



No.	CF-2011-24	1/2
Issue Date	21 July 2011	

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

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TRANSPORT CANADA EMERGENCY AIRWORTHINESS DIRECTIVE

PLEASE FORWARD IMMEDIATELY TO THE PERSON RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF YOUR AIRCRAFT

Number: CF- 2011-24

Subject: Wing to Fuselage Attachment Joints - Barrel Nut Cracking

Effective: 8 August 2011

Applicability: Bombardier Inc. DHC-8 Aeroplane Models 400, 401 and 402, Serial Numbers 4001 and subsequent.

Compliance: As indicated below, unless already accomplished.

Background: There have been three in-service reports of cracked barrel nuts found at the front spar locations of the wing to fuselage attachment joints. Additionally, three operators have reported finding a loose washer in the barrel nut assembly. Failure of the barrel nuts could compromise the structural integrity of the wing to fuselage attachments.

Preliminary investigation determined that these cracks are due to hydrogen embrittlement.

This directive mandates an initial and repetitive detailed inspection of the barrel nuts.

Corrective Actions: Part I – Initial Inspection

A. Conduct a torque check and detailed visual inspection of each barrel nut in accordance with the accomplishment instructions in Bombardier Service Bulletin (SB) 84-57-25, Initial Issue, dated 20 July 2011, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, in accordance with the following schedule as of the effective date of this directive:

1. For aeroplanes that have accumulated 1900 or more total hours air time or 12 months or more in service since new: within 100 hours air time or 10 days, whichever comes first, after the effective date of this directive.
2. For aeroplanes that have accumulated less than 1900 total hours air time or less than 12 months in service since new: prior to reaching 2000 total hours air time or 12 months in service since new, whichever comes first.

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

Aeroplanes that have completed a torque check and detailed visual inspection of each barrel nut, or have had barrel nuts replaced, in accordance with SB A84-57-19 since 01 June 2011 meet the requirements of Part I of this directive.

- B. If the bolt preload is incorrect, or if the barrel nut or barrel nut cradle is cracked or corroded, replace the barrel nut and attachment hardware in accordance with section 3. B, Part B of the above mentioned SB, prior to further flight. Proceed to Part II of this directive.
- C. If each bolt preload is correct and none of the barrel nuts or barrel nut cradles are cracked or corroded, proceed to Part II of this directive.

Part II – Repetitive Inspection

At intervals not to exceed 2000 hours air time or 12 months after the initial inspection or replacement of the barrel nut, whichever comes first, repeat the torque check and detailed visual inspection of each barrel nut in accordance with the accomplishment instructions in Bombardier Service Bulletin (SB) 84-57-25, Initial Issue, dated 20 July 2011, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Authorization: For the Minister of Transport, Infrastructure and Communities

ORIGINAL SIGNED BY

Robin Lau
Acting Chief, Continuing Airworthiness

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