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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0126; Directorate Identifier 2011-NE-03-AD; Amendment 39-16726; AD 2011-13-03]

RIN 2120-AA64

Airworthiness Directives: Lycoming Engines (Type Certificate Previously Held by Textron Lycoming) and Teledyne Continental Motors (TCM) Turbocharged Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires inspecting certain Lycoming and TCM reciprocating engines with certain Hartzell Engine Technologies, LLC (HET) turbochargers installed, and disassembly and cleaning of the turbocharger center housing and rotating assembly (CHRA) cavities of affected turbochargers. This AD was prompted by a turbocharger failure due to machining debris left in the cavities of the CHRA during manufacture. We are issuing this AD to prevent seizure of the turbocharger turbine, which could result in damage to the engine, and smoke in the airplane cabin.

DATES: This AD is effective July 13, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 13, 2011.

We must receive comments on this AD by August 12, 2011.

ADDRESSES: You may send comments 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 AD, contact Hartzell Engine Technologies, LLC, 2900 Selma Highway, Montgomery, AL 36108, phone: 334-386-5400; fax: 334-386-5450. You may

review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; 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: Gary Wechsler, Aerospace Engineer, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5575; fax: 404-474-5606; e-mail: gary.wechsler@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

HET recently informed us of a failure of one of their turbochargers installed on a TCM TSIO-550-K model reciprocating engine. HET identified the cause of the failure as machining debris left in the CHRA. HET also informed us that the debris was a by-product of manufacture that had not been removed. This debris, if present, could result in seizure of the turbocharger turbine, which could result in damage to the engine, and smoke in the airplane cabin.

Relevant Service Information

We reviewed Hartzell Engine Technologies, LLC Service Bulletin (SB) No. 040, Revision A, dated December 22, 2010. The SB describes procedures for identifying affected turbochargers, and performing a one-time disassembly, CHRA cleaning, and reassembly.

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 turbochargers of the same type design.

AD Requirements

This AD requires accomplishing the cleaning specified in the service information described previously.

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 airplanes with no more than 50 hours time-in-service on new or overhauled affected turbochargers are at risk of the unsafe condition described in this AD. 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-2011-0126 and Directorate Identifier 2011-NE-03-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 about 2,761 turbochargers are installed on Lycoming and TCM engines, installed on airplanes of U.S. registry. We also estimate it will take about 1 work-hour to inspect each turbocharger and that 264 turbochargers will fail inspection and require corrective action. Each corrective action will require 3 work-hours. The average labor rate is $85 per work-hour. No additional parts are required. Based on these figures, we estimate the cost of the AD on U.S. operators to be $391,765. Our cost estimate is exclusive of possible warranty coverage.

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 turbochargers 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):

2011-13-03 Lycoming Engines (Type certificate previously held by Textron Lycoming) and Teledyne Continental Motors (TCM) Turbocharged Reciprocating Engines: Amendment 39-16726; Docket No. FAA-2011-0126; Directorate Identifier 2011-NE-03-AD.

Effective Date

(a) This AD is effective July 13, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the Lycoming Engines and TCM turbocharged reciprocating engines listed in, but not limited to, Table 1 of this AD, with the following Hartzell Engine Technologies, LLC (HET) turbocharger models TA3601, TAO401, TAO402, TAO411, TAO413, T1879, T18A21, T18A44, THO867, and TEO659, installed:

(1) Newly manufactured turbochargers (otherwise known as the -0000 series) before serial number H-NJL00003, or rebuilt (otherwise known as the -9000 series) before serial number H-NJR00002; and

(2) With less than 50 hours time-in-service (TIS) on the effective date of this AD; and

(3) With a part number listed in Table 2 or Table 3 of this AD; and

(4) With a "slanted A" foundry mark located on the center housing and rotating assembly (CHRA).

Table 1–Engines Affected

TSIO-520-BE	TSIO-360-H	TIO-540-AF1A	TIGO-541-E
TSIO-360-MB, SB	O-540-L3C5D	TIO-540-AF1B	GTSIO-520-F
TIO-540-AK1A	TSIO-520-T	TIO-540-AH1A	GTSIO-520-K
L/TSIO-360-RB	L/TO-360-E1A6D	TIO-541-E1D4	GTSIO-520-D
TIO-540-AE2A	TIO-540-AG1A	TIO-541-E1C4	GTSIO-520-H

Table 2–KAES Turbocharger Part Numbers Affected

406990-9004	407540-0003	407540-9003	407800-9003	408590-9012	408610-0001
465292-0001	465292-9001	465292-0002	465292-9002	465292-0004	465292-9004
465398-9002	466011-0002	466011-9002	466304-0003	466304-9003	466642-0001
466642-0002	466642-9002	466642-0005	466642-9005	466642-0006	466642-0007
408610-9001	465398-0002	466642-9001	N/A	N/A	N/A

Table 3–Original Equipment Turbocharger Part Numbers Affected

637374-1	633274-4	635034-2	642518-4	646677	649151-1
649151-2	46C19836	46C19839	46C22924	C295001-0301	C295001-0304
LW-10191	LW-13310	LW-16254	N/A	N/A	N/A

(d) This AD does not require action for:

(1) Turbochargers with more than 50 hours TIS on the effective date of this AD.

(2) Turbochargers with a circled "JT" foundry mark on the CHRA.

(e) This AD does not apply to engines with new or overhauled turbochargers installed on or before September 2001.

Unsafe Condition

(f) This AD was prompted by a turbocharger failure due to machining debris that was not cleaned from the cavities of the center housing and rotating assembly (CHRA), during manufacture. We are issuing this AD to prevent seizure of the turbocharger turbine, which could result in damage to the engine, and smoke in the airplane cabin.

Compliance

(g) Unless already done, disassemble, clean, and reassemble the turbochargers affected by this AD as follows:

Turbochargers With Between 0 and 10 Hours TIS

(1) For affected turbochargers including overhauls, with between 0 and 10 hours TIS on the effective date of this AD, before further flight, disassemble the turbocharger, clean the CHRA center housing cavity, and reassemble the turbocharger.

Turbochargers With More Than 10 Hours TIS But Less Than 50 Hours TIS

(2) For affected turbochargers including overhauls, with more than 10 hours TIS but less than 50 hours TIS on the effective date of this AD, within the next 10 hours TIS, disassemble the turbocharger, clean the CHRA center housing cavity, and reassemble the turbocharger.

(3) Use paragraphs 1 through 10 of the CLEANING CHRA CENTER HOUSING section of Hartzell Engine Technologies, LLC SB No. 040, Revision A, dated December 22, 2010, to do the cleaning.

(4) The reference to Step 16 in paragraph 10 of the CLEANING CHRA CENTER HOUSING section of Hartzell Engine Technologies, LLC SB No. 040, Revision A, dated December 22, 2010, is incorrect. The correct reference is Step 9.

Turbochargers With More Than 50 Hours TIS

(h) For turbochargers with more than 50 hours TIS on the effective date of this AD, no further action is required.

Special Flight Permits

(i) Special flight permits are restricted to day Visual Meteorological Conditions flight only.

Alternative Methods of Compliance (AMOCs)

(j) The Manager, Atlanta Aircraft Certification Office, has the authority to approve AMOCs for this AD if requested using the procedures found in 14 CFR 39.19.

Related Information

(k) For more information about this AD, contact Gary Wechsler, Aerospace Engineer, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5575; fax: 404-474-5606; e-mail: gary.wechsler@faa.gov.

Material Incorporated by Reference

(l) You must use Hartzell Engine Technologies, LLC Service Bulletin No. 040, Revision A, dated December 22, 2010, to clean the turbocharger.

(m) The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(n) For service information identified in this AD, contact Hartzell Engine Technologies, LLC, 2900 Selma Highway, Montgomery, AL 36108, phone: 334-386-5400; fax: 334-386-5450.

(o) You may review copies of the service information that is incorporated by at the FAA, New England Region, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the FAA, call 781-238-7125. 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 June 14, 2011.
Peter A. White,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.