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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: PREVENTIVE MAINTENANCE

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1. PURPOSE. This circular provides information concerning preventive maintenance and who may perform it.
 2. REFERENCES. FAR 43.3(h); Appendix A(c) of FAR 43; FAR Part 1, Definitions and Abbreviations; FAR 43.3, "Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations"; FAR 43.5, "Return to service after maintenance, preventive maintenance, rebuilding, or alteration"; FAR 43.9, "Content, form, and disposition of maintenance, rebuilding, and alteration records (except 100-hour, annual, and progressive inspections)"; FAR 43.13, "Performance rules (general)"; FAR 65.81, "General privileges and limitations"; FAR 65.103, "Repairman certificate: privileges and limitations"; and FAR 145.51, "Privileges of certificates."
 3. WHAT IS IT? Preventive maintenance is defined by FAR Part 1 as simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations. The type of work referred to is found in FAR 43, Appendix A(c), and for your convenience is listed here as Appendix 1.
 4. WHO MAY DO IT? FAR 43.3(h) provides that the holder of a pilot's certificate issued under Part 61 may perform preventive maintenance on any aircraft owned or operated by him that is not used in air carrier service. This means that any pilot, from student pilot to an Airline Transport pilot, may perform preventive maintenance, but only on aircraft the pilot owns or operates. The pilot must perform the work and cannot delegate it to someone else or supervise someone else doing it. However, the aircraft cannot be one that is used in air carrier service. This includes those aircraft used in air taxi operations, since an air taxi is an air carrier as defined by Part 298 of the Civil Aeronautics Board (CAB) Regulations.
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5. HOW MUST IT BE DONE? FAR 43.13 requires that preventive maintenance must be done using methods, techniques, and practices acceptable to the Administrator. Also, the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices must be used. If special equipment or test apparatus is recommended by the manufacturer involved, then that equipment or apparatus, or its equivalent, acceptable to the Administrator, must be used. The work performed must be done in such a manner and the materials used must be of such 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. Pilots should exercise caution before engaging in preventive maintenance, since many of today's aircraft are highly sophisticated and complex machines. What may appear to be a simple task may turn out to be a highly complicated operation. Therefore, pilots should consider if the intended operation is within their capability before they begin the work.
6. APPROVAL FOR RETURN TO SERVICE. FAR 43.5 specifies that:
- "(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;
 - "(b) This section does not apply to preventive maintenance performed by a certificated pilot under § 43.3(h)."
7. MAINTENANCE RECORD ENTRIES (OMB: 04-ROO18). Section 43.9, "Content, form, and disposition of maintenance, rebuilding, and alteration records (except 100-hour, annual, and progressive inspections)," states in part:
- "(a) Except as provided in paragraphs (b) and (c) of this section, each person who maintains, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, or appliance shall make an entry in the 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."

Paragraph (b) of section 43.9 states: "Each holder of an air carrier or commercial operator certificate that is required by its operating certificate or by approved operations specifications to provide for a continuous airworthiness maintenance program, shall make a record of the maintenance, rebuilding and alteration, on aircraft, airframes, aircraft engines, propellers, appliances or parts thereof, which it operates, in accordance with the provisions of Part 121 or Part 127, of this chapter as appropriate."

Paragraph (c) of section 43.9 pertains to persons performing the annual, 100-hour, and progressive inspections and is not relevant to preventive maintenance.

8. OTHER REQUIRED MAINTENANCE. FAR 91.165 states in part that "Each owner or operator of an aircraft shall . . . between required inspections, have defects repaired as prescribed in Part 43 of this chapter. In addition, he shall ensure that maintenance personnel make appropriate entries in the aircraft and maintenance records indicating the aircraft has been released to service." Also, FAR 91.163 states in part "(a) The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition . . ." and "(b) No person may perform maintenance, preventive maintenance, or alterations on an aircraft other than as prescribed in this subpart and other applicable regulations, including Part 43."

Paragraphs 6, 7, and 8 of this advisory circular clarify the inspection requirements for maintenance and preventive maintenance and the entries required by FAR 43 when it is accomplished.

9. WHEN IN DOUBT. If pilots are not absolutely certain that the work they intend to perform is preventive maintenance, they should ask for assistance. Therefore, contact your local General Aviation District Office, or Flight Standards District Office, and discuss the work beforehand. You will find that they will be glad to tell you if the work can be performed as preventive maintenance. A little time spent here could save many problems later on.

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10. ON WHAT AIRCRAFT? As stated in paragraph 4, preventive maintenance may be performed by a pilot on any aircraft that is not used in air carrier service. This means that preventive maintenance may be accomplished on airplanes, rotorcraft, gliders, and ~~lighter-than-air~~ aircraft. However, FAR 43 does not apply to an experimental aircraft unless the aircraft has had a different kind of airworthiness certificate previously issued to it.



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APPENDIX 1. EXCERPT FROM FAR 43, APPENDIX A

(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, cowlings, 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 airflow.
- (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.

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(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.