CIVIL AIR REGULATIONS

PART 18—MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS[1]

As amended to August 15, 1949

CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

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AUTHORITY: §§ 18.1 to 18.20 issued under sec. 205 (a), 52 Stat. 984; 49 U. S. C. 425 (a). Interpret or apply secs. 601, 605, 52 Stat. 1007, 1010; 49 U. S. C. 551, 554.

SOURCE: §§ 18.1 to 18.20 contained in Amendment 105, Civil Air Regulations, 6 F. R. 1811.

GENERAL

§ 18.1 *Definitions.* As used in this part: (a) "Aircraft engine" means an aircraft engine approved by the Administrator.

(b) "Propeller" means a propeller approved by the Administrator.

(c) "Instrument" means an instrument installed, for other than purely experimental purposes, in a certificated aircraft.

(d) "Manufacturer" means: (1) the holder of the type certificate, or approval by the Administrator, for an aircraft, aircraft engine, or propeller, or of the current rights, under a licensing arrangement, to the benefits of such type certificate or approval, or (2) the manufacturer of a part or accessory of a certificated aircraft, or (3) the manufacturer of an instrument which is installed in a certificated aircraft: *Provided,* That such manufacturer shall have in his employ a properly certificated mechanic in direct charge of maintenance, repair, or alteration operations.

MAINTENANCE, REPAIRS, AND ALTERATIONS

§ 18.5 *Routine maintenance.* Routine maintenance is defined as simple or minor preservation operations including but not limited to the adjustment of rigging and clearances, and the replacement of small standard parts not involving complex assembly operations.

§ 18.6 *Repairs.* A repair is any operation other than routine maintenance which is required to restore an aircraft, aircraft engine, propeller, or instrument to a condition for safe operation, including the mending or replacement of damaged or deteriorated parts.

(a) *Minor repairs.* Minor repairs are elementary repair operations executed in accordance with standard practices and not within the definition of major repairs.

(b) *Major repairs.* Major repairs are complex repair operations of vital importance to the airworthiness of an aircraft, including but not limited to:

(1) Straightening, splicing, welding and similar operations when the strength of important structural members might be appreciably affected thereby.

(2) Operations requiring complicated or unconventional techniques or equipment.

§ 18.7 *Alterations.* An alteration is any appreciable change in the design of an aircraft, aircraft engine, propeller, or instrument.

(a) *Minor alteration.* A minor alteration is:

(1) An alteration having no appreciable effect on the weight, balance, structural strength, power-plant operation, flight characteristics, or other characteristics affecting the airworthiness of an aircraft; or

(2) An alteration for which specific plans and instructions have been approved by the Administrator and which can be executed by means of elementary operations.

(b) *Major alterations.* Major alterations are all alterations not within the definition of minor alterations.

RULES AND PROCEDURES FOR MAINTENANCE, REPAIRS, AND ALTERATIONS

§ 18.10 *Agencies authorized to perform maintenance, repair, and alteration operations.* Maintenance, repair, and alteration operations shall be performed only by: (a) A certificated mechanic having the proper rating or a person working under the direct supervision of such mechanic; or (b) a certificated repair station having the proper rating; or (c) the manufacturer of the aircraft or part of the aircraft to be repaired: *Provided,* That all instrument repairs and alterations and propeller major repairs and major alterations shall be performed only by a certificated repair station having the proper rating or by the instrument or propeller manufacturer.

§ 18.11 *Provision for approval of major repairs and major alterations.* No aircraft, aircraft engine, or propeller which has undergone any major repair or major alteration shall be returned to service until examined, inspected, and approved by a duly authorized representative for the Administrator unless such repair or alteration has been executed in accordance with a manual or specification approved by the Administrator,[2] and performed by a certificated repair station of the proper rating or by the manufacturer.

§ 18.12 *Flight tests.* When an aircraft or aircraft engine or propeller thereof has undergone a maintenance, minor repair, or minor alteration operation which may have changed its flight characteristics appreciably or substantially affected its operation in flight, or has undergone a major repair or major alteration, such aircraft shall, prior to carrying passengers, be test flown by a pilot having at least 200 solo hours and holding at least a private pilot certificate and appropriate rating for the aircraft to be test flown.

RECORDING OF REPAIRS AND ALTERATIONS

§ 18.15 *Minor repair and minor alteration logbook entries.* An adequate description of every minor repair or minor alteration of an aircraft, aircraft engine, or propeller shall be entered in the appropriate logbook over the signature and certificate number of the mechanic directly in charge of or performing such

[1] Civil Aeronautics Manual 18, which may be secured from the Correspondence Section, Civil Aeronautics Administration, Washington 25, D. C., describes in detail the operations which the Administrator of Civil Aeronautics considers to be routine maintenance, minor and major repairs, and minor and major alterations. It sets forth in detail repair methods, techniques, and practices which the Administrator has found acceptable in the execution of repairs in accordance with the regulations in this part. It also describes forms, scope of technical data, and records prescribed by the Administrator in accordance with this part.

[2] Such manual or specification may, for example, be issued by the manufacturer, a certificated repair station, or by the Administrator. All such manuals or specifications issued by parties other than the Administrator must be approved by him.

repair or alteration and in case a manufacturer or a certificated repair station makes said repair or alteration the appropriate logbook shall also be signed by an authorized official of such agency. The installation of an instrument in an aircraft shall be recorded in the aircraft logbook by the agency making the installation.

§ 18.16 *Major repair and major alteration records.* A repair agency performing a major repair or major alteration on an aircraft, aircraft engine, or propeller, shall execute such Repair and Alterations Forms as may be prescribed and furnished by the Administrator, and shall deliver a duplicate copy of any such Form to the owner of the aircraft and make proper entries on the appropriate page of the Aircraft Operation Record.

§ 18.17 *Provisions for air carrier records.* Logbook and aircraft operation record entries required in this part may be replaced, in the case of repairs or alterations to scheduled air carrier aircraft, by a suitable system of recording repairs, alterations, and signatures of responsible personnel.

DESIGN, TECHNIQUES, AND MATERIALS

§ 18.20 *Design, techniques, and materials.* Repairs shall be so executed, and materials of such strength and quality shall be used that the condition of the repaired aircraft, aircraft engine, propeller, or instrument shall be at least equivalent to its original or a properly altered condition in regard to aerodynamic and mechanical function, structural strength, and resistance to vibration and deterioration, and all other qualities affecting airworthiness. Alterations shall be so designed and executed that the altered aircraft, aircraft engine, propeller, or instrument will comply with the airworthiness requirements in effect when the particular model of the aircraft or part of the aircraft was originally certificated and, in addition, with particular provisions of the current airworthiness requirements rendered necessary for safe operation by the alteration.

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U. S. GOVERNMENT PRINTING OFFICE: 1949 O - 849880