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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2019-0322; Product Identifier 2019-NM-039-AD; Amendment 39-19712; AD 2019-16-09]**

**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 DHC-8-400 series airplanes. This AD was prompted by reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar and cracking on the elevator front spar. This AD requires one-time inspections for cracks and damage of the elevator PCU brackets and surrounding area, horizontal stabilizer rear spar, and elevator front spar, and related investigative and corrective actions if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective October 9, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 9, 2019.

**ADDRESSES:** For service information identified in this final rule, contact De Havilland Aircraft of Canada Ltd., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; phone: 416-375-4000; fax: 416-375-4539; email: thd@dehavilland.com; internet: <https://dehavilland.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-2019-0322.

#### **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-2019-0322; 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 Propulsion 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**

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 DHC-8-400 series airplanes. The NPRM published in the Federal Register on May 14, 2019 (84 FR 21268). The NPRM was prompted by reports of cracked elevator PCU brackets on the horizontal stabilizer rear spar and cracking on the elevator front spar. The NPRM proposed to require one-time inspections for cracks and damage of the elevator PCU brackets and surrounding area, horizontal stabilizer rear spar, and elevator front spar, and related investigative and corrective actions if necessary.

The FAA is issuing this AD to address failure of an elevator PCU bracket or fracture of the front spar into two segments; either structural failure may cause a jam in one elevator or a loss of airplane pitch control if both elevators are affected.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-34, dated December 17, 2018 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model DHC-8-400 series airplanes. The MCAI states:

There have been five in-service reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar, and two reports of cracking on the elevator front spar. In one case, the PCU bracket cracking led to detachment of the bracket during pushback. An investigation found that the force-fight loads induced by elevator PCUs not rigged to the required tolerance is the common factor in cracking of both the elevator PCU bracket and of the elevator front spar. A secondary contributor to the elevator PCU bracket cracking is the bracket flange preload that may be induced during production installation. Failure of an elevator PCU bracket or progression of the elevator front spar cracking into two segments may cause the affected elevator to jam. Failure of an elevator bracket on both elevators, or progression of elevator front spar cracking into two segments on both elevators, could cause a loss of aeroplane pitch control.

This [Canadian] AD mandates a one-time inspection of the elevator PCU brackets, the horizontal stabilizer rear spar and elevator front spar with reporting of inspection findings. Any brackets found cracked are to be replaced with new brackets with improved strength. For any spar found cracked, obtain instructions to repair the spar from Bombardier and repair the spar accordingly. Additional corrective action may be considered depending on the results of the inspections findings.

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-2019-0322.

## **Comments**

The FAA 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.

### **Request To Remove Certain Service Information Procedures**

Horizon Air requested that the FAA change the language in the introductory text of paragraph (g) of the proposed AD from mandating “the Accomplishment Instructions” in the service information to mandating only the section that corrects the unsafe condition. Horizon Air stated that the Accomplishment Instructions, Part A, “Job Set-up,” and Part C, “Close Out,” do not directly correct the unsafe condition. Horizon Air stated that incorporating these two sections as a requirement in the AD restricts an operator's ability to accomplish other maintenance in conjunction with the required actions to correct the unsafe condition.

The FAA agrees with the commenter's request to exclude the “Job Set-up” and “Close Out” sections of Bombardier Service Bulletin 84-55-09, dated June 7, 2018. The FAA has revised the introductory text of paragraph (g) of this AD to require accomplishment of Section 3.B, Part A, of the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018, and the FAA has revised paragraph (g)(1) of this AD to require accomplishment of Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018.

### **Request To Revise Company Name and Email Address**

Horizon Air requested that the FAA update the contact information for reporting in the introductory text of paragraph (h) of the proposed AD. Horizon Air pointed out that De Havilland Aircraft of Canada Ltd is now the design approval holder (DAH) for the Q400 aircraft.

The FAA agrees with the commenter's request. The FAA has updated the address information accordingly in this final rule.

As a note, there is a difference between the commercial designation and the model designation on the U.S. type certificate data sheet (TCDS). “Q400” is the commercial designation, while Bombardier, Inc., Model DHC-8-400 is the designation on the TCDS. The FAA uses the model designation on the TCDS to define the applicability in ADs and, as a result, have not changed the applicability of this AD. The FAA is in the process of changing the TCDS to reflect the name change for these models. The FAA will use the name identified in the current TCDS so as not to delay issuance of the final rule. Once the TCDS has been changed, the FAA will use the new name in subsequent ADs.

## **Conclusion**

The FAA 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. 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.

The FAA 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 has issued Service Bulletin 84-55-09, dated June 7, 2018. This service information describes procedures for one-time detailed visual and fluorescent penetrant inspections for cracks and damage of the elevator PCU brackets (including the surrounding area), horizontal stabilizer rear spar, and elevator front spar, and related investigative and corrective actions if necessary. The related investigative action is an eddy current inspection for cracking of certain mating holes of the horizontal stabilizer rear spar. Corrective actions include replacement of the elevator PCU brackets and repair of the horizontal stabilizer rear spar and elevator front spar.

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 54 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
13 work-hours × \$85 per hour = \$1,105	\$0	\$1,105	\$59,670

\* Table does not include estimated costs for reporting.

The FAA estimates that it would take about 1 work-hour per product to comply with the reporting requirement in this AD. The average labor rate is \$85 per hour. Based on these figures, the FAA estimates the cost of reporting the inspection results on U.S. operators to be \$4,590, or \$85 per product.

The FAA estimates the following costs to do any necessary on-condition actions 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 these on-condition actions:

#### Estimated Costs of On-Condition Actions

Labor cost	Parts cost	Cost per product
18 work-hours × \$85 per hour = \$1,530	\$0	\$1,530

### Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave. SW, Washington, DC 20591, ATTN: Information Collection Clearance Officer, AES-200.

## **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.

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) 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):



**2019-16-09 Bombardier, Inc.:** Amendment 39-19712; Docket No. FAA-2019-0322; Product Identifier 2019-NM-039-AD.

**(a) Effective Date**

This AD is effective October 8, 2019.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers 4001 through 4580 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight controls.

**(e) Reason**

This AD was prompted by reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar and cracking on the elevator front spar. The FAA is issuing this AD to address this condition, which, if not detected and corrected, may cause failure of an elevator PCU bracket or fracture the front spar into two segments; either structural failure may cause a jam in one elevator or a loss of airplane pitch control if both elevators are affected.

**(f) Compliance**

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

**(g) Inspections**

No earlier than 7,500 total accumulated flight hours, but before accumulating 8,000 flight hours after the effective date of this AD: Perform detailed visual and fluorescent penetrant inspections for cracks and damage of the elevator PCU brackets, horizontal stabilizer rear spar, and elevator front spar, in accordance with Section 3.B, Part A, of the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018.

(1) If any crack is detected on any elevator PCU bracket, and no crack or damage is found on either spar: Before further flight, replace the elevator PCU bracket with a new bracket, and do all related investigative and corrective actions, in accordance with Section 3.B, Part B, of the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018.

(2) If any crack or damage is detected on any horizontal stabilizer rear spar or elevator front spar: Before further flight, repair 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.

#### **(h) Reporting**

At the applicable time specified in paragraph (h)(1) or (2) of this AD: Report the results of the inspections required by paragraph (g) of this AD to the De Havilland CMDB Focal by fax 1-416-375-4538 or email at [cmdb.request@dehavilland.com](mailto:cmdb.request@dehavilland.com), in accordance with the instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018. If operators have reported findings as part of obtaining any corrective actions approved by Bombardier, Inc.'s TCCA DAO, operators are not required to report those findings as specified in this paragraph.

(1) If the inspections were done on or after the effective date of this AD: Submit the report within 30 days after the inspections.

(2) If the inspections were done before the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

#### **(i) 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; TCCA; or Bombardier, Inc.'s TCCA DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

(3) Reporting Requirements: A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

#### **(j) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2018-34, dated December 17, 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-2019-0322.

(2) For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, Airframe and Propulsion 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.

**(k) 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 84-55-09, dated June 7, 2018.

(ii) [Reserved]

(3) For service information identified in this AD, contact De Havilland Aircraft of Canada Ltd., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; phone: 416-375-4000; fax: 416-375-4539; email: thd@dehavilland.com; internet: <https://dehavilland.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 August 15, 2019.

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