



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-2014-07R1

Effective Date:

27 July 2020

ATA:

53

Type Certificate:

A-276

Subject:

Fuselage – Cracking of Skin Panels and Skin Splice Joints and Angles at Stringers 6 and 20 between Fuselage Station 409.00 and 589.00

Revision:

Supersedes AD CF-2014-07, issued 31 January 2014.

Applicability:

MHI RJ Aviation ULC. (formerly Bombardier Inc.) model CL-600-2B19 aeroplanes, serial numbers 7003 through 7990, 8000 and subsequent.

Compliance:

As indicated below, unless already accomplished.

Background:

Complete aeroplane fatigue testing on a CL-600-2B19 aeroplane by the aeroplane manufacturer revealed the onset of simultaneous cracking on the skin panels and skin splice joints and angles at stringers (STRGs) number 6 and 20 at various locations between fuselage stations (FS) 409.00 to FS 589.00.

Cracks at multiple locations may reduce the residual strength of the joint below the required levels if the cracks are not detectable under the existing maintenance program established at the time of certification. This multiple site damage (MSD) behavior, if not corrected, could lead to widespread fatigue damage (WFD) and adversely affect the structural integrity of the aeroplane and/or could result in rapid decompression of the aeroplane.

A Temporary Revision (TR) has been made to the Maintenance Requirements Manual (MRM) to revise existing Airworthiness Limitations (AWL) tasks and introduce new inspection tasks for the detection of MSD. The aeroplane manufacturer is also developing a structural modification to preclude WFD from occurring in the fleet at these locations.

AD CF-2014-07 mandated the incorporation of the new and revised AWL tasks, and a structural modification to preclude WFD.

Since AD CF-2014-07 was issued, MHI RJ Aviation ULC. (MHIRJ) discovered inconsistencies between the Engineering Structure Reports and Maintenance Tasks for the inspection of fuselage skin longitudinal splice along STRG 20 from FS409.00 to FS409.00+127, and from FS559.00+106 to FS621.00.

Investigation revealed that inspection under the forward and aft fairing along STRG 20 was omitted in error. In order to rectify this situation, this AD mandates revision of AWL task 53-41-207, to replace AWL tasks 53-41-109, 53-41-205 and 53-41-206. Failure to adhere to the revised AWL task 53-41-207 may expose the aeroplane to undetected MSD for those locations and potential rapid decompression of the aeroplane.

Corrective Actions:**Part I – Revision to the Maintenance Schedule**

- A. Within 60 days from the effective date of AD CF-2014-07, 14 February 2014, amend the Transport Canada approved maintenance schedule by incorporating AWL tasks, 53-41-110 and 53-41-204 listed in the MRM, Revision 9, dated 10 June 2013.
- B. For aeroplanes that have accumulated more than 38 000 total flight cycles as of the effective date of AD CF-2014-07, 14 February 2014, initial compliance with the AWL tasks listed above must be carried out within 2000 flight cycles from the effective date of AD CF-2014-07, 14 February 2014.
- C. Within 60 days from the effective date of this AD, amend the Transport Canada approved maintenance schedule by incorporating the revised AWL task 53-41-207 as introduced by TR 2B-2280, dated 12 June 2020 in the AWL section of the MRM. Initial compliance with the above-mentioned AWL task must be carried out in accordance with the phase-in as described in TR 2B-2280.
- D. If cracking or damage is found during the required inspections, contact MHIRJ for an approved repair/modification and incorporate the repair/modification before further flight. The approved repair/modification must specifically reference this AD.

New limitations or inspection requirements specified in the approved repairs/modifications obtained from MHIRJ, will supersede inspection requirements introduced in Part I A and Part I C of this AD for the area affected by the repair/modification only.
- E. Compliance in accordance with superseding TRs or later revisions of the Airworthiness Limitations section of the MRM, approved by Transport Canada, also satisfies the requirements of Part I A and Part I C of this AD.
- F. Alternative Actions: Aeroplanes that have been inspected in accordance with the requirements of Repair Engineering Orders (REOs) listed in Table 1 below have satisfied the requirements of the threshold inspection introduced in Part I C of this AD. For those aeroplanes, the next repeat inspection must be performed in accordance with the AWL tasks introduced in Part I C of this AD.

Table 1: REOs Equivalent to Threshold Inspection of Part I C

Aeroplane Serial Number	Bombardier REO
7168	601R-53-00-714 Rev. --
7437	601R-53-00-722 Rev. --
7574	601R-53-00-725 Rev. --
7667	601R-53-00-726 Rev. --
7640	601R-53-00-727 Rev. --
7636	601R-53-00-728 Rev. --
7400	601R-53-00-730 Rev. --
7660	601R-53-00-731 Rev. --
7638	601R-53-00-732 Rev. --
7523	601R-53-00-734 Rev. --
7425	601R-53-00-735 Rev. --
7568	601R-53-00-737 Rev. --
7873	601R-53-00-739 Rev. --
7536	601R-53-00-741 Rev. – A
7657	601R-53-00-742 Rev. --
7682	601R-53-00-752 Rev. --
7656	601R-53-00-753 Rev. --
7904	601R-53-00-754 Rev. --
7687	601R-53-00-758 Rev. --
7879	601R-53-00-762 Rev. --
7447	601R-53-00-763 Rev. --
7256	601R-53-00-765 Rev. --
7663	601R-53-00-767 Rev. --
7457	601R-53-00-769 Rev. --
7257	601R-53-00-772 Rev. --
7569	601R-53-00-777 Rev. --
7695	601R-53-00-780 Rev. --
7880	601R-53-00-785 Rev. --
7490	601R-53-00-787 Rev. --
7366	601R-53-00-790 Rev. --
7306	601R-53-00-795 Rev. --
7479	601R-53-00-797 Rev. --
7487	601R-53-00-798 Rev. --

Part II – Structural Modification Point (SMP)

- A. In this AD, the SMP is defined as the point in time, expressed in terms of accumulated aeroplane flight cycles, at which the modification, repair or replacement of skin panels, skin splice joints and angles at STRGs 6 and 20 between FS409.00 and FS621.00 is required so as to preclude the onset of WFD. Prior to reaching 60 000 total flight cycles, contact MHIRJ for an approved repair/modification/replacement and incorporate the repair/modification/replacement before further flight. The repair/modification/replacement must specifically reference this AD and be approved by Transport Canada.
- B. New limitations or inspection requirements specified in the approved repairs/modifications/replacement obtained from MHIRJ will supersede inspection requirements introduced in Part I A and Part I C of this AD. The repairs/modifications/replacement must specifically reference this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Philip Tang
Acting Chief, Continuing Airworthiness
Issued on 13 July 2020

Contact:

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