



No.	CF-2010-01	1/2
Issue Date	18 January 2010	

# 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-2010-01

**Subject:** Ram Air Turbine (RAT) – Non-Conforming Balance Washer Screws

**Effective:** 16 February 2010

**Applicability:** Bombardier Inc. Models BD-700-1A10 and BD-700-1A11, Serial Numbers (S/Ns) 9002 and subsequent.

**Compliance:** As indicated below.

**Background:** Following five reported cases of balance washer screw failure on similar RATs/air driven generators installed on other aircraft types, an 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 187 RATs [Part Number (P/N) GL456-1101-7 and Hamilton Sundstrand P/Ns in the 762826 series] had non-conforming screws installed either during production or possibly 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 RAT structural failure (including blade failure), loss of RAT 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 of the RAT and replacing the balance washer screws, if required. It also prohibits future installation of unmodified RATs.

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

Applicable to BD-700-1A10 and BD-700-1A11 aircraft, S/Ns 9002 through 9380.

Prior to the next scheduled in-flight operational test of the RAT after the effective date of this directive, unless already accomplished, check the S/N of the installed RAT. This check may be conducted visually, which requires the RAT to be lowered, or by checking the delivery and maintenance records.

- A. If the RAT 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, other than compliance with Part III of this directive.

Service Bulletin	Issue	Date
700-24-075	Revision 1	15 July 2009
700-1A11-24-014	Revision 1	15 July 2009

- B. If the RAT 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 RAT identification plate.

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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Service Bulletin	Issue	Date
700-24-075	Revision 1	15 July 2009
700-1A11-24-014	Revision 1	15 July 2009

- 1) If symbol "24-7" is marked on the RAT identification plate, the balance washer screws have already been replaced. No further action is required, other than compliance with Part III of this directive.
- 2) If symbol "24-7" is not marked on the RAT identification plate, replacement of the balance washer screws is required. Proceed to Part II of this directive.

## **Part II: Replacement of the Balance Washer Screws and Identification of the RAT**

Applicable to BD-700-1A10 and BD-700-1A11 aircraft, S/Ns 9002 through 9380.

Prior to the next scheduled in-flight operational test of the RAT after the effective date of this directive, unless already accomplished:

Replace all of the balance washer screws, and mark the RAT identification plate with symbol "24-7", 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
700-24-075	Revision 1	15 July 2009
700-1A11-24-014	Revision 1	15 July 2009

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

## **Part III: Replacement Parts**

Applicable to BD-700-1A10 and BD-700-1A11 aircraft, S/Ns 9002 and subsequent

After the effective date of this directive:

It is not permitted to install a replacement/spare RAT [P/N GL456-1101-7; Hamilton Sundstrand P/Ns in the 762826 series] with 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 "24-7" on the identification plate.

Service Bulletin	Issue	Date
700-24-075	Revision 1	15 July 2009
700-1A11-24-014	Revision 1	15 July 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](mailto:CAW_Web_Feedback@tc.gc.ca) or any Transport Canada Centre.