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[Page 35619-35622]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0122; Directorate Identifier 2009-CE-067-AD; Amendment 39-16338; AD 2010-13-07]

RIN 2120-AA64

Airworthiness Directives; Piper Aircraft, Inc. Models PA-32R-301T and PA-46-350P Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Piper Aircraft, Inc. Models PA-32R-301T and PA-46-350P airplanes. This AD requires you to replace any spot-welded, V-band exhaust coupling with a riveted, V-band exhaust coupling. This AD results from reports that spot-welded, V-band exhaust couplings are failing. We are issuing this AD to prevent failure of the V-band exhaust coupling, which could cause the exhaust pipe to detach from the turbocharger. This failure could result in release of high-temperature gases inside the engine compartment and possibly cause an in-flight fire. An in-flight fire could lead to loss of control.

DATES: This AD becomes effective on July 28, 2010.

On July 28, 2010, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

ADDRESSES: To get the service information identified in this AD, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone: (570) 323-6181; fax: (570) 327-7101; Internet: <http://www.lycoming.com>.

To view the AD docket, go to U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, or on the Internet at <http://www.regulations.gov>. The docket number is FAA-2010-0122; Directorate Identifier; 2009-CE-067-AD.

FOR FURTHER INFORMATION CONTACT: Darby Mirocha, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, Georgia 30337; telephone: (404) 474-5573; fax: (404) 474-5606; e-mail: darby.mirocha@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

On February 9, 2010, we issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to Piper Aircraft, Inc. Models PA-32R-301T and PA-46-350P airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on February 19, 2010 (75 FR 7407). The NPRM proposed to require replacing any spot-welded, V-band exhaust coupling with a riveted, V-band exhaust coupling.

Comments

We provided the public the opportunity to participate in developing this AD. We received one comment in support of the AD. The following presents the additional comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: Incorporate Additional Lycoming Service Instructions

Gerald Stroum and Gerald Blank suggest that Lycoming Service Instructions 1448 and 1238B be incorporated into the AD because they contain helpful instructions and procedures for the proper installation of exhaust components.

Mr. Stroum also suggests that adding a requirement to free all slip joints when replacing the clamp will assist in enabling the exhaust system to be installed and aligned correctly.

The commenters state that these types of clamps (spot welded) have been used with a long history of success in the automotive diesel industry, and the issue is more readily solved by proper installation than by a change in clamp design. Their experience shows proper installation, torque techniques, and pre-torque alignments of components go a long way in preventing clamp failures down the road.

We agree with the commenters that proper installation and maintenance, which includes freeing the slip joint to ensure proper operation, plays a key role in the longevity and proper function of the exhaust system.

The data in Lycoming Service Instruction 1448 contains references to part numbers that are not the subject of this AD; therefore, we have determined including reference to that service instruction would provide confusing and contradictory information. However, we agree Lycoming Service Instruction 1238B provides beneficial information about the proper assembly and torque procedures of V-band clamps.

We will change the final rule AD action to incorporate by reference Lycoming Service Instruction 1238B. We will not change the final rule AD action to incorporate reference to Lycoming Service Instruction 1448.

Comment Issue No. 2: Correct the Cost of Compliance

Gerald Blank, Ed Novak, and Shoreline Aviation, Inc. state that the Cost of Compliance section in the proposed AD incorrectly reflects the number of V-band clamps installed on the airplanes affected by this AD.

All three commenters suggest changing the Cost of Compliance section to accurately reflect the number of V-band clamps installed on each affected model airplane.

We agree with the commenters. After further research, we determined that Model PA-32R-301T (Saratoga II TC) has two of the affected V-Band clamps installed, and Model PA-46-350P (Mirage) has one. We will change the final rule AD action to incorporate this change.

Comment Issue No. 3: The AD Should Be Written Against the V-Band Clamp Instead of the Airplanes

Ed Novak and Shoreline Aviation, Inc. both suggest that since identical clamps have failed on other airplane models that prompted two previous ADs (AD 2000-11-04 for Commander Aircraft Company (Commander) Model 114TC airplanes and AD 2004-23-17 for Mooney Airplane Company, Inc., (Mooney) Model M20M airplanes), this AD should be written against the Lycoming engine/clamp combination restricting its use on any exhaust system.

Shoreline Aviation, Inc. states the incident that prompted this AD would not have happened if the previous ADs had been written against the clamp and not the airplanes.

Based on the specific reports the FAA has received to date regarding Piper Aircraft, Inc. Models PA-32R-301T and PA-46-350P airplanes and with the subsequent issuance of Piper Service Bulletin 1180A, the FAA initiated this AD action against certain Piper airplanes only.

We will continue to collect and analyze all available data to determine whether the condition exists in any other airplane configurations. We may take additional rulemaking action in the future to address either additional airplane configurations or the engine design depending on the FAA's determination of all existing and future information received.

Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for incorporating reference to Lycoming Service Instruction 1238B and updating the Cost of Compliance section to accurately reflect how many V-band clamps each model of the airplanes affected by this AD has installed, and minor editorial corrections. We have determined that these minor corrections:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Costs of Compliance

We estimate that this AD affects 596 airplanes in the U.S. registry provided they have the affected V-band exhaust coupling installed.

We estimate the following costs to do the replacement for Model PA-46-350P airplanes. These airplanes have one V-band clamp installed:

Labor Cost	Parts Cost	Total Cost Per Model PA-46-350P Airplane
2 work-hours X \$85 per hour = \$170	\$714	\$884

- We estimate the following costs to do the replacement for Model PA-32R-301T airplanes. These airplanes have two V-band clamps installed:

Labor Cost	Parts Cost	Total Cost Per Model PA-32R-301T Airplane
2 work-hours per V-band clamp. 2 clamps per airplane: 4 work-hours X \$85 per hour = \$340.	\$714 per V-band clamp. \$714 X 2 = \$1,428.	\$1,768

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 AD.

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 other information as included in the Regulatory Evaluation) and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "Docket No. FAA-2010-0122; Directorate Identifier 2009-CE-067-AD" in your request.

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 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. FAA amends § 39.13 by adding a new AD to read as follows:



2010-13-07 Piper Aircraft, Inc.: Amendment 39-16338; Docket No. FAA-2010-0122; Directorate Identifier 2009-CE-067-AD.

Effective Date

(a) This AD becomes effective on July 28, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

Model	Serial numbers
PA-32R-301T	3257001 through 3257311.
PA-46-350P	4622001 through 4622200 and 4636001 through 4636341.

Subject

(d) Air Transport Association of America (ATA) Code 78: Engine Exhaust.

Unsafe Condition

This AD is the result of reports that spot-welded, V-band exhaust couplings are failing. We are issuing this AD to prevent failure of the V-band exhaust coupling, which could cause the exhaust pipe to detach from the turbocharger. This failure could result in release of high-temperature gases inside the engine compartment and possibly cause an in-flight fire. An in-flight fire could lead to loss of control.

Compliance

(e) To address this problem, you must do the following, unless already done:

Actions	Compliance	Procedures
(1) Replace V-band exhaust couplings, part number (P/N) Lycoming 40D21162-340M or Eaton/Aeroquip 55677-340M with an improved design Eaton/Aeroquip P/N NH1009399-10 or Lycoming P/N 40D23255-340M.	At the next regularly scheduled maintenance event after July 28, 2010 (the effective date of this AD) or within the next 25 hours time-in-service (TIS) after July 28, 2010 (the effective date of this AD), whichever occurs first.	Remove the spot welded V-band clamp(s) and discard. Then, do either of the following actions: (i) Install the new riveted clamp(s) and tighten to an initial torque of 40 in. lbs. Tap the V-band clamp(s) around its circumference with a rubber mallet to equalize band tension. Retorque the clamp(s) to 60 in. lbs. and again tap the clamp(s) around its circumference. Retorque the clamp(s) to a 60 in. lbs. final torque and re-safety wire the V-band coupling(s); or (ii) Install the new riveted clamp(s) follow Lycoming Service Instruction No. 1238B, dated January 6, 2010, and re-safety wire the V-band coupling(s).
(2) Do not install any Eaton/Aeroquip P/N 55677-340M or Lycoming P/N 40D21162-340M.	As of July 28, 2010 (the effective date of this AD).	Not applicable.

Alternative Methods of Compliance (AMOCs)

(f) The Manager, Atlanta Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Darby Mirocha, Aerospace Engineer, FAA, Atlanta ACO, 1701 Columbia Avenue, College Park, Georgia 30337; telephone: (404) 474-5573; fax: (404) 474-5606. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(g) You must use Lycoming Service Instruction No. 1238B, dated January 6, 2010, or the procedures specified in paragraph (e)(1) of this AD to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701; telephone: (570) 323-6181; fax: (570) 327-7101; Internet: <http://www.lycoming.com>.

(3) You may review copies of the service information incorporated by reference for this AD at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the Central Region, call (816) 329-3768.

(4) You may also review copies of the service information incorporated by reference for this AD 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/code_of_federal_regulations/ibr_locations.html.

Issued in Kansas City, Missouri, on June 14, 2010.
Sandra J. Campbell,
Acting Manager, Small Airplane Directorate,
Aircraft Certification Service.