



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0324; Directorate Identifier 2017-CE-004-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Aerospace Welding Minneapolis, Inc. Mufflers**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Aerospace Welding Minneapolis, Inc. mufflers, part numbers A1754001-23 and A1754001-25, installed on Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company) Models 172, 172R, 172S, and 177 airplanes. This proposed AD was prompted by occurrences of cracks or broken welds in the connecting weld of the muffler body to muffler cuff that may allow carbon monoxide exhaust fumes into the cockpit heating system. This proposed AD would require an inspection of the muffler for leaking to identify cracks and replacement of the muffler. We are proposing this AD to correct the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**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: 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 NPRM, contact Aerospace Welding Minneapolis, Inc. (AWI) 1045 Gemini Road, Eagan, Minnesota 55121; telephone: 651-379-9888; fax: 651-379-9889; Internet: [www.awi-ami.com](http://www.awi-ami.com). You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

### **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-2017-0324; 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 proposed 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:** Mark Grace, Aerospace Engineer, FAA, Chicago Aircraft Certification Office, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; telephone: (847) 294-7377; fax: (847) 294-7834; email: [mark.grace@faa.gov](mailto:mark.grace@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-0324; Directorate Identifier 2017-CE-004-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed 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 proposed AD.

### **Discussion**

We were notified of broken or cracked welds in the connecting weld of the muffler body to muffler cuff on certain Aerospace Welding Minneapolis, Inc. (AWI) mufflers, part numbers (P/Ns) A1754001-23 and A1754001-25 that were installed on Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company) Models 172, 172R, 172S, and 177 airplanes. There have been 54 occurrences identified by maintenance and 2 occurrences identified by the carbon monoxide (CO) gas monitor warning system. This condition, if not corrected, could lead to CO exhaust fumes entering the cockpit heating system and result in inhibiting the pilot’s ability to maintain control of the airplane.

### **Related Service Information under 1 CFR part 51**

We reviewed AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017. The service information describes procedures for removing and replacing the affected mufflers. 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 AWI Mandatory Service Bulletin No. 16063001, dated June 30, 2015. The service bulletin describes how to identify the installation of an affected muffler.

### **FAA's Determination**

We are proposing 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.

### **Proposed AD Requirements**

This proposed AD would require inspecting the muffler for leaking to identify cracks and replacement of the muffler with an FAA-approved part.

### **Differences Between this Proposed AD and the Service Information**

The AWI service bulletin requires replacement of the muffler before further flight. This proposed AD would require an inspection of the muffler for leaking to identify cracks within 5 hours time-in-service (TIS) after the effective date of the AD with replacement of leaking mufflers before further flight. This proposed AD would allow 100 hours TIS or at the next annual inspection for replacement of non-leaking mufflers. The service bulletin also requires returning the affected mufflers back to AWI, and this proposed AD does not require return of the muffler. The actions of the proposed AD would take precedence over the service information.

## Costs of Compliance

We estimate that this proposed AD affects 171 mufflers installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection of muffler	1 work-hour X \$85 per hour = \$85	Not applicable	\$85	\$14,535
Replacement of the muffler	4 work-hours X \$85 per hour = \$340	\$350	\$690	\$117,990

The proposed AD would affect 171 mufflers with parts manufacturer approval; however, only 9 mufflers remain in service.

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

## 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 determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (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),
- (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.

### **The Proposed Amendment**

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

**Aerospace Welding Minneapolis, Inc.:** Docket No. FAA-20170324; Directorate Identifier 2017-CE-004-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Aerospace Welding Minneapolis, Inc. (AWI) mufflers listed in figure 1 of paragraph (c) of this AD that are installed on but limited to the airplanes listed in figure 2 of paragraph (c) of this AD.

Note 1 to paragraph (c) of this AD: You may use AWI Mandatory Service Bulletin No. 16063001, dated June 30, 2015, to identify if an affected muffler is installed on the airplane.

Figure 1 of paragraph (c) of this AD—*Affected Mufflers*

Muffler Part Number	Muffler Serial Numbers
A1754001-23	33553 through 33557; 34721 through 34728; 35322 through 35329; 35670; 38481 through 38485; 38584 through 38586; and 38723 through 38727
A1754001-25	32795 through 32800; 33558 through 33569; 33779 through 33790; 34636 through 34653; 34968 through 34984; 35159 through 35176; 37903 through 37906; 38174 through 38193; 38502 through 38506; 38566 through 38575; and 38817 through 38836

Figure 2 of paragraph (c) of this AD—*Affected Airplanes*

Muffler Part Number	Textron Aviation Inc. (Type Certificate Previously Held by Cessna Aircraft Company) Airplanes
A1754001-23	Model 172 Serial numbers (S/Ns) 17259224 and up; Model 172R S/Ns 80001 and up; and Model 172S S/Ns 8001 and up
A1754001-25	Model 172 S/Ns 17256513 and up; Model 172R S/Ns 80001 and up; 172S S/N 8001 and up; and Model 177 S/N 1770001 and up

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 7820, Exhaust Noise Suppressor.

**(e) Unsafe Condition**

This AD was prompted by occurrences of cracks or broken welds in the connecting weld of the muffler body to muffler cuff that may allow carbon monoxide (CO) exhaust fumes into the cockpit heating system. We are issuing this AD to prevent cracks in the connecting weld of the muffler body to muffler cuff that may allow CO fumes to enter the cockpit heating system and possibly inhibit the pilot’s ability to maintain control of the airplane.

**(f) Compliance**

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

**(g) Inspection of the Muffler**

Within 5 hours time-in-service after the effective date of this AD, inspect the affected muffler following the instructions listed in paragraphs (g)(1) through (3).

(1) Using a vacuum cleaner with the hose attached to the blowing side of the vacuum (with the filter installed), attach the vacuum to the airplane tailpipe and seal securely.

(2) The vacuum will pressurize the system sufficiently for a soap solution to be brushed or applied from a spray bottle to the surface of the exhaust system.

(3) Inspect for evidence of breaches (leakage) in the system from cracks.

(4) In lieu of doing this inspection and at the same within 5 hours after the effective date of this AD compliance time, you may replace the affected muffler with an FAA-approved part that is not a muffler listed in figure 1 of paragraph (c) of this AD.

(i) This replacement must be done following AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017.

(ii) If replacement is done instead of the inspection, then paragraph (h)(3) of this AD is the only additional requirement of this AD.

**(h) Replacement of the Muffler**

(1) If evidence of breaches (leakage) is found during the inspection required in paragraph (g) of this AD, before further flight, replace the affected muffler with an FAA-approved part following AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017.

(2) If no evidence of breaches (leakage) is found during the inspection required in paragraph (g) of this AD, within the next 100 hours TIS after the effective date of this AD or at the next annual inspection after the effective date of this AD, whichever occurs later, replace the affected muffler with an FAA-approved part that is not a muffler listed in figure 1 of paragraph (c) of this AD following AWI Cessna 172 (Lycoming) Muffler Removal and Installation, Revision 01, January 17, 2017.

(3) After the effective date of this AD, do not install on any airplane an affected muffler listed in figure 1 of paragraph (c) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Chicago Aircraft Certification Office, 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 ACO, send it to the attention of the person identified in paragraph (j)(1) 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.

**(j) Related Information**

(1) For more information about this AD, contact Mark Grace, Aerospace Engineer, FAA, Chicago Aircraft Certification Office, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; telephone: (847) 294-7377; fax: (847) 294-7834; email: mark.grace@faa.gov.

(2) For service information identified in this AD, contact Aerospace Welding Minneapolis, Inc. 1045 Gemini Road, Eagan, Minnesota 55121; telephone: 651-379-9888; fax: 651-379-9889; Internet: www.awi-ami.com. You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Issued in Kansas City, Missouri, on April 11, 2017.

Pat Mullen,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.

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