



CIVIL AVIATION AUTHORITY
CZECH REPUBLIC
Airworthiness Division
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AIRWORTHINESS DIRECTIVE

Number: CAA-AD-024/2004

Supersedes CAA-AD-107/2002

Date of issue: March 19, 2004

**Lycoming Engines (formerly Textron
Lycoming)**

AEIO-540, IO-540, LTIO-540, O-540,
TIO-540

ENGINE – CRANKSHAFT GEAR RETAINING BOLTS – INSPECTION/REPLACEMENT

Applicability: 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..

These engines are installed on, but not limited to the aircraft listed in FAA AD 2004-05-24.

Effective date: May 13, 2004

Compliance: Required as indicated in FAA AD 2004-05-24.

Remarks: The compliance of this AD must be recorded in Engine Logbook, where applicable the requirements of this AD must be integrated into Aircraft Technical Documentation. Address inquiries concerning this AD to: Civil Aviation Authority, Airworthiness Division, Ruzyně Airport, 160 08 Prague 6, Czech Republic, tel: 420 233320922, fax: 420 220562270.

Ing. Pavel MATOUŠEK
director

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.

▼ **Footer Information**

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

Francis A. Favara,

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

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