



No.	CF-2009-24	1/3
Issue Date	19 May 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) 593**. 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-2009-24
Subject: Air Driven Generator (ADG) – Strut Cracking
Effective: 08 June 2009
Applicability: Bombardier Inc. Model CL-600-2B16 (CL-604), Serial Numbers 5408 through 5665
Compliance: As indicated below.

Background: Two cases of a crack on a "dry" ADG (Hamilton Sundstrand part number in the 761339 series), in the aft area of the strut and generator housing assembly, have been reported on CL-600-2B19 aircraft. The same part number is also installed on CL-600-2B16 (CL-604) aircraft. Investigation determined that the crack was in an area of the strut where the wall thickness of the casting was below specification, due to a manufacturing anomaly in a specific batch of ADGs. Structural failure and departure of the ADG during deployment could possibly result in damage to the aircraft structure. If deployment were activated by a dual engine shutdown, ADG structural failure would also result in loss of hydraulics for the flight controls.

This directive gives instructions to check the part number of the installed ADG and, for ADGs with a part number in the 761339 series, the serial numbers of the ADG and the strut and generator housing assembly are also to be checked. If these serial numbers are within specified ranges [see Part I, paragraph B.(3).(a) below], initial and subsequent repeat fluorescent penetrant inspections of the ADG strut are required.

This directive also gives instructions to perform a fluorescent penetrant inspection after each unscheduled in-flight ADG deployment and a visual inspection after each unscheduled on-ground ADG deployment. Instructions regarding re-identification (where applicable) and replacement parts are also included.

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

Within 400 hours air time or before the next scheduled ADG operational test, whichever comes first, after the effective date of this directive, unless already accomplished and the ADG has not subsequently been replaced:

Check the part number of the installed ADG:

- A. If the part number of the ADG is 604-90800-23 (Hamilton Sundstrand part number 1711405), the strut wall thickness is within specification. No further action is required and compliance with this directive is complete.
- B. If the part number of the ADG is 604-90800-1, -17 or -19 (Hamilton Sundstrand part number in the 761339 series), check the ADG serial number and proceed as follows:
 - 1) If the serial number of the ADG is 2000 or higher, the strut wall thickness is within specification and only re-identification is required. Proceed to Part VI of this directive.
 - 2) If the serial number of the ADG is in the range 0101 through 1999 and the symbol 24-3 is marked in the Serial Number block of the identification plate, the strut wall thickness is within specification and only re-identification is required. Proceed to Part VI of this directive.
 - 3) If the serial number of the ADG is in the range 0101 through 1999 and the symbol 24-3 is not marked in the Serial Number block of the identification plate, check the serial number of the strut and generator housing assembly (for location, see Figure 1, Sheet 1 of Hamilton Sundstrand Service Bulletin (SB) ERPS10AG-24-3) and proceed as follows:
 - a) If the serial number of the strut and generator housing assembly is in the range 0001 through 2503, a fluorescent penetrant inspection is required. Proceed to Part II of this directive.
 - b) If the serial number of the strut and generator housing assembly is 2504 or higher, the strut wall thickness is within specification and only re-identification is required. Proceed to Part VI of this directive.

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

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

Part II - Initial Fluorescent Penetrant Inspection

Within 400 hours air time or before the next scheduled ADG operational test, whichever comes first, after the effective date of this directive, unless already accomplished:

Inspect the ADG strut and replace the ADG, as necessary, in accordance with paragraphs 2.A., 2.C. and 2.D. of the Accomplishment Instructions in Bombardier Alert SB 604-24-017, Revision 1, dated 15 January 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Prior accomplishment of the fluorescent penetrant inspection, conducted in accordance with either the above referenced SB or one of the following SBs, also meets the intent of Part II of this directive:

Bombardier Alert SB 604-24-017	Original issue	Dated 6 May 2005
Hamilton Sundstrand SB ERPS10AG-24-3	Original issue	Dated 14 April 2005
Hamilton Sundstrand SB ERPS10AG-24-3	Revision 1	Dated 19 April 2005
Hamilton Sundstrand SB ERPS10AG-24-3	Revision 2	Dated 14 November 2006
Hamilton Sundstrand SB ERPS10AG-24-3	Revision 3	Dated 12 March 2009

If the ADG is replaced by an ADG with part number 604-90800-23 (Hamilton Sundstrand part number 1711405), no further action is required and compliance with this directive is complete.

Notes:

1. Part II is only applicable if required by Part I, Paragraph B.(3).(a) of this directive.
2. For aircraft with serial numbers 5611 through 5665, Bombardier conducted the initial fluorescent penetrant inspection prior to aircraft delivery. As long as the ADG has not been replaced since aircraft delivery, this meets the intent of Part II of this directive.
3. In Hamilton Sundstrand SB ERPS10AG-24-3, the fluorescent penetrant inspection is referred to as "Penetrant Check".

Part III - Repeat Fluorescent Penetrant Inspections

Before further flight after each scheduled ADG operational test:

Inspect the ADG strut and replace the ADG, as necessary, in accordance with paragraphs 2.A., 2.C. and 2.D. of the Accomplishment Instructions in Bombardier Alert SB 604-24-017, Revision 1, dated 15 January 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If the ADG is replaced by an ADG with part number 604-90800-23 (Hamilton Sundstrand part number 1711405), no further action is required and compliance with this directive is complete.

Note: Part III is required for each ADG that has been inspected in accordance with Part II of this directive.

Part IV - Inspection after an Unscheduled In-Flight ADG Deployment

A. Before further flight after each unscheduled in-flight ADG deployment:

Visually inspect the ADG strut and replace the ADG, as necessary, in accordance with paragraphs 2.A., 2.B. and 2.D. of the Accomplishment Instructions in Bombardier Alert SB-604-24-017, Revision 1, dated 15 January 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If the ADG is replaced by an ADG with part number 604-90800-23 (Hamilton Sundstrand part number 1711405), no further action is required and compliance with this directive is complete.

B. Within 72 hours or 10 hours air-time, whichever comes first, after each unscheduled in-flight ADG deployment:

Perform a fluorescent penetrant inspection of the ADG strut and replace the ADG, as necessary, in accordance with paragraphs 2.A., 2.C. and 2.D. of the Accomplishment Instructions in Bombardier Alert SB 604-24-017, Revision 1, dated 15 January 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If the ADG is replaced by an ADG with part number 604-90800-23 (Hamilton Sundstrand part number 1711405), no further action is required and compliance with this directive is complete.

Notes:

1. Part IV is required, after an unscheduled in-flight ADG deployment, for each ADG that is specified in Part I, Paragraph B.(3).(a) of this directive.

2. The visual inspection specified in Part IV, Paragraph A above is not required if the fluorescent penetrant inspection, specified in Paragraph B, is performed before further flight.

Part V - Inspection after an Unscheduled On-Ground ADG Deployment

Before further flight following each unscheduled on-ground ADG deployment task:

Visually inspect the ADG strut and replace the ADG, as necessary, in accordance with paragraphs 2.A., 2.B. and 2.D. of the Accomplishment Instructions in Bombardier Alert SB 604-24-017, Revision 1, dated 15 January 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If the ADG is replaced by an ADG with part number 604-90800-23 (Hamilton Sundstrand part number 1711405), no further action is required and compliance with this directive is complete.

Note: Part V is required, after an unscheduled on-ground ADG deployment, for each ADG that is specified in Part I, Paragraph B.(3).(a) of this directive.

Part VI - Re-Identification

Within 400 hours air time or before the next scheduled operational test, whichever comes first, after the effective date of this directive:

Re-identify the ADG in accordance with the Accomplishment Instructions in Bombardier SB-604-24-019, dated 1 October 2007, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Re-identification, conducted in accordance with Revision 2, dated 14 September 2007, Revision 3, dated 12 February 2008 or Revision 4, dated 30 April 2009 of Hamilton Sundstrand SB-ERPS10AG-24-4, also meets the intent of Part VI of this directive.

Following re-identification, no further action is required and compliance with this directive is complete.

Note: Part VI is only applicable if required by Part I, Paragraph B.(1), B.(2) or B.(3).(b) of this directive. The strut wall thickness of the ADGs specified in these paragraphs is not below specification.

Part VII - Replacement Parts

As of the effective date of this directive:

It is not permitted to install a replacement ADG with part number 604-90800-1, -17 or -19 (Hamilton Sundstrand part number in the 761339 series) on any aircraft if the serial number of the ADG is in the range 0101 through 1999 strut and the serial number of the generator housing assembly is in the range 0001 through 2503.

However, it is permitted to install one of the above-specified ADGs back onto the same aircraft if it has been removed for non-related purposes, such as for maintenance or to gain access to other components, etc.

Note: The CL-604 Illustrated Parts Catalog also specifies that, for an ADG with a Hamilton Sundstrand part number in the 761339 series, future procurement is to be an ADG with Hamilton Sundstrand part number 1711405.

Authorization: For Minister of Transport, Infrastructure and Communities

Derek Ferguson
Acting Chief, Continuing Airworthiness

Contact: Mr. Richard Topham, Continuing Airworthiness, Ottawa, telephone 613-952-4428, facsimile 613-996-9178 or e-mail richard.topham@tc.gc.ca or any Transport Canada Centre.