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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 92-ANE-56-AD; Amendment 39-12986; AD 2002-26-01]

RIN 2120-AA64

Airworthiness Directives; Textron Lycoming Division, AVCO Corporation Fuel Injected Reciprocating Engines.

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes two existing airworthiness directives (AD's), that are applicable to certain Textron Lycoming fuel injected reciprocating engines. These AD's currently require inspection, and replacement if necessary, of externally mounted fuel injector fuel lines. These amendments require adding engine series to the applicability that have been identified with the potential for the same problem and necessitate being included in the list of Textron Lycoming fuel injected reciprocating engine series. This amendment is prompted by the need to ensure that the additional Textron Lycoming fuel injected engine series listed in this final rule receive the same inspections as series covered by the current AD's. The actions specified by this AD are intended to prevent failure of the fuel injector fuel lines allowing fuel to spray into the engine compartment, resulting in an engine fire.

DATES: Effective January 31, 2003. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 31, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Textron Lycoming, 652 Oliver Street, Williamsport, PA 17701, telephone (570) 323-6181; fax (570) 327-7101. This information may be examined, by appointment, at the Federal Aviation Administration (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, 10 Fifth Street, 3rd floor, Valley Stream, NY 11581-1200; telephone (516) 256-7537; fax (516) 568-2716.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 93-02-05, Amendment 39-8487 (58 FR 26056, April 30, 1993), which is applicable to certain Textron Lycoming fuel injected reciprocating engines that currently require inspection, and replacement if necessary, of externally mounted fuel injector fuel lines, was published in the Federal Register on March 11, 2002 (67 FR 10859). Because of the requests of two commenters, this AD has been expanded and will also supersede AD 93-05-22, Amendment 39-8525, (58 FR 19768, April 16, 1993), which is only applicable to Lycoming TIO-540-S1AD. This dual supersedure will eliminate duplication and provide proper inspection and replacement instructions for the TIO-540-S1AD engines. The NPRM supersedure proposed to require that additional engine series that have been identified with the potential for the same problem, be included in the list of Textron Lycoming fuel injected reciprocating engine series listed in the AD applicability, in accordance with Textron Lycoming Mandatory Service Bulletin (MSB) No. 342D, dated July 10, 2001.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

AD Not Necessary and Duplicates another AD

Two commenters point out that the current AD does not apply to the TIO-540-S1AD engines and the same unsafe condition in those engines is covered by a separate action, AD 93-05-22, Amendment 39-8525. The commenters request that either this action also supersede AD 93-05-22 or that this action not apply to the TIO-540-S1AD engines.

The FAA agrees. AD 93-05-22, Amendment 39-8525, is also superseded by this AD, and the TIO-540-S1AD engines have been included in the Applicability.

Clamps Installed On Factory Shipped Engines

One commenter states that engines shipped from the factory have all of the fuel line clamps installed, and no action is required until a maintenance action is performed in the field that disturbs the clamping. The commenter states that exempting engines shipped from the factory would avoid an unnecessary inspection after an engine has been delivered after purchase or overhaul.

The FAA disagrees. The current AD and this superseding AD already account for new and newly overhauled engines by allowing those engines 50 hours after the effective date before an initial inspection is required, as opposed to 10 hours for engines that have been maintained since new or since overhaul. The FAA has determined that inspections are necessary even before maintenance is performed to ensure that the fuel injector lines remain properly clamped. Therefore, the FAA made no changes to the rule with respect to this request. Engines shipped from the factory (new or overhauled) will have passed one or more inspections that will satisfy the requirements of this AD.

Engines That Have Been Previously Inspected

One commenter states that Textron Lycoming Mandatory Service Bulletin (MSB) No. 342D should also be included in the proposal's paragraph (a) listing after MSB No. 342C under the section titled "Engines That Have Been Previously Inspected". The commenter states there will be engines that have already been inspected to Textron Lycoming MSB No. 342D. This would allow an operator to take credit for a previously completed inspection.

The FAA agrees. Reference to Textron Lycoming MSB No. 342D has been added to paragraph (a) in the final rule.

Engines That Have Not Been Inspected

One commenter states that Textron Lycoming MSB No. 342D should also be included in the proposal's paragraph (b) listing after MSB No. 342C under the section titled "Engines That Have Not Been Inspected". The commenter states that there will be engines that have not been inspected to Textron Lycoming MSB No. 342D. This addition would allow a reference to the latest Service Bulletin.

The FAA agrees. Reference to Textron Lycoming MSB No. 342D has been added to paragraph (b) of the final rule.

Distances for Clamping Locations

One commenter states that since vibration seems to be a concern, there should be a distance provided from the engine case to the clamp on the push rod tube that would give maximum line vibration reduction to reduce the effects of engine vibration.

The FAA disagrees. While the FAA understands that vibration is a concern, the FAA does not agree that a change is required to the AD. The information to dampen the vibrations is contained in Textron Lycoming MSB No. 342D. No change has been made to this final rule.

Additional Items Installed on the Clamp

One commenter requests guidance relative to whether other items can be installed on the clamp around the push rod tube, and if not, a statement added that the clamp around the push rod tube must "stand alone" and only be used for the fuel line.

The FAA does not agree. Proper clamping procedures are contained in MSB No. 342D. No change has been made to the rule.

Service Bulletin Issue Dates Added

Service Bulletin (SB) issue dates were omitted in NPRM Docket No. 92-ANE-56-AD in the paragraphs entitled "Engines That Have Been Previously Inspected" and "Engines That Have Not Been Inspected". The SB issue dates are added to this AD in the paragraphs referenced above.

Difference Between Service Bulletin and AD Compliance Time

Textron Lycoming MSB No. 342D Time of Compliance statement states, "Check every 100 hours," * * * This AD states, "* * * at each 100-hour inspection * * *". The 100-hour inspections may be extended to 110 hours provided the next inspection is performed at 90 hours. The requirements of this AD has precedence over Textron Lycoming MSB No. 342D.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Economic Analysis

There are approximately 4,160 Textron Lycoming engines of the affected design in the worldwide fleet. The FAA estimates that 2,496 engines installed on aircraft of U.S. registry will be affected by this AD, that it will take approximately 1 work hour to inspect and replace all lines on a four-cylinder engine, 1.5 work hours to inspect and replace all lines on a six-cylinder engine, and 2 hours to inspect and replace all lines on an eight-cylinder engine, and that the average labor rate is \$60 per work hour. Required parts will cost approximately \$440.00 for a four-cylinder engine,

\$660.00 for a six-cylinder engine, and \$880.00 for an eight-cylinder engine. Based on these figures, the total cost per airplane of this AD on U.S. operators is estimated as follows:

- \$500.00 for a four-cylinder engine.
- \$750.00 for a six-cylinder engine.
- \$1000.00 for an eight-cylinder engine.

Regulatory Analysis

This final rule does not have federalism implications, as defined in Executive Order 13132, because it 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. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

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

Adoption of the Amendment

Accordingly, pursuant to 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. Section 39.13 is amended by removing Amendment 39-8487 (58 FR 26056, April 30, 1993) and Amendment 39-8525 (58 FR 19768, April 16, 1993) and by adding a new airworthiness directive, Amendment 39-12986, 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).

2002-26-01 Textron Lycoming Division, AVCO Corporation: Amendment 39-12986. Docket No. 92-ANE-56-AD. Supersedes AD 93-02-05, Amendment 39-8487 and AD 93-05-22, Amendment 39-8525.

Applicability: This airworthiness directive (AD) is applicable to Textron Lycoming fuel injected reciprocating engines incorporating externally mounted fuel injection lines as listed in the following Table 1:

TABLE 1.—ENGINE MODELS AFFECTED.

Engine	Model
AEIO-320	-D1B, -D2B, -E1B, -E2B
AIO-320	-A1B, -B1B, -C1B
IO-320	-B1A, -B1C, -C1A, -D1A, -D1B, -E1A, -E1B, -E2A, -E2B
LIO-320	-B1A, -C1A
AEIO-360	-A1A, -A1B, -A1B6, -A1D, -A1E, -A1E6, -B1F, -B2F, -B1G6, -B4A, -H1A, -H1B
AIO-360	-A1A, -A1B, -B1B
HIO-360	-A1A, -A1B, -B1A, -C1A, -C1B, -D1A, -E1AD, E1BD, -F1AD
IO-360	-A1A, -A1B, -A1B6, -A1B6D, -A1C, -A1D, -A1D6, -A2A, -A2B, -A3B6, -A3B6D, -B1B, -B1D, -B1E, -B1F, -B1G6, -B2F, -B2F6, -B4A, -C1A, -C1B, -C1C, -C1C6, -C1D6, -C1E6, -C1F, -C1G6, -C2G6, -J1A6D, -L2A, -M1A,
IVO-360	-A1A
LIO-360	-C1E6
TIO-360	-A1B, -C1A6D
IGO-480	-A1B6
AEIO-540	-D4A5, -D4B5, -D4D5, -L1B5, -L1B5D, -L1D5
IGO-540	-B1A, -B1C
IO-540	-A1A5, -AA1A5, -AA1B5, -AB1A5, -AC1A5, -B1A5, -B1C5, -C1B5, -C4B5, -C4D5D, -D4A5, -E1A5, -E1B5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, -G1F5, -J4A5, -V4A5D, -K1A5, -K1A5D, -K1B5, -K1C5, -K1D5, -K1E5, -K1E5D, -K1F5, -K1J5, -K1F5D, -K1G5, -K1G5D, -K1H5, -K1J5D, -K1K5, -K1E5, -K1E5D, -K1F5, -K1J5, -L1C5, -M1A5, -M1B5D, -N1A5, -P1A5, -R1A5, -S1A5, -T4A5D, -T4B5, -T4B5D, -T4C5D, -V4A5, -V4A5D, -W1A5D, -W3A5D
IVO-540	-A1A
LTIO-540	-F2BD, -J2B, -J2BD, -N2BD, -R2AD, -U2A, -V2AD, -W2A

TABLE 1.—ENGINE MODELS AFFECTED.—Continued

Engine	Model
TIO-540	-A1A, -A1B, -A2A, -A2B, -A2C, -AE2A, -AH1A, -AA1AD, -AF1A, -AF1B, -AG1A, -AB1AD, -AB1BD, -AH1A, -AJ1A, -AK1A, -C1A, -E1A, -G1A, -F2BD, -J2B, -J2BD, -N2BD, -R2AD, -S1AD, -U2A, -V2AD, -W2A
TIVO-540	-A2A
IO-720	-A1A, -A1B, -D1B, -D1BD, -D1C, -D1CD, -B1B, -B1BD, -C1B

Engine models in Table 1 are installed on, but not limited to Piper PA-24 Comanche, PA-30 and PA-39 Twin Comanche, PA-28 Arrow, and PA-23 Aztec; Beech 23 Musketeer; Mooney 20, and Cessna 177 Cardinal airplanes.

Note 1: This AD is applicable to engines with an "I" in the prefix of the model designation that have externally mounted fuel injection lines. This AD is not applicable to engines having internally mounted fuel injection lines, which are not accessible.

Note 2: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Compliance with this AD is required as indicated, unless already done.

To prevent failure of the fuel injector fuel lines allowing fuel to spray into the engine compartment, resulting in an engine fire, do the following:

Engines That Have Been Previously Inspected

(a) For engines that have been inspected in accordance with Textron Lycoming Mandatory Service Bulletin (MSB) No. 342, dated March 24, 1972; Textron Lycoming MSB No. 342A, dated May 26, 1992; Textron Lycoming MSB No. 342B, dated October 22, 1993; Supplement No. 1 to MSB No. 342B, dated April 27, 1999; Textron Lycoming MSB No. 342C, dated April 28, 2000; and Textron Lycoming MSB No. 342D, dated July 10, 2001, inspect in accordance with paragraph (c) of this AD.

Engines That Have Not Been Inspected

(b) For engines that have not had initial inspections previously done in accordance with Textron Lycoming MSB No. 342, dated March 24, 1972; Textron Lycoming MSB No. 342A, dated May 26, 1992; Textron Lycoming MSB No. 342B, dated October 22, 1993; Supplement No. 1 to MSB No. 342B, dated April 27, 1999; Textron Lycoming MSB No. 342C, dated April 28, 2000; or Textron Lycoming MSB No. 342D, dated July 10, 2001, inspect in accordance with Textron Lycoming MSB No. 342D, dated July 10, 2001 as follows:

(1) For engines that have not yet had any fuel line maintenance done, or have not had any fuel line maintenance done since new or since the last overhaul, inspect within 50 hours time-in-service after the effective date of this AD, and replace as necessary, the fuel injector fuel lines and clamps

between the fuel manifold and the fuel injector nozzles that do not meet all conditions specified in Textron Lycoming MSB No. 342D, dated July 10, 2001.

(2) For all other engines, inspect within 10 hours time-in-service after the effective date of this AD, and replace as necessary, the fuel injector fuel lines and clamps between the fuel manifold and the fuel injector nozzles that do not meet all conditions specified in Textron Lycoming MSB No. 342D, dated July 10, 2001.

Repetitive Inspections

(c) Thereafter, at each annual inspection, at each 100-hour inspection, at each engine overhaul, and after any maintenance has been done on the engine where any clamp (or clamps) on a fuel injector line (or lines) has been disconnected, moved, or loosened, inspect the fuel injector fuel lines and clamps and replace as necessary any fuel injector fuel line and clamp that does not meet all conditions specified in Textron Lycoming MSB No. 342D, dated July 10, 2001.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, New York Aircraft Certification Office (ACO). Operators must submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, New York ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the New York ACO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be done.

Documents That Have Been Incorporated By Reference

(f) The clamp inspection and installations must be done in accordance with Textron Lycoming MSB No. 342D, dated July 10, 2001. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Textron Lycoming, 652 Oliver Street, Williamsport, PA 17701, telephone (570) 323-6181. Copies may be inspected 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.

Effective Date

(g) This amendment becomes effective on January 31, 2003.

Issued in Burlington, Massachusetts, on December 16, 2002.
Jay J. Pardee,
Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. 02-32339 Filed 12-26-02; 8:45 am]
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