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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1566; Project Identifier MCAI-2022-00290-T; Amendment 39-22521; AD 2023-16-02]

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 all Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes. This AD was prompted by reports of mechanical wear damage found on the engine fuel feed system tubes and fuel tube connections. This AD requires repetitive inspections of the fuel feed system for damage, and replacement 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 September 22, 2023.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2022-1566; 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 St., 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 under Docket No. FAA-2022-1566.

FOR FURTHER INFORMATION CONTACT:

Joseph Catanzaro, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7366; 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 all Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes. The NPRM published in the **Federal Register** on December 6, 2022 ([87 FR 74527](#)). The NPRM was prompted by AD CF-2022-08, dated March 3, 2022, issued by Transport Canada, which is the aviation authority for Canada (Transport Canada AD CF-2022-08) (also referred to as the MCAI). The MCAI states there have been several in-service findings of mechanical wear damage on the engine fuel feed system tubes and fuel tube connections on airplanes that are “post-SB BD500-282004” or that have the production equivalent. Airbus Canada Limited Partnership (ACLP) Service Bulletin BD500-282004, Issue 1, dated August 30, 2019, was mandated by Transport Canada AD CF-2019-19R1, dated November 1, 2019, and specifies, among other actions, modifying the fuel feed line installations in the fuel collector tanks. Transport Canada AD CF-2019-19R1 corresponds to FAA AD 2022-02-07, Amendment 39-21904 ([87 FR 7027](#), February 8, 2022) (AD 2022-02-07).

In the NPRM, the FAA proposed to require repetitive inspections of the fuel feed system for damage and replacement if necessary, as specified in Transport Canada AD CF-2022-08. The NPRM also proposed to address mechanical wear damage on the engine fuel feed system tubes and fuel tube connections, as specified in Transport Canada AD CF-2022-08. The unsafe condition, if not addressed, could result in failure of the affected fuel tubes and subsequent failure of the gravity transfer system, which could lead to a fuel imbalance resulting in a reduction in aircraft functional capabilities and increased crew workload.

You may examine the MCAI in the AD docket at *regulations.gov* under Docket No. FAA–2022–1566.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from The Air Line Pilots Association, International (ALPA) who supported the NPRM without change.

The FAA received additional comments from Delta Airlines (DAL). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Add Exception To Identify Correct Washer Part Number

DAL stated that the service information specified by Transport Canada AD CF–2022–08 (ACLP Service Bulletin BD500–282006, Issue 002, dated December 21, 2021) introduced incorrect, demodifying washer part number NAS1149E0332R at post-FAA AD 2022–02–07 locations. DAL requested that the FAA require the use of ACLP Service Bulletin BD500–282006, Issue 003, dated September 23, 2022, or later revision to prevent demodification of post-FAA AD 2022–02–07 airplanes.

The FAA agrees that the washer part number NAS1149E0332R is incorrect. The correct part number is NAS1149D0332J. The FAA further agrees that Issue 003 of the referenced service information corrects the washer part number. However, the FAA finds it unnecessary to change the compliance method in this AD as requested. Transport Canada AD CF–2002–08 allows later approved revisions of the service information, so Issue 003 is already included as acceptable service information in this AD. To address the part number error, the FAA has instead added an exception in paragraph (h)(6) of this AD to identify the correct washer part number.

Request To Change Paragraph Reference for Exceptions

DAL stated paragraph (g) should be changed to “Except as specified in paragraph (h) of this AD” in lieu of “Except as specified in paragraph (g) of this AD” to reference the Exceptions paragraph.

The FAA agrees that (g) was referenced in error, and has revised paragraph (g) of this AD accordingly.

Request for Change in Compliance Time Due to Parts Shortage

DAL reviewed the compliance time as stated in Transport Canada AD CF–2022–08, dated March 3, 2022, relating to the worldwide parts shortage resulting in low stock on parts required to accomplish this inspection. DAL has noted a large portion of its fleet will have to be inspected within 850 hours once the FAA AD is issued. The part shortages will risk grounding airplanes and will increase out-of-service time due to the ground time required to do inspections. This will cause a significant negative economic impact on the operators and the public by reducing the airplanes' service time, which, as noted by the commenter, was not considered in the Costs of Compliance section of the NPRM. DAL would like for the FAA to assist in ensuring parts support.

Although the FAA is not involved in controlling the availability of parts worldwide, the FAA has received assurance from the parts original equipment manufacturer (OEM) that parts will be available for most airplanes within the required compliance time. If parts may not be available in a timely manner for certain airplanes, paragraph (j)(1) of this AD allows operators to request approval of an alternative method of compliance to extend the compliance time, based on a showing that the extension will not adversely affect safety.

Regarding the commenter's concern that the AD's impact on operations was not considered in the NPRM, the FAA notes that the cost information provided in an AD describes only the direct costs of the specific actions required by the AD. The FAA recognizes that in doing the required actions, operators might incur incidental costs in addition to the direct costs. The cost analysis in ADs, however, typically does not include incidental costs, including airplane down time, which might vary significantly among operators. Even if additional down time is necessary for some airplanes in some cases, the FAA does not have sufficient information to evaluate the number of potentially affected airplanes or the amount of additional downtime that may be required. Therefore, it would be impossible to estimate such costs.

Request To Clarify Part Configuration

DAL stated paragraph (g) of the proposed AD needs to clarify the saddle clamp configuration in Figure 1 of the service information referenced in Transport Canada AD CF-2022-08. (The FAA assumes the commenter is referring to Figure 1, Sheet 2, which identifies item numbers "15 OR 16 OR 17"; Figure 1, Sheet 4, which identifies "THREADED COUPLING BODY B0305072-20DE OR -24DE"; and Figure 1, Sheet 5, which identifies "RIGID COUPLING BODY B0305118-20A or -24A.") The commenter stated that use of the term "or" in these locations incorrectly implies that the parts are interchangeable. DAL stated that operators should instead refer to Figure 1 in Issue 003 of ACLP Service Bulletin BD500-282006 for the correct installation specifications.

The FAA agrees to add clarification regarding the referenced information. The FAA has received confirmation from Airbus Canada that in all cases where the term "OR" is used in the figures described above, reference is made to the clamp assembly in each instance and the parts are applicable to all affected airplanes, and are identified as "two-way interchangeable" in the Illustrated parts data publication (IPDP). The operator may also refer to the IPDP for clarification.

Request To Revise Punctuation

DAL requested that paragraph (h)(4) of the proposed AD be changed to remove the apostrophe in "hour's air time because the word "hour's" is not used in Transport Canada AD CF-2022-08.

The FAA has revised paragraph (h)(4) of this AD to quote the phrase from the Transport Canada AD verbatim.

Request for Clarification of Required for Compliance (RC) Procedure

DAL requested clarification of the RC steps in the service information referenced in Transport Canada CF-2022-08. DAL requested that the proposed AD clarify that the RC paragraph is referring to Section 3 procedure and not the steps under the title "Procedure."

The FAA provides the following clarification. Only Section 3 Procedure (in each Part) under the title Procedure is required for compliance. Section 2, Job set-up, and section 4, Job close-up, are recommended but not required. Paragraph (h)(7) of this AD has been added to clarify these requirements.

Request To Clarify Conditions for Replacement

Paragraph (h)(5) of the proposed AD stated that replacement of the affected part would be required “if any mechanical wear damage is found on which the measured damage is within the specifications identified in ACLP SB BD500–282006.” Delta requested that “within the specifications” be changed to “outside of the specifications.”

The FAA agrees that if the measured damage exceeds the allowable damage value given by the service bulletin, then the part is required to be replaced. If the part does not exceed the allowable limits, then the part is not required to be replaced. The FAA has changed paragraph (h)(5) of this AD to define wear damage requiring replacement, *i.e.*, when mechanical wear damage is found on which the measured damage exceeds the allowable limits identified in the referenced service information.

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](#)

Transport Canada AD CF–2022–08 specifies procedures for repetitive general visual inspections for signs of mechanical wear damage (damage includes cracks, scores, scratches, nicks, and gouges) of the fuel feed system (the fuel feed tubes, related attaching hardware, and the area where the saddle clamp was installed), and replacement of affected parts (including the fuel tube, related saddle clamp, attaching hardware, and fuel shutoff valve) if any damage is found that exceeds the allowable limits.

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.

Interim Action

The FAA considers that this AD is an interim action. If final action is later identified, the FAA might consider further rulemaking then.

Costs of Compliance

The FAA estimates that this AD affects 69 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
74 work-hours × \$85 per hour = \$6,290	\$0	\$6,290	\$434,010

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
7 work-hours × \$85 per hour = \$595	\$57,284	Up to \$57,879

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:

2023–16–02 Airbus Canada Limited Partnership (Type Certificate Previously Held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.):
Amendment 39–22521; Docket No. FAA–2022–1566; Project Identifier MCAI–2022–00290–T.

(a) Effective Date

This airworthiness directive (AD) is effective September 22, 2023.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all 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.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel.

(e) Unsafe Condition

This AD was prompted by reports of mechanical wear damage on the engine fuel feed system tubes and fuel tube connections. The FAA is issuing this AD to address mechanical wear damage on the engine fuel feed system tubes and fuel tube connections. The unsafe condition, if not addressed, could result in failure of the affected fuel tubes and subsequent failure of the gravity transfer system, which could lead to a fuel imbalance resulting in a reduction in aircraft functional capabilities and increased crew workload.

(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-2022-08, dated March 3, 2022 (Transport Canada AD CF-2022-08).

(h) Exceptions To Transport Canada AD CF-2022-08

(1) Where Transport Canada AD CF-2022-08 refers to its effective date, this AD requires using the effective date of this AD.

(2) Where paragraph B. of Part 1 of Transport Canada AD CF-2022-08 specifies a compliance time for accomplishing the inspection, for this AD, the inspection must be done at the time specified in paragraph (h)(2)(i) or (ii) of this AD, whichever occurs later.

(i) The compliance time specified in paragraph B. of Part 1 of Transport Canada AD CF-2022-08.

(ii) Within 60 flight hours or 7 days after the effective date of this AD, whichever occurs first.

(3) Where paragraph B. of part II of Transport Canada AD CF-2022-08 specifies a compliance time for accomplishing the inspection, for this AD, the inspection must be done at the time specified in paragraph (h)(3)(i) or (ii) of this AD, whichever occurs later.

(i) The compliance time specified in paragraph B. of Part II of Transport Canada AD CF-2022-08.

(ii) Within 60 flight hours or 7 days after the effective date of this AD, whichever occurs first.

(4) Where Transport Canada AD CF-2022-08 refers to “hours air time,” this AD requires replacing those words with “flight hours.”

(5) Where Transport Canada AD CF-2022-08 specifies to “rectify any discrepancy,” this AD requires replacing those words with “if any mechanical wear damage is found on which the measured damage exceeds the allowable limits identified in ACLP SB BD500-282006, before further flight replace the affected part.”

(6) Where the service information referenced in Transport Canada AD CF–2022–08 specifies “washer part number NAS1149E0332R,” this AD requires replacing those words with “washer part number NAS1149D0332J.”

(7) Where Transport Canada AD CF–2022–08 requires actions “in accordance with Parts C and D Accomplishment Instructions of ACLP SB BD500–282006,” and “in accordance with Parts A and B Accomplishment Instructions of ACLP SB BD500–282006,” this AD requires replacing those words with “in accordance with Section 3 Procedure in each Part of the Accomplishment Instructions of ACLP SB BD500–282006.”

(i) No Reporting Requirement

Although the service information referenced in Transport Canada AD CF–2022–08 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) 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 manager of the International Validation Branch, mail it to ATTN: Program Manager, Continuing Operational Safety, at the address identified in paragraph (k) 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 Airbus Canada Limited Partnership 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 paragraphs (i) and (j)(2) of this AD, if any service information contains procedures that are identified as RC, those procedures must be done to comply with this AD; any procedures that are not identified as RC are recommended. Those procedures 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 identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures identified as RC require approval of an AMOC.

(k) Additional Information

For more information about this AD, contact Joseph Catanzaro, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7366; email 9-avs-nyaco-

cos@faa.gov.

(I) 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-2022-08, dated March 3, 2022.

(ii) [Reserved]

(3) For Transport Canada AD CF-2022-08, 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 St., 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 August 8, 2023.

Victor Wicklund,

Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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