



No.	CF-2009-48	1/3
Issue Date	14 December 2009	

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.

In Number: CF-2009-48

Subject: Air-Driven Generator (ADG) – Non-Conforming Balance Washer Screws

Effective: 25 January 2010

Applicability: Bombardier Inc. Models:

CL-600-2B19, Serial Numbers (S/Ns) 7305 through 7990 and 8000 and subsequent.
CL-600-2C10, S/Ns 10003 and subsequent.
CL-600-2D15 and CL-600-2D24, S/Ns 15001 and subsequent.

Compliance: As indicated below, unless already accomplished.

Background: Following five reported cases of balance washer screw failure on similar ADGs/ram air turbines installed on other aircraft types, investigation by Hamilton Sundstrand determined that a specific batch of the screws had a metallographic non-conformity that increased their susceptibility to brittle fracture. Subsequently, it was established that 152 “dry” ADGs [Hamilton Sundstrand Part Numbers (P/Ns) in the 761339 series and 1711405; see Note] either had non-conforming screws installed during production or may possibly have had non-conforming screws installed during maintenance or repair at Hamilton Sundstrand repair stations.

Failure of a balance washer screw can result in loss of the related balance washer, with consequent turbine imbalance. Such imbalance could potentially result in ADG structural failure (including blade failure), loss of ADG electrical power and structural damage to the aircraft and, if deployment was activated by a dual engine shutdown, could also result in loss of hydraulic power for the flight controls.

This directive mandates checking the ADG and replacing the balance washer screws, if required. It also prohibits future installation of unmodified ADGs.

Note: ADGs with Hamilton Sundstrand P/Ns in the 761339 series and 1711405 are installed on the aircraft models listed in the Applicability section above in addition to Bombardier Inc. Model CL-600-2B16. The latter model is covered in a separate directive.

Corrective Actions: **Part I - Identification Check**

Applicable to:
CL-600-2B19 aircraft, S/Ns 7305 through 7990 and 8000 through 8105,
CL-600-2C10 aircraft, S/Ns 10003 through 10297, and
CL-600-2D15 and CL-600-2D24 aircraft, S/Ns 15001 through 15248.

Prior to the next in-flight or on-ground functional/operational check of the ADG, after the effective date of this directive, check the S/N of the installed ADG:

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

- A. If the ADG S/N is not listed in paragraph 1.A. of the applicable Bombardier Aerospace Service Bulletin (SB) detailed below, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada, no further action is required and compliance with this directive is complete.

Service Bulletin	Issue	Date
601R-24-127	Original	23 October 2009
670BA-24-026	Original	23 October 2009

- B. If the ADG S/N is listed in paragraph 1.A. of the applicable Bombardier Aerospace SB detailed below, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada, inspect the ADG identification plate.

Service Bulletin	Issue	Date
601R-24-127	Original	23 October 2009
670BA-24-026	Original	23 October 2009

- 1) If symbol "24-5" is marked on the ADG identification plate, the balance washer screws have already been replaced. No further action is required and compliance with this directive is complete.
- 2) If symbol "24-5" is not marked on the ADG identification plate, replacement of the balance washer screws is required. Proceed to Part II of this directive.

Note: Part I of this directive may be conducted visually, which requires the ADG to be lowered, or by checking the delivery and maintenance records.

Part II: Replacement of the Balance Washer Screws and Identification of the ADG

Applicable to:

CL-600-2B19 aircraft, S/Ns 7305 through 7990 and 8000 through 8105,
CL-600-2C10 aircraft, S/Ns 10003 through 10297, and
CL-600-2D15 and CL-600-2D24 aircraft, S/Ns 15001 through 15248.

Prior to the next in-flight or on-ground functional/operational check of the ADG, after the effective date of this directive:

Replace all of the balance washer screws, and mark the ADG identification plate with symbol "24-5", in accordance with the Accomplishment Instructions in the applicable Bombardier Aerospace SB detailed below, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.

Service Bulletin	Issue	Date
601R-24-127	Original	23 October 2009
670BA-24-026	Original	23 October 2009

Note: Part II is only applicable if required by Part I, Paragraph B.2. of this directive.

Part III: Replacement Parts

Applicable to:

CL-600-2B19 aircraft, S/Ns 7305 through 7990 and 8000 and subsequent,
CL-600-2C10 aircraft, S/Ns 10003 and subsequent, and
CL-600-2D15 and CL-600-2D24 aircraft, S/Ns 15001 and subsequent.

After the effective date of this directive:

It is not permitted to install a replacement/spare ADG [Hamilton Sundstrand P/N in the 761339 series or 1711405] that has one of the S/Ns listed in paragraph 1.A of the applicable Bombardier Aerospace SB detailed below, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada, unless it is identified with the symbol "24-5" on the identification plate.

Service Bulletin	Issue	Date
601R-24-127	Original	23 October 2009
670BA-24-026	Original	23 October 2009

Authorization: For Minister of Transport, Infrastructure and Communities

ORIGINAL SIGNED BY

Derek Ferguson,
Chief, Continuing Airworthiness

Contact: Mr. Richard Topham, Continuing Airworthiness, Ottawa, telephone 613-952-4357, facsimile 613-996-9178 or e-mail CAW_Web_Feedback@tc.gc.ca or any Transport Canada Centre.