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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2010-0802; Directorate Identifier 2009-NM-256-AD; Amendment 39-16733; AD 2011-13-10]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Learjet Inc. Model 45 Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing airworthiness directive (AD) for the products listed above. That AD currently requires, for certain airplanes, repetitive inspections for chafing and other damage of the case drain tube from the hydraulic pump case installed on the left-hand engine, and corrective action if necessary. That AD also requires, for all airplanes, repetitive inspections for discrepancies of the left engine's nacelle tubing, repetitive inspections for evidence of fluid leakage within the left engine accessory compartment, and corrective actions if necessary. This new AD also requires replacing the left engine fuel and hydraulic tubing and installing a tubing support channel, which terminates the repetitive inspections required in the existing AD. This new AD also removes airplanes from the applicability. This AD was prompted by reports of chafed hydraulic tubes in the left-hand engine. We are issuing this AD to prevent chafed hydraulic tubes in the left-hand engine and consequent hydraulic tube failure and uncontrolled loss of flammable fluid within the engine cowling, which could result in a fire in the engine nacelle and loss of control of the airplane.

**DATES:** This AD is effective August 1, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of August 1, 2011.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of June 17, 2009 (74 FR 26288, June 2, 2009).

**ADDRESSES:** For service information identified in this AD, contact Learjet, Inc., One Learjet Way, Wichita, Kansas 67209-2942; telephone 316-946-2000; fax 316-946-2220; e-mail [ac.ict@aero.bombardier.com](mailto:ac.ict@aero.bombardier.com); Internet <http://www.bombardier.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, 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:** James Galstad, Aerospace Engineer, Systems and Propulsion Branch, ACE-116W, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; phone: 316-946-4135; fax: 316-946-4107; e-mail: [james.galstad@faa.gov](mailto:james.galstad@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede airworthiness directive (AD) 2009-11-13, Amendment 39-15923 (74 FR 26288, June 2, 2009). That AD applies to the specified products. The NPRM published in the Federal Register on August 23, 2010 (75 FR 51701). That NPRM proposed to require, for certain airplanes, repetitive inspections for chafing and other damage of the case drain tube from the hydraulic pump case installed on the left-hand engine, and corrective action if necessary. That NPRM also proposed to require, for all airplanes, repetitive inspections for discrepancies of the left engine's nacelle tubing, repetitive inspections for evidence of fluid leakage within the left engine accessory compartment, and corrective actions if necessary. That NPRM also proposed to require replacing the left engine fuel and hydraulic tubing and installing a tubing support channel which terminates the repetitive inspections required in the existing AD.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comment received on the proposal and the FAA's response to the comment.

### **Request to Reference Later Revisions of the Maintenance Manual**

Marlin Priest requested that we revise the NPRM to reference later revisions of the maintenance manual, as operators may not have the prior revisions available. The commenter pointed out that Table 3 of the NPRM references Learjet 45 Maintenance Manual MM-104, Revision 47, dated March 30, 2009; and Learjet 40 Maintenance Manual MM-105, Revision 15, dated March 30, 2009. The commenter stated that Learjet 45 Maintenance Manual MM-104 is currently at a later revision.

We disagree with the request to refer to a later revision of Learjet 45 Maintenance Manual MM-104. The reference to that maintenance manual appears in requirements that are simply restated from AD 2009-11-13. Operators were required to have accomplished those actions within 50 flight hours after June 17, 2009 (the effective date of AD 2009-11-13). Therefore, we find it unnecessary to reference later versions of the maintenance manual in Table 3 of this AD. In addition, we cannot refer to "the latest revision of the maintenance manual" in this AD because using the phrase "or later FAA-approved revisions," violates Office of the Federal Register regulations for approving materials that are incorporated by reference. However, affected operators may request approval to use a later revision of the referenced maintenance manual as an alternative method of compliance under the provisions of paragraph (n) of the final rule. No change has been made to this AD in this regard.

## Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting the AD as proposed—except for minor editorial changes. We have determined that these minor changes:

- 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 358 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspection (required by AD 2009-11-13)	3	\$85	\$0	\$255 per inspection	325	\$82,875 per inspection
Modification (new required action)	20	\$85	Up to \$14,740	Up to \$16,440	358	Up to \$5,885,520
Concurrent Action	4	\$85	\$189	\$529	358	\$189,382

## 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 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.

**Adoption of 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 removing airworthiness directive (AD) 2009-11-13, Amendment 39-15923 (74 FR 26288, June 2, 2009), and adding the following new AD:



**2011-13-10 Learjet Inc.:** Amendment 39-16733; Docket No. FAA-2010-0802; Directorate Identifier 2009-NM-256-AD.

**Effective Date**

(a) This airworthiness directive (AD) is effective August 1, 2011.

**Affected ADs**

(b) This AD supersedes AD 2009-11-13, Amendment 39-15923.

**Applicability**

(c) This AD applies to Learjet Inc. Model 45 airplanes; certificated in any category; serial numbers 45-005 through 45-405 inclusive, and 45-2001 through 45-2126 inclusive.

**Subject**

(d) Air Transport Association (ATA) of America Code 71: Powerplant.

**Unsafe Condition**

(e) This AD results from reports of chafed hydraulic tubes in the left-hand engine. The Federal Aviation Administration is issuing this AD to prevent chafed hydraulic tubes in the left-hand engine and consequent hydraulic tube failure and uncontrolled loss of flammable fluid within the engine cowling, which could result in a fire in the engine nacelle and loss of control of the airplane.

**Compliance**

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**Restatement of Requirements of AD 2009-11-13**

**Repetitive Inspections: Case Drain Tube**

(g) For airplanes having serial numbers identified in Table 1 of this AD: Within 50 flight hours after June 17, 2009 (the effective date of AD 2009-11-13), do a detailed inspection for chafing and other damage of the case drain tube from the hydraulic pump case installed on the left-hand engine, in accordance with the applicable service bulletin identified in Table 1 of this AD. If any damage is found, before further flight, reposition or replace the tube, as applicable, in accordance with the Accomplishment Instructions of the applicable service bulletin identified in Table 1 of this AD. Repeat the inspection thereafter at intervals not to exceed 150 flight hours until the modification required by paragraph (l) of this AD is done.

**Table 1–Service Bulletins for Inspections**

<b>For –</b>	<b>Use –</b>
Serial numbers 45-005 through 45-313 inclusive (commonly referred to as “M45” airplanes)	Bombardier Alert Service Bulletin A45-29-15, dated December 26, 2006.
Serial numbers 45-2001 through 45-2063 inclusive (commonly referred to as “M40” airplanes)	Bombardier Alert Service Bulletin A40-29-03, dated December 26, 2006.

Note 1: For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

### **Repetitive Inspections: Nacelle Tubing**

(h) Within 50 flight hours after June 17, 2009, do a detailed inspection for discrepancies of the left engine's nacelle tubing, in accordance with the applicable temporary revision (TR) identified in Table 2 of this AD. Discrepancies include damaged tubing, and inadequate clearance between any unsupported section of the tube or other tubing and surrounding components. If any discrepancy is found, before further flight, adjust the tubing and clamping or replace the tubing, as applicable, in accordance with the applicable TR identified in Table 2 of this AD. Repeat the inspection thereafter at intervals not to exceed 150 flight hours until the modification required by paragraph (l) of this AD is done.

**Table 2–TRs for inspections**

<b>For –</b>	<b>Use –</b>
Serial numbers 45-2001 through 45-4000 inclusive (commonly referred to as “M40” airplanes)	Learjet 40 TR 71-1, dated April 28, 2009, to the Learjet 40 Maintenance Manual MM-105.
Serial numbers 45-002 through 45-2000 inclusive (commonly referred to as “M45” airplanes)	Learjet 45 TR 71-1, dated April 28, 2009, to the Learjet 45 Maintenance Manual MM-104.

### **Concurrent Inspections: Fluid Leakage**

(i) Concurrently with each inspection required by paragraph (h) of this AD, do a detailed inspection for evidence of engine oil, hydraulic fluid, or fuel leakage within the left engine accessory compartment, in accordance with the applicable maintenance manual section identified in Table 3 of this AD. If there is evidence of leakage: Before further flight, remove each plumbing clamp within the inspection areas specified in paragraphs (g) and (h) of this AD, and clean and remove all evidence of fluid leakage.

**Table 3–Maintenance Manual Sections for Inspections**

<b>For –</b>	<b>Use –</b>
Serial numbers 45-002 through 45-2000 inclusive (commonly referred to as “M45” airplanes)	Section 71-00-00, “Powerplant – Maintenance Practices,” and Section 71-00-01, “Engine – Maintenance Practices,” of the Learjet 45 Maintenance Manual MM-104, Revision 47, dated March 30, 2009.

Serial numbers 45-2001 through 45-4000 inclusive (commonly referred to as “M40” airplanes)	Section 71-00-01, “Engine – Maintenance Practices,” of the Learjet 40 Maintenance Manual MM-105, Revision 15, dated March 30, 2009.
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### **Additional Corrective Action for Fluid Leakage and Inadequate Clearance**

(j) If evidence of fluid leakage was found during any inspection required by paragraph (i) of this AD, or if inadequate clearance was found during any action required by paragraph (g) or (h) of this AD: Before further flight, replace each clamp associated with the fluid leakage or inadequate clearance with a new clamp, in accordance with the applicable maintenance manual identified in Table 3 of this AD.

### **Parts Installation**

(k) As of June 17, 2009, no person may re-install, on any airplane, any plumbing clamp that has been removed in accordance with the requirements of paragraphs (g), (h), (i), or (j) of this AD.

### **New Requirements of This AD**

#### **Terminating Action**

(l) Within 300 flight hours or 12 months after the effective date of this AD, whichever occurs first, do the actions specified in paragraphs (l)(1) and (l)(2) of this AD, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 40-71-04 (Model 45, serial numbers 45-2001 through 45-2126) or 45-71-7 (Model 45, serial numbers 45-005 through 45-405), both dated December 7, 2009, as applicable. Accomplishment of the requirements of paragraphs (l) and (m), as applicable, of this AD terminates the requirements of paragraphs (g), (h), (i), and (j) of this AD.

(1) Replace the left engine fuel and hydraulic tubing and install a tubing support channel using new parts.

(2) Do the inspections specified in paragraphs (l)(2)(i), (l)(2)(ii), (l)(2)(iii), and (l)(2)(iv) of this AD and all applicable corrective actions. Do all applicable corrective actions before further flight.

(i) A general visual inspection for galling of the fuel supply manifold assembly;

(ii) A general visual inspection for minimum clearance between the firewall fuel supply tube assembly and the engine firewall cutout;

(iii) A general visual inspection for minimum clearance between the lower nacelle hydraulic tube and hose assemblies; and

(iv) A general visual inspection for minimum clearance between the lower nacelle fuel tubes and flexible hoses.

(m) For airplanes having serial numbers 45-005 through 45-319, and 45-321, as identified in Bombardier Service Bulletin 45-71-5, dated February 13, 2007; and for airplanes having serial numbers 45-2001 through 45-2069, as identified in Bombardier Service Bulletin 40-71-02, dated February 13, 2007: Before or concurrently with accomplishing the requirements of paragraph (l) of this AD, do the applicable actions specified in paragraphs (m)(1), (m)(2), (m)(3), (m)(4), and (m)(5) of this AD, depending on airplane serial number and configuration, as specified in, and in accordance with, the Accomplishment Instructions of Bombardier Service Bulletin 45-71-5 (Model 45, serial numbers 45-005 through 45-319, and 45-321), dated February 13, 2007; or Bombardier Service Bulletin 40-71-02 (Model 45, serial numbers 45-2001 through 45-2069), dated February 13, 2007; as applicable. Do all applicable corrective actions before further flight. If, during any inspection required by paragraph (m)(3), (m)(4), or (m)(5) of this AD, it is determined that clearances are not met, before further flight, replace the tubing in accordance with the Accomplishment Instructions of

Bombardier Service Bulletin 45-71-5, dated February 13, 2007; or Bombardier Service Bulletin 40-71-02, dated February 13, 2007; as applicable.

(1) Change the routing and clamping configuration of the engine and alternator wire harnesses and the starter/generator wire bundles.

(2) Do a detailed inspection for chafing damage of specific hydraulic tubes located within the left engine nacelle between the adjacent fuel tubes and to determine if there is interference between the fuel tubing and hydraulic tubing; secure hydraulic tubes with additional clamps, inspect adjacent fuel tubing for interference with the hydraulic tubing, replace the left engine hydraulic pump case drain tube on certain airplanes, and do all applicable corrective actions.

(3) Do a general visual inspection for clearance between the left engine hydraulic tubing with adjacent tubing, structure, and other components.

(4) Do a general visual inspection for clearance between the wire harnesses and the hydraulic and fuel tubing on the left engine.

(5) Do a general visual inspection for clearance between the wire harnesses and the hydraulic and fuel tubing on the right engine.

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

(n)(1) The Manager, Wichita 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. 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 the Related Information section 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.

(3) AMOCs approved previously in accordance with AD 2009-11-13, amendment 39-15923, are approved as AMOCs for the corresponding provisions of this AD.

### **Related Information**

(o) For more information about this AD, contact James Galstad, Aerospace Engineer, Systems and Propulsion Branch, ACE-116W, FAA, Wichita ACO, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; phone: 316-946-4135; fax: 316-946-4107; e-mail: James.Galstad@faa.gov.

### **Material Incorporated by Reference**

(p) You must use the service information contained in Table 4 of this AD, as applicable, to do the actions required by this AD, unless the AD specifies otherwise.

**Table 4—All Material Incorporated by Reference**

<b>Document</b>	<b>Revision</b>	<b>Date</b>
Bombardier Alert Service Bulletin A45-29-15	Original	December 26, 2006
Bombardier Alert Service Bulletin A40-29-03	Original	December 26, 2006
Learjet 40 Temporary Revision 71-1 to the Learjet Maintenance Manual MM-105	Original	April 28, 2009
Learjet 45 Temporary Revision 71-1 to the Learjet Maintenance Manual MM-104	Original	April 28, 2009



Sections 71-00-00 and 71-00-01 of the Learjet 45 Maintenance Manual MM-104	47	March 30, 2009
Section 71-00-01 of the Learjet 40 Maintenance Manual MM-105	15	March 30, 2009
Bombardier Service Bulletin 40-71-04	Original	December 7, 2009
Bombardier Service Bulletin 45-71-7	Original	December 7, 2009
Bombardier Service Bulletin 45-71-5	Original	February 13, 2007
Bombardier Service Bulletin 40-71-02	Original	February 13, 2007

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

**Table 5—New Material Incorporated by Reference**

<b>Document</b>	<b>Date</b>
Bombardier Service Bulletin 40-71-04	December 7, 2009
Bombardier Service Bulletin 45-71-7	December 7, 2009
Bombardier Service Bulletin 45-71-5	February 13, 2007
Bombardier Service Bulletin 40-71-02	February 13, 2007

(2) The Director of the Federal Register previously approved the incorporation by reference of the service information contained in Table 6 of this AD on June 17, 2009 (74 FR 26288, June 2, 2009).

**Table 6—Material Previously Incorporated by Reference**

<b>Document</b>	<b>Revision</b>	<b>Date</b>
Sections 71-00-00 and 71-00-01 of the Learjet 45 Maintenance Manual MM-104	47	March 30, 2009
Section 71-00-01 of the Learjet 40 Maintenance Manual MM-105	15	March 30, 2009
Bombardier Alert Service Bulletin A40-29-03	Original	December 26, 2006
Bombardier Alert Service Bulletin A45-29-15	Original	December 26, 2006
Learjet 40 Temporary Revision 71-1 to the Learjet Maintenance Manual MM-105	Original	April 28, 2009
Learjet 45 Temporary Revision 71-1 to the Learjet Maintenance Manual MM-104	Original	April 28, 2009

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

(4) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on June 14, 2011.  
Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.