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| No.        | CF-2013-07   | 1/6 |
| Issue Date | 1 March 2013 |     |

# AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to **Canadian Aviation Regulation (CAR) 521 Division X**. Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard**.

This AD has been issued by the Continuing Airworthiness Division (AARDG), National Aircraft Certification Branch, Transport Canada, Ottawa, telephone 613 952-4357.

- Number:** CF-2013-07
- Subject:** Fuel System Safety - Introduction of Design changes
- Effective:** 14 March 2013
- Applicability:** Bombardier Inc. DHC-8 aeroplane models 102, 103, 106, 201, 202, 301, 311, 314 and 315 aeroplane models with serial numbers 002 through 672.
- Compliance:** As indicated below, unless already accomplished.
- Background:** Bombardier Aerospace has completed a system safety review of the aeroplane fuel system against fuel tank safety standards introduced in Chapter 525 of the Airworthiness Manual through Notice of Proposed Amendment (NPA) 2002-043. The identified non-compliances were then assessed using Transport Canada Policy Letter No. 525-001, to determine if mandatory corrective action is required.

The assessment showed that a number of modifications to the fuel system are required to mitigate unsafe conditions that could result in potential ignition sources within the fuel system.

AD CF-2007-32R1 is issued in conjunction with the issuance of this AD, to clarify the phase-in schedule for Fuel System Limitations (FSL) tasks associated with modifications mandated by this AD.

**Corrective Actions:** **Part I**

Within 6000 hours air time or 36 months, whichever occurs first, from the effective date of this AD, carry out the applicable modifications detailed below:

A. Applicable to aeroplane serial numbers 003 through 624:

Modsum 8Q101512, Fuel System - Fuel Tank Mechanical Design, SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier Service Bulletin (SB) 8-57-44 Revision D, dated 08 Oct 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

B. Applicable to aeroplane serial numbers 003 through 629 with a long range fuel system installed in accordance with Change Request (CR) 828CH00044, CR828SO08061, Special Order Option (SOO) 8061, CR828CH00027 or CR828SO00006:

Modsum 8Q902091, Fuel - Fuel Tank System Design - Long Range Fuel Tanks - SFAR 88. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-39 Revision B, dated 14 Aug 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Pursuant to **CAR 202.51** the registered owner of a Canadian aircraft shall, within seven days, notify the Minister in writing of any change of his or her name or address.

To request a change of address, contact the Civil Aviation Communications Centre (AARC) at Place de Ville, Ottawa, Ontario K1A 0N8, or 1-800-305-2059, or [www.tc.gc.ca/civilaviation/communications/centre/address.asp](http://www.tc.gc.ca/civilaviation/communications/centre/address.asp)

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Incorporation of Modsum 8Q902091 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in Revision A of Bombardier SB 8-28-39 meets the requirements of this paragraph.

- C. Applicable to aeroplane serial numbers 003 through 624 with SOO 8155 or 849SO08155 or SOO 8098 or SOO 8099 or SOO 8062 or Supplemental Type Certificate SA85-1 or Limited Supplemental Type Certificate W-LSA98-005/D incorporated:

Modsum 8Q902144, Fuel - APU Fittings, Jumpers and Interfaces in the Tank - Improvements to Conductivity for SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-44 Revision B, dated 25 July 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q902144 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue or Revision A of Bombardier SB 8-28-44 meets the requirements of this paragraph.

- D. Applicable to aeroplane serial numbers 003 through 624:

Modsum 8Q101865, Fuel System - Fuel Tank Mechanical Design, SFAR 88 Compliance (Retrofit). Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-47 Initial Issue, dated 02 May 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- E. Applicable to DHC-8 models 102, 103 and 106 aeroplanes, serial numbers 002 through 014:

Modsum 8Q101916, Fuel - Secondary Pressure Relief Valve part number 232935-2 - Rework - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-58 Initial Issue, dated 25 Jul 2011, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- F. Applicable to aeroplane serial numbers 002 through 629 with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, including aeroplanes with metric refuel/defuel indicators installed in accordance with CR828CH00029:

Modsum 8Q902122, Fuel - Long Range Fuel Tanks - Refuel/Defuel with Metric and Imperial Indicators - Wiring Change at Refuel/Defuel Panel for Pressure Relief Valve (PRV) SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-41 Revision B, dated 8 August 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q902122 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue or Revision A of Bombardier SB 8-28-41 meets the requirements of this paragraph.

- G. Applicable to aeroplane serial numbers 002 through 619 with imperial refuel/defuel indicators, excluding aeroplanes with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006:

Modsum 8Q101511, Fuel - Refuel/Defuel - Wiring Change at Refuel/Defuel Panel for Pressure Relief Valve (PRV) - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-35 Revision B, dated 3 June 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q101511 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue or Revision A of Bombardier SB 8-28-35 meets the requirements of this paragraph.

- H. Applicable to aeroplane serial numbers 002 through 619 with metric refuel/defuel indicators installed in accordance with CR828CH00020, excluding aeroplanes with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006:

Modsum 8Q901117, Fuel - Refuel/Defuel With Metric Indicators - Wiring Change at Refuel/Defuel Panel for Pressure Relief Valve (PRV) - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-43 Revision A, dated 25 June 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q901117 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-43 meets the requirements of this paragraph.

- I. Applicable to DHC-8 models 102, 103, 106, 201, 202, 301, 311, 314 and 315 aeroplanes, serial numbers 003 through 619, excluding aeroplanes that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in the Initial Issue, Revision A or Revision B of Bombardier SB 8-28-36 before the effective date of this AD:

Modsum 8Q101652, Fuel - Fuel Quantity Indication - Wire Routing Segregation and Identification - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-36 Revision C, dated 7 October 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Note: For DHC-8 models 102, 103, 106, 201 and 202 aeroplanes with an Active Noise and Vibration Suppression (ANVS) system installed, that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in the Initial Issue, Revision A or Revision B of Bombardier SB 8-28-36 before the effective date of this AD, refer to Part II, paragraph A of this AD for additional requirements.

- J. Applicable to aeroplane serial numbers 003 through 672 with ModSum 8Q101513 or 8Q101652, excluding aeroplanes with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006:

Modsum 8Q101907, Fuel - Fuel Quantity Gauging System (FQGS) - Wire Routing Segregation - Installation of a Top Hat Support Between Stn X-405 to X-424 at Y-38 - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-48 Revision A, dated 27 February 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q101907 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-48 meets the requirements of this paragraph.

- K. Applicable to aeroplane serial numbers 003 through 619, excluding aeroplanes with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, and excluding aeroplanes that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in Revision C or earlier revisions of Bombardier SB 8-28-36 before the effective date of this AD:

Modsum 8Q101908, Fuel System - Fuel Quantity Indication - Wire Routing Segregation, Installation of Dual Spacers - SFAR 88. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-55 Initial Issue, dated 23 July 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Note: For aeroplanes that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in the Revision C or earlier revisions of SB 8-28-36 before the effective date of this AD, refer to Part III, paragraph A of this AD for additional requirements.

- L. Applicable to aeroplane serial numbers 002 through 629, with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, excluding aeroplanes that have incorporated Modsum 8Q902064 in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-42 before the effective date of this AD:

Modsum 8Q902064, Fuel - Fuselage and Front Spar - Segregation and Re-Identification of Wiring Harnesses for Long Range Fuel Quantity Indication. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-42 Revision A, dated 1 October 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Note: For DHC-8 models 102, 103, 106, 201 and 202 aeroplanes with an ANVS system installed that have incorporated Modsum 8Q902064 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-42, refer to Part II, paragraph B of this AD for additional requirements.

- M. Applicable to aeroplane serial numbers 003 through 672 with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, and with Modsum 8Q902064 and either Modsum 8Q101513 or Modsum 8Q101652 :

Modsum 8Q902382, Fuel - Fuel Quantity Gauging System (FQGS) - Wire Routing Segregation - Installation of a Top Hat Support Between Stn X-405 to X-424 at Y-38 - Long Range Aircraft - SFAR 88 Compliance. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-49 Revision A, dated 23 July 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 8Q902382 prior to the effective date of this AD in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-49 meets the requirements of this paragraph.

- N. Applicable to aeroplane serial numbers 003 through 629 with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, excluding aeroplanes that have incorporated Modsum 8Q902064 in accordance with the Accomplishment Instructions contained in Revision A or Initial Issue of Bombardier SB 8-28-42 before the effective date of this AD:

Modsum 8Q902383, Fuel System - Fuel Quantity Indication - Wire Routing Segregation, Installation of Dual Spacers (Long Range Aircraft) - SFAR 88. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-56 Initial Issue, dated 23 July 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Note: For aeroplanes that have incorporated Modsum 8Q902064 in accordance with the Accomplishment Instructions contained in Revision A or Initial Issue of Bombardier SB 8-28-42 before the effective date of this AD, refer to Part III, paragraph B of this AD for additional requirements.

## **Part II**

Within 12 000 hours air time or 72 months, whichever occurs first, from the effective date of this AD, carry out the applicable modifications/inspections/rectifications detailed below:

- A. Applicable to DHC-8 models 102, 103, 106, 201 and 202 aeroplanes, serial numbers 003 through 619, with an ANVS system installed, that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in the Initial Issue, Revision A or Revision B of Bombardier SB 8-28-36 before the effective date of this AD:

Modsum 8Q101652, Fuel - Fuel Quantity Indication - Wire Routing Segregation and Identification - SFAR 88 Compliance, in accordance with Bombardier SB 8-28-36, Revision C, dated 7 October 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- B. Applicable to DHC-8 models 102, 103, 106, 201 and 202 aeroplanes, serial numbers 002 through 629, with an ANVS system installed, that have incorporated Modsum 8Q902064 in accordance with the Accomplishment Instructions contained in the Initial Issue of Bombardier SB 8-28-42 before the effective date of this AD:

Modsum 8Q902064, Fuel - Fuselage and Front Spar - Segregation and Re-Identification of Wiring Harnesses for Long Range Fuel Quantity Indication, in accordance with Bombardier SB 8-28-42, Revision A, dated 1 October 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- C. Applicable to DHC-8 models 102, 103, 106, 201 and 202 aeroplanes, serial numbers 620 through 666 with an ANVS System installed:

Perform a one-time inspection of the Fuel Quantity Indicating System (FQIS) wiring harness routing and the applicable rectification in accordance with the Accomplishment Instructions of Bombardier SB 8-28-52, dated 3 Nov 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Inspection and rectification carried out in accordance with the Accomplishment Instructions of Bombardier SB 8-28-53, dated 3 Nov 2008 before the effective date of this AD meets the requirements of this paragraph.

## **Part III**

Within 18 000 hours air time or 108 months, whichever occurs first, from the effective date of this AD, carry out the applicable modifications detailed below:

- A. Applicable to aeroplane serial numbers 003 through 672, with Modsum 8Q101513 installed or that have incorporated Modsum 8Q101652 in accordance with the Accomplishment Instructions contained in Revision C or earlier revisions of Bombardier SB 8-28-36 before the effective date of this AD, excluding aeroplanes with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006:

Modsum 8Q101908 Fuel System - Fuel Quantity Indication - Wire Routing Segregation, Installation of Dual Spacers - SFAR 88. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-55, Initial Issue, dated 23 July 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- B. Applicable to aeroplane serial numbers 003 through 672 with a long range fuel system installed in accordance with CR828CH00044, CR828SO08061, SOO 8061, CR828CH00027 or CR828SO00006, with Modsum 8Q902064 installed on delivery or that have incorporated Modsum 8Q902064 in accordance with the instructions contained in Revision A or Initial Issue of Bombardier SB 8-28-42 before the effective date of this AD.

Modsum 8Q902383, Fuel System - Fuel Quantity Indication - Wire Routing Segregation, Installation of Dual Spacers - SFAR 88. Approved instructions for the incorporation of the Modsum are contained in Bombardier SB 8-28-56, Initial Issue, dated 23 July 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

**Authorization:** For the Minister of Transport, Infrastructure and Communities,

*ORIGINAL SIGNED BY*

Derek Ferguson  
Chief, Continuing Airworthiness

**Contact:** Philip Tang, Continuing Airworthiness, Ottawa, telephone 613-952-4357, facsimile 613-996-9178 or e-mail [ADs@tc.gc.ca](mailto:ADs@tc.gc.ca) or any Transport Canada Centre.