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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0124; Directorate Identifier 2016-NM-166-AD; Amendment 39-18911; AD 2017-11-12]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-100-1A10 airplanes. This AD was prompted by several reports of nose wheel steering failures in service. This AD requires a part verification and replacement of certain steering manifolds. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 11, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 11, 2017.

ADDRESSES: For service information identified in this final rule, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-5000; fax 514-855-7401; email thd.crj@aero.bombardier.com; Internet http://www.bombardier.com. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0124.

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-2017-0124; 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 Docket 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: Assata Dessaline, Aerospace Engineer, Avionics and Services Branch, ANE-172, FAA, New York Aircraft Certification Office (ACO), 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7301; fax 516-794-5531.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model BD-100-1A10 airplanes. The NPRM published in the Federal Register on February 28, 2017 (82 FR 12071). The NPRM was prompted by several reports of nose wheel steering failures in service. The NPRM proposed to require a part verification and replacement of certain steering manifolds. We are issuing this AD to prevent moisture from entering the electrical stage of the electro-hydraulic servo valve (EHSV), which, in combination with a steering selector valve failure, could lead to uncommanded nose wheel steering, and a consequent runway excursion at high speed.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2016-24, dated August 19, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for certain Bombardier, Inc., Model BD-100-1A10 airplanes. The MCAI states:

> Several cases of nose wheel steering failures have been reported in service. In one case, the aeroplane experienced uncommanded nose wheel steering, resulting in a runway excursion.
>
> Investigations found the presence of moisture inside the electrical stage of the electro-hydraulic servo valve (EHSV) unit, which resulted in low insulation resistance and corrosion. This condition, in combination with a steering selector valve failure, could result in uncommanded nose wheel steering, which could lead to a runway excursion at high speed.
>
> This [Canadian] AD mandates the replacement of the steering manifold to provide better moisture ingress protection of the EHSV.

You may examine the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0124.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting this 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.

Related Service Information Under 1 CFR Part 51

We reviewed Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015. This service information describes procedures for a one-time verification of the steering manifold part number and replacement of the steering manifold and mod plate. 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.

Costs of Compliance

We estimate that this AD affects 161 airplanes of U.S. registry.
We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Steering manifold part verification	1 work-hour × $85 per hour = $85	$0	$85	$13,685.
Replacement of steering manifold	Up to 4 work-hours × $85 per hour = $340	Up to $18,522	Up to $18,862	Up to $3,036,7823.

According to the manufacturer, some of the costs of this 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 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 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.

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 airworthiness directive (AD):

2017-11-12 Bombardier, Inc.: Amendment 39-18911; Docket No. FAA-2017-0124; Directorate Identifier 2016-NM-166-AD.

(a) Effective Date

This AD is effective July 11, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bombardier, Inc., Model BD-100-1A10 airplanes, certificated in any category, as identified in Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015.

(d) Subject

Air Transport Association (ATA) of America Code 32, Landing gear.

(e) Reason

This AD was prompted by several reports of nose wheel steering failures in service. We are issuing this AD to prevent moisture from entering the electrical stage of the electro-hydraulic servo valve (EHSV), which in combination with a steering selector valve failure, could lead to uncommanded nose wheel steering, and a consequent runway excursion at high speed.

(f) Compliance

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

(g) Verification and Replacement of Steering Manifold

Within 48 months after the effective date of this AD, do a one-time inspection to determine the part number of the steering manifold, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015.

(1) If the airplane has steering manifold part number (P/N) 40750-103, within 48 months after the effective date of this AD, write "SB100-32-018" on the nose landing gear (NLG) mod plate. If the mod plate is missing or full, within 48 months after the effective date of this AD, install a new plate, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015.

(2) If the airplane has steering manifold P/N 40750-101, within 48 months after the effective date of this AD, replace it in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015, and write "SB100-32-018" on the NLG mod plate. If the mod plate is missing or full, within 48 months after the effective date of this AD, install a

new plate, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015.

(h) Credit for Previous Actions

This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 100-32-25, dated September 24, 2014.

(i) Parts Installation Prohibition

As of the effective date of this AD, no person may install a steering manifold, P/N 40750-101, on the NLG assembly of any airplane.

(j) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, New York Aircraft Certification Office (ACO), ANE-170, 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 ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531. 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.

(2) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO, ANE-170, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(k) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2016-24, dated August 19, 2016, for related information. This MCAI may be found in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0124.

(2) For more information about this AD, contact Assata Dessaline, Aerospace Engineer, Avionics and Services Branch, ANE-172, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7301; fax 516-794-5531.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (l)(3) and (l)(4) of this AD.

(l) 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 this AD specifies otherwise.

(i) Bombardier Service Bulletin 100-32-25, Revision 01, dated June 30, 2015.

(ii) Reserved.

(3) For service information identified in this AD, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-5000; fax 514-855-7401; email thd.crj@aero.bombardier.com; Internet http://www.bombardier.com.

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

(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, call 202-741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Renton, Washington, on May 23, 2017.

Michael Kaszycki,

Acting Manager, Transport Airplane Directorate,

Aircraft Certification Service.