



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1662; Project Identifier MCAI-2022-00689-T; Amendment 39-22446; AD 2023-11-01]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-100-1A10 airplanes. This AD was prompted by multiple reports of erratic electrical system status on the push button annunciators (PBAs) and the engine instrument and crew alerting system (EICAS) while on-ground and during flight. This AD requires a records check and replacement of affected left-hand (LH) direct current power center (DCPC) units. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1662; 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 Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 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 St., 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-2022-1662.

FOR FURTHER INFORMATION CONTACT: Steven Dzierzynski, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; 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 by adding an AD that would apply to certain Bombardier, Inc., Model BD-100-1A10 airplanes. The NPRM published in the *Federal Register* on January 12, 2023 (88 FR 2029). The NPRM was prompted by AD CF-2022-28, dated May 26, 2022, issued by Transport Canada, which is the aviation authority for Canada (referred to after this as the MCAI). The MCAI states there have been multiple reports of erratic electrical system status on the PBAs and the EICAS while on-ground and during flight, and in several cases, leading to momentary loss of electrical power and loss of flight displays following

flight crew responses to the erratic statuses. It was found that airplanes could experience misleading electrical system status indications (PBA and EICAS) as a result of contamination of electrical contacts in the LH DCPC internal communication data bus. Those erratic indications could cause the crew to turn off fully-operational electrical power sources, leading to partial or complete loss of electrical power. Loss of electrical power could result in the loss of flight displays and reduced controllability of the airplane.

The MCAI also states that Transport Canada previously issued AD CF-2020-46, dated November 17, 2020 (which corresponds to FAA AD 2021-23-14, Amendment 39-21812 (86 FR 68889, December 6, 2021)), which mandated the use of revised Electrical Emergency and Non-Normal Procedures in the airplane flight manual that directed crews not to turn off active generators in the event of an erroneous electrical system status indication. The MCAI advised that further corrective action is being developed to introduce a design improvement to the DCPC that is intended to protect the internal communication data bus from contaminants, and that a time-limited maintenance check will also be implemented.

In the NPRM, the FAA proposed to require a records check and replacement of affected LH DCPC units. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1662.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from a commenter, NetJets. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Define Action for Certain LH DCPCs

NetJets requested that the FAA specify what actions, if any, are required for LH DCPC having less than 3,100 total flight cycles.

The FAA agrees to clarify. No action has been identified for those LH DCPC units having less than 3,100 total flight cycles as of the effective date of this AD. Once action has been identified, the FAA might consider rulemaking to require those actions. No changes have been made to this AD in this regard.

Request for Additional Method of Compliance

NetJets requested revising the proposed AD to allow use of certain other service bulletins as a means of compliance with the proposed requirements. NetJets suggested that accomplishment of Bombardier Service Bulletin 350-24-005, dated November 29, 2022; or Safran Service Bulletin 975GC02Y-24-020, dated August 5, 2022; could meet the intent of the proposed requirements for certain LH DCPC part numbers (P/Ns). NetJets pointed out that Bombardier Service Bulletin 350-24-005 references Bombardier Service Bulletin 350-24-004, dated April 9, 2021, as a prior or concurrent service bulletin, and also provides modification instructions that result in changing the part number of the LH DCPC unit from P/N 975GC02Y07 to P/N 975GC02Y08. NetJets stated that accomplishing those service bulletins could provide an acceptable means of compliance and could exclude LH DCPC P/N 975GC02Y08 from the proposed AD requirements.

The FAA agrees to revise this AD. The FAA has also reviewed Bombardier Service Bulletin 100-24-30, dated November 29, 2022, and determined that service bulletin also has similar modification instructions. The FAA has determined that Bombardier Service Bulletins 100-24-30 and 350-24-005, both dated November 29, 2022, could be used as optional terminating action. The FAA has revised this AD to add paragraph (j) to this AD.

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 Bombardier Service Bulletins 100-24-29 and 350-24-004, both dated April 9, 2021. This service information specifies procedures for a records check to determine the total flight hours and replacement of affected LH DCPC units (P/Ns 975GC02Y04, 975GC0Y05, 975GC02Y06, or 975GC02Y07). These documents are distinct since they apply to different airplane configurations.

The FAA has also reviewed Bombardier Service Bulletins 100-24-30 and 350-24-005, both dated November 29, 2022. This service information specifies procedures for modifying LH DCPC units having P/N 975GC02Y07. These documents are distinct since they apply to different airplane 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.

Interim Action

The FAA considers that this AD is an interim action. The MCAI states that further corrective action is being developed. Once this action is developed, approved, and available, the FAA might consider additional rulemaking.

Costs of Compliance

The FAA estimates that this AD would affect 315 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
1 work-hour X \$85 per hour = \$85	\$0	\$85	\$26,775

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 this on-condition action:

Estimated costs of on-condition actions

Labor cost	Parts cost	Cost per product
8 work-hours X \$85 per hour = \$680	Up to \$35,000	Up to \$35,680

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this 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

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 adding the following new airworthiness directive:
2023-11-01 Bombardier, Inc.: Amendment 39-22446; Docket No. FAA-2022-1662;
Project Identifier MCAI-2022-00689-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bombardier, Inc., Model BD-100-1A10 airplanes, certificated in any category, having serial numbers 20003 through 20795 inclusive, 20797 through 20812 inclusive, 20814 through 20832 inclusive, and 20834 through 20836 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 24, Electrical Power.

(e) Unsafe Condition

This AD was prompted by multiple reports of erratic electrical system status on the push button annunciators (PBAs) and the engine instrument and crew alerting system (EICAS) while on-ground and during flight. The FAA is issuing this AD to address erratic indications, which could cause the flight crew to turn off fully-operational electrical power sources, leading to partial or complete loss of electrical power. The unsafe condition, if not addressed, could result in loss of flight displays and reduced controllability of the airplane.

(f) Compliance

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

(g) Records Check

Within 60 days after the effective date of this AD, verify the total flight hours of the left-hand (LH) direct current power center (DCPC) unit since the date of manufacture by doing a records check in accordance with paragraph 2.B.(1) of the Accomplishment Instructions of the applicable service bulletin identified in paragraphs (g)(1) and (2) of this AD.

(1) For airplanes having serial number 20001 through 20500 inclusive, use Bombardier Service Bulletin 100-24-29, dated April 9, 2021.

(2) For airplanes having serial number 20501 through 20999 inclusive, use Bombardier Service Bulletin 350-24-004, dated April 9, 2021.

(h) Replacement of the LH DCPC

If, during the records check required by paragraph (g) of this AD, the total flight hours since date of manufacture of the LH DCPC unit is equal to or more than 3,100 total flight hours and the LH DCPC has not been cleaned as specified in Safran Service Bulletin 975GC02Y-24-018 before the effective date of this AD: Within 19 months after the effective date of this AD, replace the LH DCPC unit in accordance with paragraphs 2.B.(2) through 2.B.(5) and 2.C. of the Accomplishment Instructions of the applicable service bulletin identified in paragraphs (g)(1) and (2) of this AD.

(i) Exception to the Service Information

Although the note in paragraph 2.B.(4) of the Accomplishment Instructions of Bombardier Service Bulletins 100-24-29, and 350-24-004, both dated April 9, 2021, specifies that actions will reset “the unit total flight hours to zero at date of incorporation,” this AD does not include that requirement.

(j) Optional Terminating Action

Modification of a LH DCPC having part number (P/N) 975GC02Y07 into an LH DCPC having P/N 975GC02Y08, in accordance with Parts A and B of the

Accomplishment Instructions of the applicable service bulletin identified in paragraphs (j)(1) and (2) of this AD, is considered terminating action for the requirements of paragraphs (g) and (h) of this AD for that LH DCPC.

(1) For airplanes having serial number 20001 through 20500 inclusive, use Bombardier Service Bulletin 100-24-30, dated November 29, 2022.

(2) For airplanes having serial number 20501 through 20999 inclusive, use Bombardier Service Bulletin 350-24-005, dated November 29, 2022.

(k) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, AIR-730, 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 ATTN: Program Manager, Continuing Operational Safety, at the address identified in paragraph (l)(2) of this AD or email to: 9-avs-nyaco-cos@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.

(l) Additional Information

(1) Refer to Transport Canada AD CF-2022-28, dated May 26, 2022, 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-2022-1662.

(2) For more information about this AD, contact Steven Dzierzynski, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; email 9-avs-nyaco-cos@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference 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 100-24-29, dated April 9, 2021.

(ii) Bombardier Service Bulletin 100-24-30, dated November 29, 2022.

(iii) Bombardier Service Bulletin 350-24-004, dated April 9, 2021.

(iv) Bombardier Service Bulletin 350-24-005, dated November 29, 2022.

(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 514-855-2999; email ac.yul@aero.bombardier.com; website [bombardier.com](https://www.bombardier.com).

(4) 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.

(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 fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on May 25, 2023.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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