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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0965; Product Identifier 2018-NM-124-AD; Amendment 39-19617; AD 2019-07-06]

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 a report that certain split ball bearings used in main landing gear (MLG) side brace actuator assemblies are manufactured from material that does not meet the required material properties. This AD requires an inspection of the left and right MLG side brace actuator assemblies and, if necessary, replacement of the split ball bearings. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective May 28, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 28, 2019.

ADDRESSES: For service information identified in this final rule, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; email ac.yul@aero.bombardier.com; internet <http://www.bombardier.com>. You may view this service information at the FAA, Transport Standards 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 on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0965.

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-2018-0965; 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, the regulatory evaluation, any comments received, and other information. The address for Docket

Operations (phone: 800-647-5527) 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: Darren Gassetto, Aerospace Engineer, Mechanical Systems and Admin Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

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 November 29, 2018 (83 FR 61336). The NPRM was prompted by a report that certain split ball bearings used in MLG side brace actuator assemblies are manufactured from material that does not meet the required material properties. The NPRM proposed to require an inspection of the left and right MLG side brace actuator assemblies and, if necessary, replacement of the split ball bearings.

We are issuing this AD to address the non-conforming split ball bearings, which, if not corrected, could result in potentially asymmetric MLG extension or retraction and consequent collapse of the MLG during landing.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-20, dated July 27, 2018 (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:

The landing gear supplier has informed Bombardier Aerospace about a quality escape involving Main Landing Gear (MLG) side brace actuators that have been assembled using non-conforming split ball bearings. The affected bearings are manufactured from material that does not meet the required material properties. If not corrected, this condition can result in potentially asymmetric MLG gear extension or retraction and subsequent gear collapse during landing.

This [Canadian] AD mandates verification of the installed MLG side brace actuator assemblies and replacement of the affected parts.

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-2018-0965.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

One commenter, Andy Ingwersen, and Flexjet indicated support for the NPRM.

Request for Records Check To Determine MLG Side Brace Actuator Assembly Serial Number as an Alternative Method of Compliance

Flexjet requested that an additional means of verification be allowed for determining the serial number of the left and right MLG side brace actuator assembly part number 40310-103. Flexjet suggested that we add language to paragraph (g) of the proposed AD stating “A review of airplane maintenance records is acceptable in lieu of this inspection if the serial number can be conclusively determined from that review.” Flexjet justified this request by pointing out that similar language is used in other ADs. Flexjet explained that 20 MLG side brace actuator assembly serial numbers are affected by Bombardier Service Bulletin 100-32-30, dated December 18, 2017, and 217 MLG side brace actuator assembly serial numbers are affected by Bombardier Service Bulletin 350-32-006, dated December 18, 2017, and reasoned that a logbook review would save time and present less of a financial burden on operators.

We agree with the commenter for the reasons provided. We have determined that a review of maintenance records is acceptable for complying with the actions specified in paragraph (g) of this AD, provided the serial number can be conclusively determined from that review. We have revised paragraph (g) of this AD accordingly.

Request To Shorten Compliance Time

One commenter, Ty Smith, made a request to change the compliance time to verify the MLG side brace actuator assembly serial number and perform applicable on-condition actions, and we infer from the request that the commenter wishes the compliance time to be shortened. The commenter asserted that a compliance time of 48 months leaves a large window of opportunity for the unsafe condition to potentially lead to a malfunction. The commenter conceded that a certain amount of time is needed to address the unsafe condition, but presumed that operators have the means to address the unsafe condition sooner than the 48 month compliance time allows.

We agree to clarify. As noted in figure 1 to paragraphs (g) and (h) of this AD, the compliance time varies depending on the total number of flight cycles accumulated on an airplane, with 48 months being the longest possible compliance time. In consideration of the average utilization rate by the affected U.S. operators, the practical aspects of an orderly modification of the U.S. fleet during regular maintenance periods, and the availability of required modification parts, we have determined that the compliance times specified in figure 1 to paragraphs (g) and (h) of this AD are appropriate. We have not changed this AD in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

Bombardier, Inc., has issued Service Bulletin 100-32-30, dated December 18, 2017; and Service Bulletin 350-32-006, dated December 18, 2017. This service information describes procedures for inspecting the left and right MLG side brace actuator assemblies to verify the serial number and replace the split ball bearings. These documents are distinct since they apply to airplanes in different

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 the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 468 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs for Required Actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
1 work-hour × \$85 per hour = \$85	\$0	\$85	\$39,780

We estimate the following costs to do any necessary on-condition actions that would be required based on the results of the required inspection. We have no way of determining the number of aircraft that might need these on-condition actions:

Estimated Costs of On-Condition Actions

Labor cost	Parts cost	Cost per product
8 work-hours × \$85 per hour = \$680 per airplane	\$1,820	\$2,500

According to the manufacturer, some or all 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 known 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

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 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):



2019-07-06 Bombardier, Inc.: Amendment 39-19617; Docket No. FAA-2018-0965; Product Identifier 2018-NM-124-AD.

(a) Effective Date

This AD is effective May 28, 2019.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Bombardier, Inc., Model BD-100-1A10 airplanes, certificated in any category, serial numbers 20003 through 20500 and 20501 through 20665 inclusive.

(d) Subject

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

(e) Reason

This AD was prompted by a report that certain split ball bearings used in main landing gear (MLG) side brace actuator assemblies are manufactured from material that does not meet the required material properties. We are issuing this AD to address these non-conforming split ball bearings, which, if not corrected, can result in potentially asymmetric MLG extension or retraction and consequent collapse of the MLG during landing.

(f) Compliance

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

(g) Inspection To Verify Serial Number

At the applicable time specified in figure 1 to paragraphs (g) and (h) of this AD: Perform an inspection to verify the serial number of the left and right MLG side brace actuator assemblies having part number (P/N) 40310-103, in accordance with paragraphs 2.A. and 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 100-32-30, dated December 18, 2017; or perform an inspection to verify the serial number of the left and right MLG side brace actuator assemblies having P/N 2-8554-2, in accordance with paragraphs 2.A. and 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 350-32-006, dated December 18, 2017; as applicable. A review of airplane maintenance records is acceptable in lieu of this inspection if the serial number can be conclusively determined from that review.

Figure 1 to paragraphs (g) and (h) of this AD – Compliance Times

Airplane cycles	Compliance Time
As of the effective date of this AD: 3,350 total flight cycles or fewer	Before accumulating 3,750 total flight cycles, or within 48 months after the effective date of this AD, whichever occurs first
As of the effective date of this AD: more than 3,350 total flight cycles	Within 400 flight cycles or 12 months after the effective date of this AD, whichever occurs first

(h) Replacement

If, during the inspection specified in paragraph (g) of this AD, the serial number of the part installed is listed in table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 100-32-30, dated December 18, 2017; or table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 350-32-006, dated December 18, 2017; as applicable: at the applicable time specified in figure 1 to paragraphs (g) and (h) of this AD, replace the split ball bearing having P/N 104467672, in accordance with paragraph 2.C. of the Accomplishment Instructions of Bombardier Service Bulletin 100-32-30, dated December 18, 2017; or paragraph 2.C. of the Accomplishment Instructions of Bombardier Service Bulletin 350-32-006, dated December 18, 2017; as applicable. If the serial number of the installed part is not listed in table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 100-32-30, dated December 18, 2017; or table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 350-32-006, dated December 18, 2017; as applicable; no further action is required by this paragraph.

(i) Parts Installation Limitation

As of the effective date of this AD, no person may install on any Bombardier, Inc., Model BD-100-1A10 airplane any MLG side brace actuator assembly having a serial number listed in table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 100-32-30, dated December 18, 2017; or table 1 of paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 350-32-006, dated December 18, 2017; as applicable; unless the split ball bearing having P/N 104467672 has been previously replaced as specified in paragraph (h) of this AD.

(j) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, New York 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 ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 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 Branch, 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 AD CF-2018-20, dated July 27, 2018, 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-2018-0965.

(2) For more information about this AD, contact Darren Gassetto, Aerospace Engineer, Mechanical Systems and Admin Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

(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 100-32-30, dated December 18, 2017.

(ii) Bombardier Service Bulletin 350-32-006, dated December 18, 2017.

(3) For service information identified in this AD, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; email ac.yul@aero.bombardier.com; internet <http://www.bombardier.com>.

(4) You may view this service information at the FAA, Transport Standards 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, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Des Moines, Washington, on April 8, 2019.

Michael J. Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.