



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0654; Project Identifier MCAI-2022-01505-T; Amendment 39-22467; AD 2023-12-09]

RIN 2120-AA64

Airworthiness Directives; Airbus Canada Limited Partnership (Type Certificate Previously Held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes.

This AD was prompted by reports that, during instrument landing system (ILS) approaches, the flight control system reverted from primary flight control computer (PFCC) normal mode operating in autopilot to remote electronics unit (REU) direct mode, and then, after a period of time, to PFCC direct mode. This AD requires installation of a PFCC software update; and a records review or detailed inspection to identify pre-existing repairs or damage within certain limits to certain structures, and obtaining and following additional instructions, if necessary, as specified in a Transport Canada AD, which is incorporated by reference. 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 a certain publication 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-2023-0654; 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 material incorporated by reference in this AD, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; telephone 888-663-3639; email: TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca; website: tc.canada.ca/en/aviation.

- 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. It is also available in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0654.

FOR FURTHER INFORMATION CONTACT: Steven Dzierzynski, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone (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 by adding an AD that would apply to certain Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes. The NPRM published in the *Federal Register* on March 30, 2023 (88 FR 19019). The NPRM was prompted by AD CF-2022-65, dated November 23, 2022, issued by Transport Canada, which is the aviation authority for Canada (also referred to as the MCAI). The MCAI states that airplanes equipped with the CAT IIIB Autoland option, have had numerous occurrences during ILS approaches where the flight control system has reverted from PFCC normal mode operating in autopilot to REU direct mode, and then, after a period of time, to PFCC direct mode. During these occurrences, the caution message FLT CTRL DIRECT is posted on the engine indication and crew alerting system (EICAS). The MCAI states that it requires a PFCC software update, which includes control law updates that require review and disposition of previous repairs and damage assessments prior to conducting the software update. These pre-existing repairs and damage may exceed the Aircraft Structural Repair Publication (ASRP) permitted damage limits for affected structures and would affect the control laws.

In the NPRM, the FAA proposed to require installing updated PFCC software; this installation includes pre-requisites that must be met prior to the installation (installing certain database versions and software). In addition, the installation requires a records review or detailed inspection to identify pre-existing repairs and damages (that were within ASRP limits) to certain structures and obtaining and following additional instructions, as specified in Transport Canada AD CF-2022-65. The FAA is issuing this AD to address reversion to direct mode during ILS approaches, which, if not corrected, could impact flight control functions, which could prevent continued safe flight and

landing. See the MCAI for additional background information.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0654.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from The Air Line Pilots Association, International (ALPA), who supported the NPRM without change. The FAA received an additional comment from one commenter, Delta Air Lines (Delta). The following presents the comment received on the NPRM and the FAA's response to each comment.

Request for Clarification if Repair Review is a Required for Compliance (RC) Action

Delta requested to include an exception in paragraph (h) of the proposed AD to clarify that step 3.2 of the Accomplishment Instructions in Airbus Canada Limited Partnership A220 Service Bulletin (SB) BD500-270020, Issue No. 001, dated September 28, 2022, is not required for compliance (RC).

The FAA disagrees with adding an exception for Procedure section 3.2 of Airbus Canada Limited Partnership A220 SB BD500-270020, Issue No. 001, dated September 28, 2022. The note of step 1 of the Procedure section states "The Procedure section of the Accomplishment Instructions is Required for Compliance (RC) and must be done to comply with the AD." The software of the PFCC is updated so that the new Control Laws (CLAWS) obey the compliance requirements for the Maximum Landing Weight (MLW) increase and to resolve inadvertent Direct Mode reversions in approach on CAT IIIB capable configuration. The unsafe condition is addressed by the software update which also includes the control laws updates. There is a statement in the Background section of the proposed AD that references the Transport Canada AD CF-2022-65 note, which mentions the PFCC software update also includes control laws updates. No changes have been made to this AD regarding this issue.

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, 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

Transport Canada AD CF-2022-65 specifies procedures for installing updated PFCC software; this installation includes pre-requisites that must be met prior to the installation (installing certain database versions and software). In addition, the installation requires a records review or detailed inspection to identify pre-existing repairs and damages (that were within ASRP limits) to certain structures and obtaining and following additional instructions. This material 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 72 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
4 work-hours X \$85 per hour = \$340	\$14	\$354	\$25,488

The FAA has received no definitive data on which to base the cost estimates for

the on-condition actions specified in this AD.

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:

2023-12-09 Airbus Canada Limited Partnership (Type Certificate Previously Held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.): Amendment 39-22467; Docket No. FAA-2023-0654; Project Identifier MCAI-2022-01505-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 Airbus Canada Limited Partnership (Type Certificate previously held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.) Model BD-500-1A10 and BD-500-1A11 airplanes, certificated in any category, as identified in Transport Canada AD CF-2022-65, dated November 23, 2022 (Transport Canada AD CF-2022-65).

(d) Subject

Air Transport Association (ATA) of America Code: 27, Flight control system.

(e) Unsafe Condition

This AD was prompted by reports that, during instrument landing system (ILS) approaches, the flight control system reverted from primary flight control computer (PFCC) normal mode operating in autopilot to remote electronics unit (REU) direct mode, and then, after a period of time, to PFCC direct mode. The FAA is issuing this AD to address reversion to direct mode during ILS approaches, which, if not corrected, could impact flight control functions and could prevent continued safe flight and landing.

(f) Compliance

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

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, Transport Canada AD CF-2022-65.

(h) Exceptions to Transport Canada AD CF-2022-65

(1) Where Transport Canada AD CF-2022-65 refers to its effective date, this AD requires using the effective date of this AD.

(2) Where the service information referenced in Transport Canada AD CF-2022-65 specifies installing software updates on the PFCCs using a USB-type device, this AD also allows the use of a portable maintenance access terminal (PMAT)-type device.

Note 1 to paragraph (h)(2): When using a PMAT-type device, guidance for updating the software can be found in Airbus Canada Service Bulletin (SB) BD500-270020, Issue 001, dated September 28, 2022.

(i) Additional AD Provisions

The following provisions also apply to this AD:

(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 International Validation Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. 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 Airbus Canada Limited Partnership's Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(3) *Required for Compliance (RC)*: Except as required by paragraph (i)(2) of this AD, if any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

(j) Additional Information

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

(2) For Airbus Canada service information identified in this AD that is not incorporated by reference, contact Airbus Canada Limited Partnership, 13100 Henri-Fabre Boulevard, Mirabel, Québec J7N 3C6, Canada; telephone 450-476-7676; email a220_crc@abc.airbus; website: a220world.airbus.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.

(k) 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) Transport Canada AD CF-2022-65, dated November 23, 2022.

(ii) [Reserved]

(3) For Transport Canada AD CF-2022-65, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; telephone 888-663-3639; email: TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca; website: tc.canada.ca/en/aviation.

(4) 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.

(5) You may view this material 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 June 13, 2023.

Michael Linegang, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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