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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NE-31-AD; Amendment 39-13519; AD 2004-05-24]

RIN 2120-AA64

Airworthiness Directives; Lycoming Engines (Formerly Textron Lycoming) AEIO-540, IO-540, LTIO-540, O-540, and TIO-540 Series Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for Lycoming Engines (Formerly Textron Lycoming) AEIO-540, IO-540, LTIO-540, O-540, and TIO-540 series reciprocating engines. That action requires replacing certain zinc-plated crankshaft gear retaining bolts. This action retains that requirement, but expands the population of affected engines. In addition, this AD adds five additional kits for replacing the crankshaft gear retaining bolts. This AD results from notification from the Manufacturer of 161 engines not identified in the previous AD. This AD also results from approval of the five additional kits as alternative methods of compliance with AD 2002-23-06. We are issuing this AD to prevent loss of all engine power and possible forced landing.

DATES: Effective March 30, 2004. The Director of the Federal Register approved the incorporation by reference of Lycoming Service Bulletin 554, dated September 30, 2002, on November 19, 2002 (67 FR 68932, November 14, 2002). The Director of the Federal Register approved the incorporation by reference of Lycoming Mandatory Service Bulletin No. 554, Supplement 5, dated August 15, 2003, as of March 30, 2004.

We must receive any comments on this AD by May 14, 2004.

ADDRESSES: Use one of the following addresses to submit comments on this AD:

By mail: Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-31-AD, 12 New England Executive Park, Burlington, MA 01803-5299.

By fax: (781) 238-7055.

By e-mail: 9-ane-adcomment@faa.gov

You can get the service information referenced in this AD from Lycoming, a Textron Company, 652 Oliver Street, Williamsport, PA 17701; telephone (570) 323-6181. You can also access this service information electronically on <http://www.lycoming.textron.com>.

You may examine the AD docket, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA. You may examine the service information, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone (516) 228 7337; fax (516) 794 5531.

SUPPLEMENTARY INFORMATION: On November 8, 2002, we issued AD 2002-23-06, Amendment 39-12950 (67 FR 68932, November 14, 2002). That AD requires replacing the crankshaft gear retaining bolt:

Before further flight on engines that have been overhauled or have had the gear retaining bolt replaced between November 27, 1996 and November 10, 1998, and that have not complied with emergency AD 2002-20-51 by using a bolt from the gear bolt replacement kit, 05K19987 and

Within 10 hours time-in-service (TIS) or 7 days after the effective date of that AD, on engines that have complied with AD 2002-20-51, but did not install a bolt from gear bolt replacement kit, 05K19987, and

Within 10 hours TIS or 7 days after the effective date of that AD, on engines that have been overhauled in the field, or that have had the gear retaining bolt replaced in the field between November 10, 1998, and the effective date of AD 2002-23-06 (November 19, 2002).

That AD was prompted by two failures of zinc-plated crankshaft gear retaining bolts, and a reassessment of the extent to which the suspect bolts may still be present in the field. That condition, if not corrected, could result in loss of all engine power and possible forced landing.

Actions Since AD 2002-23-06 Was Issued

Since that AD was issued, Lycoming identified 161 additional engines by serial number (SN) that they might have assembled with a zinc-plated crankshaft gear retaining bolt, part number (P/N) STD-2209, during the initial assembly or during a subsequent rebuild or overhaul of the engine. Lycoming also developed five additional kits for other maintenance purposes that also contain replacement gear retaining bolts. We approved those kits as alternate methods of compliance with AD 2002-23-06, and incorporated those kits in this new AD. In addition, any bolt, STD-2209, installed by Lycoming after November 10, 1998, is cadmium plated and is not affected by AD 2002-23-06. This includes STD-2209 bolts installed using Service Bulletin (SB) 554 in production, overhaul, or for any other reason. Lycoming has replaced bolt, STD-2209, with bolt, STD-2247. This new bolt, STD-2247, is not affected by this AD.

Relevant Service Information

We have reviewed and approved the technical contents of Lycoming SB No. 554, dated September 30, 2002, that describes procedures for replacing the existing crankshaft gear retaining bolt. We have also reviewed Lycoming Mandatory SB (MSB) No. 554, Supplement 5, dated August 15, 2003. That MSB provides lists of engine SNs, by engine model, of engines that were assembled with zinc-plated crankshaft gear retaining bolt, P/N STD-2209, during the initial assembly or during a subsequent rebuild or overhaul of the engine by Lycoming.

FAA's Determination and Requirements of This AD

The unsafe condition described previously is likely to exist or develop on other T/L AEIO-540, IO-540, O-540, LTIO-540, and TIO-540 series reciprocating engines of the same type design. We are

issuing this AD to prevent the loss of all engine power and possible forced landing. This AD requires replacing the crankshaft gear retaining bolt:

Before further flight on engines that have been overhauled or have had the gear retaining bolt replaced between November 27, 1996 and November 10, 1998, by Lycoming, that have an engine serial number listed in Lycoming SB 554, and that have not complied with AD 2002-23-06.

Before further flight on engines that have complied with AD 2002-23-06, but did not install a bolt from gear bolt replacement kits: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K233367, or with a bolt that has a P/N other than P/N STD-2209.

Before further flight on engines that have been overhauled in the field, between November 27, 1996 and the effective date of AD 2002-23-06 (November 19, 2002) that have not had the gear retaining bolt replaced with a bolt from kits: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335 or 05K23336, or with a bolt that has a P/N other than P/N STD-2209.

Within 10 hours TIS or 7 days after the effective date of this AD, whichever occurs earlier, on engines listed by SN in Lycoming MSB No. 554, Supplement 5, dated August 15, 2003.

You must use the service information described previously to perform the actions required by this AD.

FAA's Determination of the Effective Date

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Changes to 14 CFR Part 39—Effect on the AD

On July 10, 2002, we issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs our AD system. This regulation now includes material that relates to special flight permits, alternative methods of compliance, and altered products. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "AD Docket No. 2002-NE-31-AD" in the subject line of your comments. If you want us to acknowledge receipt of your mailed comments, send us a self-addressed, stamped postcard with the docket number written on it; we will date-stamp your postcard and mail it back to you. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it. If a person contacts us verbally, and that contact relates to a substantive part of this AD, we will summarize the contact and place the summary in the docket. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We are reviewing the writing style we currently use in regulatory documents. We are interested in your comments on whether the style of this document is clear, and your suggestions to improve the clarity of our communications with you. You may get more information about plain language at <http://www.faa.gov/language> and <http://www.plainlanguage.gov>.

Examining the AD Docket

You may examine the AD Docket (including any comments and service information), by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. See ADDRESSES for the location.

Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will 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 that the 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); and
3. 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 2002-NE-31-AD" in your request.

List of Subjects in 14 CFR Part 39

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

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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 removing Amendment 39-12950 (67 FR 68932, November 14, 2002) and by adding a new airworthiness directive, Amendment 39-13519, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

CORRECTION: [*Federal Register (FR): March 15, 2004, page 12059*], delete the line that separates "Maule" and "Rocket" under (5) ...installed on, but not limited to. The Maule models should read: Maule. MT-7-260, M-7-260, MX-7-235, MT-7-235, M7-235, Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235). We have corrected this copy. We will not issue a correction to the FR.

2004-05-24 Lycoming Engines (Formerly Textron Lycoming): Amendment 39-13519. Docket No. 2002-NE-31-AD. Supersedes AD 2002-23-06, Amendment 39-12950.

Effective Date

- (a) This airworthiness directive (AD) becomes effective March 30, 2004.

Affected ADs

- (b) This AD supersedes AD 2002-23-06, Amendment 39-12950.

Applicability

(c) This AD applies to all Lycoming Engines (Formerly Textron Lycoming) AEIO-540, IO-540, LTIO-540, O-540, and TIO-540 series reciprocating engines with crankshaft gear retaining bolts, part number (P/N) STD-2209 installed, except:

- (1) O-540-F series engines to which AD 99-03-05 applies and on which the bolt has not been subsequently replaced, and
- (2) Engines on which the bolt was installed during original assembly or was replaced by Lycoming as specified in Service Bulletin (SB) 554 after November 10, 1998, and
- (3) Engines with a bolt P/N STD-2209 supplied as part of a bolt replacement kit 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336, and
- (4) Engines with single-drive dual magnetos.
- (5) These engines are installed on, but not limited to the following aircraft:

Aero Commander. (500), (500-B), (500-E), (500-U)
Aero Mercantil. Gavilan.
Aerofab. Renegade 250.
Bellanca Aircraft. Aries T-250
Britten-Norman. (BN-2).
Cessna Aircraft. Skylane C-182, Stationair C-206, Turbo Skylane T182T, Turbo Stationair T-206

Christen. Pitts (S-2S), (S-2B).
Commander Aircraft. 114TC, 114B
DeHavilland. (DH-114-2X)
Dornier. (DO-28-B1)
Evangel-Air.
Extra-Flugzeugbau. Extra 300.
Found Bros. (FBA-2C), Centennial (100)
Gippsland. GA-200.
Helio. Military (H-250).
King Engineering. Angel.
Maule. MT-7-260, M-7-260, MX-7-235, MT-7-235, M7-235, Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235).
Mooney Aircraft. "TLS" M20M.
Moravan. Zlin-50L
Pilatus Britten-Norman. Islander (BN-2A-26), Islander (BN-2A-27), Islander II (BN-2B-26), Islander (BN-2A-21), Trislander (BN-2A-Mark III-2), Islander (BN-2B).
Piper Aircraft. 700P Aerostar, Aerostar 600A, Aerostar 601B, Aerostar 601P, Apache (PA-23 "235"), Aztec (PA-23 "250"), Aztec (PA-23 "250"), Comanche (PA-24 "250"), Comanche (PA-24 "260"), Aztec F, Aztec C (PA-23 "250"), Cherokee (PA-24 "250"), Cherokee (PA-28 "235"), Cherokee Six (PA-32 "260"), Cherokee Six (PA-32-300). "LANCE", Comanche (PA-24 "150"), Comanche (PA-24 "250"), Comanche (PA-24), Comanche (PA-24 "260"), Comanche 260, Mirage (PA-46-350P, Navajo (PA-31), Navajo (PA-31-300), Navy Aztec (PA-23 "250"), Pawnee (PA-24 "235"), Pawnee (PA-25 "260"), Saratoga (PA-32-300), Brave 300, Sequoia 602P, T-1020, T35, Turbo Aztec (PA-23-250), Turbo Saratoga TC (PA-32-301T)
S.O.C.A.T.A. Rallye 235CA., Rallye 235GT, Rallye 235C, TB-20

Unsafe Condition

(d) This AD results from an expanded population of affected engines, and approval of five kits for replacing the crankshaft gear retaining bolts. We are issuing this AD to prevent the loss of all engine power and possible forced landing.

Compliance

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

Engines That Have Complied With Emergency AD 2002-20-51 or AD 2002-23-06

(f) No further action is required for AEIO-540, LTIO-540, IO-540, O-540, and TIO-540 series engines that have:

(1) A bolt, P/N STD-2209 that was included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

(2) A bolt P/N STD-2209 that was installed by Lycoming as specified in SB 554 after November 10, 1998; or

(3) A bolt with a P/N other than P/N STD-2209.

(g) For AEIO-540, LTIO-540, IO-540, O-540, and TIO-540 series engines that have complied with emergency AD 2002-20-51, replace the crankshaft gear retaining bolt with a new bolt that does not have P/N STD-2209, unless the bolt that was installed was:

(1) Included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

(2) A bolt installed by Lycoming as specified in SB 554 after November 10, 1998; or

(3) A bolt with a P/N other than STD-2209.

(4) You can find information on replacing the retaining bolt in Lycoming SB No. 554, dated September 30, 2002.

Engines Listed by Serial Number (SN) in Lycoming SB 554, Dated September 30, 2002

(h) No further action is required for AEIO-540, LTIO-540, IO-540, O-540, and TIO-540 engines with:

(1) A single-drive dual magneto, and all O-540-F engines to which AD 99-03-05 applies and on which the bolt has not been subsequently replaced with a bolt other than one included in gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

(2) A bolt replaced by Lycoming as specified in SB 554 after November 10, 1998; or

(3) A bolt, other than P/N STD-2209, including any O-540-F engines listed by SN in Table 1 of Lycoming SB No. 554, dated September 30, 2002.

(i) Before further flight, for all other engines that have an engine SN listed in Table 1 of Lycoming SB No. 554, dated September 30, 2002, replace the crankshaft gear retaining bolt with:

(1) A new bolt included in gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

(2) A bolt with a P/N other than STD-2209.

(3) You can find information on replacing the retaining bolt in Lycoming SB No. 554, dated September 30, 2002.

Bolts That Have Been Replaced During Field Maintenance or Field Overhaul

(j) Before further flight, replace the crankshaft gear retaining bolt with a new bolt supplied as part of gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336, or a bolt with a P/N other than P/N STD-2209, if:

(1) The bolt on an O-540-F series engine was replaced after compliance with AD 99-03-05 with a bolt that was not included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

(2) The bolt on an AEIO, LTIO, IO, O, or TIO-540 series engine was replaced during field maintenance or field overhaul between November 27, 1996, and the effective date of this AD with a bolt that was not included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336.

(3) You can find information on replacing the bolt in Lycoming SB No. 554, dated September 30, 2002.

Engines Listed by Serial Number (SN) in Lycoming Mandatory Service Bulletin (MSB) 554, Supplement 5, Dated August 15, 2003

(k) If an engine model and SN is listed in Lycoming MSB 554, Supplement 5, dated August 15, 2003, replace the crankshaft gear retaining bolt within 10 hours TIS, or 7 days after the effective date of this AD, whichever is earlier, with:

- (1) A new bolt included in gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or
- (2) Bolt STD-2247, or
- (3) A bolt with a P/N other than P/N STD-2209.
- (4) You can find information on replacing the retaining bolt in Lycoming SB No. 554, dated September 30, 2002.

Recording Gear Bolt Replacement Kit Number

(l) After the effective date of this AD, record the part number of the gear bolt or the number of the gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336, in the engine records when recording compliance with this AD.

Prohibition Against Installing Gear Retaining Bolts P/N STD-2209

(m) After the effective date of this AD, do not install any crankshaft gear retaining bolt, P/N STD-2209, except one that is included in a Lycoming gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336, onto any engine listed in this AD.

Alternative Methods of Compliance

(n) The Manager, New York Aircraft Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Material Incorporated by Reference

(o) Engine serial numbers are listed in Lycoming Mandatory Service Bulletin No. 554, Supplement 5, dated August 15, 2003; and in Table 1 of Lycoming Service Bulletin No. 554, dated September 30, 2002. The incorporation by reference of Lycoming Service Bulletin No. 554, dated September 30, 2002, was previously approved by the Director of the Federal Register on November 19, 2002 (67 FR 68932, November 14, 2002). The incorporation by reference of Lycoming Mandatory Service Bulletin No. 554, Supplement 5, dated August 15, 2003, was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You can get a copy from Lycoming, a Textron Company, 652 Oliver Street, Williamsport, PA 17701; telephone (570) 323-6181. You can also get this information "<http://www.lycoming.textron.com>". You may review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Issued in Burlington, Massachusetts, on March 3, 2004.

Francis A. Favara,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 04-5262 Filed 3-12-04; 8:45 am]

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