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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0226; Directorate Identifier 2010-NM-034-AD; Amendment 39-16238; AD 2010-06-13]

RIN 2120-AA64

Airworthiness Directives; Learjet Inc. Model 45 Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Model 45 airplanes. This AD requires a general visual inspection for cracked and missing ballscrew assembly sleeves of the flap actuator, repetitive non-destructive liquid penetrant inspections of each sleeve or flap actuator for cracks, and replacement or modification of the flap actuator if necessary. This AD results from reports of cracked and missing ballscrew assembly sleeves of the flap actuators. We are issuing this AD to detect and correct cracked and missing sleeves, which could cause loss of the load-carrying ball bearings on both actuators on one flap, resulting in flap asymmetry and loss of control of the airplane.

DATES: This AD is effective April 1, 2010.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of April 1, 2010.

We must receive comments on this AD by May 3, 2010.

ADDRESSES: You may send comments 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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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; Internet <http://www.bombardier.com>.

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 street address for the Docket Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: William Griffith, Aerospace Engineer, Airframe Branch, ACE-118W, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone (316) 946-4116; fax (316) 946-4107.

SUPPLEMENTARY INFORMATION:

Discussion

We have received reports of cracked and missing ballscrew assembly sleeves of the flap actuators. Three flap actuators were found with the ballnut sleeves corroded and cracked. Three additional airplanes were discovered to contain similar corrosion on the ballnut sleeves. The root cause is galvanic corrosion due to an aluminum sleeve installed on a steel ballnut. This condition, if not corrected, could cause loss of the load-carrying ball bearings on both actuators on one flap, resulting in flap asymmetry and loss of control of the airplane.

Relevant Service Information

We reviewed Bombardier (Learjet) Alert Service Bulletins A45-27-40 (for Model 45 airplanes, serial numbers 45-005 through 45-380), and A40-27-24 (for Model 45 airplanes, serial numbers 45-2001 through 45-2111), both dated January 11, 2010. These service bulletins describe procedures for a general visual inspection for cracked and missing ballscrew assembly sleeves of the flap actuator; a non-destructive liquid penetrant inspection for cracks of each sleeve and flap actuator, depending on the findings; and replacement of the flap actuator and ballscrew actuator sleeve if the sleeve is cracked along its entire length.

We also reviewed Bombardier (Learjet) Optional Service Bulletins 45-27-41 (for Model 45 airplanes, serial numbers 45-005 through 45-380), and 40-27-25 (for Model 45 airplanes, serial numbers 45-2001 through 45-2111), both dated January 11, 2010. These service bulletins describe procedures for modifying the flap actuator if a certain crack length is found and the part does not need to be replaced.

FAA's Determination and Requirements of This AD

We are issuing 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. This AD requires accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and the Service Information."

Differences Between the AD and the Service Information

Although Bombardier (Learjet) Alert Service Bulletins A45-27-40 and A40-27-24, both dated January 11, 2010, specify a compliance time of 30 days after the publication of those service bulletins, this AD requires a compliance time of 15 days after the effective date of this AD. We have received additional reports of fully cracked sleeves requiring replacement. Therefore, we have determined that the 15-day compliance time is necessary to address the identified unsafe condition. This difference has been coordinated with Learjet.

Although Bombardier (Learjet) Alert Service Bulletins A45-27-40 and A40-27-24, both dated January 11, 2010, do not specify repetitive inspections, this AD requires operators to repeat the non-destructive liquid penetrant inspections at intervals not to exceed 6 months. The repetitive inspections will help determine the extent of the problem in the fleet. This difference has been coordinated with Learjet.

Although Bombardier (Learjet) Alert Service Bulletins A45-27-40 and A40-27-24, both dated January 11, 2010, specify to inspect for missing ballscrew assembly sleeves, these service bulletins do not specify a corrective action if any sleeve is missing. This AD requires replacing the flap actuator if any sleeve is missing. This difference has been coordinated with Learjet.

Bombardier (Learjet) Alert Service Bulletins A45-27-40 and A40-27-24, both dated January 11, 2010, specify modifying or replacing the flap actuator as corrective action for a cracked sleeve, depending on the percentage of the length of the sleeve that is cracked. This AD instead requires replacing the actuator if a sleeve is cracked along its entire length, and modifying the actuator for any cracked sleeve that is not cracked along its entire length. This difference has been coordinated with Learjet.

Interim Action

We consider this AD interim action. Learjet Inc. is currently developing a new modification of the ballscrew assembly of the flap actuator that will address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

FAA's Justification and Determination of the Effective Date

We have received reports of cracked and missing ballscrew assembly sleeves of the flap actuators. Cracked and missing sleeves could result in the loss of the load-carrying ball bearings from the assembly, resulting in the loss of the flap drive load path for that actuator. Loss of the sleeves on both actuators on one flap could result in flap asymmetry, resulting in loss of control of the airplane. Because of our requirement to promote safe flight of civil aircraft and thus the critical need to ensure structural integrity of the ballscrew assembly sleeves of the flap actuator and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2010-0226; Directorate Identifier 2010-NM-034-AD" at the beginning of your comments. We specifically invite comments

on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this 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 AD.

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

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), 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

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 adding the following new AD:



2010-06-13 Learjet Inc.: Amendment 39-16238. Docket No. FAA-2010-0226; Directorate Identifier 2010-NM-034-AD.

Effective Date

(a) This airworthiness directive (AD) is effective April 1, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Learjet Inc. Model 45 airplanes, certificated in any category, serial numbers 45-005 through 45-380 inclusive and 45-2001 through 45-2111 inclusive.

Subject

(d) Air Transport Association (ATA) of America Code 27: Flight Controls.

Unsafe Condition

(e) This AD results from reports of cracked and missing ballscrew assembly sleeves of the flap actuators. The Federal Aviation Administration is issuing this AD to detect and correct cracked and missing sleeves, which could cause loss of the load-carrying ball bearings on both actuators on one flap, resulting in flap asymmetry 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.

General Visual Inspection

(g) Within 15 days after the effective date of this AD, do a general visual inspection for cracked or missing ballscrew assembly sleeves of the flap actuator, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Alert Service Bulletin A45-27-40 (for Model 45 airplanes, serial numbers 45-005 through 45-380); or Bombardier (Learjet) Alert Service Bulletin A40-27-24 (for Model 45 airplanes, serial numbers 45-2001 through 45-2111); both dated January 11, 2010. Thereafter, do the actions in paragraph (h) or (i), as applicable, of this AD.

Note 1: For the purposes of this AD, a general visual inspection is: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of

inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

Non-Destructive Liquid Penetrant Inspection (Sleeve Is Present and Not Cracked Along Its Entire Length)

(h) During the general visual inspection required by paragraph (g) of this AD, if the sleeve is present and not cracked along its entire length, before further flight after accomplishing the general visual inspection, do a non-destructive liquid penetrant inspection to detect cracking of the flap actuators, in accordance with Accomplishment Instructions of Bombardier (Learjet) Alert Service Bulletin A45-27-40, or Bombardier (Learjet) Alert Service Bulletin A40-27-24, both dated January 11, 2010.

(1) If no crack is found during the non-destructive liquid penetrant inspection, repeat the inspection thereafter at intervals not to exceed 6 months.

(2) If any crack is found during the non-destructive liquid penetrant inspection, before further flight, modify the flap actuator, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Optional Service Bulletin 45-27-41 (for Model 45 airplanes, serial numbers 45-005 through 45-380); or Bombardier (Learjet) Optional Service Bulletin 40-27-25 (for Model 45 airplanes, serial numbers 45-2001 through 45-2111); both dated January 11, 2010. Repeat the non-destructive liquid penetrant inspection of the half (modified) sleeve thereafter at intervals not to exceed 6 months. If any crack is found in any half (modified) sleeve, before further flight, replace the sleeve with a new half sleeve, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Optional Service Bulletin 45-27-41, or Bombardier (Learjet) Optional Service Bulletin 40-27-25, both dated January 11, 2010, and repeat the non-destructive liquid penetrant inspection of the half sleeve thereafter at intervals not to exceed 6 months.

Replacement (Sleeve Is Missing or Cracked Along Its Entire Length)

(i) During the general visual inspection required by paragraph (g) of this AD, if the sleeve is missing or cracked along its entire length, before further flight after accomplishing the general visual inspection, replace the actuator with a new or serviceable actuator, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Alert Service Bulletin A45-27-40, or Bombardier (Learjet) Alert Service Bulletin A40-27-24, both dated January 11, 2010. Within 6 months after any actuator replacement required by paragraph (i) of this AD: Do a non-destructive liquid penetrant inspection to detect cracking of the actuator, in accordance with Accomplishment Instructions of Bombardier (Learjet) Alert Service Bulletin A45-27-40, or Bombardier (Learjet) Alert Service Bulletin A40-27-24, both dated January 11, 2010.

(1) If no crack is found during the non-destructive liquid penetrant inspection, repeat the inspection thereafter at intervals not to exceed 6 months.

(2) If any crack is found during the non-destructive liquid penetrant inspection, but the sleeve is not cracked along its entire length, before further flight, modify the flap actuator, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Optional Service Bulletin 45-27-41, or Bombardier (Learjet) Optional Service Bulletin 40-27-25, both dated January 11, 2010. Repeat the non-destructive liquid penetrant inspection of the half (modified) sleeves thereafter at intervals not to exceed 6 months. If any crack is found in any half (modified) sleeve, before further flight, replace the sleeve with a new half sleeve, in accordance with the Accomplishment Instructions of Bombardier (Learjet) Optional Service Bulletin 45-27-41, or Bombardier (Learjet) Optional Service Bulletin 40-27-25, both dated January 11, 2010. Repeat the non-destructive liquid penetrant inspection of the half sleeve thereafter at intervals not to exceed 6 months.

(3) If the sleeve is cracked along its entire length, before further flight, replace the actuator with a new or serviceable actuator, in accordance with the Accomplishment Instructions of Bombardier

(Learjet) Optional Service Bulletin 45-27-41, or Bombardier (Learjet) Optional Service Bulletin 40-27-25, both dated January 11, 2010, and repeat the non-destructive liquid penetrant inspection of the sleeve thereafter at intervals not to exceed 6 months.

Note 2: Guidance on modification of the flap actuator can be found in Microtecnica Service Bulletin 27-0018, dated November 24, 2009.

Parts Installation

(j) As of the effective date of this AD, no person may install, on any airplane, a ballscrew assembly sleeve of the flap actuator, unless the actuator has been modified according to Bombardier (Learjet) Optional Service Bulletin 45-27-41, or Bombardier (Learjet) Optional Service Bulletin 40-27-25, both dated January 11, 2010.

Reporting Requirement

(k) Submit a one-time report of the findings of the general visual inspection and the initial non-destructive liquid penetrant inspection required by this AD to Chris Broadrick, Bombardier Aerospace, Project Coordinator–Fielding Specialist, Customer Support Engineering, One Learjet Way, P.O. Box 7707, Wichita, Kansas 67209; telephone 316-946-2315; fax 316-946-8908; e-mail chris.broadrick@aero.bombardier.com; at the applicable time specified in paragraph (k)(1) or (k)(2) of this AD. The report must include airplane serial number, flap actuator part number, flap actuator serial number, and flap actuator time in service (in hours). Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

(1) If the inspection was done on or after the effective date of this AD: Submit the report within 10 days after the inspection.

(2) If the inspection was done before the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

Special Flight Permits

(l) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the airplane can be modified, unless cracks are discovered in both an inboard and outboard actuator sleeve for any flap.

Alternative Methods of Compliance (AMOCs)

(m)(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. Send information to ATTN: William Griffith, Aerospace Engineer, Airframe Branch, ACE-118W, FAA, Wichita ACO, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone (316) 946-4116; fax (316) 946-4107.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

Material Incorporated by Reference

(n) You must use the service information included in Table 1 of this AD, as applicable, 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 Learjet, Inc., One Learjet Way, Wichita, Kansas 67209-2942; telephone 316-946-2000; fax 316-946-2220; e-mail ac.ict@aero.bombardier.com; Internet <http://www.bombardier.com>.

(3) 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.

(4) 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 NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Table 1 – Material incorporated by reference

Document	Date
Bombardier (Learjet) Alert Service Bulletin A40-27-24	January 11, 2010
Bombardier (Learjet) Alert Service Bulletin A45-27-40	January 11, 2010
Bombardier (Learjet) Optional Service Bulletin 40-27-25	January 11, 2010
Bombardier (Learjet) Optional Service Bulletin 45-27-41	January 11, 2010

Issued in Renton, Washington, on March 9, 2010.

Jeffrey E. Duven,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.