



No.	CF-2011-29R1	1/2
Issue Date	24 May 2012	

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-2011-29R1

Subject: Hydraulic Accumulators – Screw Cap/End Cap Failure

Effective: 7 June 2012

Revision: Supersedes Airworthiness Directive CF-2011-29, dated 02 August 2011

Applicability: Bombardier Inc. DHC-8 Aeroplane, Series 100, 200 and 300, Serial Numbers, 003 and subsequent

Compliance: As indicated below, unless already accomplished.

Background: Seven cases of on-ground hydraulic accumulator screw cap or end cap failure have been experienced on CL-600-2B19 (CRJ) aeroplanes, resulting in loss of the associated hydraulic system and high-energy impact damage to adjacent systems and structure. To date, the lowest number of flight cycles accumulated at the time of failure has been 6991.

Although there have been no failures to date on any DHC-8 aeroplanes, similar accumulators to those installed on the CL-600-2B19, Part Numbers (P/N) 08-60162-001 and 08-60162-002 (Parking Brake Accumulator), are installed on the aeroplanes listed in the Applicability section of this directive.

A detailed analysis of the systems and structure in the potential line of trajectory of a failed screw cap/end cap for the accumulator has been conducted. It has identified that the worst-case scenarios would be the loss of number 2 hydraulic system, and damage to aeroplane structures.

This AD gives instructions to determine the part number and serial number of the existing parking brake accumulator, and where applicable, to replace the accumulator.

Revision 1 of this AD mandates the installation of restraint devices around the parking brake accumulator end caps to hold them in place in the event of an end cap failure.

Corrective Actions: **Part I - Replacement of Parking Brake Accumulator**

Within 2000 hours air time or 12 months, whichever occurs first, from the effective date of the original issue of this AD (18 August 2011):

- A. Determine the part number and serial number of the parking brake accumulator in accordance with the Accomplishment Instructions of Bombardier Service Bulletin (SB) 8-32-170, dated 25 February 2011, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.
- B. For accumulators that do not have P/N 08-60162-001 or 08-60162-002, proceed to Part III of this AD.

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

C. For accumulator with P/N 08-60162-001 or 08-60162-002:

1. If the serial number is listed in the Table of paragraph 3.B.(2) of the above-mentioned SB, proceed to Part III of this AD.
2. If the serial number is not listed in the Table paragraph 3.B.(2) of the above-mentioned SB, replace the accumulator in accordance with the Accomplishment Instructions of the above-mentioned SB, or if applicable, Bombardier SB 8-32-172, dated 15 March 2011, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada. Proceed to Part III of this AD.

Part II - Spare Parts

As of the effective date of the original issue of this AD (18 August 2011), no replacement/spare accumulator with P/N 08-60162-001 or 08-60162-002 is permitted to be installed on any aeroplane unless its serial number is listed in paragraph 3.B.(2) of Bombardier SB 8-132-170, dated 25 February 2011, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.

Part III - Installation of Restraint Devices around Parking Brake Accumulator End Caps

Within 6000 hours air time or 36 months, whichever occurs first, from the effective date of this AD, install restraint devices around the parking brake accumulator end caps (ModSum 8Q101901) in accordance with Bombardier SB 8-32-169, Revision A, dated 16 December 2011, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Incorporation of ModSum 8Q101901 in accordance with Bombardier SB 8-32-169, Initial Issue, dated 25 November 2011, also meets the requirements of Part III of this AD.

Authorization: For the Minister of Transport, Infrastructure and Communities

ORIGINAL SIGNED BY

Derek Ferguson
Chief, Continuing Airworthiness

Contact: Miss Helen Tsai, Continuing Airworthiness, Ottawa, telephone 613-952-4357, facsimile 613-996-9178 or e-mail ADs@tc.gc.ca or any Transport Canada Centre.