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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-2001; Project Identifier MCAI-2023-00666-T; Amendment 39-22676; AD 2024-03-06]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is superseding Airworthiness Directive (AD) 2021-20-13, which applied to certain Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes. AD 2021-20-13 required repetitive lubrication and repetitive detailed visual inspections (DVI) and non-destructive test (NDT) inspections of the main landing gear (MLG) shock strut lower pins, and replacement if necessary. This AD continues to require the lubrication and inspections specified in AD 2021-20-13 until the MLG shock strut assembly is modified by replacing the trailing arm bushing and installing new dynamic joint components. This AD was prompted by a new design solution for this potential failure of the shock strut lower pin. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective April 16, 2024.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of April 16, 2024.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of November 18, 2021 ([86 FR 57033](#), October 14, 2021).

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA–2023–2001; 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 mandatory continuing airworthiness information (MCAI), 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 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; website bombardier.com.
- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, 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* under Docket No. FAA–2023–2001.

FOR FURTHER INFORMATION CONTACT:

Gabriel Kim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend [14 CFR part 39](#) to supersede AD 2021–20–13, Amendment 39–21751 ([86 FR 57033](#), October 14, 2021) (AD 2021–20–13). AD 2021–20–13 applied to certain Bombardier, Inc., Model CL–600–2B16 (604 Variant) airplanes. AD 2021–20–13 required repetitive lubrication and repetitive DVI and NDT inspections of the MLG shock strut lower pins, and replacement if necessary. The FAA issued AD 2021–20–13 to correct an unsafe condition identified as cracking of the MLG shock strut lower pin part number 19146–3.

The NPRM published in the **Federal Register** on October 25, 2023 ([88 FR 73265](#)). The NPRM was prompted by AD CF–2023–32, dated May 9, 2023, issued by Transport Canada, which is the aviation authority for Canada (Transport Canada AD CF–2023–32) (also referred to as the MCAI). The MCAI states there is a new design solution for this potential failure of the shock strut lower pin, which involves replacing the training arm bushings at the attachment and reassembly of the MLG shock strut assembly to training arm assembly joint with new dynamic joint components. As a result, the MCAI requires this new design as terminating action for the requirements of Transport Canada AD CF–2020–54R1.

In the NPRM, the FAA proposed to continue to require the lubrication and inspections specified in AD 2021–20–13 until the MLG shock strut assembly is modified by replacing the trailing arm bushing and

installing new dynamic joint components. The FAA is issuing this AD to address cracking of the MLG shock strut lower pin. The unsafe condition, if not addressed, could result in structural failure of one or both MLG.

You may examine the MCAI in the AD docket at *regulations.gov* under Docket No. FAA-2023-2001.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from three commenters, including Executive Jet Management, Inc., NetJets, and Boeing. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Update the Service Information to the Latest Revision and Provide Credit

Executive Jet Management, Inc. NetJets, and Boeing requested the FAA revise the proposed AD to allow using Bombardier Service Bulletin 604-32-031 Revision 01, dated March 17, 2023; Bombardier Service Bulletin 605-32-008 Revision 01, dated March 17, 2023; and Bombardier Service Bulletin 650-32-005 Revision 01, dated March 17, 2023. NetJets also requested that the proposed AD be revised to add credit for using the original issues of the service information.

The FAA agrees to update this final rule to reference Bombardier Service Bulletin 604-32-031 Revision 01, dated March 17, 2023; Bombardier Service Bulletin 605-32-008 Revision 01, dated March 17, 2023; and Bombardier Service Bulletin 650-32-005 Revision 01, dated March 17, 2023, which include minor changes that do not affect the substantive requirements proposed in the NPRM. The FAA has revised this AD to reflect the updated service bulletins. The FAA has also added paragraph (n) of this AD to provide credit for the original issues of the applicable service bulletins, and redesignated subsequent paragraphs accordingly.

Conclusion

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data, considered the 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 this product. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

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

The FAA reviewed the following Bombardier service information:

- Service Bulletin 604-32-031, Revision 01, dated March 17, 2023.
- Service Bulletin 605-32-008, Revision 01, dated March 17, 2023.
- Service Bulletin 650-32-005, Revision 01, dated March 17, 2023.

This service information contains procedures for disassembling the left- and right-hand MLG shock strut and trailing arm joint, replacing the trailing arm bushings at the attachment, and re-assembling the joint with new dynamic joint components. These documents are distinct since they apply to different airplane configurations.

This AD also requires the following Bombardier service information, which the Director of the Federal Register approved for incorporation by reference as of November 18, 2021 ([86 FR 57033](#), October 14, 2021):

- Service Bulletin 604–32–030, dated June 30, 2020.
- Service Bulletin 605–32–007, dated June 30, 2020.
- Service Bulletin 650–32–004, dated June 30, 2020.

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

The FAA estimates that this AD affects 433 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs for Required Actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Lubrication and inspections (retained actions from AD 2021–20–13)	7 work-hours × \$85 per hour = \$595	\$0	\$595 per cycle	\$257,635 per cycle.
Modification and testing (new actions)	9 work-hours × \$85 per hour = \$765	2,435	\$3,200	\$1,385,600.

The FAA estimates the following costs to do any necessary on-condition replacement that would be required based on the results of the repetitive inspections. The FAA has no way of determining the number of aircraft that might need this on-condition action:

Estimated Costs of On-Condition Replacement

Labor cost	Parts cost	Cost per product
6 work-hours × \$85 per hour = \$510	\$2,435	\$2,945

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

The FAA 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) 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:

- a. Removing Airworthiness Directive 2021–20–13, Amendment 39–21751 ([86 FR 57033](#), October 14, 2021); and
- b. Adding the following new Airworthiness Directive:
2024–03–06 Bombardier, Inc: Amendment 39–22676; Docket No. FAA–2023–2001; Project Identifier MCAI–2023–00666–T.

(a) Effective Date

This airworthiness directive (AD) is effective April 16, 2024.

(b) Affected ADs

This AD replaces AD 2021–20–13, Amendment 39–21751 ([86 FR 57033](#), October 14, 2021) (AD 2021–20–13).

(c) Applicability

This AD applies to Bombardier, Inc., Model CL–600–2B16 (604 Variant) airplanes, serial numbers (S/N) 5301 through 5665 inclusive, 5701 through 5988 inclusive, and 6050 through 6188 inclusive, certificated in any category.

(d) Subject

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

(e) Reason

This AD was prompted by reports of cracking of the main landing gear (MLG) shock strut lower pin. The FAA is issuing this AD to address cracking of the MLG shock strut lower pin. The unsafe condition, if not addressed, could result in structural failure of one or both MLG.

(f) Compliance

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

(g) Retained Repetitive Lubrication, With Revised Applicability

This paragraph restates the requirements of paragraph (g) of AD 2021–20–13, with revised applicability. Within 200 flight hours (FH) or 12 months after November 18, 2021 (the effective date of AD 2021–20–13), whichever occurs first, lubricate the left-hand (LH) and right-hand (RH) MLG shock strut lower pins having part number (P/N) 19146–3, in accordance with paragraph 2.B., “Part A,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 200 FH or 12 months, whichever occurs first.

(1) For airplanes having S/N 5301 through 5665 inclusive: Bombardier Service Bulletin 604-32-030, dated June 30, 2020.

(2) For airplanes having S/N 5701 through 5988 inclusive: Bombardier Service Bulletin 605-32-007, dated June 30, 2020.

(3) For airplanes having S/N 6050 through 6188 inclusive: Bombardier Service Bulletin 650-32-004, dated June 30, 2020.

(h) Retained Detailed Visual Inspections (DVI), With No Changes

This paragraph restates the requirements of paragraph (h) of AD 2021-20-13, with no changes. At the applicable compliance time specified in paragraphs (h)(1) through (3) of this AD, perform the DVI for cracking and damage of the LH and RH MLG shock strut lower pins having part number (P/N) 19146-3, in accordance with paragraph 2.C., "Part B," of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 400 FH or 24 months, whichever occurs first. If the DVI coincides with a non-destructive testing (NDT) inspection required by paragraph (i) of this AD, the NDT inspection supersedes the DVI for that interval only. If the accumulated flight cycles (FC) of the MLG shock strut lower pin are not known, use the related MLG assembly accumulated FC to determine when to accomplish the actions required by this paragraph.

(1) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before November 18, 2021 (the effective date of AD 2021-20-13) and on which an MLG shock strut lower pin has accumulated fewer than 600 total FC on the pin as of November 18, 2021: Before the accumulation of 750 total FC on the pin.

(2) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before November 18, 2021 (the effective date of AD 2021-20-13) and on which an MLG shock strut lower pin has accumulated 600 total FC or more on the pin as of November 18, 2021: Within 150 FC after November 18, 2021.

(3) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after November 18, 2021 (the effective date of AD 2021-20-13): Before the accumulation of 750 total FC.

(i) Retained NDT Inspection, With No Changes

This paragraph restates the requirements of paragraph (i) of AD 2021-20-13, with no changes. At the applicable compliance time specified in paragraphs (i)(1) through (4) of this AD: Perform the NDT inspection for cracking and damage of the LH and RH MLG shock strut lower pins having P/N 19146-3, in accordance with paragraph 2.D., "Part C," of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 900 FC. If the accumulated FC of the MLG shock strut lower pin is not known, use the related MLG assembly accumulated FC to determine when to accomplish the actions required by this paragraph.

(1) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before November 18, 2021 (the effective date of AD 2021-20-13) and on

which an MLG shock strut lower pin has accumulated fewer than 1,200 total FC on the pin as of November 18, 2021: Before the accumulation of 1,500 total FC on the pin.

(2) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before November 18, 2021 (the effective date of AD 2021–20–13) and on which an MLG shock strut lower pin has accumulated 1,200 total FC or more but fewer than 2,000 total FC on the pin as of November 18, 2021: Within 300 FC after November 18, 2021, or before the accumulation of 2,200 total FC on the pin, whichever occurs first.

(3) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before November 18, 2021 (the effective date of AD 2021–20–13) and on which an MLG shock strut lower pin has accumulated 2,000 total FC or more on the pin as of November 18, 2021: Within 200 FC after November 18, 2021.

(4) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after November 18, 2021 (the effective date of AD 2021–20–13): Before the accumulation of 1,500 total FC.

(j) Retained Replacement, With No Changes

This paragraph restates the requirements of paragraph (j) of AD 2021–20–13, with no changes. If, during any inspection required by this AD, any crack or damage of the MLG shock strut lower pin is detected, before further flight, replace the affected MLG shock strut lower pin with a new part in accordance with paragraph 2.E., “Part D,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD.

(k) New Requirement of This AD: Modification

Within 60 months from the effective date of this AD, modify the LH and RH MLG assembly in accordance with paragraph 2.B. of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (k)(1) through (3) of this AD.

(1) For airplanes having S/N 5301 through 5665 inclusive: Bombardier Service Bulletin 604–32–031, Revision 01, dated March 17, 2023.

(2) For airplanes having S/N 5701 through 5988 inclusive: Bombardier Service Bulletin 605–32–008, Revision 01, dated March 17, 2023.

(3) For airplanes having S/N 6050 through 6188 inclusive: Bombardier Service Bulletin 650–32–005, Revision 01, dated March 17, 2023.

(l) New Requirement of the AD: Testing

Before further flight after completing the actions required by paragraph (k) of this AD, perform the testing of the MLG shock strut assembly to trailing arm assembly joint in accordance with paragraph 2.C. of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (k)(1) through (3) of this AD.

(m) Terminating Action

Modifying and testing an airplane as required by paragraphs (k) and (l) of this AD terminates the initial and repetitive lubrication and inspections required by paragraphs (g), (h), and (i) of this AD for that airplane.

(n) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (k) and (l) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 604–32–031, dated December 29, 2022; Bombardier Service Bulletin 605–32–008, dated December 29, 2022; or Bombardier Service Bulletin 650–32–005, dated December 29, 2022.

(o) Additional AD Provisions

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation 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 International Validation Branch, mail it to the address identified in paragraph (p)(2) of this AD or email to: 9-AVS-AIR-730-AMOC@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or Transport Canada; or Bombardier, Inc.'s Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(p) Additional Information

(1) Refer to Transport Canada AD CF–2023–32, dated May 9, 2023, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA–2023–2001.

(2) For more information about this AD, contact Gabriel Kim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; email 9-avs-nyaco-cos@faa.gov.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (q)(5) and (6) of this AD.

(q) 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.

(3) The following service information was approved for IBR on April 16, 2024.

(i) Bombardier Service Bulletin 604–32–031, Revision 01, dated March 17, 2023.

(ii) Bombardier Service Bulletin 605–32–008, Revision 01, dated March 17, 2023.

(iii) Bombardier Service Bulletin 650–32–005, Revision 01, dated March 17, 2023.

(4) The following service information was approved for IBR on November 18, 2021 ([86 FR 57033](#), October 14, 2021).

(i) Bombardier Service Bulletin 604–32–030, dated June 30, 2020.

(ii) Bombardier Service Bulletin 605–32–007, dated June 30, 2020.

(iii) Bombardier Service Bulletin 650–32–004, dated June 30, 2020.

(5) 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; website bombardier.com.

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

(7) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locationsoremailfr.inspection@nara.gov.

Issued on February 7, 2024.

Victor Wicklund,

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

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