[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1251; Project Identifier MCAI-2022-00588-T]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all Bombardier, Inc., Model BD-100-1A10 airplanes. This proposed AD was prompted by an investigation that indicated that one of the springs in the pitch trim switch of the horizontal stabilizer had failed. The failure of the spring could result in the airplane pitching nose down when actually commanded nose up. This proposed AD would require a verification of the serial numbers of certain pitch trim switches, and replacement of the affected pitch trim switches with new ones in the pilot and co-pilot control wheels. This proposed AD would also prohibit the installation of affected parts. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Bombardier Business Aircraft Customer Response Center, 400 Côte Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 1-514-855-2999; email ac.yul@aero.bombardier.com; Internet bombardier.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Examining the AD Docket

You may examine the AD docket at regulations.gov by searching for and locating Docket No. FAA-2022-1251; 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 NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Thomas Niczky, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7347; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2022-1251; Project Identifier MCAI-2022-00588-T" at the beginning

of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Thomas Niczky, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7347; email 9-avs-nyaco-cos@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued TCCA AD CF-2022-24, dated May 2, 2022 (TCCA AD CF-2022-24) (also referred to after this as the MCAI), to correct an unsafe condition on all Bombardier, Inc., Model BD-100-1A10 airplanes. The MCAI states that during several in-service events, following a stab trim fault advisory message and an auto-pilot disconnect, both pilot and co-pilot commands to trim the horizontal stabilizer nose-up resulted in a nose-down movement of the horizontal stabilizer. In two events, the horizontal stabilizer reached the full travel nose-down position before the crew recognized the nature of the problem, and quickly recovered control of the airplane for safe landing. As a result, this led to increased crew workload and reduced safety margins.

Subsequent investigation by Bombardier and the supplier of the horizontal stabilizer pitch trim switch determined that one of the springs within the pitch trim switch had failed. The supplier of the springs was changed in 2019. The majority of observed pitch trim switch failures occurred in pitch trim switches that were manufactured after 2019.

TCCA AD CF-2022-24 requires the replacement of the affected pitch trim switches with re-designed pitch trim switches that have reliable springs. The FAA is issuing this AD to address the failure of the springs in the pitch trim switch, which, if not corrected, could result in the airplane pitching nose down when actually commanded nose up, resulting in reduced controllability of the airplane and high control forces.

You may examine the MCAI in the AD docket at regulations.gov under Docket No. FAA-2022-1251.

Related Service Information Under 1 CFR Part 51

The FAA has reviewed Bombardier Service Bulletin 100-27-21, dated March 21, 2022, for Model BD-100-1A10 (CH-300) airplanes, S/Ns 20003 to 20500. This service

information describes procedures for verifying serial numbers (S/Ns) of certain pitch trim switch part numbers in the pilot and co-pilot control wheels, and replacing affected pitch trim switches.

The FAA has also reviewed Bombardier Service Bulletin 350-27-011, dated March 21, 2022, for Model BD-100-1A10 (CH-350) airplanes, S/Ns 20501 to 20936. This service information describes procedures for verifying S/Ns of certain pitch trim switch part numbers in leather and non-leather covered pilot and co-pilot control wheels, and replacing affected pitch trim switches.

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.

FAA's Determination

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 the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because the FAA evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in the service information already described. This proposed AD would also prohibit the installation of affected pitch trim switches.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 697 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions

Action	Labor cost	Parts	Cost per product
Switch inspection	1 work-hour X $85 per hour = $85	N/A	$59,245

Estimated costs of on-condition actions

Action	Labor cost	Parts	Cost per product
Switch replacement (Airplane S/Ns 20003-20500)	4 work-hours X $85 per hour = $340	$2,352	$2,692
Switch replacement (Airplane S/Ns 20501-20936)	4 work-hours X $85 per hour = $340	$2,442	$2,782

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would 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 Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

Bombardier, Inc.: Docket No. FAA-2022-1251; Project Identifier MCAI-2022-00588-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Bombardier, Inc., Model BD-100-1A10 airplanes, all serial numbers, certificated in any category.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by the investigation that one of the springs in the pitch trim switch for the horizontal stabilizer had failed. The FAA is issuing this AD to address the failure of the springs in the pitch trim switch. The unsafe condition, if not corrected, could result in the airplane pitching nose down when actually commanded nose up, and the flightcrew may not be able to regain control of the horizontal stabilizer, resulting in reduced controllability of the airplane and high control forces.

(f) Compliance

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

(g) Review of the Airplane Records

Within 200 flight hours or 6 months, whichever occurs first, from the effective date of this AD, review the airplane (technical) records for the horizontal stabilizer pitch trim switches and control wheels to determine the date of replacement, if any, of the pilot or co-pilot trim switch and control wheels.

(1) If the pilot or co-pilot pitch trim switch or control wheels were removed after January 1, 2019, and the replacement pitch trim switches have serial numbers 02000 and

subsequent, then no further action is required other than compliance with paragraph (j) of this AD.

(2) For airplanes with serial numbers (S/Ns) 20003 through 20780 inclusive: If no pilot or co-pilot pitch trim switch or control wheel was replaced after January 1, 2019, then no further action is required other than compliance with paragraph (j) of this AD.

(3) For airplanes with S/Ns 20901 through 20936 inclusive: If no pilot or co-pilot pitch trim switch or control wheel has been replaced on an airplane, then no further action is required other than compliance with paragraph (j) of this AD.

(h) Verification and Replacement of Pitch Trim Switches

For airplanes not identified in paragraphs (g)(1) through (3) of this AD: Within 200 flight hours or 6 months, whichever occurs first, from the effective date of this AD, identify the serial numbers of both the pilot and co-pilot pitch trim switches, and do the applicable actions specified in paragraph (h)(1) or (2) of this AD.

(1) If the pilot or co-pilot pitch trim switch has a serial number that is not listed in figure 2 to paragraph (h) of this AD, before further flight re-install the pitch trim switch in accordance with Section 2.B. of the Accomplishment Instructions of the applicable service information identified in figure 1 to paragraph (h) of this AD.

(2) If the pilot or co-pilot pitch trim switch has a serial number listed in figure 2 to paragraph (h) of this AD, before further flight, replace the pitch trim switch in accordance with Section 2.B. of the Accomplishment Instructions of the applicable service information identified in figure 1 to paragraph (h) of this AD.

(3) Before further flight perform the operational test in accordance with Section 2.C. of the Accomplishment Instructions of the applicable service information identified Bombardier SB listed in figure 1 to paragraph (h) of this AD.

Figure 1 to paragraph (h) - *Applicable Bombardier Service Bulletins*

Bombardier SB	Airplane Serial number
100-27-21 - Special Check/Modification - Pitch Trim System - Replacement of Pitch Trim Switches on Pilot and Co-Pilot Control Wheels, Basic Issue, dated March 21, 2022	20003 through 20500
350-27-011 - Special Check/Modification - Pitch Trim System - Replacement of Pitch Trim Switches on Pilot and Co-Pilot Control Wheels, Basic Issue, dated March 21, 2002	20501 through 20936

Figure 2 to paragraph (h) - *Serial Numbers of Affected Pitch Trim Switches to be Removed and Replaced*

Pitch Trim Switch Part Number (P/N)	Serial Number (S/N)
83452541	01583 through 01604 inclusive 01610 through 01622 inclusive 01628 through 01635 inclusive
83452548	00001 through 01999 inclusive

(i) Verification/Replacement of Pitch Trim Switches for Airplanes with S/Ns 20501 and Subsequent with Certain Control Wheel P/Ns 83912156 and 83912157

For airplanes with S/Ns 20501 and subsequent with leather-covered control wheels, pilot control wheel P/N 83912156, or co-pilot control wheel P/N 83912157: Within 200 flight hours or 6 months, whichever occurs first, from the effective date of this AD, remove and inspect both the pilot and co-pilot pitch trim switches to determine the part number of the pitch trim switch in accordance with Section 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 350-27-011, dated March 21, 2002.

(1) If pitch trim switch P/N 83452541 or P/N 83452548 is found installed in either the pilot or the co-pilot control wheel, before further flight, replace the pitch trim switch with pitch trim switch P/N 83452548, serial number 02000 and subsequent, in accordance with Section 2.B. of the Accomplishment Instructions of the applicable service information identified in figure 1 to paragraph (h) of this AD.

(2) Before further flight thereafter perform the operational test in accordance with Section 2.C. of the Accomplishment Instructions of Bombardier Service Bulletin 350-27-011, dated March 21, 2002.

(j) Parts Installation Prohibition

As of the effective date of this AD, no person may install, on any airplane, a trim switch P/N 83452548 or P/N 83452541 with any serial number listed in figure 2 to paragraph (h) of this AD.

(k) 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 responsible Flight Standards 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. 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, 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.

(l) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) TCCA AD CF-2022-24, dated May 2, 2022, for related information. This MCAI may be found in the AD docket at regulations.gov under Docket No. FAA-2022-1251.

(2) For more information about this AD, contact Thomas Niczky, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7347; email 9-avs-nyaco-cos@faa.gov.

(3) For service information identified in this AD, contact Bombardier Business Aircraft Customer Response Center, 400 Côte Vertu Road West, Dorval, Québec H4S

1Y9, Canada; telephone 1-514-855-2999; email ac.yul@aero.bombardier.com; Internet bombardier.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on September 29, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.
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