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MANDATORY

SERVICE BULLETIN

DATE: May 25, 2017

Service Bulletin No. 401A
(Supersedes Service Bulletin No.401)
Engineering Aspects are
FAA Approved

SUBJECT: Recommended Guidance After a Lightning Strike

MODELS AFFECTED: All Lycoming engine models including electronically-controlled engines

TIME OF COMPLIANCE: Anytime aircraft is struck by lightning.

REASON FOR REVISION Clarify action to be taken after a lightning strike; add action to be taken for electronically-controlled engines

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements.

Lightning strikes can cause unpredictable and severe damage to critical components of the Lycoming engine. For example, heat from the lightning strike can cause internal damage to the hardened surfaces of parts such as ball bearings, crankshaft bearing surfaces, camshaft lobes, gear teeth, etc. In addition, lightning strikes can cause electrical damage to electronically-controlled engines that may not be apparent from a visual inspection.

The information contained in this Service Bulletin is intended to provide guidance for identifying lightning strike damage to Lycoming engines, including electronically-controlled engines. However, the engine must be thoroughly evaluated and repaired by appropriate maintenance personnel before the aircraft is flown again.

Recommended Guidance for All Engine Models

After a lightning strike, if there is external evidence of electrical damage to the engine or propeller or evidence of magnetism of the engine or propeller, before the next flight, complete a visual inspection of the engine and propeller for electrical arc damage (in accordance with the airframe and propeller manufacturer's recommended procedures/guidance).

If there is evidence of arc damage, send the engine either to Lycoming Engines or an FAA authorized repair facility for an internal inspection and evaluation on whether an engine repair or overhaul is necessary.

OR

Complete the following in the field in accordance with the applicable Lycoming Engines' manual:

1. Remove, disassemble, and clean the engine.
2. Examine the engine compartment in the aircraft, the engine, external surfaces, internal parts for discoloration, cracks, and other indications of arcing and heat damage.



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NOTICE: Refer to the latest revision of Service Bulletin No. 240 which identifies certain parts that must be replaced on engine reassembly. **Do not re-install any part if it is discolored, cracked, or damaged. Replace the part with a serviceable part.**

3. Assemble the engine and complete an operational ground check, per the applicable Lycoming manual or the aircraft manufacturer's Pilot's Operating Handbook (POH), to ensure the engine is operating correctly.

Recommended Guidance for Electronically-Controlled Engine Models

1. Complete the "Recommended Guidance for All Engine Models" in this Service Bulletin.
2. Visually examine all wiring and electrical components for:
 - A. Heat damage to the harness braiding and on the engine in galleys and behind panel lights
 - B. Burnt wire, cracked insulation, evidence of arcing
 - C. Evidence of arcing or heat damage to the harness connector and airframe receptacles for the aircraft interface
 - D. Evidence of arcing or heat damage to the engine harness ground terminals
3. Review the fault codes recorded after the lightning strike for an indication of sensors affected by the lightning strike.
4. Replace all affected wiring, sensors, and electrical components.

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