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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0660; Project Identifier AD-2021-00398-T; Amendment 39-21809; AD 2021-23-11]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Learjet Inc. Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Learjet Inc. Model 45 airplanes. This AD was prompted by a report of a fuel leak due to a cracked fuel line between the engine fuel control and the engine fuel flow meter. This AD requires replacing the existing fuel flow meter bracket assembly with a redesigned bracket assembly and reporting information to the FAA. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 10, 2022.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of January 10, 2022.

**ADDRESSES:** For service information identified in this final rule, contact Learjet Inc., One Learjet Way, Wichita, KS 67209; phone: (316) 946-2000; email: ac.ict@aero.bombardier.com; website: <https://businessaircraft.bombardier.com/en/aircraft/Learjet.html>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0660.

#### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0660; 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 address for Docket Operations is U.S. Department of

Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Thomas Teplik, Aviation Safety Engineer, Wichita ACO Branch, FAA, 1801 S. Airport Road, Wichita, KS 67209; phone: (316) 946-4196; email: thomas.teplik@faa.gov or Wichita-COS@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain serial numbered Learjet Inc. Model 45 (Learjet 40), Model 45 (Learjet 45), Model 45 (Learjet 70), and Model 45 (Learjet 75) airplanes. The NPRM published in the Federal Register on August 13, 2021 (86 FR 44660). The NPRM was prompted by a report of a fuel leak due to a cracked fuel line between the engine fuel control and the engine fuel flow meter on a Model 45 (Learjet 45) airplane. Further analysis of the fleet of all the 45 models revealed similar failures in this area including the following: 16 fuel line failures, 2 instances of multiple inlet attaching bolts breaking, 9 leaking fuel controls, a broken gearbox strut, 4 cracked No. 6 bearing oil supply lines, and 7 cracked engine oil tanks. The FAA evaluated the flammable fluid leaks and broken parts and determined that they may have resulted from vibration. In the NPRM, the FAA proposed to require replacing the existing fuel flow meter bracket assembly with a redesigned bracket assembly and reporting information to the FAA. The FAA is issuing this AD to address the unsafe condition on these products.

### **Discussion of Final Airworthiness Directive**

#### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

#### **Conclusion**

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

### **Related Service Information Under 1 CFR Part 51**

The FAA reviewed the following service documents required for compliance with this AD:

- Bombardier Learjet 40 Service Bulletin (SB) SB 40-73-01, Revision 1;
- Bombardier Learjet 45 SB 45-73-2, Revision 1;
- Bombardier Learjet 70 SB 70-73-01, Revision 1; and
- Bombardier Learjet 75 SB 75-73-01, Revision 2; all documents dated January 9, 2017.

As applicable to the model configuration specified, each service bulletin contains procedures for replacing the existing fuel flow meter bracket assembly with a redesigned fuel flow meter bracket assembly that has an increased material thickness. 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.

## Differences Between This AD and the Service Information

This AD requires reporting certain maintenance information to the FAA, where the service information does not. The information provided in the reports is related to contributing factors that the FAA found showed a correlation between the reported engine fan vibration levels and the cracking fuel line between engine fuel control and the engine fuel flow meter and a correlation between the cracking fuel line and a certain batch of fan disks. In addition, the FAA found that a contributing factor could be the susceptibility of the fuel flow meter bracket assembly to the engine installation vibration. The requested reporting information allows the FAA to determine whether further rulemaking action is necessary to mitigate the unsafe condition.

Also, the effectivity of Bombardier Learjet 45 SB 45-73-2, Revision 1, dated January 9, 2017, begins with serial number 45-005. This AD also applies to airplane serial numbers 45-002 through 45-004 because, although these three airplanes are not currently in service, they are subject to the unsafe condition. Thus, it is necessary to include them in the event they are returned to service.

## Costs of Compliance

The FAA estimates that this AD affects 443 airplanes 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
Replacing the bracket assembly	4.5 work-hours × \$85 per hour = \$382.50	\$3,895	\$4,277.50	\$1,894,932.50
Reporting and reviewing logbooks	9 work-hours × \$85 per hour = \$765	Not Applicable	\$765	\$338,895

## Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to take approximately 9 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

## 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,
- (2) Will not affect intrastate aviation in Alaska, 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.

### **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:



**2021-23-11 Learjet Inc.:** Amendment 39-21809; Docket No. FAA-2021-0660; Project Identifier AD-2021-00398-T.

**(a) Effective Date**

This airworthiness directive (AD) is effective January 10, 2022.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Learjet Inc. Model 45 (Learjet 40), Model 45 (Learjet 45), Model 45 (Learjet 70), and Model 45 (Learjet 75) airplanes, serial numbers 45-002 through 45-556 and 45-2001 through 45-2146, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7100, Powerplant System.

**(e) Unsafe Condition**

This AD was prompted by a report of a fuel leak due to a cracked fuel line between the engine fuel control and the engine fuel flow meter. The FAA is issuing this AD to prevent cracking and failures. The unsafe condition, if not addressed, could result in an engine installation fire, which could progress to an uncontrolled fire and consequent loss of control of the airplane.

**(f) Compliance**

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

**(g) Reporting Requirement**

Within 60 days after the effective date of this AD, report the following information, where available, to the Wichita ACO Branch via email at [thomas.teplik@faa.gov](mailto:thomas.teplik@faa.gov) and [Wichita-COS@faa.gov](mailto:Wichita-COS@faa.gov); or by mail to Wichita ACO Branch, FAA, Attn: Thomas Teplik, 1801 S. Airport Road, Room 100, Wichita, KS 67209.

(1) Name of the owner; the address of the owner; name of the organization doing the actions required by this AD; the date the actions were completed; the name of the person submitting the report; the address, telephone number, and email of the person submitting the report.

(2) The fan vibration levels that have been recorded in the airplane and engine maintenance records since November 1, 2019. Include the airplane and engine serial numbers.

(3) The date of each vibration level recorded and the associated hours time-in-service (TIS) for the airplane and each engine.

(4) For each fan vibration level reported, include:

(i) Whether molybdenum coating for the fan was applied per Temporary Revision 72-494, dated August 15, 2017 (or as subsequently incorporated into the engine's Inspection/Repair Manual TFE731 (ATA Number 72-IR-02)).

(ii) If molybdenum coating was applied using a different process than Temporary Revision 72-494, dated August 15, 2017 (or as subsequently incorporated into the engine's Inspection/Repair Manual TFE731 (ATA Number 72-IR-02)), report the process by which the molybdenum coating was applied and the revision level of the document defining the application process for the molybdenum coating.

Note 1 to paragraph (g)(4): Temporary Revision 72-494, dated August 15, 2017, specifies applying a dry film lubricant on the mating surfaces of the fan hub and the fan blades. The lubricating solid for this dry film lubricant is molybdenum disulfide, which is referred to in this AD as molybdenum coating.

(5) For each fan vibration level reported, the fan hub serial number and hours TIS for this fan hub.

(6) Installation date and service bulletin (SB) revision level for the installation of the bracket assembly with fuel flow meter and hose if installed before the effective date of this AD.

(7) Any failures of the bracket assembly with fuel flow meter and hose installed in accordance with any SB listed in paragraph (h) of this AD or any prior revision of these SBs.

(8) Installation date and SB revision level used for installation of the fuel control screws within the engine fuel control in accordance with Honeywell SB TFE731-73-5146.

(9) Any failures of fuel control screws after compliance with Honeywell SB TFE731-73-5146.

## **(h) Replacement**

Within 12 months after the effective date of this AD or 750 hours TIS after the effective date of this AD, whichever occurs first, replace the engine fuel flow meter bracket in accordance with the Accomplishment Instructions, paragraphs 3.A through 3.C, of the following Bombardier SB, listed in paragraphs (h)(1) through (4) of this AD, applicable to your airplane model configuration.

(1) Bombardier Learjet 40 SB 40-73-01, Revision 1, dated January 9, 2017.

(2) Bombardier Learjet 45 SB 45-73-2 Revision 1, dated January 9, 2017.

(3) Bombardier Learjet 70 SB 70-73-01 Revision 1, dated January 9, 2017.

(4) Bombardier Learjet 75 SB 75-73-01, Revision 2, dated January 9, 2017.

## **(i) Credit for Previous Actions**

(1) This paragraph provides credit for the action required by paragraph (h) of this AD, if that action was performed before the effective date of this AD using Bombardier Learjet 40 SB 40-73-01, Basic Issue; Bombardier Learjet 45 Service Bulletin SB 45-73-2, Basic Issue; Bombardier Learjet 70 SB 70-73-01, Basic Issue; or Bombardier Learjet 75 SB 75-73-01, Basic Issue; all dated October 3, 2016; or Bombardier Learjet 75 SB 75-73-01, Revision 1, dated October 10, 2016.

(2) To take credit for any previous action, you must comply with paragraph (g) of this AD within 60 days after the effective date of this AD.

## **(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita ACO Branch, 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 (k) 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.

**(k) Related Information**

For more information about this AD, contact Thomas Teplik, Aviation Safety Engineer, Wichita ACO Branch, FAA, 1801 S. Airport Road, Wichita, KS 67209; phone: (316) 946-4196; email: thomas.teplik@faa.gov.

**(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference 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) Bombardier Learjet 40 Service Bulletin 40-73-01, Revision 1, dated January 9, 2017.

(ii) Bombardier Learjet 45 Service Bulletin 45-73-2 Revision 1, dated January 9, 2017.

(iii) Bombardier Learjet 70 Service Bulletin 70-73-01 Revision 1, dated January 9, 2017.

(iv) Bombardier Learjet 75 Service Bulletin 75-73-01, Revision 2, dated January 9, 2017.

(3) For service information identified in this AD, contact Learjet Inc., One Learjet Way, Wichita, KS 67209; phone: (316) 946-2000; email: ac.ict@aero.bombardier.com; website: <https://businessaircraft.bombardier.com/en/aircraft/Learjet.html>.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(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](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on November 1, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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