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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9512; Directorate Identifier 2016-NE-27-AD; Amendment 39-18909; AD 2017-11-10]

RIN 2120-AA64

Airworthiness Directives; Lycoming Engines Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Lycoming TIO-540-AJ1A reciprocating engines. This AD requires initial and repetitive inspections of engine exhaust system weld joints and torque checking the exhaust pipe flange mounting nuts. This AD was prompted by several reports of engine exhaust leaks. We are issuing this AD to correct the unsafe condition on these products.

DATES: This AD is effective June 28, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 28, 2017.

We must receive comments on this AD by July 28, 2017.

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 final rule, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: 800-258-3279; fax: 570-327-7101; Internet: www.lycoming.com/Lycoming/SUPPORT/TechnicalPublications/ServiceBulletins.aspx. You may

view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9512.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9512; 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 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: Norman 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; email: Norman.Perenson@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We received several reports of cracked engine exhaust pipes and exhaust studs pulling out from cylinders on Lycoming TIO-540-AJ1A reciprocating engines. This AD requires initial and repetitive inspections of all engine exhaust system weld joints and torque checking the exhaust pipe flange mounting nuts. We are issuing this AD to prevent engine exhaust leaks, which could lead to uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane.

Related Service Information Under 1 CFR Part 51

We reviewed Lycoming Engines Mandatory Service Bulletin (MSB) No. 627C, dated November 17, 2016. The MSB describes procedures for exhaust system inspection and flange nut torque check. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

We reviewed Lycoming Engines MSB No. 614A, dated October 10, 2014, which provides maintenance instructions on the exhaust system for certain Lycoming engines. The FAA issued AD 2015-10-06, Amendment 39-18162 (80 FR 30345, May 28, 2015), (“AD 2015-10-06”) that mandates replacement of the turbocharger mounting bracket and inspection of the exhaust pipes in accordance with Lycoming Engines MSB No. 614A, dated October 10, 2014. The requirements in this AD are in addition to the requirements of AD 2015-10-06. Complying with AD 2015-10-06 and Lycoming Engines MSB No. 614A, dated October 10, 2014, does not constitute compliance with this AD.

FAA's Determination

We are issuing this AD 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.

AD Requirements

This AD requires initial and repetitive inspections of all engine exhaust system weld joints and torque checking the exhaust pipe flange mounting nuts.

Differences Between This AD and the Service Information

Table 1 of Lycoming Engines MSB No. 627C, dated November 17, 2016, provides a longer time between inspections of the engine exhaust system when an operational carbon monoxide detector is installed in the airplane. This AD does not consider whether an operational carbon monoxide detector is installed in the airplane.

Interim Action

We consider this AD interim action. Lycoming is determining the root cause for the unsafe condition identified in this AD. Once a root cause is determined, we will consider additional rulemaking.

FAA's Justification and Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because engine exhaust leaks could lead to uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane. Therefore, we find that notice and opportunity for prior public comment are impracticable and that good cause exists for making this amendment effective in less than 30 days.

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 send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2016-9512 and Directorate Identifier 2016-NE-27-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this 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 AD.

Costs of Compliance

We estimate that this AD affects 758 engines, installed on airplanes of U.S. registry.
We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection and torque check	1 work-hour × \$85 per hour = \$85 per inspection cycle	\$0.00	\$85.00	\$64,430.00 per inspection cycle.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave. SW., Washington, DC 20591. ATTN: Information Collection Clearance Officer, AES-200.

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

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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under 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.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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):



2017-11-10 Lycoming Engines Reciprocating Engines (Type Certificate previously held by Textron Lycoming Division, AVCO Corporation): Amendment 39-18909; Docket No. FAA-2016-9512; Directorate Identifier 2016-NE-27-AD.

(a) Effective Date

This AD is effective June 28, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Lycoming TIO-540-AJ1A reciprocating engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7800, Engine Exhaust System.

(e) Unsafe Condition

This AD was prompted by several reports of engine exhaust leaks. We are issuing this AD to prevent engine exhaust leaks, which could lead to uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For all engines, perform an initial exhaust system inspection within 10 hours time in service (TIS) after the effective date of this AD as follows:

(i) Use the Required Action, paragraph 1. of Lycoming Engines Mandatory Service Bulletin (MSB) No. 627C, dated November 17, 2016, to do the inspection.

(ii) For any part that fails the inspection required by paragraph (g)(1)(i) of this AD, before further flight, replace the failed part with a part eligible for installation.

(iii) Use the Required Action, paragraph 3. of Lycoming MSB No. 627C, dated November 17, 2016, to submit a survey to Lycoming Engines within 10 days of performing the inspection.

(2) For all engines, perform an initial torque check of the exhaust system flange nuts within 10 hours TIS after the effective date of this AD, or within 100 hours TIS after the last exhaust system maintenance (ESM), whichever occurs later, as follows:

(i) Use the Required Action, paragraph 2. of Lycoming Engines MSB No. 627C, dated November 17, 2016 to torque check the flange nuts.

(ii) For any part that fails the check required by paragraph (g)(2)(i) of this AD, before further flight, replace the failed part with a part eligible for installation.

(iii) Use the Required Action, paragraph 3. of Lycoming MSB No. 627C, dated November 17, 2016, to submit a survey to Lycoming Engines within 10 days of performing the check.

(3) For all engines with 1,000 hours TIS or less since the last ESM:

(i) Repeat the actions required by paragraphs (g)(1)(i) through (iii) of this AD inclusive, every 25 hours TIS since the last ESM, or exhaust system inspection, whichever occurs later.

(ii) Repeat the actions required by paragraphs (g)(2)(i) through (iii) of this AD inclusive, every 100 hours TIS after the last ESM, or torque check of the exhaust system flange nuts, whichever occurs later.

(4) For all engines with more than 1,000 hours TIS since the last ESM:

(i) Repeat the actions required by paragraphs (g)(1)(i) through (iii) of this AD inclusive, every 50 hours TIS since the last ESM, or exhaust system inspection, whichever occurs later.

(ii) Repeat the actions required by paragraphs (g)(2)(i) through (iii) of this AD inclusive, every 100 hours TIS since the last ESM, or torque check of the exhaust system flange nuts, whichever occurs later.

(h) Definitions

For the purposes of this AD, ESM is any maintenance that requires the removal and replacement of any exhaust system pipe or turbocharger mounting bracket, or the re-torquing of the exhaust flange mounting nuts.

(i) Terminating Action

The requirement in Required Action paragraph 3., to submit a survey to Lycoming Engines ends one year after the effective date of this AD, but, the exhaust system inspections in Required Actions paragraph 1., and torque checks of the exhaust system flange nuts, in Required Actions paragraph 2., are still required.

(j) Paperwork Reduction Act Burden Statement

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

(k) Alternative Methods of Compliance (AMOCs)

The Manager, New York Aircraft Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(l) Related Information

(1) For more information about this AD, contact Norman 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; email: Norman.Perenson@faa.gov.

(2) Lycoming Engines MSB No. 614A, dated October 10, 2014, which is not incorporated by reference in this AD, can be obtained from Lycoming Engines using the contact information in paragraph (m)(3) of this AD.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Lycoming Engines Mandatory Service Bulletin No. 627C, dated November 17, 2016.

(ii) Reserved.

(3) For Lycoming Engines service information identified in this AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: 800-258-3279; fax: 570-327-7101; Internet: www.lycoming.com/Lycoming/SUPPORT/TechnicalPublications/ServiceBulletins.aspx.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on May 24, 2017.

Carlos A. Pestana,
Acting Assistant Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.