



No.	CF-2012-27	1/2
Issue Date	2 November 2012	

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-2012-27

Subject: Cracking of the Nacelle Lower Longeron

Effective: 15 November 2012

Applicability: Bombardier Inc. DHC-8 aeroplane models 102, 103 and aeroplanes converted to model 106 in accordance with Bombardier Service Bulletin 8-92-07 or 8-92-08, serial numbers 003 through 287 with PreMod 8/1593 nacelle lower longeron installed.

Compliance: As indicated below, unless already accomplished.

Background: There has been one in-service report where a nacelle lower longeron was found to be cracked during a routine maintenance inspection. The investigation determined that the crack initiated from the right-hand side (RHS) drain hole. Fatigue testing has indicated that both the RHS and left-hand side (LHS) longerons are vulnerable to fatigue cracking. Failure of the nacelle lower longeron would result in a degradation of the structural integrity of the nacelle and could potentially lead to collapse of the main landing gear (MLG).

This AD mandates initial and repeat inspections of the RHS and LHS nacelle lower longerons until the terminating action is accomplished.

Corrective Actions: **Part I – Initial Inspection**

A. Perform a detailed visual inspection (DVI) of each nacelle lower longeron in accordance with the Accomplishment Instructions in Bombardier Service Bulletin (SB) 8-54-39, Revision A, dated 2 August 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, in accordance with the following schedule:

1. For aeroplane models 102 and 103 that have accumulated 35 000 total flight cycles or less, within 5000 flight cycles, but not to exceed 36 000 total flight cycles, from the effective date of this AD;
2. For aeroplane models 102 and 103 that have accumulated more than 35 000 total flight cycles, within 1000 flight cycles, from the effective date of this AD;
3. For aeroplanes converted to model 106 with the PreMod 8/1641 configuration, within 500 flight cycles, from the effective date of this AD;
4. For aeroplanes converted to model 106 with PostMod 8/1641 configuration, within 5000 flight cycles, from the effective date of this AD.

Use of a Bolt-Hole Eddy Current (BHEC) test in accordance with the Accomplishment Instructions in Bombardier SB 8-54-39, Revision A, dated 2 August 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, also meets the requirements of Part I. A. of this AD.

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

Canada

- B. If a crack is found, before further flight, replace the nacelle lower longeron in accordance with the Accomplishment Instructions of the above-mentioned SB, or, contact Bombardier Toronto Help Desk for a Transport Canada approved repair. The approved repair must specifically reference this AD.
- C. If no crack is found, repeat the inspection of each nacelle lower longeron in accordance with Part II of this AD until the terminating action in Part III of this AD is accomplished.

Part II – Repetitive Inspection

- A. Perform a BHEC test of each nacelle lower longeron in accordance with the Accomplishment Instructions in Bombardier SB 8-54-39, Revision A, dated 2 August 2012, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, in accordance with the following schedule:
 - 1. For aeroplane models 102 and 103, at intervals not to exceed 2500 flight cycles
 - 2. For aeroplanes converted to model 106, at intervals not to exceed 1854 flight cycles.
- B. If a crack is found, before further flight, replace the nacelle lower longeron in accordance with the Accomplishment Instructions of the above-mentioned SB, or, contact the Bombardier Toronto Help Desk for a Transport Canada approved repair. The approved repair must specifically reference this AD.
- C. If no crack is found, continue the repetitive inspections of each nacelle lower longeron in accordance with Part II of this AD until the terminating action in Part III of this AD is accomplished.

Part III – Terminating Action for the Repetitive Inspections

The following constitutes terminating action for the repetitive inspections in Part II of this AD:

- A. Replacement of the nacelle lower longeron in accordance with the Accomplishment Instructions in the above mentioned SB;
- B. Cold working of the drain holes in accordance with the Accomplishment Instructions in the above-mentioned SB.

Incorporation of the initial issue of SB 8-54-39, dated 14 March 2012, also satisfies the requirements of this AD.

Authorization: For the Minister of Transport, Infrastructure and Communities,

ORIGINAL SIGNED BY

Derek Ferguson
Chief, Continuing Airworthiness

Contact: Robert Farinas, Continuing Airworthiness, Ottawa, telephone 613-952-4357, facsimile 613-996-9178 or e-mail ADs@tc.gc.ca or any Transport Canada Centre.