Transport Canada Transports Canada

TP 7245E

No. CF-2009-27 1/4
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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-2009-27**

Subject: **Air Driven Generator (ADG) – Strut Cracking**

Effective: 29 June 2009

Applicability: Bombardier Inc. Models:
CL-600-2B19, Serial Numbers 7305 through 8051.
CL-600-2C10, Serial Numbers 10003 through 10260.
CL-600-2D15 and CL-600-2D24, Serial Numbers 15001 through 15106.

Compliance: As indicated below, unless already accomplished.

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 is also installed on CL-600-2C10, -2D15 and -2D24 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 was 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 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], a one-time fluorescent penetrant inspection of the ADG strut is required.

Note: For ADGs with serial numbers in the above-referenced specified ranges, subsequent fluorescent penetrant inspections are required after each scheduled in-flight or on-ground functional check of the ADG and also after each unscheduled in-flight ADG deployment. These inspection requirements are not mandated in this directive but are specified in the approved maintenance program.

Corrective Actions:

Part I - Identification Check

Within 1000 hours air time or before the next scheduled ADG functional check, whichever comes first, after the effective date of this directive:

Check the part number of the installed ADG:

A. If the ADG has 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 ADG has a 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. No further action is required and compliance with this directive is complete.

2) If the serial number of the ADG is in the range 0101 through 1999 and symbol 24-3 is marked in the Serial Number block of the identification plate, the strut wall thickness is within specification. No further action is required and compliance with this directive is complete.

3) If the serial number of the ADG is in the range 0101 through 1999 and 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. No further action is required and compliance with this directive is complete.

4) If the serial number of the strut and generator housing assembly is not checked, fluorescent penetrant inspection is required. Proceed to Part II of this directive.

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

Part II - Fluorescent Penetrant Inspection

A. Applicable to CL-600-2B19 Aircraft, Serial Numbers 7305 through 8051:

Within 1000 hours air time or before the next scheduled ADG functional check, whichever comes first, after the effective date of this directive:

Inspect the ADG strut, and replace the ADG as necessary, in accordance with the Accomplishment Instructions in Bombardier Alert Service Bulletin (ASB) A601R-24-120, Revision C, dated 20 April 2009, 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 A601R-24-120	**Original issue**	**Dated 20 April 2005**
Bombardier Alert SB A601R-24-120	**Revision A**	**Dated 1 December 2005**
Bombardier Alert SB A601R-24-120	**Revision B**	**Dated 7 December 2006**
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**

Following completion of Part II, 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), or by Part I, Paragraph B.(4) of this directive.

2. For ADGs specified in Part I, Paragraph B.(3).(a), repeat fluorescent penetrant inspections (per Hamilton Sundstrand SB ERPS10AG-24-3) are required as part of the periodic ADG Functional Check procedure. Refer to Airworthiness Requirements, Part 2 of Maintenance Requirements Manual, Appendix A – Certification Maintenance Requirements (CMR) and the Aircraft Maintenance

Manual (AMM), as follows:

- CMR Task No. C24-20-129-01.
- AMM Task No: 24-23-01-720-803.

3. For ADGs specified in Part I, Paragraph B.(3).(a), fluorescent penetrant inspection (per Hamilton Sundstrand SB ERPS10AG-24-3) is required following each future unscheduled in-flight ADG deployment, as specified in the following task:

   - AMM Task No: 05-51-19-210-801.

4. In Hamilton Sundstrand SB ERPS10AG-24-3, the fluorescent penetrant inspection is referred to as a “Penetrant Check”.

B. Applicable to CL-600-2C10 Aircraft, Serial Numbers 10003 through 10260, and CL-600-2D15 and CL-600-2D24 Aircraft, Serial Numbers 15001 through 15106:

Within 1000 hours air time or before the next scheduled ADG functional check, whichever comes first, after the effective date of this directive:

Inspect the ADG strut, and replace the ADG as necessary, in accordance with the Accomplishment Instructions in Bombardier ASB A670BA-24-020, Revision C, dated 20 April 2009, 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 A670BA-24-020	**Original issue**	**Dated 20 April 2005**
Bombardier Alert SB A670BA-24-020	**Revision A**	**Dated 17 May 2005**
Bombardier Alert SB A670BA-24-020	**Revision B**	**Dated 7 December 2006**
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**

Following completion of Part II, 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), and Part I, Paragraph B.(4) of this directive.

2. For ADGs specified in Part I, Paragraph B.(3).(a), repeat fluorescent penetrant inspections (per Hamilton Sundstrand SB ERPS10AG-24-3) are required as part of the periodic ADG Functional Check procedure. Refer to Airworthiness Requirements, Part 2 of Maintenance Requirements Manual, Appendix A – Certification Maintenance Requirements (CMR) and the Aircraft Maintenance Manual (AMM), as follows:

   - CMR Task No. 24-23-00-102.
   - AMM Task No: 24-23-01-720-802.

3. For ADGs specified in Part I, Paragraph B.(3).(a), fluorescent penetrant inspection (per Hamilton Sundstrand SB ERPS10AG-24-3) is required following each future unscheduled in-flight ADG deployment, as specified in

the following task:

- AMM Task No: 05-51-19-210-801.

4. In Hamilton Sundstrand SB ERPS10AG-24-3, the fluorescent penetrant inspection is referred to as a “Penetrant Check”.

Authorization: For Minister of Transport, Infrastructure and Communities

Derek Ferguson
Acting Chief, Continuing Airworthiness

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