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-2010-31**

Subject: **Fuel System Safety – Introduction of Design Changes**

Effective: **21 September 2010**

Applicability: **Bombardier Inc. Models DHC-8-400, DHC-8-401, DHC-8-402 aeroplanes, Serial Numbers 4003, 4004, 4006 and 4008 through 4205**

Compliance: **Compliance is required as indicated unless already accomplished.**

Background: Bombardier Aerospace has completed a system safety review of the aeroplanes 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 source within the fuel system.

Corrective Actions:

A. Applicable to aeroplanes Serial Numbers (S/N) 4003, 4004, 4006 & 4008 through 4118.

1. Within 6000 hours air time after the effective date of this directive, incorporate the modifications detailed below:

   a. Modsum 4-126330, Fuel Tank System Design Left and Right Side (SFAR 88) Retrofit. Approved instructions for the incorporation of Modsum 4-126330 are contained in Bombardier Service Bulletin (SB) 84-57-09 Revision B, dated 3 September 2008, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

   Incorporation of Modsum 4-126330 prior to the effective date of this directive according to the instructions contained in Revision A of Bombardier SB 84-57-09 meets the requirements of this paragraph.

   b. Modsum 4-126366, Fuel Tank System and Fuel Indication - Wiring Identification, Segregation and Installation (High Level Sensor and Fuel Quantity Indication) - Retrofit. Approved instructions for the incorporation of Modsum 4-126366 are contained in Bombardier SB 84-28-04 Revision B, dated 21 October 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

   Incorporation of Modsum 4-126366 prior to the effective date of this directive according to the instructions contained in the initial issue and Revision A of Bombardier SB 84-28-04 meets the requirements of this paragraph.

c. Modsum 4-901425, Fuel Feed to APU - Replacement of Couplings in Center Wing Left Side - SFAR 88. This Modsum is required only on aeroplanes with the APU option (Modsum 4-302000). Approved instructions for the incorporation of Modsum 4-901425 are contained in Bombardier SB 84-28-05 Initial Issue, dated 28 June 2006, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

2. Except as provided in paragraph A.2.a. and A.2.b. below, for aeroplanes that have incorporated either Modsum 4-126330 or 4-901425 prior to the effective date of this directive, carry out Fuel System Limitation (FSL) task 28400-417 (Functional Check of the Fuel Tank Components and Plumbing Lines for Electrical Bonding) contained in DHC-8 Series 400 Maintenance Requirements Manual, PSM 1-84-7, Part 2 “Airworthiness Limitation Items” within 6000 hours air time after the effective date of this directive.

   a. Aeroplanes that have successfully completed FSL task 28400-417 after incorporation of the above-noted Modsums do not need to comply with the requirements of paragraph A.2. above.

   b. Aeroplanes that have the above-noted Modsums incorporated during manufacturing of the aeroplane do not need to comply with the requirements of paragraph A.2. above.

3. For aeroplanes that have incorporated neither Modsums 4-126330 nor 4-901425 before the effective date of this directive, carry out FSL task 28400-417 upon completion of the incorporation of Modsum 4-126330 and, if applicable, Modsum 4-901425.

B. Applicable to aeroplanes S/N 4003, 4004, 4006 & 4008 through 4118 manufactured before 21 September 2005.

Within 6000 hours air time after the effective date of this directive, incorporate Modsum 4-126370, Fuel Tank System - Enhance Protective Covering for Electrical Cable Assembly. Approved instructions for the incorporation of Modsum 4-126370 are contained in Bombardier SB 84-28-03 Revision C, dated 15 May 2009 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 4-126370 prior to the effective date of this directive according to instructions contained in Revision B of Bombardier SB 84-28-03 meets the requirements of this paragraph.

C. Applicable to aeroplanes S/N 4003, 4004, 4006 & 4008 through 4118 manufactured on or after 21 September 2005.

Within 12 000 hours air time after the effective date of this directive, incorporate Modsum 4-126370, Fuel Tank System - Enhance Protective Covering for Electrical Cable Assembly. Approved instructions for the incorporation of Modsum 4-126370 are contained in Bombardier SB 84-28-03 Revision C, dated 15 May 2009 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of Modsum 4-126370 prior to the effective date of this directive according to instructions contained in Revision B of Bombardier SB 84-28-03 meets the requirements of this paragraph.

D. Applicable to aeroplanes S/N 4119 through 4205.

Within 6000 hours air time after the effective date of this directive, incorporate Modsum 4-113580, Electrical System - Fuel, High Level Sensor - Sealant Application on Sensor Terminal Screws. Approved instructions for the incorporation of Modsum 4-113580 are contained in Bombardier SB 84-28-07 Initial Issue, dated 1 August 2008 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Authorization: For Minister of Transport, Infrastructure and Communities

ORIGINAL SIGNED BY

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Chief, Continuing Airworthiness

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