The Agency appreciates the cooperative spirit in which the public's comments were submitted.

In consideration of the foregoing Chapter I of Title 14 is amended as follows, effective July 8, 1964.

PART 1—DEFINITIONS AND ABBREVIATIONS [NEW]

1. By amending Part 1 [New] as follows:

By amending the definitions of "airframe" and "major alteration" in § 1.1 to read as follows:

§ 1.1 General definitions.

"Airframe" means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of engines), and landing gear of an aircraft and their accessories and controls."

"Major alteration" means an alteration not listed in the aircraft, aircraft engine, or propeller specifications—

(1) That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or

(2) That is not done according to accepted practices or cannot be done by elementary operations.

PART 40—SCHEDULED INTERSTATE AIR CARRIER CERTIFICATION AND OPERATION RULES

2. By amending § 40.240 of Part 40 to read as follows:

§ 40.240 Maintenance responsibility and authority.

(a) Irrespective of whether the air carrier has made arrangements with any other person for the performance of maintenance and inspection functions, each air carrier shall have the primary responsibility for the airworthiness of its airplanes and required equipment.

(b) An air carrier may perform maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness and inspection program and its maintenance manual. In addition, an air carrier may perform these functions for another air carrier as provided in the continuous airworthiness maintenance and inspection program and maintenance manual of the other air carrier.

(c) An air carrier may approve any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after maintenance, preventive maintenance, or alterations that it performed under paragraph (b) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.

PART 41—CERTIFICATION AND OPERATION RULES FOR CERTIFIED ROUTE AIR CARRIERS ENGAGING IN OVERSEAS AND FOREIGN AIR TRANSPORTATION WITHIN HAWAII AND ALASKA

3. By amending § 41.240 of Part 41 to read as follows:

§ 41.240 Maintenance responsibility and authority.

(a) Irrespective of whether the air carrier has made arrangements with any other person for the performance of maintenance and inspection functions, each air carrier shall have the primary

responsibility for the airworthiness of its airplanes and required equipment.

(b) An air carrier may perform maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness and inspection program and its maintenance manual. In addition, an air carrier may perform these functions for another air carrier as provided in the continuous airworthiness maintenance and inspection program and maintenance manual of the other air carrier.

(c) An air carrier may approve any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after maintenance, preventive maintenance, or alterations that it performed under paragraph (b) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.

PART 42—AIRCRAFT CERTIFICATION AND OPERATION RULES FOR SUPPLEMENTAL AIR CARRIERS, COMMERCIAL OPERATORS USING LARGE AIRCRAFT, AND CERTIFIED ROUTE AIR CARRIERS ENGAGING IN CHARTER FLIGHTS OR OTHER SPECIAL SERVICES

4. By amending § 42.240 of Part 42 to read as follows:

§ 42.240 Maintenance responsibility and authority.

(a) Irrespective of whether the operator has made arrangements with any other person for the performance of maintenance and inspection functions, each operator shall have the primary responsibility for the airworthiness of its airplanes and required equipment.

(b) An operator may perform maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness and inspection program and its maintenance manual. In addition, an air carrier may perform these functions for another air carrier as provided in the continuous airworthiness maintenance and inspection program and maintenance manual of the other air carrier.

(c) An operator may approve any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after maintenance, preventive maintenance, or alterations that it performed under paragraph (b) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.

PART 46—SCHEDULED AIR CARRIER HELICOPTER CERTIFICATION AND OPERATION RULES

5. By amending § 46.240 of Part 46 to read as follows:

§ 46.240 Maintenance responsibility and authority.

(a) Irrespective of whether the air carrier has made arrangements with any

other person for the performance of maintenance and inspection functions, each air carrier shall have the primary responsibility for the airworthiness of its airplanes and required equipment.

(b) An air carrier may perform maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness and inspection program and its maintenance manual. In addition, an air carrier may perform these functions for another air carrier as provided in the continuous airworthiness maintenance and inspection program and maintenance manual of the other air carrier.

(c) An air carrier may approve any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after maintenance, preventive maintenance, or alterations that it performed under paragraph (b) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.

PART 65—CERTIFICATION: AIRMEN OTHER THAN FLIGHT CREWMEMBERS [NEW]

6. By amending the first sentence of § 65.81(a) of Part 65 [New] to read as follows:

§ 65.81 General privileges and limitations.

(a) A certificated mechanic may perform or supervise the maintenance or alteration of an aircraft or appliance, or a part thereof, for which he is rated (but excluding major repairs to, and major alterations of, propellers, and any repair to, or alteration of, instruments), and may perform additional duties in accordance with §§ 65.85, 65.87, and 65.95.

7. By amending § 65.95(a) (1) of Part 65 [New] to read as follows:

§ 65.95 Inspection authorization: privileges and limitations.

(a) The holder of an inspection authorization may—

(1) Inspect and approve for return to service any aircraft or related part or appliance (except aircraft operated under Part _____, _____, or _____ of this chapter (present Part 40, 41, or 46) or large aircraft operated under Part _____ of this chapter (present Part 42)), after a major repair or major alteration to it in accordance with Part 43 [New] of this chapter, if the work was done in accordance with technical data approved by the Administrator; and

PART 91—GENERAL OPERATION AND FLIGHT RULES [NEW]

8. By amending § 91.171 of Part 91 [New] as follows:

By amending subdivision (a) (2) (ii), by redesignating present paragraph (b) as paragraph (c) and inserting a new paragraph (b), and by revising the redesignated paragraph (c) to read as follows:

§ 91.171 Progressive inspection.

- (a)
- (2)

(ii) An inspection schedule, specifying the intervals in hours or days when routine and detailed inspections will be performed and including instructions for exceeding an inspection interval by not more than 10 hours while en route and for changing an inspection interval because of service experience;

(b) The frequency and detail of the progressive inspection shall provide for the complete inspection of the aircraft within each 12 calendar months and be consistent with the manufacturer's recommendations, field service experience, and the kind of operation in which the aircraft is engaged. The progressive inspection schedule must insure that the aircraft at all times will be airworthy and will conform to all applicable FAA aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data.

(c) If the progressive inspection is discontinued, the owner or operator shall immediately notify the local General Aviation District Office, in writing, of the discontinuance. After that discontinuance, the first periodic inspection under § 91.169(a) is due within 12 calendar months after the last complete inspection of the aircraft under the progressive inspection. The 100-hour inspection under § 91.169(b) is due within 100 hours after that complete inspection. A complete inspection of the aircraft, for the purpose of determining when the periodic and 100-hour inspections are due, will require a detailed inspection of the aircraft and all its components in accordance with the progressive inspection. A routine inspection of the aircraft and a detailed inspection of several components is not considered to be a complete inspection.

PART 145—REPAIR STATIONS [NEW]

§ 145.51 [amended]

9. By revising the last sentence of § 145.51 of Part 145 [New] to read as follows: "However, a certificated repair station may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major alteration unless the work was done in accordance with technical data approved by the Administrator."

PART 18—MAINTENANCE, REPAIR, AND ALTERATION OF AIRFRAMES, POWERPLANTS, PROPELLERS AND APPLIANCES

10. By deleting Part 18.

(Secs. 313(a), 601, 602, 603, 604, and 605 of the Federal Aviation Act of 1958; 49 U.S.C. 1354(a), 1421, 1422, 1423, 1424, 1425)

11. By adding a Part 43 [New] reading as follows:

PART 43—MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING, AND ALTERATION

Sec. 43.1 Applicability.

- Sec. 43.3 Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.
- 43.5 Return to service after maintenance, preventive maintenance, rebuilding, or alteration.
- 43.7 Persons authorized to approve aircraft, airframes, aircraft engines, propellers, and appliances for return to service after maintenance, preventive maintenance, rebuilding, or alteration.
- 43.9 Content, form and disposition of maintenance, rebuilding, and alteration records (except 100-hour, periodic, and progressive inspections).
- 43.11 Content, form, and disposition of periodic, 100-hour, and progressive inspection records.
- 43.13 Performance rules (general).
- 43.15 Additional performance rules for 100-hour, periodic, and progressive inspections.
- Appendix A—Major alterations, major repairs, and preventive maintenance
- Appendix B—Recording of major repairs and major alterations
- Appendix C—Recording of periodic and progressive inspections
- Appendix D—Scope and detail of items (as applicable to the particular aircraft) to be included in periodic and 100-hour inspections

AUTHORITY: The provisions of this Part 43 [New] issued under secs. 313(a), 601, 602, 603, 604, and 605 of the Federal Aviation Act of 1958; 49 U.S.C. 1354(a), 1421, 1422, 1423, 1424, 1425.

§ 43.1 Applicability.

(a) Except as provided in paragraph (b) of this section, this part prescribes rules governing the maintenance, preventive maintenance, rebuilding, and alteration of any—

- (1) Aircraft having a U.S. airworthiness certificate; and
- (2) Airframe, aircraft engine, propeller, or appliance of such an aircraft.

(b) This part does not apply to any aircraft for which an experimental airworthiness certificate has been issued, unless a different kind of airworthiness certificate had previously been issued for that aircraft.

§ 43.3 Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.

(a) Except as provided in this section, no person may maintain, rebuild, alter, or perform preventive maintenance on an aircraft, airframe, aircraft engine, propeller, or appliance to which this part applies. Those items, the performance of which is a major alteration, a major repair, or preventive maintenance, are listed in Appendix A.

(b) The holder of a mechanic certificate may perform maintenance, preventive maintenance, and alterations as provided in Part 65 [New] of this chapter.

(c) The holder of a repairman certificate may perform maintenance and preventive maintenance as provided in Part 65 [New] of this chapter.

(d) A person working under the supervision of a holder of a mechanic or repairman certificate may perform the maintenance, preventive maintenance, and alterations that his supervisor is authorized to perform, if the supervisor

personally observes the work being done to the extent necessary to ensure that it is being done properly and if the supervisor is readily available, in person, for consultation. However, this paragraph does not authorize the performance of 100-hour or periodic inspections, nor inspections performed after a major repair or alteration.

(e) The holder of a repair station certificate may perform maintenance, preventive maintenance, and alterations as provided in Part 145 [New] of this chapter.

(f) The holder of an air carrier certificate may perform maintenance, preventive maintenance, and alterations as provided in Part 40, 41, 42, or 46 of this chapter, as applicable.

(g) The holder of a commercial operator certificate issued under Part 42 of this chapter may perform maintenance, preventive maintenance, and alterations as provided in that part.

(h) The holder of a pilot certificate issued under Part 61 [New] of this chapter may perform preventive maintenance on any aircraft owned or operated by him that is not used in air carrier service.

(i) A manufacturer may rebuild or alter products manufactured by him, for which he holds a type or production certificate or which he manufactured in accordance with a Technical Standard Order or Product and Process Specification issued by the Administrator. In addition, he may perform 100 hour, periodic, and progressive inspections on aircraft manufactured by him, while operating under a production certificate or under an approved production inspection system for such aircraft.

§ 43.5 Return to service after maintenance, preventive maintenance, rebuilding, or alteration.

(a) No person may return to service any aircraft, airframe, aircraft engine, propeller, or appliance, that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless—

(1) It has been approved for return to service by a person authorized under § 43.7;

(2) The maintenance record entry required by § 43.9 has been made;

(3) The repair or alteration form authorized by or furnished by the Administrator has been executed in a manner prescribed by the Administrator; and

(4) If a repair or an alteration results in any change in the aircraft operating limitations or flight data contained in the approved aircraft flight manual, those operating limitations or flight data are appropriately revised and set forth as prescribed in § 91.31 [New] of this chapter.

(b) This section does not apply to preventive maintenance performed by a certificated pilot under § 43.3(h).

§ 43.7 Persons authorized to approve aircraft, airframes, aircraft engines, propellers, and appliances for return to service after maintenance, preventive maintenance, rebuilding, or alteration.

(a) Except as provided in this section, no person, other than the Administrator, may approve any aircraft, airframe, air-

craft engine, propeller, or appliance for return to service after it has undergone maintenance, preventive maintenance, rebuilding, or alteration.

(b) The holder of a mechanic certificate or an inspection authorization may approve an aircraft, airframe, aircraft engine, propeller, or appliance for return to service as provided in Part 65 [New] of this chapter.

(c) The holder of a repair station certificate may approve an aircraft, airframe, aircraft engine, propeller, or appliance for return to service as provided in Part 145 [New] of this chapter.

(d) A manufacturer may approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance that he has worked on under § 43.3(i). However, except for minor alterations, the work must have been done in accordance with technical data approved by the Administrator.

(e) The holder of an air carrier certificate may approve an aircraft, airframe, aircraft engine, propeller, or appliance for return to service as provided in Part 40, 41, 42, or 46 of this chapter, as applicable.

(f) The holder of a commercial operator certificate issued under Part 42 of this chapter may approve an aircraft, airframe, aircraft engine, propeller, or appliance for return to service as provided in that part.

§ 43.9 Content, form and disposition of maintenance, preventive maintenance, rebuilding, and alteration records (except 100-hour, periodic, and progressive inspections).

(a) *Maintenance record entries.* Except as provided in paragraphs (b) and (c) of this section, each person who maintains, rebuilds, alters, or performs preventive maintenance on an aircraft, airframe, aircraft engine, propeller, or appliance shall make an entry in the permanent maintenance record of that equipment containing the following information:

(1) A description (or reference to data acceptable to the Administrator) of the work performed.

(2) The date of completion of the work performed.

(3) The name of the person performing the work.

(4) If the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service, the signature (and if a certificated mechanic, the certificate number) of the person who approved it.

In addition to the entry required by this paragraph, major repairs and major alterations shall be entered on a form, and the form disposed of, in the manner prescribed in Appendix B, by the person performing the work.

(b) *Special provisions for certificated air carrier and commercial operator records.* Paragraph (a) of this section does not apply to maintenance, preventive maintenance, or alterations performed on aircraft operated by a certificated air carrier or commercial operator that is required by its operating certificate or by approved operations specifications to provide for a continuous airworthiness maintenance and inspection program, if

a suitable system of recording maintenance and alteration is used that includes the information required by paragraph 9(a) of this section. In addition, the registered owner or operator of the aircraft shall—

(1) Keep all records of major structural repairs and major alterations until the aircraft is sold, transferred, or retired;

(2) Keep all records of maintenance for one year from the date of approval for return to service of the aircraft, airframe, aircraft engine, propeller, appliance, or component thereof, to which the record pertains;

(3) Keep all maintenance records of the last complete overhaul cycle for each aircraft, airframe, aircraft engine, propeller, appliance, or component thereof, until that aircraft is sold, transferred, or retired;

(4) Keep all records of the results of x-rays, and other special tests specified by the Administrator, relating to airframes, aircraft engines, propellers, appliances, or parts thereof, designated as critical by the Administrator, until that airframe, aircraft engine, propeller, or appliance is sold, transferred, or retired; and

(5) In addition:

(i) If the aircraft, or an airframe, aircraft engine, propeller, appliance, or part thereof, designated as critical by the Administrator, is retired, keep the particular records for one year after cancellation of the registration certificate, or if not registered, for one year from the date of retirement;

(ii) For records of major structural repairs and major alterations, if the aircraft is retired, keep the records for one year after cancellation of the registration certificate; and

(iii) If an aircraft, airframe, aircraft engine, propeller, or appliance is sold or transferred, give the records required to be kept under this section to the new owner or operator.

(c) This section does not apply to persons performing the periodic, 100-hour, and progressive inspections required by Part 91 [New] of this chapter or to certificated pilots performing preventive maintenance under § 43.3(h).

§ 43.11 Content, form, and disposition of periodic, 100-hour, and progressive inspection records.

(a) *Maintenance record entries.* The person approving or disapproving for return to service an aircraft, airframe, aircraft engine, propeller, or appliance after a periodic, 100-hour, or progressive inspection required by Part 91 [New] of this chapter shall make an entry in the permanent maintenance record of that equipment, containing the following information:

(1) The type of inspection (and for progressive inspections, a brief description of the extent of the inspection).

(2) The date of the inspection and aircraft time in service.

(3) The signature (and if a certificated mechanic, the certificate number) of the person approving or disapproving for return to service, the aircraft, airframe, aircraft engine, propeller, or appliance.

(4) For periodic or 100-hour inspections if the aircraft is approved for return to service, the following or a similarly worded statement—"I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition".

(5) For periodic inspections, if the aircraft is not approved for return to service because of needed maintenance, non-compliance with applicable specifications, airworthiness directives or other approved data, the following or a similarly worded statement—"I certify that this aircraft has been inspected in accordance with a periodic inspection and a list of discrepancies and unairworthy items dated (date) has been provided for the aircraft owner or lessee".

(6) For progressive inspections, the following or a similarly worded statement—"I certify that in accordance with a progressive inspection program, a routine inspection of (identify whether aircraft, or components) and a detailed inspection of (identify components) were performed in accordance with a progressive inspection and the aircraft is approved for return to service".

(b) **Additional recording requirements.** Each person performing a periodic or progressive inspection shall complete the form and dispose of it as prescribed in Appendix C. In addition, if the person performing a periodic inspection finds that the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which airworthiness depends, he shall give the owner or lessee a signed and dated copy of a list of discrepancies.

§ 43.13 Performance rules (general).

(a) Each person maintaining or altering, or performing preventive maintenance, shall use methods, techniques, and practices acceptable to the Administrator. He shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. If special equipment or test apparatus is recommended by the manufacturer involved, he must use that equipment or apparatus or its equivalent acceptable to the Administrator.

(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).

(c) **Special provisions for air carriers and commercial operators.** Unless otherwise notified by the Administrator, the methods, techniques, and practices contained in the maintenance manual or the maintenance part of the air carrier manual of a certificated air carrier or commercial operator (that is required by its operating certificate or approved operating specifications to provide a continuous airworthiness maintenance and

inspection program) constitute acceptable means of compliance with this section.

§ 43.15 Additional performance rules for 100-hour, periodic, and progressive inspections.

(a) **General.** Each person performing a 100-hour, periodic, or progressive inspection required by Part 91 [New] of this chapter shall perform those inspections in such a manner as to determine whether the aircraft concerned meets all applicable airworthiness requirements.

(b) **Rotorcraft.** Each person performing a 100-hour, periodic, or progressive inspection of a rotorcraft shall inspect the following systems in accordance with the maintenance manual of the manufacturer concerned:

(1) The drive shafts or similar systems.

(2) The main rotor transmission gear box for obvious defects.

(3) The main rotor and center section (or the equivalent area).

(4) The auxiliary rotor on helicopters.

(c) **Periodic and 100-hour inspections.**

(1) Each person performing a periodic or 100-hour inspection shall use a checklist while performing the inspection. The checklist may be of the person's own design, one provided by the manufacturer of the equipment being inspected, or one obtained from another source. This checklist must include the scope and detail of the items contained in Appendix D to this part and paragraph (b) of this section.

(2) Each person approving an aircraft for return to service after a periodic or 100-hour inspection shall, before that approval, run the aircraft engine or engines to determine satisfactory performance, in accordance with the manufacturer's recommendations, of—

(i) Power output (static and idle r.p.m.);

(ii) Magnetos;

(iii) Fuel and oil pressure; and

(iv) Cylinder and oil temperature.

(d) **Progressive inspection.** (1) Each person performing a progressive inspection shall, at the start of a progressive inspection system, inspect the aircraft completely. After this initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule. Routine inspections consist of visual examination or check of the appliances, the aircraft, and its components and systems, insofar as practicable without disassembly. Detailed inspections consist of a thorough examination of the appliances, the aircraft, and its components and systems, with such disassembly as is necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered to be a detailed inspection.

(2) If the aircraft is away from the station where inspections are normally conducted, an appropriately rated mechanic, a certificated repair station, or the manufacturer of the aircraft may perform inspections in accordance with the procedures and using the forms of the person who would otherwise perform the inspection.

NOTE: The record-keeping and reporting requirements contained herein have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

DISTRIBUTION TABLE

Former section	Revised section
18.0	43.1.
18.1	Surplusage.
18.1-1	Appendix A.
18.1-2	Not a rule.
18.1-3	Appendix A.
18.1-4	Not a rule.
18.1-5	Not a rule.
18.1-6	Appendix A.
18.10	43.3.
18.10-1	43.3.
18.11 (7th through 81st words of (b) (2)).	Trfd. to Part 145 [New].
18.11 (15th through 54th words of (b) (5) (as applicable to air carriers and commercial operators)).	Trfd. to Parts 40, 41, 42, and 46.
18.11 (15th through 54th words of (b) (5) (as applicable to repair stations)).	Trfd. to Part 145 [New].
18.11 (15th through 54th words of (b) (5) (less applicability to air carriers, commercial operators, and repair stations)).	43.7.
18.11 (less 7th through 31st words of (b) (2) and 15th through 54th words of (b) (5) (as applicable to return to service requirements)).	43.5.
18.11 (less 7th through 31st words of (b) (2) and 15th through 54th words of (b) (5) and less applicability to return to service requirements).	43.7.
18.11-1	Surplusage.
18.11-2	Not a rule.
18.12 (as applicable to performance).	43.3.
18.12 (less applicability to performance).	43.7.
18.12-1	Surplusage.
18.13	43.5.
18.20 (last sentence)	43.9.
18.20 (less last sentence)	Surplusage.
18.20-1	Obsolete.
18.21	43.9.
18.21-1 (2d sentence)	43.9.
18.21-1 (less 2d sentence)	Not a rule.
18.22	43.9.
18.22-1	Appendix A.
18.22-2	Appendix A.
18.23	43.11.
18.23-1	Appendix B.
18.24	43.9.
18.30	43.13.
18.30-1	43.13.
18.30-2-18.30-17	Not a rule.
18.30-18 (paragraph (a))	43.15.
18.30-18 (paragraph (1))	Appendix D.
18.30-18 (paragraphs (1)-(ix) (less last sentence of (i), (iii), (v), and (vi))).	Appendix D.
18.30-18 (paragraphs (1), (iii), (v), and (vi) (last sentence)).	43.15.
18.30-18 (paragraph (x))	43.15.
18.30-18 (paragraphs (xi), (a), and (b)).	43.11.
18.30-19(a)	Not a rule.
18.30-19(b) (less last 2 sentences).	43.15.
18.30-19(b) (last 2 sentences).	Trfd. to Part 91 [New].
18.30-19(c)	Trfd. to Part 91 [New].
18.30-19(d)	43.15.
18.30-19 (less (a)-(d))	43.11.
18.30-20	Obsolete.
18.30-21	Surplusage.

DISTRIBUTION TABLE—Continued

Former section	Revised section
18.30-22	Not a rule.
Appendix A	Not a rule.
Appendix B	Not a rule.
Appendix C	Not a rule.
Appendix D	Not a rule.

APPENDIX A—MAJOR ALTERATIONS, MAJOR REPAIRS, AND PREVENTIVE MAINTENANCE

(a) *Major alterations*—(1) *Airframe major alterations*. Alterations of the following parts and alterations of the following types, when not listed in the aircraft specifications issued by the FAA, are airframe major alterations:

- (i) Wings.
- (ii) Tail surfaces.
- (iii) Fuselage.
- (iv) Engine mounts.
- (v) Control system.
- (vi) Landing gear.
- (vii) Hull or floats.
- (viii) Elements of an airframe including spars, ribs, fittings, shock absorbers, bracing, cowlings, fairings, and balance weights.
- (ix) Hydraulic and electrical actuating system of components.
- (x) Rotor blades.
- (xi) Changes to the empty weight or empty balance which result in an increase in the maximum certificated weight or center of gravity limits of the aircraft.
- (xii) Changes to the basic design of the fuel, oil, cooling, heating, cabin pressurization, electrical, hydraulic, de-icing, or exhaust systems.
- (xiii) Changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics.

(2) *Powerplant major alterations*. The following alterations of a powerplant when not listed in the engine specifications issued by the FAA, are powerplant major alterations.

- (i) Conversion of an aircraft engine from one approved model to another, involving any changes in compression ratio, propeller reduction gear, impeller gear ratios or the substitution of major engine parts which requires extensive rework and testing of the engine.
- (ii) Changes to the engine by replacing aircraft engine structural parts with parts not supplied by the original manufacturer or parts not specifically approved by the Administrator.
- (iii) Installation of an accessory which is not approved for the engine.
- (iv) Removal of accessories that are listed as required equipment on the aircraft or engine specification.
- (v) Installation of structural parts other than the type of parts approved for the installation.
- (vi) Conversions of any sort for the purpose of using fuel of a rating or grade other than that listed in the engine specifications.

(3) *Propeller major alterations*. The following alterations of a propeller when not authorized in the propeller specifications issued by the FAA are propeller major alterations:

- (i) Changes in blade design.
- (ii) Changes in hub design.
- (iii) Changes in the governor or control design.
- (iv) Installation of a propeller governor or feathering system.
- (v) Installation of propeller de-icing system.
- (vi) Installation of parts not approved for the propeller.

(4) *Appliance major alterations*. Alterations of the basic design not made in accordance with recommendations of the appliance manufacturer or in accordance with an FAA Airworthiness Directive are appliance major alterations. In addition, changes in the basic design of radio communication and

navigation equipment approved under type certification or a Technical Standard Order, that have an effect on frequency stability, noise level, sensitivity, selectivity, distortion, spurious radiation, AVC characteristics, or ability to meet environmental test conditions and other changes that have an effect on the performance of the equipment are also major alterations.

(b) *Major repairs*—(1) *Airframe major repairs*. Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs.

- (i) Box beams.
- (ii) Monocoque or semimonocoque wings or control surfaces.
- (iii) Wing stringers or chord members.
- (iv) Spars.
- (v) Spar flanges.
- (vi) Members of truss-type beams.
- (vii) Thin sheet webs of beams.
- (viii) Keel and chine members of boat hulls or floats.
- (ix) Corrugated sheet compression members which act as flange material of wings or tail surfaces.
- (x) Wing main ribs and compression members.
- (xi) Wing or tail surface brace struts.
- (xii) Engine mounts.
- (xiii) Fuselage longerons.
- (xiv) Members of the side truss, horizontal truss, or bulkheads.
- (xv) Main seat support braces and brackets.

- (xvi) Landing gear brace struts.
- (xvii) Axles.
- (xviii) Wheels.
- (xix) Skis, and ski pedestals.
- (xx) Parts of the control system such as control columns, pedals, shafts, brackets, or horns.
- (xxi) Repairs involving the substitution of material.

(xxii) The repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction.

- (xxiii) The repair of portions of skin sheets by making additional seams.
- (xxiv) The splicing of skin sheets.
- (xxv) The repair of three or more adjacent wing or control surface ribs or the leading edge of wings and control surfaces, between such adjacent ribs.

(xxvi) Repair of fabric covering involving an area greater than that required to repair two adjacent ribs.

(xxvii) Replacement of fabric on fabric covered parts such as wings, fuselages, stabilizers, and control surfaces.

(xxviii) Repairing, including rebotomming, of removable or integral fuel tanks and oil tanks.

(2) *Powerplant major repairs*. Repairs of the following parts of an engine and repairs of the following types, are powerplant major repairs:

- (i) Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger.
- (ii) Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing.
- (iii) Special repairs to structural engine parts by welding, plating, metalizing, or other methods.

(3) *Propeller major repairs*. Repairs of the following types to a propeller are propeller major repairs:

- (i) Any repairs to, or straightening of steel blades.
- (ii) Repairing or machining of steel hubs.
- (iii) Shortening of blades.
- (iv) Retipping of wood propellers.

(v) Replacement of outer laminations on fixed pitch wood propellers.

(vi) Repairing elongated bolt holes in the hub of fixed pitch wood propellers.

(vii) Inlay work on wood blades.

(viii) Repairs to composition blades.

(ix) Replacement of tip fabric.

(x) Replacement of plastic covering.

(xi) Repair of propeller governors.

(xii) Overhaul of controllable pitch propellers.

(xiii) Repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminum blades.

(xiv) The repair or replacement of internal elements of blades.

(4) *Appliance major repairs*. Repairs of the following types to appliances are appliance major repairs:

- (i) Repairs to instruments.
- (ii) Adjusting and calibrating VOR, ILS, and DME equipment.
- (iii) Rewinding the field coil of an electrical accessory.
- (iv) Complete disassembly of complex hydraulic power valves.
- (v) Overhaul of pressure type carburetors, and pressure type fuel, oil, and hydraulic pumps.

(c) *Preventive maintenance*. Work of the following type is preventive maintenance:

- (1) Removal, installation, and repair of landing gear tires.
- (2) Replacing elastic shock absorber cords on landing gear.

(3) Servicing landing gear shock struts by adding oil, air, or both.

(4) Servicing landing gear wheel bearings, such as cleaning and greasing.

(5) Replacing defective safety wiring or cotter keys.

(6) Lubrication not requiring disassembly other than removal of nonstructural items such as cover plates, cowlings, and fairings.

(7) Making simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces.

(8) Replenishing hydraulic fluid in the hydraulic reservoir.

(9) Refinishing decorative coating of fuselage, wings, tail group surfaces (excluding balanced control surfaces), fairings, cowling, landing gear, cabin, or cockpit interior when removal or disassembly of any primary structure or operating system is not required.

(10) Applying preservative or protective material to components where no disassembly of any primary structure or operating system is involved and where such coating is not prohibited or is not contrary to good practices.

(11) Repairing upholstery and decorative furnishings of the cabin or cockpit interior when the repairing does not require disassembly of any primary structure or operating system or interfere with an operating system or affect primary structure of the aircraft.

(12) Making small simple repairs to fairings, nonstructural cover plates, cowlings, and small patches and reinforcements not changing the contour so as to interfere with proper air flow.

(13) Replacing side windows where that work does not interfere with the structure or any operating system such as controls, electrical equipment, etc.

(14) Replacing safety belts.

(15) Replacing seats or seat parts with replacement parts approved for the aircraft, not involving disassembly of any primary structure or operating system.

(16) Trouble shooting and repairing broken circuits in landing light wiring circuits.

(17) Replacing bulbs, reflectors, and lenses of position and landing lights.

(18) Replacing wheels and skis where no weight and balance computation is involved.

(19) Replacing any cowling not requiring removal of the propeller or disconnection of flight controls.

(20) Replacing or cleaning spark plugs and setting of spark plug gap clearance.

(21) Replacing any hose connection except hydraulic connections.

(22) Replacing prefabricated fuel lines.

(23) Cleaning fuel and oil strainers.

(24) Replacing batteries and checking fluid level and specific gravity.

(25) Removing and installing glider wings and tail surfaces that are specifically designed for quick removal and installation and when such removal and installation can be accomplished by the pilot.

APPENDIX B—RECORDING OF MAJOR REPAIRS AND MAJOR ALTERATIONS

(a) Except as provided in paragraph (b), each person performing a major repair or major alteration shall—

(1) Execute FAA Form 337 at least in duplicate;

(2) Give a signed copy of that form to the aircraft owner; and

(3) Forward a copy of that form to the local Flight Standards District Office within 48 hours after the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service.

(b) For major repairs made in accordance with a manual or specification acceptable to the Administrator, a certificated repair station may, in place of the requirements of paragraph (a)—

(1) Use the customer's work order upon which the repair is recorded;

(2) Give the aircraft owner a signed copy of the work order and retain a duplicate copy for at least two years from the date of approval for return to service of the aircraft, airframe, aircraft engine, propeller, or appliance;

(3) Give the aircraft owner a maintenance release signed by an authorized representative of the repair station and incorporating the following information:

(i) Identity of the aircraft, airframe, aircraft engine, propeller, or appliance.

(ii) If an aircraft, the make, model, serial number, nationality and registration marks, and location of the repaired area.

(iii) If an airframe, aircraft engine, propeller, or appliance, give the manufacturer's name, name of the part, model, and serial numbers (if any); and

(4) Include the following or a similarly worded statement—

"The aircraft, airframe, aircraft engine, propeller, or appliance identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Agency and is approved for return to service.

Pertinent details of the repair are on file at this repair station under Order No. -----,

Date -----

Signed -----
(For signature of authorized representative)

(Repair station name) (Certificate No.)

(Address)

APPENDIX C—RECORDING OF PERIODIC AND PROGRESSIVE INSPECTIONS

(a) Each person performing a periodic or progressive inspection shall execute FAA Form 3350, Aircraft Use and Inspection Report.

(b) Each person performing a periodic inspection shall—

(1) Send the form to the local FAA District Office within 48 hours after the aircraft is approved for return to service; or

(2) If the aircraft is not approved for return to service, send the form and the list of discrepancies required by § 43.11(b) to the local FAA District Office, within 48 hours after completing the inspection.

(c) For progressive inspections, each person performing a progressive inspection shall—

(1) Send the form to the local FAA District Office within 48 hours after completing the first complete inspection of the aircraft (upon beginning a progressive inspection system) and thereafter once in January of each year; or

(2) If a progressive inspection system is discontinued for a particular aircraft, forward the form with the word "Discontinued" written in over the box preceding "progressive inspection", within 48 hours after the discontinuance.

APPENDIX D—SCOPE AND DETAIL OF ITEMS (AS APPLICABLE TO THE PARTICULAR AIRCRAFT) TO BE INCLUDED IN PERIODIC AND 100-HOUR INSPECTIONS

(a) Each person performing a periodic or 100-hour inspection shall, before that inspection, remove or open all necessary inspection plates, access doors, fairing, and cowling. He shall thoroughly clean the aircraft and aircraft engine.

(b) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) the following components of the fuselage and hull group:

(1) Fabric and skin—for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings.

(2) Systems and components—for improper installation, apparent defects, and unsatisfactory operation.

(3) Envelope, gas bags, ballast tanks, and related parts—for poor condition.

(c) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) the following components of the cabin and cockpit group:

(1) Generally—for uncleanness and loose equipment that might foul the controls.

(2) Seats and safety belts—for poor condition and apparent defects.

(3) Windows and windshields—for deterioration and breakage.

(4) Instruments—for poor condition, mounting, marking, and (where practicable) improper operation.

(5) Flight and engine controls—for improper installation and improper operation.

(6) Batteries—for improper installation and improper charge.

(7) All systems—for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment.

(d) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) components of the engine and nacelle group as follows:

(1) Engine section—for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.

(2) Studs and nuts—for improper torquing and obvious defects.

(3) Internal engine—for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.

(4) Engine mount—for cracks, looseness of mounting, and looseness of engine to mount.

(5) Flexible vibration dampeners—for poor condition and deterioration.

(6) Engine controls—for defects, improper travel, and improper safetyming.

(7) Lines, hoses, and clamps—for leaks, improper condition and looseness.

(8) Exhaust stacks—for cracks, defects, and improper attachment.

(9) Accessories—for apparent defects in security of mounting.

(10) All systems—for improper installation, poor general condition, defects, and insecure attachment.

(11) Cowling—for cracks, and defects.

(e) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) the following components of the landing gear group:

(1) All units—for poor condition and insecurity of attachment.

(2) Shock absorbing devices—for improper oleo fluid level.

(3) Linkages, trusses, and members—for undue or excessive wear fatigue, and distortion.

(4) Retracting and locking mechanism—for improper operation.

(5) Hydraulic lines—for leakage.

(6) Electrical system—for chafing and improper operation of switches.

(7) Wheels—for cracks, defects, and condition of bearings.

(8) Tires—for wear and cuts.

(9) Brakes—for improper adjustment.

(10) Floats and skis—for insecure attachment and obvious or apparent defects.

(f) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) all components of the wing and center section assembly for poor general condition, fabric or skin deterioration, distortion, evidence of failure, and insecurity of attachment.

(g) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) all components and systems that make up the complete empennage assembly for poor general condition, fabric or skin deterioration, distortion, evidence of failure, insecure attachment, improper component installation, and improper component operation.

(h) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) the following components of the propeller group:

(1) Propeller assembly—for cracks, nicks, binds, and oil leakage.

(2) Bolts—for improper torquing and lack of safetyming.

(3) Anti-icing devices—for improper operations and obvious defects.

(4) Control mechanisms—for improper operation, insecure mounting, and restricted travel.

(i) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) the following components of the radio group:

(1) Radio and electronic equipment—for improper installation and insecure mounting.

(2) Wiring and conduits—for improper routing, insecure mounting, and obvious defects.

(3) Bonding and shielding—for improper installation and poor condition.

(4) Antenna including trailing antenna—for poor condition, insecure mounting, and improper operation.

(j) Each person performing a periodic or 100-hour inspection shall inspect (where applicable) each installed miscellaneous item that is not otherwise covered by this listing for improper installation and improper operation.

Issued in Washington, D.C., on April 15, 1964.

N. E. HALABY,
Administrator.

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