



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2006-24785; Directorate Identifier 2006-NE-20-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Lycoming Engines Reciprocating Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for certain Lycoming Engines (L)O-360, (L)IO-360, AEIO-360, O-540, IO-540, AEIO-540, (L)TIO-540, IO-580, and IO-720 series reciprocating engines. That NPRM proposed to require replacing certain crankshafts of affected engine models. This action revises that NPRM by including the IO-390, AEIO-390, and AEIO-580 series engine models having affected crankshafts. We are proposing this supplemental NPRM to prevent failure of the crankshaft, which will result in total engine power loss, in-flight engine failure, and possible loss of the aircraft. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

**DATES:** We must receive comments on this supplemental NPRM by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; phone: 570 323-6181; fax: 570- 327-7101, or on the internet at [www.Lycoming.Textron.com](http://www.Lycoming.Textron.com). You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7337; fax: 516-794-5531; e-mail: [norman.perenson@faa.gov](mailto:norman.perenson@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2006-24785; Directorate Identifier 2006-NE-20-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We issued an NPRM supersedure to amend 14 CFR part 39 to include an AD that would apply to Lycoming Engines (L)O-360, (L)IO-360, AEIO-360, O-540, IO-540, AEIO-540, (L)TIO-540, IO-580, and IO-720 series reciprocating engines. That NPRM published in the Federal Register on August 12, 2011 (76 FR 50152). That NPRM supersedure proposed to retain all of the requirements of AD 2006-20-09 (71 FR 57407, September 29, 2006), and would expand the affected engines by moving the start date of affected engine models back from March 1, 1997, to January 1, 1997. All references to March 1, 1997 in AD 2006-20-09, and the NPRM supersedure are, therefore, obsolete and the start date of affected models in this supplemental NPRM supersedure is changed to January 1, 1997. Lycoming also changed its Service Instruction No. 1009AS dated May 25, 2006 to Service Instruction No. 1009AU, dated November 18, 2009. The changes to Service Instruction 1009 do not affect the engine overhaul time.

### **Actions Since Previous NPRM was Issued**

Since we issued the previous NPRM (76 FR 50152, August 12, 2011), Lycoming Engines made us aware of additional engine models with crankshafts affected by the unsafe condition. They are the IO-390, AEIO-390, and AEIO-580 series reciprocating engines. These engine models were considered experimental and did not have a type certificate when we issued AD 2006-20-09 (71 FR 57407, September 29, 2006). These models now have type certificates and so we propose to add them in this supplemental NPRM.

### **Comments**

We gave the public the opportunity to comment on the original NPRM. We received no comments on that NPRM (76 FR 50152, August 12, 2011).

### **FAA's Determination**

We are proposing this supplemental NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the original NPRM (76 FR 50152, August 12, 2011). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this supplemental NPRM.

### **Proposed Requirements of the Supplemental NPRM**

This supplemental NPRM would retain all of the requirements of AD 2006-20-09 (71 FR 57407, September 29, 2006). This supplemental NPRM would also change the start date of affected engine models from March 1, 1997, to January 1, 1997, and would add Lycoming Engines IO-390, AEIO-390, and AEIO-580 series reciprocating engines to the applicability.

### **Costs of Compliance**

We estimate that this proposed AD would require no additional costs of compliance over those in the original AD 2006-20-09, which are \$60,384,000. This proposed AD carries over the original costs of compliance. We estimate that this proposed AD would affect 3,774 engines installed on airplanes of U.S. registry. Because the proposed AD compliance interval coincides with engine overhaul or other engine maintenance, we estimate no additional labor hours will be needed to comply with this proposed AD. Parts would cost about \$16,000 per engine. Based on these figures, we estimate the total cost of the proposed AD to be \$60,384,000. Our estimate is independent of any possible warranty coverage.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs" describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States,

or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Lycoming Engines (formerly Textron Lycoming):** Docket No. FAA-2006-24785; Directorate Identifier 2006-NE-20-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD supersedes AD 2006-20-09, Amendment 39-14778 (71 FR 57407, September 29, 2006).

**(c) Applicability**

This AD applies to Lycoming Engines (L)O-360, (L)IO-360, AEIO-360, IO-390, AEIO-390, O-540, IO-540, AEIO-540, (L)TIO-540, IO-580, AEIO-580, and IO-720 series reciprocating engines listed by engine model number and serial number in Table 1, Table 2, Table 3, or Table 4 of Lycoming Mandatory Service Bulletin (MSB) 569A, dated April 11, 2006, and those engines with crankshafts listed by crankshaft serial number in Table 5 of Lycoming MSB 569A, dated April 11, 2006. These applicable engines are manufactured new, rebuilt, overhauled, or had a crankshaft installed after January 1, 1997.

**(d) Unsafe Condition**

This AD results from Lycoming Engines discovering that the March 1, 1997 start date of affected engine models in MSB No. 569A, is incorrect. This AD also results from the need to include the IO-390, AEIO-390, and AEIO-580 series engine models having affected crankshafts. We are issuing this AD to prevent failure of the crankshaft, which will result in total engine power loss, in-flight engine failure, and possible loss of the aircraft.

**(e) Compliance**

You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

**(f) Credit for Previous Actions**

(1) If you previously complied with any of the following ADs, no further action is required:

(i) AD 2002-19-03 (67 FR 59139, September 20, 2002); or

(ii) AD 2005-19-11 (70 FR 54618, September 16, 2005); or

(iii) AD 2006-06-16 (71 FR 14638, March 23, 2006).

(2) If you previously accomplished any of the following Lycoming MSBs, no further action is required:

(i) MSB No. 552; or

(ii) MSB No. 553; or

(iii) Supplement No. 1 to MSB No. 553; or

(iv) MSB No. 566; or

(v) Supplement No. 1 to MSB No. 566; or

(vi) MSB No. 569, MSB No. 569A, and Supplement 1 to MSB No. 569A.

(3) If Lycoming Engines manufactured new, rebuilt, overhauled, or repaired your engine, or replaced the crankshaft in your engine before January 1, 1997, and you have not had the crankshaft replaced, no further action is required.

(4) If Table 1, Table 2, Table 3, or Table 4 of Lycoming MSB No. 569A, dated April 11, 2006, lists your engine serial number (S/N), and Table 5 of MSB No. 569A, dated April 11, 2006, does not list your crankshaft S/N, no further action is required.

(5) For engine model TIO-540-U2A, S/N L-4641-61A, no action is required.

**(g) Engines For Which Action Is Required**

If you did not previously comply with any of the ADs listed in paragraph (f)(1) of this AD, do the following:

(1) If Table 1, Table 2, Table 3, or Table 4 of Lycoming MSB No. 569A, dated April 11, 2006, lists your engine S/N, and Table 5 of MSB No. 569A, dated April 11, 2006, lists your crankshaft S/N, replace the affected crankshaft with a crankshaft that is not listed in Table 5 of MSB No. 569A at the earliest of the following:

(i) The time of the next engine overhaul as specified in Lycoming Engines Service Instruction No. 1009AU, dated November 18, 2009; or

- (ii) The next separation of the crankcase, or
- (iii) No later than 12 years from the time the crankshaft first entered service or was last overhauled, whichever is later.

(2) If Table 1, Table 2, Table 3, or Table 4 of Lycoming MSB No. 569A, dated April 11, 2006, does not list your engine S/N, and Table 5 of MSB No. 569A does list your crankshaft S/N (an affected crankshaft was installed as a replacement), replace the affected crankshaft with a crankshaft that is not listed in Table 5 of MSB No. 569A at the earliest of the following:

- (i) The time of the next engine overhaul as specified in Lycoming Engines Service Instruction No. 1009AU, dated November 18, 2009; or
- (ii) The next separation of the crankcase, or
- (iii) No later than 12 years from the time the crankshaft first entered service or was last overhauled, whichever is later.

**(h) Prohibition Against Installing Certain Crankshafts**

After the effective date of this AD, do not install any crankshaft that has a S/N listed in Table 5 of Lycoming MSB No. 569A, dated April 11, 2006, into any engine.

**(i) Alternative Methods of Compliance (AMOC)**

The Manager, New York Aircraft Certification Office, may approve AMOCs to this AD. Use the procedures in 14 CFR 39.19 to make your request. AMOCs approved for AD 2002-19-03 (67 FR 59139, September 20, 2002) and AD 2006-20-09 (71 FR 57407, September 29, 2006) are approved as AMOCs for this AD.

**(j) Related Information**

(1) For more information about this AD, contact Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7337; fax: 516-794-5531; e-mail: [norman.perenson@faa.gov](mailto:norman.perenson@faa.gov).

(2) For service information identified in this AD, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone: 570-323-6181; fax: 570-327-7101, or on the internet at [www.Lycoming.Textron.com](http://www.Lycoming.Textron.com). You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on April 2, 2012.

Colleen M. D'Alessandro,  
Assistant Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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