AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2020-32R1

Effective Date:

7 May 2021

ATA:

53

Type Certificate:

A-236

Subject:

Fuselage – Cracks on Aft Wing To Body Fairing (WTBF) Structure

Revision:

Supersedes AD CF-2020-32, issued 25 September 2020.

Applicability:

Airbus Canada Limited Partnership (formerly C Series Aircraft Limited Partnership, Bombardier Inc.) aeroplanes:

Model BD-500-1A10, serial numbers 50001 and subsequent,

Model BD-500-1A11, serial numbers 55001 and subsequent.

Compliance:

As indicated below, unless already accomplished.

Background:

Cracks have been reported in the longeron, frame, and tie-rod on the left and right sides of the aft WTBF structure near the tie-rod attachment at Fuselage Station (FS) 973 on a number of model BD-500-1A10/-1A11 aeroplanes. This cracking is suspected to have resulted from excessive tie-rod preload, with reports indicating that cracking begins earlier on aeroplanes with the latest of two aft WTBF configurations. Uncorrected, this cracking can lead to the loss of aft WTBF integrity, which can lead to damage due to parts departing the aeroplane, the loss of the radio altimeter, and stability and performance issues.

Airbus Canada Limited Partnership has released a Service Bulletin (SB) to adjust the load on certain tie-rods and to perform repeat inspections of the aft WTBF structure near the tie-rod attachment at FS973. Airbus Canada Limited Partnership has also revised an Aircraft Maintenance Publication (AMP) Data Module (DM) to ensure that these tie-rods do not have excessive tie-rod preload applied when they are installed during future maintenance.

To mitigate the risks associated with the loss of aft WTBF integrity, AD CF-2020-32 required the actions specified in the SB to be performed, including the collection of data required to assist the investigation and possibly develop further corrective actions. AD CF-2020-32 also required the use of the aforementioned AMP DM or later revisions of this AMP DM when installing aft WTBF tie-rods.

Since AD CF-2020-32 was issued, Airbus Canada Limited Partnership has developed a modification, which strengthens the support structure of the aft WTBF by reinforcing the longerons and frames. This AD revision, CF-2020-32R1, revises the requirements of AD CF-2020-32 in consideration of this aft WTBF reinforcement modification.

Corrective Actions:

For the purpose of this AD, the following definitions apply:

The **applicable SB** is defined as Airbus Canada Limited Partnership SB BD500-538005 Issue 002, dated 22 February 2021, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada (TC).

The **reinforcement SB** is defined as Airbus Canada Limited Partnership SB BD500-538006 Issue 001, dated 22 February 2021, or later revisions approved by the Chief, Continuing Airworthiness, TC.

The **applicable AMP DM** is defined as Airbus Canada Limited Partnership AMP DM BD500-A-J53-82-55-04AAA-720A-A (Aft fairing strut, Wing To Body Fairing (WTBF) – Install procedure) Issue 006, dated 26 June 2020, or later revisions.

Group A aeroplanes are model BD-500-1A10 aeroplanes having serial numbers 50001 through 50019, and model BD-500-1A11 aeroplanes having serial numbers 55001 through 55046.

Group B aeroplanes are model BD-500-1A10 aeroplanes having serial numbers 50020 through 50055, and model BD-500-1A11 aeroplanes having serial numbers 55047 through 55085.

Group C aeroplanes are model BD-500-1A11 aeroplanes having serial numbers 55086 through 55089.

Group D aeroplanes are model BD-500-1A10 aeroplanes having serial numbers 50056 and subsequent, and model BD-500-1A11 aeroplanes having serial numbers 55090 and subsequent.

Part I – AMP DM Prohibition

From the effective date of AD CF-2020-32 (9 October 2020), when installing aft WTBF tie-rods, the applicable AMP DM must be used.

Part II – Initial Inspection and Tie-Rod Load Adjustment

A. For Group A and B aeroplanes: Within the applicable compliance time indicated in Table 1 below, inspect the aft WTBF structure and repair any cracks or damage found in accordance with Part A of the applicable SB and adjust the load on the two tie-rods at FS973 in accordance with Part B of the applicable SB.

   Compliance with Part A and Part B of Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, prior to the effective date of this AD, satisfies the requirements of Part II of this AD.

B. For Group C and D aeroplanes: Within the applicable compliance time indicated in Table 1 below, inspect the aft WTBF structure and repair any cracks or damage found in accordance with Part A of the applicable SB.

   Compliance with Part A of Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, prior to the effective date of this AD, satisfies the requirements of Part II of this AD.

Table 1: Compliance Time for Initial or Rework Incorporation of the Applicable SB

	Aeroplane Usage	Compliance Time
Group A Aeroplanes	All Group A aeroplanes	Within 850 hours air time from the effective date of AD CF-2020-32 (9 October 2020) or 4850 hours air time from the aeroplane date of manufacture, as identified on the identification plate of the aeroplane, whichever occurs later
Group B and C Aeroplanes	For aeroplanes with 1200 hours total air time or more accumulated as of the effective date of AD CF-2020-32 (9 October 2020)	Within 500 hours air time from the effective date of AD CF-2020-32 (9 October 2020)
	For aeroplanes with less than 1200 hours total air time accumulated as of the effective date of AD CF-2020-32 (9 October 2020)	Within 850 hours air time from the effective date of AD CF-2020-32 (9 October 2020)
	For new aeroplanes with an aeroplane date of manufacture, as identified on the identification plate of the aeroplane, dated on or after the effective date of AD CF-2020-32 (9 October 2020)	Within 850 hours air time from the aeroplane date of manufacture, as identified on the identification plate of the aeroplane
Group D Aeroplanes	All Group D aeroplanes	Within 2000 hours air time from the aeroplane date of manufacture, as identified on the identification plate of the aeroplane

Part III – Applicable to Group A and B Aeroplanes – Rework Requirement

For aeroplanes that have complied with Part II prior to the effective date of AD CF-2020-32 (9 October 2020), within 30 days from the effective date of AD CF-2020-32 (9 October 2020), verify the aeroplane maintenance records to confirm that the applicable AMP DM was followed for all WTBF tie-rod installations during or subsequent to the incorporation of Part II. For all WTBF tie-rod installations during or subsequent to the incorporation of Part II, if the applicable AMP DM was not followed, or if it cannot be confirmed that the applicable AMP DM was followed, repeat the adjustment of the load on the two tie-rods at FS973 in accordance with Part B of the applicable SB within the applicable compliance timeframe indicated in Table 1 above.

Compliance with Part B of Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, prior to the effective date of this AD, to repeat the adjustment of the load on the two tie-rods at FS973, satisfies the requirements of Part III of this AD.

Part IV – Applicable to Group A and B Aeroplanes – Data Reporting Requirement

Within 30 days from the tie-rod load adjustment required by Part II or Part III, as applicable, complete and return Appendix A of the applicable SB to Airbus Canada Limited Partnership in accordance with the instructions contained in the applicable SB.

Completion and return of Appendix A in accordance with Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, prior to the effective date of this AD, satisfies the requirements of Part IV of this AD.

Part V – Repeat Inspections

Repeat the inspection of the aft WTBF structure, repairing any cracks or damage found, in accordance with Part A of the applicable SB, at intervals not to exceed:

A. For Group A and D aeroplanes: Intervals not to exceed 850 hours air time from the initial inspection required by Part II of this AD.

B. For Group B and C aeroplanes:

1. For aeroplanes that have completed Part A and Part B of the reinforcement SB and Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, or later revisions approved by the Chief, Continuing Airworthiness, TC as a pre-requisite to the reinforcement SB: Intervals not to exceed 850 hours air time from the initial inspection required by Part II of this AD.

2. All other aeroplanes: Intervals not to exceed 500 hours air time from the initial inspection required by Part II of this AD.

Compliance with Part A of Airbus Canada Limited Partnership SB BD500-538005 Issue 001, dated 8 July 2020, prior to the effective date of this AD, to repeat the above-mentioned inspections, satisfies the requirements of Part V of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 23 April 2021

Contact:

Hilary Ross, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail TC.AirworthinessDirectives-ConsignesdenavigabiliteTC@tc.gc.ca or any Transport Canada Centre.