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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0983; Project Identifier AD-2022-00614-E; Amendment 39-22132; AD 2022-16-03]

RIN 2120-AA64

Airworthiness Directives; Continental Aerospace Technologies, Inc., Lycoming Engines, and Textron Lycoming/Subsidiary of Textron, Inc. Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Continental Aerospace Technologies, Inc. GTSIO-520, IO-346, IO-470, IO-520, IO-550, LTSIO-520, O-470, TSIO-520, and TSIOL-550 series model reciprocating engines, Lycoming Engines AEIO-320, AEIO-360, AEIO-540, AIO-320, AIO-360, GO-480, GSO-480, HIO-360, HIO-540, IGO-480, IGO-540, IGSO-480, IGSO-540, IO-320, IO-360, IO-540, LIO-360, LTIO-540, O-235, O-320, O-360, O-540, TIGO-541, TIO-360, TIO-540, TIO-541, TVO-435, VO-435, and VO-540 series model reciprocating engines, and Textron Lycoming/Subsidiary of Textron, Inc. IO-720 series model reciprocating engines. This AD was prompted by a report of a manufacturing quality escape of improperly lubricated roller bearings installed in certain magnetos, which may result in overheating and magneto seizure. This AD requires the replacement of affected magneto or inspection of affected magneto and, if no white grease is detected, replacement of magneto components, as applicable, and reassembly of the magneto. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 15, 2022.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 15, 2022.

The FAA must receive comments on this AD by September 12, 2022.

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 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: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Continental Aerospace Technologies, P.O. Box 90, Mobile, AL 36615; phone: (251) 436-8299; website: www.continental.aero. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

Examining the AD Docket

You may examine the AD docket at www.regulations.gov by searching for and locating Docket No. FAA-2022-0983; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for the Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Boyce Jones, Aviation Safety Engineer, Atlanta ACO, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: (404) 474-5535; email: boyce.jones@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA received a report from Continental Aerospace Technologies, Inc., of a manufacturing quality escape that identified a certain population of magnetos that did not meet the design specification due to improperly lubricated roller bearings. The supplier notified the manufacturer that roller bearings installed in certain magnetos were delivered with a light corrosion preventive lubricant instead of the specified translucent white grease. Analysis by the manufacturer determined that affected magnetos assembled without the properly lubricated roller bearing have the potential to overheat, causing accelerated wear in the contact and cam follower. As a result of its analysis, the manufacturer published service information that specifies procedures for the removal and replacement of the affected magneto or inspection of the affected magneto and, if no white grease is detected, replacement of magneto components, as applicable, and reassembly of the magneto. This condition, if not addressed, could result in failure of one or more engines, in-flight shutdown, and loss of the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Continental Aerospace Technologies Critical Service Bulletin CSB673, Revision C, dated May 24, 2022 (the CSB). The CSB specifies procedures for removing and replacing affected magneto or inspecting affected magneto and, if no white grease is detected, replacing magneto components, as applicable, and reassembling the magneto. This CSB also specifies procedures for returning certain parts to the manufacturer for warranty replacement. 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 ADDRESSES.

AD Requirements

This AD requires the replacement of the affected magneto or inspection of the affected magneto and, if no white grease is detected, replacement of magneto components, as applicable, and reassembly of the magneto.

Clarification of Requirements

The CSB specifies procedures to return certain parts to the manufacturer for warranty replacement. However, this AD does not require returning parts to the manufacturer. The CSB also specifies to discard the roller bearing after the roller bearing has been pressed out of the magneto housing. This AD does not require discarding the roller bearing.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 et seq.) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule because affected magnetos assembled without properly lubricated roller bearings have the potential to overheat, causing accelerated wear in the contact and cam follower that could lead to seizure and failure of the magnetos. Since an engine may contain two affected magnetos, there is a possibility of failure of one or more engines and loss of the airplane due to loss of ignition. The FAA considers replacement or inspection of the affected magneto to be an urgent safety issue. Replacement or inspection of the affected magneto must be accomplished within 25 operating hours time-in-service (TIS) or, if any affected magneto has accumulated more than 25 operating hours TIS, before further flight after the effective date of this AD. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “FAA-2022-0983 and Project Identifier AD-2022-00614-E” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to www.regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Boyce Jones, Aviation Safety Engineer, Atlanta ACO, FAA, 1701 Columbia Avenue, College Park, GA 30337. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD could affect up to 740 magnetos installed on airplanes of U.S. registry. The FAA has no way of determining the number of operators that will remove the affected magneto and replace it with a part eligible for installation or, in lieu of replacing, disassemble, inspect and replace magneto components. The FAA's estimated cost on U.S. operators reflects the maximum possible cost based on the 740 affected magnetos installed on products of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Remove and replace the affected magneto	1.5 work-hours × \$85 per hour = \$127.50	\$1,600	\$1,727.50	Up to \$1,278,350.
Remove, disassemble, and inspect affected magneto	1 work-hour × \$85 per hour = \$85	0	85	Up to \$62,900.

The FAA estimates the following costs to replace magneto components. The agency has no way of determining the number of aircraft that might need this replacement:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace magneto components	.25 work-hours × \$85 per hour = \$21.25	\$20	\$41.25

Reassemble and install magneto	1 work-hour × \$85 per hour = \$85	0	170
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The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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.

The FAA is 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, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

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

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:



AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2022-16-03 Continental Aerospace Technologies, Inc., Lycoming Engines, and Textron Lycoming/Subsidiary of Textron, Inc. Reciprocating Engines: Amendment 39-22132; Docket No. FAA-2022-0983; Project Identifier AD-2022-00614-E.

(a) Effective Date

This airworthiness directive (AD) is effective August 15, 2022.

(b) Affected ADs

None.

(c) Applicability

This AD applies to:

(1) Continental Aerospace Technologies, Inc. reciprocating engine models identified in Table 1 to paragraph (c) of this AD that are equipped with an S-1200 series magneto having a serial number (S/N) between F21EA057 and F21KA009R, inclusive, manufactured and sold between May and November 2021; and

(2) Lycoming Engines and Textron Lycoming/Subsidiary of Textron, Inc. reciprocating engine models identified in Table 2 to paragraph (c) of this AD that are equipped with an S-1200 series magneto authorized by Continental Aerospace Technologies, Inc. Parts Manufacturer Approval (PMA) Supplements 1-54, having an S/N between F21EA057 and F21KA009R, inclusive, manufactured and sold between May and November 2021.

Table 1 to Paragraph (c) – Continental Aerospace Technologies, Inc. Reciprocating Engine Models

Make	Model
Continental Aerospace Technologies, Inc.	GTSIO-520-C, GTSIO-520-D, GTSIO-520-F, GTSIO-520-H, GTSIO-520-K, GTSIO-520-L, GTSIO-520-M, GTSIO-520-N, IO-346-A, IO-470-C, IO-470-D, IO-470-E, IO-470-F, IO-470-G, IO-470-H, IO-470-J, IO-470-K, IO-470-L, IO-470-M, IO-470-N, IO-470-P, IO-470-R, IO-470-S, IO-470-U, IO-470-V, IO-470-VO, IO-520-A, IO-520-B, IO-520-BA, IO-520-BB, IO-520-C, IO-520-CB, IO-520-D, IO-520-E, IO-520-F, IO-520-J, IO-520-K, IO-520-L, IO-520-P, IO-550-B, IO-550-C, IO-550-D, IO-550-E, IO-550-F, IO-550-L, LTSIO-520-AE, O-470-B, O-470-E, O-470-G, O-470-J, O-470-K, O-470-L, O-470-M, O-470-R, O-470-S, O-470-U, TSIO-520-A, TSIO-520-AE, TSIO-520-AF, TSIO-520-B, TSIO-520-BB, TSIO-520-C, TSIO-520-CE, TSIO-520-DB, TSIO-520-G, TSIO-520-H, TSIO-520-KB, TSIO-520-LB, TSIO-520-M, TSIO-520-NB, TSIO-520-P, TSIO-520-R, TSIO-520-T, TSIO-520-UB, TSIO-520-VB, TSIO-520-WB, TSIOL-550-A, TSIOL-550-B, TSIOL-550-C

Table 2 to Paragraph (c) – Lycoming Engines and Textron Lycoming Reciprocating Engine Models

Make	Model
Lycoming Engines	AEIO-320-D1B, AEIO-320-D2B, AEIO-360-A1B, AEIO-360-A1B6, AEIO-360-A2B, AEIO-360-B1F, AEIO-360-B2F, AEIO-360-B2F6, AEIO-540-D4B5, AIO-320-A1A, AIO-320-A1B, AIO-320-A2A, AIO-320-A2B, AIO-320-B1B, AIO-320-C1B, AIO-360-A1A, AIO-360-A1B, AIO-360-A2A, AIO-360-A2B, AIO-360-B1B, GO-480-G1J6, GSO-480-B1J6, HIO-360-C1B, HIO-360-D1A, HIO-540-A1A, IGO-480-A1A6, IGO-540-A1C, IGSO-480-A1G6, IGSO-540-A1A, IGSO-540-A1C, IGSO-540-A1D, IGSO-540-A1E, IGSO-540-A1F, IGSO-540-A1H, IGSO-540-B1A, IGSO-540-B1C, IO-320-B1D, IO-320-B1E, IO-320-D1A, IO-320-D1B, IO-320-D1C, IO-360-A1B, IO-360-A1B6, IO-360-A1C, IO-360-A1D6, IO-360-A2B, IO-360-A2C, IO-360-B1E, IO-360-B1F, IO-360-B2E, IO-360-B2F, IO-360-B2F6, IO-360-C1B, IO-360-C1C, IO-360-C1C6, IO-360-C1D6, IO-360-C1E6, IO-360-C1F, IO-360-D1A, IO-360-E1A, IO-360-F1A, IO-540-B1A5, IO-540-D4B5, IO-540-D4C5, IO-540-E1B5, IO-540-E1C5, IO-540-G1B5, IO-540-G1C5, IO-540-G1D5, IO-540-G1E5, IO-540-G1F5, IO-540-J4A5, IO-540-K1A5, IO-540-K1B5, IO-540-K1C5, IO-540-K1D5, IO-540-K1E5, IO-540-K1F5, IO-540-K1G5, IO-540-K1H5, IO-540-K1J5, IO-540-K1K5, IO-540-L1A5, IO-540-L1C5, IO-540-M1A5, IO-540-M1C5, IO-540-P1A5, IO-540-R1A5, IO-540-S1A5, IO-540-T4B5, IO-540-W1A5, IO-540-AA1A5, LIO-360-C1E6, LTIO-540-J2B, LTIO-540-U2A, LTIO-540-W2A, O-235-C2B, O-235-E2B, O-235-F2B, O-235-G2B, O-235-J2B, O-235-K2B, O-320-D1C, O-320-D1F, O-320-D2C, O-320-D2F, O-320-E1C, O-320-E1F, O-320-E1J, O-320-E2C, O-320-E2F, O-360-A1F, O-360-A1F6, O-360-A1G, O-360-A1G6, O-360-A2F, O-360-A2G, O-360-A4G, O-360-C1F, O-540-B1D5, O-540-B2C5, O-540-E4C5, O-540-G1A5, O-540-G2A5, TIGO-541-B1A, TIGO-541-C1A, TIGO-541-D1A, TIGO-541-D1B, TIGO-541-E1A, TIO-360-A1A, TIO-360-A1B, TIO-540-A1A, TIO-540-A1B, TIO-540-A1C, TIO-540-A2A, TIO-540-A2B, TIO-540-A2C, TIO-540-C1A, TIO-540-E1A, TIO-540-G1A, TIO-540-H1A, TIO-540-J2B, TIO-540-U2A, TIO-540-W2A, TIO-541-A1A, TIO-541-E1A4, TIO-541-E1B4, TIO-541-E1C4, TIO-541-E1D4, TVO-435-B1B, TVO-435-D1A, TVO-435-F1A, TVO-435-G1A, VO-435-B1A, VO-540-B1H3, VO-540-B2G, VO-540-C2C
Textron Lycoming/Subsidiary of Textron, Inc.	IO-720-A1B, IO-720-B1B, IO-720-C1B

(d) Subject

Joint Aircraft System Component (JASC) Code 8500, Engine (RECIPROCATING).

(e) Unsafe Condition

This AD was prompted by a report of a manufacturing quality escape of improperly lubricated roller bearings installed in certain magnetos, which may result in overheating and magneto seizure. The FAA is issuing this AD to prevent failure of the magneto. The unsafe condition, if not addressed, could result in failure of one or more engines, in-flight shutdown, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

For any affected magneto, within 25 operating hours time-in-service (TIS) or, if any affected magneto has accumulated more than 25 operating hours TIS, before further flight after the effective date of this AD:

(1) Remove the affected magneto from the engine and replace with a part eligible for installation in accordance with the Corrective Action, paragraph III.A., of Continental Aerospace Technologies Critical Service Bulletin CSB673, Revision C, dated May 24, 2022 (the CSB); or

(2) Remove the affected magneto from the engine and disassemble and inspect the affected magneto in accordance with the Corrective Action, paragraphs III.B.1. through III.B.8.a., of the CSB.

(i) If, during the inspection required by paragraph (g)(2) of this AD, no white grease is detected, before further flight, inspect and replace the magneto components, as applicable, in accordance with the Corrective Action, paragraphs III.B.8.b.1 and III.B.8.b.2, of the CSB. Where the CSB specifies discarding the roller bearing, this AD instead requires removing the roller bearing from service.

(ii) Reassemble and install the magneto in accordance with the Corrective Action, paragraph III.C., of the CSB.

(h) Installation Prohibition

After the effective date of this AD, do not install onto any engine an S-1200 series magneto having a S/N between F21EA057 and F21KA009R, inclusive, manufactured and sold between May and November 2021; or any S-1200 series magneto authorized by Continental Aerospace Technologies, Inc. PMA Supplements 1-54, having an S/N between F21EA057 and F21KA009R, inclusive, manufactured and sold between May and November 2021, unless the magneto has first undergone corrective action and the data plate has been marked in accordance with the Corrective Action, paragraph III.C.3., of the CSB.

(i) Credit for Previous Actions

You may take credit for actions required by paragraph (g) of this AD if the actions were performed before the effective date of this AD using Continental Aerospace Technologies Critical Service Bulletin CSB673, Revision B, dated April 20, 2022; Continental Ignition Systems Service Bulletin (SB) SB673, Revision A, dated March 8, 2022; or Continental Ignition Systems SB SB673, Original Issue, dated January 31, 2022.

(j) Special Flight Permit

A special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to permit a one-time non-revenue ferry flight to a location where this AD can be accomplished. This ferry flight must be performed with only essential flight crew.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

For more information about this AD, contact Boyce Jones, Aviation Safety Engineer, Atlanta ACO, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: (404) 474-5535; email: boyce.jones@faa.gov.

(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) Continental Aerospace Technologies Critical Service Bulletin CSB673, Revision C, dated May 24, 2022.

(ii) [Reserved]

(3) For service information identified in this AD, contact Continental Aerospace Technologies, P.O. Box 90, Mobile, AL 36615; phone: (251) 436-8299; website: www.continental.aero.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on July 25, 2022.

Christina Underwood,

Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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