CIVIL AIR REGULATIONS

CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

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

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As amended to July 17, 1956

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TITLE 14—CIVIL AVIATION

Chapter I—Civil Aeronautics Board

Subchapter A—Civil Air Regulations

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

REVISION OF PART

Because of the number of outstanding amendments to Part 18, it has been decided to issue a revision of this part incorporating all amendments thereto in effect on July 17, 1956. Attention is called also to the following minor changes which have been made:

(1) All definitions in § 18.1 have been arranged alphabetically, without subsection numbers. Also, minor editorial changes have been made in some of the definitions for the purpose of obtaining uniformity in language or clarification of intent.

(2) All footnotes have been changed to notes and follow the sections to which they apply.

Since the changes effected by this revision are minor in nature and impose no additional burden on any person, notice and public procedure hereon are unnecessary and the revised part may be made effective on less than 30 days' notice.

In consideration of the foregoing, the Civil Aeronautics Board hereby revises Part 18 of the Civil Air Regulations (14 CFR Part 18, as amended) as attached hereto, effective on July 17, 1956.

By the Civil Aeronautics Board.

[SEAL] M. C. MULLIGAN,
Secretary.

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18.30 Standard of performance; general.

AUTHORITY: §§ 18.0 to 18.30 issued under sec. 205, 52 Stat. 984; 49 U. S. C. 425. Interpret or apply sec. 601, 52 Stat. 1007, as amended, sec. 605, 52 Stat. 1010; 49 U. S. C. 551, 554.

APPLICABILITY AND DEFINITIONS

§ 18.0 *Applicability of this part.* This part establishes rules for the performance of maintenance, repair, and alteration of aircraft for which airworthiness certificates have been issued by the Administrator, or any component thereof.

NOTE: The Administrator publishes Civil Aeronautics Manual 18 which lists operations considered to be maintenance, preventive maintenance, minor and major repairs and alterations, and progressive and 100-hour inspections, and sets forth acceptable procedures, methods, and practices under the provisions of this part. This manual may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

§ 18.1 *Definitions.* As used in this part terms are defined as follows:

Aircraft. An aircraft is any contrivance now known or hereafter invented, used, or designed for navigation of or flight in the air, including airframe, powerplant, propeller, and appliances.

Aircraft engine. An aircraft engine is an engine used, or intended to be used, for propulsion of aircraft, and includes all parts, appurtenances, and accessories thereof other than propellers.

Airframe. Airframe means any and all kinds of fuselages, booms, nacelles, cowlings, fairings, empennages, airfoil surfaces, and landing gear, and all parts, accessories, or controls, of whatever description, appertaining thereto, but not including powerplants and propellers.

Alteration. An alteration means any appreciable change in the design of an airframe, powerplant, propeller, or appliance.

Appliances. Appliances are instruments, equipment, apparatus, parts, appurtenances, or accessories, of whatever description, which are used, or are capable of being or intended to be used, in the navigation, operation, or control of aircraft in flight (including communication equipment, electronic devices, and any other mechanism or mechanisms installed in or attached to aircraft during flight, but excluding parachutes), and which are not a part or parts of airframes, powerplants, or propellers.

Appropriately certificated air carrier. An appropriately certificated air carrier is an air carrier holding an air carrier operating certificate, and which is required, either by its operating certificate or by operations specifications approved by the Administrator, to provide for a continuous airworthiness maintenance and inspection program to be performed by the carrier in accordance with its maintenance manual.

Approved. Approved, when used either alone or as modifying such words as aircraft, airframe, powerplant, propeller, appliance, method, or technique, means approved by the Administrator of Civil Aeronautics in accordance with the applicable requirements of this subchapter.

Authorized representative of the Administrator. An authorized representative of the Administrator is any employee of the Civil Aeronautics Administrator or any private person, authorized by the Administrator to perform particular duties of the Administrator under the provisions of this part.

Certificated commercial operator. A certificated commercial operator is any person holding a commercial operator certificate as required by the provisions of Part 45 of this subchapter.

Certificated mechanic. A certificated mechanic is an individual holding a valid mechanic certificate with appropriate ratings issued by the Administrator.

Certificated repair station A certificated repair station is a facility for the maintenance, repair, and alteration of airframes, powerplants, propellers, or appliances, holding a valid repair station certificate with appropriate ratings issued by the Administrator.

Certificated repairman. A certificated repairman is an individual holding a valid repairman certificate issued in accordance with Subpart B of Part 24 of this subchapter.

Component. A component is a constituent part of an aircraft.

Instrument. An instrument is a device utilizing internal mechanism to indicate visually or aurally the attitude, altitude, performance, or operation of an aircraft or any component thereof, and shall include electronic instrumen-

tation and devices for the automatic control of navigation of the aircraft in flight.

Maintenance. Maintenance, which includes preventive maintenance, is the inspection, overhaul, repair upkeep, and preservation of airframes, powerplants, propellers, and appliances, including the replacement of parts.

Major alteration. A major alteration of an aircraft or any component thereof is:

(a) An alteration which might cause an appreciable change in its weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness, or

(b) An alteration which is not accomplished in accordance with accepted practices or cannot be performed by means of elementary operations.

Major repair. A major repair to an aircraft or any component thereof is:

(a) A repair which, if improperly accomplished, would adversely affect the structural strength, performance, flight characteristics, powerplant operation, or other qualities affecting airworthiness, or

(b) A repair which is not accomplished in accordance with accepted practices or cannot be performed by means of elementary operations.

Manufacturer. A manufacturer is any person who:

(a) Holds a type or production certificate for and manufactures an aircraft, aircraft engine, propeller, or appliance, or

(b) Manufactures an approved appliance in accordance with a specification issued by the Administrator.

Minor alteration. A minor alteration of an aircraft or any component thereof is an alteration other than a major alteration.

Minor repair. A minor repair is any repair other than a major repair.

One-hundred-hour inspection. A 100-hour inspection is an inspection of an aircraft required within each 100 hours of time in service and is a complete airworthiness inspection of such aircraft and its various components and systems in accordance with procedures prescribed by the Administrator.

Periodic inspection. A periodic inspection is an inspection of an aircraft required once each 12 calendar months and is a complete airworthiness inspection of such aircraft and its various components and systems in accordance with procedures prescribed by the Administrator.

Person. Person means any individual, firm, copartnership, corporation, company, association, joint-stock association, or body politic; and includes any trustee, receiver, assignee, or other similar representative thereof.

Powerplant. A powerplant is an aircraft engine and its component parts, and other parts necessary to properly install such engine in an aircraft, but not the propeller (if used).

Preventive maintenance. Preventive maintenance means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

NOTE: The Administrator publishes, as part of Civil Aeronautics Manual 18, the various operations constituting preventive maintenance of the several types of aircraft.

Progressive inspection. A progressive inspection is a continuing airworthiness inspection of an aircraft and its various components and systems at scheduled intervals in accordance with procedures prescribed by the Administrator.

Propeller. A propeller is a device for propelling an aircraft through the air, having blades mounted on a power-driven shaft, which when rotated produces by its action on the air a thrust approximately parallel to the longitudinal axis of the aircraft, and also includes control components normally supplied by the manufacturer of the propeller. It also includes a system of rotating airfoils which serve either to counteract the effect of the main rotor torque of a rotorcraft or to maneuver a rotorcraft about one or more of its three principal axes.

Repair. Repair means the restoration of an airframe, powerplant, propeller, or appliance to a condition for safe operation after damage or deterioration.

Time in service. Time in service, as used in computing maintenance and inspection time records, is the time from the moment an aircraft leaves the ground until it touches the ground at the end of a flight.

Type. Type is a specific classification of aircraft having the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics.

GENERAL

§ 18.10 *Persons authorized to perform maintenance, preventive maintenance, repairs, and alterations.* No person shall perform maintenance, preventive maintenance, repairs, or alterations on civil aircraft of United States registry except as provided as follows:

NOTE: The Communications Act of 1934, as amended, and the rules and regulations of the Federal Communications Commission require that all transmitter adjustments or tests during or coincident with the installation, servicing, or maintenance of a radio station licensed by the Federal Communications Commission which may affect the proper operation of such station shall be made by or under the immediate supervision and responsibility of a person holding a first- or second-class radio operator license issued by the Federal Communications Commission, either radiotelephone or radiotelegraph as may be appropriate for the class of station concerned, who shall be responsible for the proper functioning of the station equipment.

(a) A certificated mechanic or a person who works under the direct supervision of such mechanic may perform maintenance, repairs, and alterations on aircraft or aircraft components including related appliances, appropriate to his rating, but excluding major repairs and alterations to propellers and all repairs and alterations to instruments.

(b) An appropriately rated repair station may perform maintenance, repairs, and alterations on aircraft or aircraft components, including propellers and appliances, as provided in Part 52 of this subchapter.

(c) A certificated pilot may perform, on aircraft owned or operated by him, except aircraft used in air carrier service, such preventive maintenance as may be authorized by the Administrator.

(d) A manufacturer shall be subject to the requirements of paragraphs (a) and (b) of this section, except that he may rebuild or alter:

(1) Any product manufactured by him under a type or production certificate, or

(2) Any product manufactured by him and approved under the terms of a Technical Standard Order or Product and Process Specification issued by the Administrator.

(e) An appropriately certificated air carrier may perform maintenance, repairs, and alterations on aircraft or aircraft components, including propellers and appliances, as provided for in its continuous airworthiness maintenance and inspection program and its maintenance manual. It may also perform maintenance, repairs, and alterations on any aircraft or aircraft components, including propellers and appliances, owned or operated by another air carrier as provided for in the applicable continuous airworthiness maintenance and inspection program and maintenance manual of such other air carrier.

(f) A certificated commercial operator may perform maintenance, repairs, and alterations on its own aircraft or aircraft components, including propellers and appliances, as provided for in its continuous airworthiness maintenance and inspection program and its maintenance manual.

§ 18.11 *Persons authorized to approve maintenance, repairs, and alterations.*

NOTE: Section 43.21 of this subchapter requires that when an aircraft has undergone any repair or alteration which may have appreciably changed its flight characteristics or substantially affected its operation in flight, such aircraft, prior to carrying passengers, shall be test flown.

(a) *Maintenance, minor repairs, and minor alterations.* No airframe, powerplant, propeller, or appliance which has undergone maintenance, minor repair, or minor alteration may be approved and returned to service except by one of the following:

(1) An appropriately rated certificated mechanic; or

(2) An appropriately rated certificated repair station; or

(3) An appropriately certificated air carrier; or

(4) A manufacturer, if the product has been rebuilt or altered by the manufacturer under the provisions of § 18.10 (d); or

(5) A certificated commercial operator.

(b) *Major repairs and major alterations.* No airframe, powerplant, propeller, or appliance, which has undergone any major repair or major alteration shall be returned to service until such repair or alteration has been examined, inspected, and approved as airworthy by one of the following:

NOTE: A major repair or major alteration whose design has not previously been approved by the Administrator may require the submittal of technical data and/or flight tests in order to establish compliance with the applicable airworthiness provisions. Examples of such major alterations for which it would be desirable to contact a representative of the Administrator prior to accomplishment of the alteration are given in Civil Aeronautics Manual 18. See also § 1.25 of this subchapter.

(1) An authorized representative of the Administrator; or

(2) An appropriately rated certificated repair station, if the work has been performed by such repair station in accordance with a manual, specification, or other technical data approved by the Administrator; or

(3) A manufacturer, if the product has been rebuilt or altered by the manufacturer under the provisions of § 18.10 (d) and in accordance with a manual, specification, or other technical data approved by the Administrator; or

(4) An appropriately certificated air carrier, if the work has been performed by such air carrier in accordance with a manual, specification, or other technical data approved by the Administrator; or

(5) An appropriately rated certificated repair station, a manufacturer, or an appropriately certificated air carrier, if the product has been approved under the terms of a Technical Standard Order and the work is performed in accordance with data furnished by the product manufacturer which he asserts meet the terms of the Technical Standard Order; or

(6) A certificated commercial operator, if the work has been performed on aircraft listed in the operating certificate of that operator and has been performed in accordance with a manual, specification, or other technical data approved by the Administrator; or

(7) A certificated mechanic holding both airframe and powerplant ratings when authorized by the Administrator in accordance with the provisions of Part 24 of this subchapter, if the work has been performed in accordance with a manual, specification, or other technical data approved by the Administrator.

§ 18.12 *Persons authorized to perform and approve one-hundred-hour, periodic, and progressive inspections*—(a) *One-hundred-hour inspection.* No person shall perform and approve 100-hour inspections except one of the following:

(1) Certificated mechanics who together hold airframe and powerplant ratings, or a certificated mechanic holding both such ratings; or

(2) An appropriately rated certificated repair station; or

(3) The manufacturer holding the type certificate for the aircraft and who is operating under an approved production inspection system or a production certificate.

(b) *Periodic inspection.* No person shall perform and approve periodic inspections except one of the following:

(1) A certificated mechanic holding both airframe and powerplant ratings when authorized by the Administrator

(d) The signature, and if a certificated mechanic or certificated repairman the certificate number, of the person approving as airworthy the work performed in accordance with Part 24 of this subchapter; or

(2) An appropriately rated certificated repair station; or

(3) The manufacturer holding the type certificate for the aircraft and who is operating under an approved production inspection system or a production certificate.

(c) *Progressive inspection.* No person shall perform or supervise and approve progressive inspections except one of the following:

(1) A certificated mechanic holding both airframe and powerplant ratings when authorized by the Administrator in accordance with Part 24 of this subchapter; or

(2) An appropriately rated certificated repair station; or

(3) The manufacturer holding the type certificate for the aircraft and who is operating under an approved production inspection system or a production certificate.

NOTE: This section does not apply to persons engaged in the inspection and maintenance of aircraft operated in accordance with Part 40 or Part 41 of this subchapter or aircraft of more than 12,500 pounds maximum certificated take-off weight operated in accordance with the provisions of Part 42 of this subchapter.

§ 18.13 *Aircraft operating limitations.* When a major repair or major alteration results in any change in the aircraft operating limitations or data contained in the approved airplane flight manual, appropriate amendments to the aircraft operating limitations shall be made in the form and manner approved by the Administrator.

MAINTENANCE, REPAIR, AND ALTERATION RECORDS

§ 18.20 *Required records and entries.* A permanent record of every maintenance (excepting preventive maintenance), repair, rebuilding, or alteration of any airframe, powerplant, propeller, or appliance shall be maintained by the owner (or in the case of an aircraft by the registered owner) in a logbook or other permanent record satisfactory to the Administrator, which shall contain at least the information specified in § 18.21. Entries in such records shall be made or caused to be made by the individual, repair station, air carrier, or manufacturer performing the work.

§ 18.21 *Content of repair and alteration records.* The record of all maintenance, repair, rebuilding, and alteration of any airframe, powerplant, propeller, or appliance or the installation or removal of an appliance shall contain the information set forth in paragraphs (a) through (d) of this section:

(a) An adequate description of the work performed;

(b) The date of completion of the work performed;

(c) The name of the individual, repair station, manufacturer, or air carrier performing the work; and

and authorizing the return of the aircraft or component to service.

§ 18.22 *Form and disposition of major repair or major alteration records.* All major repairs and major alterations to an airframe, powerplant, propeller, or appliance shall be entered on a form acceptable to the Administrator. Such form shall be executed in duplicate and shall be disposed of in such manner as, from time to time, may be prescribed by the Administrator.

§ 18.23 *Form and disposition of periodic and progressive inspection records.* A record of periodic and progressive inspections shall be entered on a form prescribed by the Administrator. Such form shall be completed and disposed of in a manner prescribed by the Administrator.

§ 18.24 *Provisions for air carrier records.* Required records and entries may be replaced, in the case of maintenance, repairs, or alterations to appropriately certificated air carrier aircraft, by a suitable system of recording maintenance, repairs, alterations, and signatures of responsible personnel: *Provided,* That the information specified in § 18.21 is furnished.

PERFORMANCE RULES

§ 18.30 *Standard of performance; general.* All maintenance, repairs and alterations shall be accomplished in accordance with methods, techniques, and practices approved by or acceptable to the Administrator.

(a) *Maintenance and repair.* All maintenance and repair shall be accomplished in such a manner and the materials used shall be of such quality and strength that the condition of the part of the aircraft on which such work has been performed shall, with regard to aerodynamic and mechanical function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness, be at least equivalent to its original or properly altered condition.

(b) *Alterations.* All alterations shall be so designed and accomplished that the altered airframe, powerplant, propeller, or appliance will comply with the applicable airworthiness requirements for the airframe, powerplant, propeller, or appliance.

NOTE: The airworthiness requirements applicable to an alteration are normally those with which the manufacturer originally demonstrated compliance for the issuance of a type certificate. The Aircraft Specification includes a reference to that part of the Civil Air Regulations and to the category under which the original type certification was obtained. The individual parts of the airworthiness regulations specify that the provisions in effect on the date of application for approval of the alteration may be made applicable. (See §§ 3.11, 4b.11, 5.11, 6.11, 13.11, or 14.11 of this subchapter, whichever part is applicable.) More detailed information on the requirements applicable at the

time of type certification can be obtained from the Civil Aeronautics Administration.

(c) *Inspections.* One-hundred-hour, periodic, and progressive inspections shall be accomplished in accordance with procedures prescribed by the Administrator.

NOTE: Specific record or reporting requirements subsequently prescribed will be subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

[F. R. Doc. 56-5230; Filed, June 29, 1956; 8:54 a. m.]

NOTICE

Inform the Publications Section, Civil Aeronautics Board, Washington 25, D. C., that you have purchased this Part of the Civil Air Regulations and that agency will supply you with copies of amendments which have been issued since this printing. Be sure to specify the number of this part and whether you wish to receive copies of amendments which may be issued in the future.

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