[Federal Register Volume 85, Number 64 (Thursday, April 2, 2020)]
[Rules and Regulations]
[Pages 18431-18435]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2020-06786]

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2019-0876; Product Identifier 2019-NM-070-AD; Amendment 39-19877; AD 2020-05-27]**

**RIN 2120-AA64**

# Airworthiness Directives; Bombardier, Inc., Airplanes

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-700-1A10 and BD-700-1A11 airplanes. This AD was prompted by a report that cracking was discovered in a channel within a structural support member for the rudder quadrant, rudder feel unit assembly, and environmental control system due to fatigue. This AD requires repetitive inspections of the rudder quadrant box assembly for any cracking, and modification of the rudder quadrant box assembly. The FAA issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective May 7, 2020.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 7, 2020.

**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 https://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 https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0876.

## Examining the AD Docket

You may examine the AD docket on the internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0876; 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 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:** Andrea Jimenez, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7330; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

## SUPPLEMENTARY INFORMATION:

### Discussion

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2019-11, dated March 22, 2019 (also referred to as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for certain Bombardier, Inc., Model BD-700-1A10 and BD-700-1A11 airplanes. You may examine the MCAI in the AD docket on the internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0876.

The FAA 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-700-1A10 and BD-700-1A11 airplanes. The NPRM published in the Federal Register on December 16, 2019 (84 FR 68370). The NPRM was prompted by a report that cracking was discovered in a channel within a structural support member for the rudder quadrant, rudder feel unit assembly, and environmental control system due to fatigue. The NPRM proposed to require repetitive inspections of the rudder quadrant box assembly for any cracking, and modification of the rudder quadrant box assembly. The FAA is issuing this AD to address cracking in the rudder quadrant support structure, which can lead to progressive deterioration in the performance of the systems it supports, and could eventually lead to uncommanded rudder movement and bleed air leakage. See the MCAI for additional background information.

### Comments

The FAA gave the public the opportunity to participate in developing this final rule. The FAA received no comments on the NPRM or on the determination of the cost to the public.

### Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. The FAA has 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.

### Related Service Information Under 1 CFR Part 51

Bombardier has issued the following service information.

- Bombardier Service Bulletin 700-53-054, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-53-5013, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-53-6012, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-1A11-53-029, Basic Issue, dated October 1, 2018.

This service information describes procedures for repetitive detailed visual inspections of the rudder quadrant box assembly for any cracking. These documents are distinct since they apply to different airplane models.

Bombardier also issued the following service information:

- Bombardier Service Bulletin 700-53-052, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-53-6010, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-1A11-53-027, Basic Issue, dated October 1, 2018.
- Bombardier Service Bulletin 700-53-5011, Basic Issue, dated October 1, 2018.

This service information describes procedures for modification of the rudder quadrant box assembly. The modification includes surface and bolt-hole eddy current inspections for cracking of the left-hand (LH) channel; a detailed visual inspection for cracking of the forward and aft half ribs and bottom and top skins; replacement of the rudder quadrant box half ribs, air systems support fitting, and LH channel; and installation of new rudder quadrant box back-up fittings. These documents are distinct since they apply to different airplane models.

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 123 airplanes of U.S. registry. The FAA estimates 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 |
|---|---|---|---|
| 2 work-hours × $85 per hour = $170 per inspection cycle | $0 | $170 per inspection cycle | $20,910 per inspection cycle. |

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

**Estimated Costs of On-Condition Action**

| Labor cost | Parts cost | Cost per product |
|---|---|---|
| 46 work-hours × $85 per hour = $3,910 | $355 | $4,265 |

## 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 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) 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.

**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):

**2020-05-27 Bombardier, Inc.:** Amendment 39-19877; Docket No. FAA-2019-0876; Product Identifier 2019-NM-070-AD.

**(a) Effective Date**

This AD is effective May 7, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model BD-700-1A10 and BD-700-1A11 airplanes, certificated in any category, serial numbers 9001 through 9844 inclusive, and 9998.

**(d) Subject**

Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Reason**

This AD was prompted by a report that cracking was discovered in a channel within a structural support member for the rudder quadrant, rudder feel unit assembly, and environmental control system due to fatigue. The FAA is issuing this AD to address cracking in the rudder quadrant support structure, which can lead to progressive deterioration in the performance of the systems it supports, and could eventually lead to uncommanded rudder movement and bleed air leakage.

**(f) Compliance**

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

**(g) Initial and Repetitive Inspections**

For airplanes that have accumulated fewer than 2,900 total flight cycles as of the effective date of this AD, and that have not been modified as specified in paragraph (i) of this AD: At the applicable time specified in paragraph (g)(1) or (2) of this AD, do a detailed visual inspection for cracking of the rudder quadrant box assembly, in accordance with paragraph 2.B. of the Accomplishment Instructions of the applicable service bulletin specified in figure 1 to paragraph (g) of this AD. Repeat the inspection thereafter at intervals not to exceed 1,000 flight cycles.

(1) For airplanes that have accumulated fewer than 2,000 total flight cycles as of the effective date of this AD: Inspect within 1,000 flight cycles after the effective date of this AD.

(2) For airplanes that have accumulated 2,000 total flight cycles or more, but fewer than 2,900 total flight cycles, as of the effective date of this AD: Inspect within 100 flight cycles after the effective date of this AD.

**Figure 1 to paragraph (g) –** *Inspection Service Information*

| Airplane Model | Service Information |
|---|---|
| BD-700-1A10 airplanes having serial numbers 9002 through 9312 inclusive, 9314 through 9380 inclusive, and 9384 through 9429 inclusive | Bombardier Service Bulletin 700-53-054, Basic Issue, dated October 1, 2018 |
| BD-700-1A10 airplanes having serial numbers 9313, 9381, and 9432 through 9844 inclusive | Bombardier Service Bulletin 700-53-6012, Basic Issue, dated October 1, 2018 |
| BD-700-1A11 airplanes having serial numbers 9127 through 9383 inclusive, 9389 through 9400 inclusive, 9404 through 9431 inclusive, and 9998 | Bombardier Service Bulletin 700-1A11-53-029, Basic Issue, dated October 1, 2018 |
| BD-700-1A11 airplanes having serial numbers 9386, 9401, and 9445 through 9840 inclusive | Bombardier Service Bulletin 700-53-5013, Basic Issue, dated October 1, 2018 |

**(h) Corrective Actions for Inspection Findings**

If any cracking is found during any inspection specified in paragraph (g) of this AD, do the actions specified in paragraph (i) of this AD at the applicable time specified in paragraphs (h)(1) through (4) of this AD.

(1) If any crack of 1.20 inch (30.48 mm) or longer is found on the forward (FWD) upper half rib: Do the actions within 100 flight cycles after discovery of the crack.

(2) If any crack of 0.40 inch (10.16 mm) or longer is found on the AFT lower half rib, do the actions within 100 flight cycles after discovery of the crack.

(3) If any crack is found on the left-hand (LH) channel that has grown from the air system's support fitting aft fastener hole to the adjacent air systems support fitting fastener hole (which is 0.625 inch (15.88 mm) from hole edge to hole edge) or longer, do the actions before further flight.

(4) If any crack is found on the LH channel that is less than 0.625 inch (15.88 mm) from hole edge to hole edge (which is the distance from the air system's support fitting aft fastener hole to the adjacent air system's support fitting fastener hole), do the actions within 50 flight cycles after discovery of the crack.

**(i) Modification of the Rudder Quadrant Box Assembly**

At the applicable time specified in paragraph (i)(1) or (2) of this AD, except as required by paragraph (h) of this AD: Modify the rudder quadrant box assembly. The modification includes surface and bolt-hole eddy current inspections for cracking of the left-hand channel; a detailed visual inspection for cracking of the forward and aft half ribs and bottom and top skins; applicable corrective actions; replacement of the rudder quadrant box half ribs, air systems support fitting, and LH channel; and installation of new rudder quadrant box back-up fittings. Do the modification and associated actions in accordance with paragraph 2.B., 2.C., and 2.D., of the Accomplishment Instructions of the applicable service bulletin specified in figure 2 to paragraph (i) of this AD; except, where the applicable service bulletin specifies to contact Bombardier for appropriate action, corrective actions must be done before further flight in accordance with the procedures specified in paragraph (l)(2) of this AD.

(1) For airplanes that have accumulated 2,900 total flight cycles or fewer as of the effective date of this AD, do the required actions before the accumulation of 3,000 total flight cycles, or within 60 months after the effective date of this AD, whichever occurs first.

(2) For airplanes that have accumulated more than 2,900 total flight cycles as of the effective date of this AD, do the required actions within 100 flight cycles or 12 months, whichever occurs first, after the effective date of this AD.

**Figure 2 to paragraph (i) –** *Modification Service Information*

| Airplane Model | Service Information |
|---|---|
| BD-700-1A10 airplanes having serial numbers 9002 through 9312 inclusive, 9314 through 9380 inclusive, and 9384 through 9429 inclusive | Bombardier Service Bulletin 700-53-052, Basic Issue, dated October 1, 2018 |
| BD-700-1A10 airplanes having serial numbers 9313, 9381, and 9432 through 9844 inclusive | Bombardier Service Bulletin 700-53-6010, Basic Issue, dated October 1, 2018. |
| BD-700-1A11 airplanes having serial numbers 9127 through 9383 inclusive, 9389 through 9400 inclusive, 9404 through 9431 inclusive, and 9998 | Bombardier Service Bulletin 700-1A11-53-027, Basic Issue, dated October 1, 2018 |
| BD-700-1A11 airplanes having serial numbers 9386, 9401, and 9445 through 9840 inclusive | Bombardier Service Bulletin 700-53-5011, Basic Issue, dated October 1, 2018 |

**(j) Alternative Modification**

Airplanes that have been modified as specified by any modification identified in paragraphs (j)(1) through (4) of this AD (which are not required by this AD), meet the requirements specified in paragraph (i) of this AD.

(1) Bombardier Repair Modification R700T400669, Revision C, dated January 19, 2018, or Bombardier Repair Modification R700T400669, Revision G, dated May 30, 2018.

(2) Bombardier In-Service Modification IS700-53-0024, Revision A, dated July 24, 2018.

(3) Bombardier Service Request for Product Support Action (SRPSA) 000220372.

(4) Bombardier Service Request for Product Support Action (SRPSA) 000271526.

**(k) Terminating Action for Repetitive Inspections**

Accomplishing the actions in paragraph (i) or (j) of this AD terminates all of the requirements in paragraph (g) of this AD.

**(l) 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.

**(m) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2019-11, dated March 22, 2019, for related information. This MCAI may be found in the AD docket on the internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0876.

(2) For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7330; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

**(n) 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 700-53-052, Basic Issue, dated October 1, 2018.

(ii) Bombardier Service Bulletin 700-53-054, Basic Issue, dated October 1, 2018.

(iii) Bombardier Service Bulletin 700-53-5011, Basic Issue, dated October 1, 2018

(iv) Bombardier Service Bulletin 700-53-5013, Basic Issue, dated October 1, 2018.

(v) Bombardier Service Bulletin 700-53-6010, Basic Issue, dated October 1, 2018.

(vi) Bombardier Service Bulletin 700-53-6012, Basic Issue, dated October 1, 2018.

(vii) Bombardier Service Bulletin 700-1A11-53-027, Basic Issue, dated October 1, 2018.

(viii) Bombardier Service Bulletin 700-1A11-53-029, Basic Issue, dated October 1, 2018.

(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 https://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, email fedreg.legal@nara.gov, or go to: https://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on March 10, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division,

Aircraft Certification Service.