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) to ADs.

Number:

CF-2014-45R3

Effective Date:

28 June 2017

ATA:

54

Type Certificate:

A-142

Subject:

Nacelle – A-Frame Structure – Insufficient Fillet Radius and Fouling with Main Landing Gear Stabilizer Brace and the Electrical Wiring Harnesses

Revision:

Supersedes AD CF-2014-45R2, issued 29 March 2017.

Applicability:

Bombardier Inc. model DHC-8-400, -401 and -402 aeroplanes, serial numbers 4001 through 4431.

Compliance:

As indicated below, unless already accomplished.

Background:

The aeroplane manufacturer has discovered that an insufficient fillet radius may exist on the flange of the nacelle A-frame structure on certain aeroplanes. There have also been several in-service reports of chafing damage on the main landing gear (MLG) stabilizer brace, the nacelle A-frame structure and its adjacent electrical wiring harnesses due to insufficient clearance.

An insufficient fillet radius and chafing damage on the nacelle A-frame structure and MLG stabilizer brace could lead to premature cracking. Fracture of the nacelle A-frame structure or failure of the MLG stabilizer brace could adversely affect the safe landing of the aeroplane. The damage to the electrical wiring harnesses could result in the loss of the MLG downlock indication.

This AD mandates the inspection and rework of the nacelle A-frame structure, and the rework of the forward MLG stabilizer brace assembly and the electrical harnesses in the nacelle area adjacent to the A-frame structure.

Revision 1 of this AD was issued to supersede incorporation of Lock-Link Over Centre Stop Shim 46422-5 that was installed by Service Bulletin (SB) 84-32-112. Consequently, SB 84-32-112, referenced in Part III of this AD, has been superseded by SB 84-32-147.

Revision 2 of this AD was issued to clarify the compliance time in Part IV. When the AD was revised to Revision 1, the text should have been amended to state that the compliance time is unchanged from the initial revision of this AD.

Revision 3 of this AD is issued to correct the revision block. In revision 2, the revision block above should have stated that CF-2014-45R1 was issued on 19 September 2016.

Corrective Actions:

Part I – Inspection, Rework, and Reversal of Fasteners on the Nacelle A-Frame Structure - Applicable to aeroplane serial numbers 4001 through 4055:

A. Within 600 hours air time or 100 days, whichever occurs first, from the original effective date, 7 January 2015, of this AD, inspect and rectify, as required, the left hand (LH) side and right hand (RH) side nacelle A-frame structure in accordance with the Accomplishment Instructions in Bombardier SB 84-54-19, Initial Issue, dated 18 April 2013, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any cracks are found, contact the Q-Series Technical Help Desk for an approved repair and incorporate the repair before further flight. The approved repair must specifically reference this AD.

B. Within 6000 hours air time or 36 months, whichever occurs first, from the original effective date of this AD (7 January 2015), rework the LH side and RH side nacelle A-frame structure in accordance with the Accomplishment Instructions in Bombardier SB 84-54-21, Initial Issue, dated 9 May 2013, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any of the following conditions are found, contact the Q Series Technical Help Desk for an approved disposition/repair and incorporate the disposition/repair, as required, before further flight:

1. A clearance of less than 2.54mm (0.100in) exists between the fasteners/A-frame structure and the MLG stabilizer brace assembly in the retracted position, after the rework is accomplished; or
2. A fouling condition exists during the extension of the MLG after the rework is accomplished.

The approved disposition/repair must specifically reference this AD.

Incorporation of Bombardier Modsum IS4Q5450002 also meets the requirements of Part I, paragraph B of this AD.

Part II – Inspection and Rework of the Nacelle A-Frame Structure - Applicable to aeroplane serial numbers 4056 through 4426:

A. Initial Inspection:

Within 600 hours air time or 100 days, whichever occurs first, from the original effective date of this AD (7 January 2015), perform a detailed visual inspection (DVI) of the LH side and RH side nacelle A-frame structure and upper surface of the MLG stabilizer brace lug in accordance with the Accomplishment Instructions in Part A of Bombardier SB 84-54-20, Revision B, dated 2 October 2014, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

1. If any damage is found, contact the Q Series Technical Help Desk for an approved disposition/repair and incorporate the disposition/repair, before further flight. The approved disposition/repair must specifically reference this AD.
2. If no damage is found, proceed to Part II, paragraph B of this AD.

B. Repetitive Inspections:

Subsequently, at intervals not to exceed 600 hours air time, repeat the DVI specified in Part II, paragraph A, of this AD until Part II, paragraph C of this AD is accomplished.

C. Terminating Action to the Inspections in Part II of this AD:

Within 6000 hours air time, or 36 months, whichever occurs first, from the original effective date of this AD (7 January 2015), rework the LH side and RH side nacelle A-frame structure in accordance with the Accomplishment Instructions in Part B of Bombardier SB 84-54-20, Revision B, dated 2 October 2014, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any of the following conditions are found, contact the Q Series Technical Help Desk for an approved disposition/repair and incorporate the disposition/repair, as required, before further flight:

1. Any cracks found on the nacelle A-frame structure; or
2. A clearance of less than 2.54mm (0.100in) exists between the A-frame structure and the MLG stabilizer brace assembly in the retracted position, after the rework is accomplished.

The approved disposition/repair must specifically reference this AD.

Rework of the LH side and RH side nacelle A-frame structure in accordance with the Initial Issue or Revision A of Bombardier SB 84-54-20, dated 25 April 2013 and 9 April 2014, respectively, prior to the original effective date of this AD (7 January 2015), also meets the requirements of Part II, paragraph C of this AD.

Incorporation of Bombardier ModSum IS4Q5450003 also meets the requirements of Part II, paragraph C of this AD.

Rework of the LH side and RH side nacelle A-frame structure in accordance with Part II, paragraph C of this AD, constitutes terminating action to the inspections in Part II, paragraphs A and B of this AD.

Part III – Modification of the MLG Stabilizer Brace Assembly – Applicable to Aeroplane Serial Numbers 4001 through 4431 with MLG Stabilizer Brace Assembly Part Number 46400-27 installed:

Within 6000 hours airtime, or 36 months, whichever occurs first, from the original effective date of this AD (7 January 2015), install the Stop Bracket in accordance with Bombardier SB 84-32-147, initial revision, dated 5 August 2016, or later revisions approved by the Chief, Continuing Airworthiness.

Incorporation of SB 84-32-147 is not required under Part III of this AD for aeroplanes that have already incorporated the previously mandated SB 84-32-112, Revision C or earlier revisions.

Part IV – Rework of the Electrical Wiring Harnesses in the Nacelle Area Adjacent to the A-Frame Structure – Applicable to Aeroplane Serial Numbers 4001 through 4411:

Within 6000 hours air time, or 36 months, whichever occurs first, from the original effective date of this AD (7 January 2015), rework the LH side and RH side electrical wiring harnesses in accordance with Bombardier SB 84-32-114, Revision A, dated 18 September 2013, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any damage is found on the A-frame structure or MLG stabilizer brace, contact the Q Series Technical Help Desk for an approved repair and incorporate the repair before further flight. The approved repair must specifically reference this AD.

Rework of the LH side and RH side electrical wiring harnesses in accordance with the Initial Issue of SB 84-32-114, dated 6 June 2013, prior to the original effective date of this AD, also meets the requirements of Part IV of this AD.

Incorporation of Bombardier Modsums IS4Q2400028 or IS4Q2400029, as applicable, also meets the requirements of Part IV of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 14 June 2017

Contact:

Craig McAllister, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.