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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2022-0991; Project Identifier AD-2022-00155-T; Amendment 39-22299; AD 2023-01-05]**

**RIN 2120-AA64**

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

#### **AGENCY:**

Federal Aviation Administration (FAA), DOT.

#### **ACTION:**

Final rule.

#### **SUMMARY:**

The FAA is adopting a new airworthiness directive (AD) for certain Learjet, Inc., Model 45 airplanes. This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary. This AD requires revising the existing inspection program to incorporate reduced inspection intervals for the anti-ice manifold assembly. The FAA is issuing this AD to address the unsafe condition on these products.

#### **DATES:**

This AD is effective March 9, 2023.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of March 9, 2023.

#### **ADDRESSES:**

*AD Docket:* You may examine the AD docket at *regulations.gov* under Docket No. FAA-2022-0991; 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.

#### *Material Incorporated by Reference:*

- For service information identified in this final rule, contact Learjet, Inc., One Learjet Way, Wichita, KS 67209-2942; telephone 316-946-2000; fax 316-946-2220; email [ac.ict@aero.bombardier.com](mailto:ac.ict@aero.bombardier.com); website [bombardier.com](http://bombardier.com).
- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](http://regulations.gov) under Docket No. FAA-2022-0991.

#### **FOR FURTHER INFORMATION CONTACT:**

Adam Hein, Aerospace Engineer, Mechanical Systems and Propulsion Section, FAA, Wichita ACO Branch, 1801 S Airport Road, Wichita, KS 67209; telephone (316) 946-4116; email: [adam.hein@faa.gov](mailto:adam.hein@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 Learjet, Inc., Model 45 airplanes. The NPRM published in the **Federal Register** on August 11, 2022 ([87 FR 49556](#)). The NPRM was prompted by a determination that new or more restrictive airworthiness limitations are necessary. In the NPRM, the FAA proposed to require revising the existing inspection program to incorporate reduced inspection intervals for the anti-ice manifold assembly.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend [14 CFR part 39](#) by adding an AD that would apply to certain Learjet, Inc., Model 45 airplanes. The SNPRM published in the **Federal Register** on November 10, 2022 ([87 FR 67834](#)). The SNPRM was prompted by a determination that additional airplanes needed to be added to the applicability. The SNPRM proposed to require revising the existing inspection program to incorporate reduced inspection intervals for the anti-ice manifold assembly and to add airplanes to the applicability. The FAA is issuing this AD to address metal fragments breaking off the anti-ice manifold assembly due to fatigue, which could block a duct in the anti-ice system and result in an unannounced loss of ice protection and subsequent loss of control of the airplane.

##### **Related Rulemaking**

The FAA issued AD 2001-03-05, Amendment 39-12109 ([66 FR 10353](#), February 15, 2001) (AD 2001-03-05), for certain Learjet Model 45 airplanes. AD 2001-03-05 requires, among other actions, revising the existing Learjet 45 maintenance program to incorporate additional inspections and maintenance practices for the anti-ice manifold assembly, including a 600-hour repetitive inspection interval of an earlier design/part number of the anti-ice manifold. Since the FAA issued AD 2001-03-05, the anti-ice

manifold was redesigned, and the inspection interval was extended to 1,200 flight hours. The design approval holder subsequently determined that the design improvements made to the anti-ice manifold assembly did not fully address the original issue of vane cracking, so the 1,200-hour inspection on the redesigned part is insufficient. However, the FAA determined that a repetitive inspection interval of 600 flight hours is sufficient to address the unsafe condition. Therefore, this AD requires revising the existing inspection program to incorporate a reduced 600-hour inspection interval for the redesigned part. Accomplishing the required actions in this AD terminates the requirements of paragraph (c) of AD 2001-03-05.

## Discussion of Final Airworthiness Directive

### Comments

The FAA received comments from two individuals who supported the SNPRM without change.

### Conclusion

The FAA reviewed the relevant data, considered any comments received, 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. Except for minor editorial changes, this AD is adopted as proposed in the SNPRM. None of the changes will increase the economic burden on any operator.

### Related Service Information Under [1 CFR Part 51](#)

The FAA reviewed Learjet 40 Maintenance Manual Temporary Revision (TR) 04-33 and Learjet 45 Maintenance Manual TR 04-48, both dated January 18, 2022. This service information specifies reduced inspection intervals for the anti-ice manifold assembly. These documents are distinct since they apply to different airplane configurations. 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**.

### Costs of Compliance

The FAA estimates that this AD affects 481 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
Inspection program revision	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$40,885

### 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:

**2023-01-05 Learjet, Inc.:** Amendment 39-22299; Docket No. FAA-2022-0991; Project

Identifier AD-2022-00155-T.

**(a) Effective Date**

This airworthiness directive (AD) is effective March 9, 2023.

**(b) Affected ADs**

This AD affects AD 2001-03-05, Amendment 39-12109 ([66 FR 10353](#), February 15, 2001) (AD 2001-03-05).

**(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, certificated in any category, with an original airworthiness certificate or original export certificate of airworthiness issued on or before January 18, 2022.

**(d) Subject**

Air Transport Association (ATA) of America Code 36, Pneumatic.

**(e) Unsafe Condition**

This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary. The FAA is issuing this AD to address metal fragments breaking off the anti-ice manifold assembly due to fatigue, which could block a duct in the anti-ice system and result in an unannounced loss of ice protection and subsequent loss of control of the airplane.

**(f) Compliance**

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

**(g) Maintenance or Inspection Program Revision**

(1) For Learjet 40 and 45 variants: Within 60 days after the effective date of this AD, revise the existing inspection program by incorporating the information in Learjet 40 Maintenance Manual Temporary Revision (TR) 04-33 or Learjet 45 Maintenance Manual TR 04-48, both dated January 18, 2022, as applicable. The initial compliance time for the inspection is at the applicable time specified in paragraph (g)(1)(i) or (ii) of this AD.

(i) For airplanes with more than 600 flight hours since the most recent inspection of the anti-ice manifold assembly was performed as of the effective date of this AD: Do the inspection within 100 flight hours or 60 days after the effective date of this AD, whichever occurs first.

(ii) For airplanes with 600 flight hours or less since the most recent inspection of the anti-ice manifold assembly was performed as of the effective date of this AD: Do the inspection within 600 flight hours

after the most recent inspection or within 100 flight hours after the effective date of this AD, whichever occurs later.

(2) For Learjet 70 and 75 variants: Within 60 days after the effective date of this AD, revise the existing inspection program to incorporate the information identified in figure 1 to paragraph (g)(2) of this AD. The initial compliance time for the inspection is at the applicable time specified in paragraph (g)(2)(i) or (ii) of this AD.

Figure 1 to paragraph (g)(2)— *Anti-Ice Inspection Tasks*

<b>IRN number</b>	<b>Task Description</b>	<b>Task interval</b>	<b>Model/Serial Effectivity</b>
3010006	**Anti-ice Manifold - Perform Borescope Inspection	600 flight hours (T)	Learjet 70/75: 45-0368, 45-0446 45-0456 through 45-2000, 45-2129, 45-2134 through 45-4000

(i) For airplanes with more than 600 flight hours since the most recent inspection of the anti-ice manifold assembly was performed as of the effective date of this AD: Do the inspection within 100 flight hours or 60 days after the effective date of this AD, whichever occurs first.

(ii) For airplanes with 600 flight hours or less since the most recent inspection of the anti-ice manifold assembly was performed as of the effective date of this AD: Do the inspection within 600 flight hours after the most recent inspection or within 100 flight hours after the effective date of this AD, whichever occurs later.

#### **(h) No Alternative Actions or Intervals**

After the existing inspection program has been revised as required by paragraph (g) of this AD, no alternative actions ( *e.g.*, inspections) or intervals, may be used unless the actions and intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k) of this AD.

#### **(i) Terminating Action for Paragraph (c) of AD 2001-03-05**

Accomplishing the revision of the existing inspection program required by paragraph (g) of this AD terminates the requirements of paragraph (c) of AD 2001-03-05.

#### **(j) Special Flight Permit**

Special flight permits may be issued in accordance with [14 CFR 21.197](#) and [21.199](#) to operate the airplane to a location where the airplane can be inspected, provided the airplane is restricted from flying into known icing conditions.

#### **(k) 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 responsible Flight Standards 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 (l) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

### **(l) Related Information**

For more information about this AD, contact Adam Hein, Aerospace Engineer, Mechanical Systems and Propulsion Section, FAA, Wichita ACO Branch, 1801 S Airport Road, Wichita, KS 67209; telephone (316) 946-4116; email: [adam.hein@faa.gov](mailto:adam.hein@faa.gov).

### **(m) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) 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) Learjet 40 Maintenance Manual Temporary Revision 04-33, dated January 18, 2022.

(ii) Learjet 45 Maintenance Manual Temporary Revision 04-48, dated January 18, 2022.

(3) For service information identified in this AD, contact Learjet, Inc., One Learjet Way, Wichita, KS 67209-2942; telephone 316-946-2000; fax 316-946-2220; email [ac.ict@aero.bombardier.com](mailto:ac.ict@aero.bombardier.com); website [bombardier.com](http://bombardier.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

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

Issued on January 6, 2023.

Christina Underwood,

Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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