



No.	1/5
Issue Date	13 September 2011

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- 2010-24R1

Subject: Hydraulic Accumulators – Screw Cap/End Cap Failure

Effective: 30 September 2011

Revision: Supersedes Airworthiness Directive CF-2010-24

Applicability: Bombardier Inc. Model CL-600-2B19, Serial Numbers 7003 and subsequent

Compliance: As indicated below, unless already accomplished.

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

The part numbers (P/N) of the accumulators currently installed on CL-600-2B19 aeroplanes are 601R75138-1 (08-60163-001 or 08-60163-002) [Hydraulic System No. 1, Hydraulic System No. 2, Inboard Brake and Outboard Brake accumulators] and 601R75138-3 (08-60164-001 or 08-60164-002) [Hydraulic System No. 3 accumulator].

A detailed analysis of the calculated line of trajectory of a failed screw cap/end cap for each of the accumulators has been conducted, resulting in the identification of several areas where systems and/or structural components could potentially be damaged. Although all of the failures to date have occurred on the ground, an in-flight failure affecting such components could potentially have an adverse effect on the controllability of the aeroplane.

This directive gives instructions to amend the Airplane Flight Manual (AFM), remove two accumulators (Hydraulic System No. 2 and No. 3) from the aeroplane and conduct repetitive ultrasonic inspections of the Hydraulic System No. 1, Inboard Brake and Outboard Brake accumulators that are not identified by the letter "T" after the serial number (S/N) on the identification plate for cracks until they are replaced by new accumulators P/N 601R75139-1 (11093-4).

Since the original issue of this directive, it was found that the existing accomplishment instructions for the Hydraulic System No. 1 accumulator replacement did not include the replacement of the reducer, P/N MS21916D8-6, which is metallurgically incompatible with the new accumulator, P/N 601R75139-1 (11093-4), and will result in galvanic corrosion if not replaced. The directive is revised to mandate this reducer replacement.

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

Corrective Actions:

Part I: AFM Change

Within 30 days after the effective date of the original issue of this directive (18 August 2010):

- A. Amend the AFM, CSP A-012, by inserting Temporary Revision (TR) No. RJ/186, dated 16 December 2008, or later approved changes to this TR.

Advise all flight crews of the changes introduced in the AFM TR.

Part II: Deactivation of the Hydraulic System No. 3 Accumulator

Within 250 flight cycles after the effective date of the original issue of this directive (18 August 2010):

Deactivate the Hydraulic System No. 3 accumulator, in accordance with Part A of the Accomplishment Instructions in Bombardier Aerospace Alert Service Bulletin (ASB) A601R-29-031, Revision A, dated 26 March 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Notes:

1. Deactivation in accordance with Part A of the original issue of ASB A601R-29-031, dated 23 December 2008, also meets the intent of Part II of this directive.
2. Accomplishment of Part II of this directive is not applicable if the accumulator has already been removed in accordance with Part IV of this directive.
3. The instructions in AFM TR No. RJ/186, dated 16 December 2008, or later approved changes to this TR, are applicable following accomplishment of Part II of this directive.

Part III: Removal of the Hydraulic System No. 2 Accumulator

Within 500 flight cycles after the effective date of the original issue of this directive (18 August 2010):

Remove the Hydraulic System No. 2 accumulator, in accordance with the Accomplishment Instructions in Bombardier Aerospace Service Bulletin (SB) 601R-29-032, Revision A, dated 26 January 2010, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Note: Removal in accordance with the original issue of SB 601R-29-032, dated 12 November 2009, also meets the intent of Part III of this directive.

Part IV: Removal of the Hydraulic System No. 3 Accumulator

Within 1000 flight cycles after the effective date of the original issue of this directive (18 August 2010):

Remove the Hydraulic System No. 3 accumulator, in accordance with Part B of the Accomplishment Instructions in Bombardier Aerospace ASB A601R-29-031, Revision A, dated 26 March 2009, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Notes:

1. Removal in accordance with Part B of the original issue of ASB A601R-29-031, dated 23 December 2008, also meets the intent of Part IV of this directive.