FAA
Aircraft Certification Service

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: NE-06-32R1
SUBJ: Reciprocating Engine - Crankshaft **Date:** September 10, 2008

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts you, owners, operators, and certificated repair facilities that, **all Lycoming Engines (Lycoming) direct-drive reciprocating engines, including VO-360 and IVO-360; except O-320-H, O-360-E, LO-360-E, TO-360-E, LTO-360-E, and TIO-541 series engines**, must be in compliance with **Airworthiness Directive (AD) 2004-10-14** if they have had a propeller strike. The local FAA Flight Standards District Office (FSDO) may issue a Special Flight Permit (SFP) even though compliance with the AD is, "before further flight". In addition to the AD requirement, Lycoming requires engine disassembly and inspection.

Background

- Lycoming issued Mandatory Service Bulletin (MSB) 475, dated October 31, 1986, to provide the proper instructions for installing the crankshaft gear bolt located at the rear of the crankshaft.
- In 1991, the FAA issued AD 91-14-22, making sections 1 through 7 of Lycoming MSB 475A, dated July 16, 1990, mandatory, "at each engine overhaul, after a propeller strike, sudden stoppage, or whenever gear train repair is required." It also contained the words "prior to further flight" and the standard SFP paragraph.
- In June 1993 the Lycoming Direct Drive Overhaul Manual incorporated the requirements and installation instructions contained in Lycoming MSB 475C, October 31, 1986 and Supplement No. 1 to MSB 475 dated May 24, 1988.
- On March 25, 2003, the FAA published a Notice of proposed rulemaking, (NPRM) to supersede AD 91-14-22. That NPRM contained the SFP paragraph, although it should have been removed, based on the FAR 39 rule change.
- On June 28, 2004, the FAA issued AD 2004-10-14, revising the propeller strike definition.
    - This AD removed the requirements "at each engine overhaul" and "or whenever gear train repair is required" because the Lycoming Direct Drive Overhaul Manual incorporated them, effectively making AD 2004-10-14 a "Prop Strike AD".
    - This AD was one of the first to eliminate the provision for an SFP and did not include a statement prohibiting one from being issued. This is because of a revision to FAR Part 39.
        - FAR Part 39 revision, effective August 21, 2002, removed certain provisions from all ADs. FAR Part 39.23 provides for an SFP to fly an aircraft to a repair facility. However, when an SFP will not be issued due to an unacceptable safety risk, the AD will state in a separate paragraph, that an SFP will not be issued.
    - The statement "… before further flight" in this AD addresses the compliance of the AD, not the issuance of an SFP.
    - The authorization for the SFP is in FAR 39.23 UNLESS the AD specifically states that an SFP will only be issued with special requirements or the FAA will not issue an SFP.
    - When this SAIB was issued in February 27, 2006, the guidance in FAA Order 8130.2F, Section 13, paragraph 191(g) conflicted with FAR 39.23 and did not permit an SFP to be issued when the compliance time in an AD is, "before further flight" and the AD does not have provisions for an SFP. Order 8130.2F was revised on November 5, 2004 to reflect the intent of FAR 39.23.

- FAR 39.23 is the authority that states that a local FSDO may issue an SFP, even when the compliance section of the AD states “before further flight”. This determination has been reviewed and is endorsed by the New England Regional Counsel.
    - Owners/operators should contact their local FSDO for an SFP.
    - If the local FSDO has additional concerns about the legality of issuing an SFP, they should contact the Boston Aircraft Evaluation Group (BOS-AEG).
    - With the regulations question settled, the local FSDO may still decline to issue an SFP in particular cases if we determine that you cannot move the aircraft safely.
- AD 2004-10-14 is now effectively a “Prop Strike AD” that only requires replacement of the crankshaft gear bolt in accordance with the installation instructions in Lycoming MSB 475C, dated January 30, 2003. However, in addition to this AD, Lycoming imposes an additional requirement in MSB 533A, dated August 9, 1999. That MSB states that the safest procedure is to remove and disassemble the engine and completely inspect the reciprocating and rotating parts including the crankshaft and dowel parts. MSB 533A was not included in AD 2004-10-14 because it is not associated with the installation of the crankshaft gear and crankshaft gear bolt, which is the primary purpose of this AD.

Recommendations

We recommend that in the event of a propeller strike, as defined in AD 2004-10-14, you comply with both AD 2004-10-14 (replacement of the crankshaft gear bolt and installation in accordance with Lycoming MSB 475C) and Lycoming MSB 533A (disassembly and inspection of the rotating parts).

For Further Information Contact

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