

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0314; Directorate Identifier 2008-NE-09-AD; Amendment 39-15471; AD 2008-08-17]

RIN 2120-AA64

Airworthiness Directives; Kelly Aerospace Power Systems Turbochargers

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Kelly Aerospace Power Systems turbochargers. This AD requires a onetime visual inspection of suspect turbochargers for an excessive gap between the turbocharger turbine housing flange and the exhaust tube flange, and replacement of turbochargers that fail the gap inspection. This AD results from two reports of exhaust leakage occurring between the turbocharger turbine housing flange and the exhaust tube flange due to machining defects of the turbocharger turbine housing flange. We are issuing this AD to prevent hazardous amounts of carbon monoxide from entering the cabin, an increase in under-cowl temperatures hampering engine and accessory function, and loss of tailpipe retention, which could lead to an in-flight fire and loss of control of the airplane.

DATES: This AD becomes effective May 6, 2008. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of May 6, 2008.

We must receive any comments on this AD by June 20, 2008.

ADDRESSES: Use one of the following addresses to comment on this AD:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: U.S. Docket Management Facility, Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: (202) 493-2251.

Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone (570) 323-6181; fax (570) 327-7101, or on the Internet at <http://www.Lycoming.Textron.com> for the Lycoming Mandatory Service Bulletin in this AD. Contact Kelly Aerospace Power Systems, 2500 Selma

Highway, Montgomery, AL 36108, telephone (334) 386-5450; fax (334) 386-5450; or on the Internet at <http://www.kellyaerospace.com> for the Kelly Aerospace Power Systems Mandatory Service Bulletins in this AD.

FOR FURTHER INFORMATION CONTACT: Kevin Brane, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; e-mail: kevin.brane@faa.gov; telephone (770) 703-6063; fax (770) 703-6097.

SUPPLEMENTARY INFORMATION: In January 2008, Lycoming Engines notified us, and Kelly Aerospace Power Systems, of two reports of exhaust leakage occurring between the turbocharger turbine housing flange and the exhaust tube flange. Lycoming Engines found machining defects in the turbine housing exit flanges of those Kelly Aerospace Power Systems turbochargers. Kelly Aerospace Power Systems investigated this quality escape, and found that the same machining defect may exist on as many as 310 turbochargers. This condition, if not corrected, could result in hazardous amounts of carbon monoxide entering the cabin and an increase in under-cowl temperatures hampering engine and accessory function. This condition could also result in loss of tailpipe retention, which could lead to an in-flight fire and loss of control of the airplane.

Relevant Service Information

We have reviewed and approved the technical contents of Lycoming Engines Mandatory Service Bulletin (MSB) No. 580, dated February 15, 2008, Kelly Aerospace Power Systems MSB No. 029, dated February 1, 2008, Kelly Aerospace Power Systems MSB No. 030, Revision A, dated April 1, 2008, and Kelly Aerospace Power Systems MSB No. 031, dated February 28, 2008. These MSBs list affected engine model numbers and suspect turbocharger part numbers and serial numbers.

FAA's Determination and Requirements of this AD

The unsafe condition described previously is likely to exist or develop on other Kelly Aerospace Power Systems turbochargers of the same type design. For that reason, we are issuing this AD to prevent hazardous amounts of carbon monoxide from entering the cabin, an increase in under-cowl temperatures hampering engine and accessory function, and loss of tailpipe retention, which could lead to an in-flight fire and loss of control of the airplane. This AD requires a onetime visual inspection of suspect turbochargers for an excessive gap between the turbocharger turbine housing flange and the exhaust tube flange, and replacement of turbochargers that fail the gap inspection. You must use the service information previously described to identify the suspect population of turbochargers affected by this AD.

FAA's Determination of the Effective Date

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable. 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 us any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "AD Docket No. FAA-2008-0314; Directorate Identifier 2008-NE-09-AD" in

the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it.

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 with FAA personnel concerning this AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office 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 Operations office (telephone (800) 647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

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

We have determined that 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 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

List of Subjects in 14 CFR Part 39

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

Adoption of the Amendment

Under 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. The FAA amends § 39.13 by adding the following new airworthiness directive:



2008-08-17 Kelly Aerospace Power Systems: Amendment 39-15471. Docket No. FAA-2008-0314; Directorate Identifier 2008-NE-09-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective May 6, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to the turbochargers referenced in paragraphs (c)(1) through (c)(15)(vi) of this AD:

(1) Kelly Aerospace Power Systems (KAPS) turbochargers, part number (P/N) 409170-0001 (Lycoming P/N LW-12463), installed on Lycoming Engines (L)TIO-540-J2B and (L)TIO-540-J2BD engines:

(i) With the engine serial numbers (SNs) listed in Table 1 of Lycoming Engines Mandatory Service Bulletin (MSB) No. 580, dated February 15, 2008; and

(ii) With the turbocharger SNs listed in KAPS MSB No. 029, dated February 1, 2008.

(iii) Lycoming Engines (L)TIO-540-J2B and (L)TIO-540-J2BD engines are installed on, but not limited to, Piper PA31-350 Navajo Chieftain, Piper T1020 airplanes, and Colemill Panther conversion airplanes using a 350 horsepower engine.

(2) KAPS turbochargers, P/N 465930-0003 (Teledyne Continental Motors (TCM) P/N 641672-3), installed on TCM GTSIO-520-L and GTSIO-520-N engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(3) KAPS turbochargers, P/N 466412-0003 (TCM P/N 652964), installed on TCM TSIOL-550-A and TSIOL-550-C engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(4) KAPS turbochargers, P/N 466412-0004, installed on RAM modifications only, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(5) KAPS turbochargers, P/N 466412-0003 (TCM P/N 652964), installed on Cessna 414 airplanes with a TCM TSIOL-550-A or TSIOL-550-C engine (Supplemental Type Certificate (STC) SA7633SW), with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(6) KAPS turbochargers, P/N 465930-0003 (TCM P/N 641672-3), installed on Cessna 421 Golden Eagle airplanes with a TCM GTSIO-520-L or GTSIO-52-N engine with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(7) KAPS turbochargers, P/N 465680-0004 (Cessna P/N C295001-0202), installed on TCM TSIO-520-AF or TSIO-520-P engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(8) KAPS turbochargers, P/N 465930-0002 (TCM P/N 641672-2), installed on TCM GTSIO-520-M engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(9) KAPS turbochargers, P/N 465680-0004 (Cessna P/N C295001-0202), installed on Cessna P210 Pressurized Centurion airplanes with a TCM TSIO-520-AF or TSIO-520-P engine, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(10) KAPS turbochargers, P/N 465930-0002 (TCM P/N 641672-2), installed on Cessna 404 Titan airplanes with a TCM GTSIO-520-M engine, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated April 1, 2008.

(11) KAPS overhauled turbochargers, P/N 465930-9003, installed on TCM GTSIO-520-L or GTSIO-520-N engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated February 28, 2008.

(12) KAPS overhauled turbochargers, P/N 409170-9001, installed on Lycoming Engines TIO-540-J2B; TIO-540-J2BD; TIO-540-N2BD, and LTIO-540-N2BD engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated February 28, 2008.

(13) KAPS overhauled turbochargers, P/N 465680-9005, installed on Lycoming Engines TIO-540-V2AD and TIO-540-W2A engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated February 28, 2008.

(14) KAPS overhauled turbochargers, P/N 465930-9002, installed on TCM GTSIO-520-M engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated February 28, 2008.

(15) Also, the following KAPS turbochargers might have been overhauled or repaired by other than KAPS, that used a P/N 441977-0023S or P/N 441977-0025S turbine housing sold as a spare part, through the Aviall Company. These turbine housings have the date code of 1006 and might have been installed between October 2006 and January 25, 2008. The turbocharger data plates might include manufacturer's information other than KAPS information, such as, Garrett:

(i) P/N 409170-0001; installed on Lycoming Engines TIO-540-J2B; TIO-540-J2BD; TIO-540-N2BD; and LTIO versions of the noted engine models.

(ii) P/N 465680-0004; installed on TCM TSIO-520-AF and TSIO-520P engines.

(iii) P/N 465680-0005; installed on Lycoming Engines TIO-540-V2AD and TIO-540-W2A engines.

(iv) P/N 465930-0002; installed on TCM GTSIO-520-M engines.

(v) P/N 465930-0003; installed on TCM GTSIO-520-L and GTSIO-520-N engines.

(vi) P/N 465448-0004; installed on TCM TSIO-520-CE engines.

(vii) P/N 466412-0003; installed on TCM TSIOL-550-A and TSIOL-550-C engines. (viii) P/N 466412-0004; installed on engines modified by RAM.

Unsafe Condition

(d) This AD results from two reports of exhaust leakage occurring between the turbocharger turbine housing flange and the exhaust tube flange due to machining defects of the turbocharger turbine housing flange. We are issuing this AD to prevent hazardous amounts of carbon monoxide from entering the cabin, an increase in under-cowl temperatures hampering engine and accessory function, and loss of tailpipe retention, which could lead to an in-flight fire and loss of control of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within 10 hours time-in-service or at the next regular inspection interval, whichever occurs first, unless the actions have already been done.

Onetime Visual Inspection of Turbocharger

(f) Carefully remove the "V" band clamp from around the turbocharger turbine housing at the turbocharger exhaust outlet, taking care not to move the exhaust tube and tailpipe assembly.

(g) Visually inspect the area that was captured by the "V" band clamp. Use a feeler gauge at the split line between the turbine housing flange and the exhaust tube flange all around the circumference.

(h) The maximum gap must not exceed 0.005 inch.

(i) Before further flight, replace any turbocharger that exceeds the 0.005 inch maximum gap, with a serviceable turbocharger.

(j) If the maximum gap is not exceeded, metal stamp a 1/8" upper case "T" on the side of the turbocharger discharge flange. Information on the stamping location can be found in the MSBs referenced in this AD.

Definition

(k) For the purpose of this AD, a serviceable turbocharger is one that is not listed in the suspect SN lists of the Lycoming Engines MSB or KAPS MSBs referenced in this AD, or one that passes the visual inspection in this AD.

Alternative Methods of Compliance

(l) The Manager, Atlanta 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.

Special Flight Permits

(m) Under 39.23, we are limiting the special flight permits for this AD by the following condition:

(1) A special flight permit to fly the airplane to where the visual inspection can be done may be issued after the operator verifies that the turbocharger tailpipe assembly is secure.

(2) To verify, apply a side load and a vertical load to the tailpipe assembly by hand. No mechanical deflection is allowed.

(3) After verifying that the tailpipe assembly is secure, the operator can apply for a special flight permit from the FAA. The FAA office or person approving the permit must add this condition to the limitations of the special flight permit.

Previous Credit

(n) If you used Kelly Aerospace Power Systems MSB No. 030, dated February 15, 2008 before the effective date of this AD to identify the suspect population of turbochargers identified in applicability paragraphs (c)(2) through (c)(9) of this AD, you satisfied the requirements of those paragraphs in this AD.

Related Information

(o) Contact Kevin Brane, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; e-mail: kevin.brane@faa.gov; telephone (770) 703-6063; fax (770) 703-6097, for more information about this AD.

Material Incorporated by Reference

(p) You must use the service information specified in Table 1 of this AD to identify the suspect population of turbochargers being inspected by this AD. The Director of the Federal Register approved the incorporation by reference of the documents listed in Table 1 of this AD in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone (570) 323-6181; fax (570) 327-7101, or go on the Internet at <http://www.Lycoming.Textron.com> for a copy of their service information. Also, contact Kelly Aerospace Power Systems, 2500 Selma Highway, Montgomery, AL 36108, telephone (334) 386-5450; fax (334) 386-5450, or go on the Internet at <http://www.kellyaerospace.com> for a copy of their service information. You may review copies 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 NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Table 1 – Incorporation by Reference

Mandatory Service Bulletin (MSB) No.	Page	Revision	Date
Lycoming MSB No. 580 Total Pages: 6	ALL	Original	February 15, 2008
Kelly Aerospace Power Systems MSB No. 029 Total Pages: 4	ALL	Original	February 1, 2008
Kelly Aerospace Power Systems MSB No. 030 Total Pages: 5	ALL	A	April 1, 2008
Kelly Aerospace Power Systems MSB No. 031 Total Pages: 5	ALL	Original	February 28, 2008

Issued in Burlington, Massachusetts, on April 10, 2008.
Peter A. White,
Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.
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