AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) to ADs.

Number:

CF-2010-30R2

Effective Date:

13 August 2019

ATA:

54

Type Certificate:

A-142

Subject:

Cracking of the Nacelle Attachment Fitting(s)

Revision:

Supersedes AD CF-2010-30R1, issued 21 September 2010.

Applicability:

De Havilland Aircraft of Canada Limited (formerly Bombardier Inc.) model DHC-8-400, -401 and -402 aeroplanes, serial number 4001 and subsequent.

Compliance:

As indicated below, unless already accomplished

Background:

Several reports have been received of cracked nacelle attachment fittings. The preliminary investigation determined the cause to be stress corrosion. Stress corrosion cracking could compromise the structural integrity of the nacelle attachment fitting and could adversely affect the safe landing of the aeroplane.

AD CF-2010-30, in the interim, mandated a Detailed Visual Inspection (DVI) and conductivity check of each of the four (4) nacelle attachment fittings.

Revision 1, CF-2010-30R1 was issued to update the aircraft serial number applicability based on the latest crack findings and also to revise the acceptable conductivity values in Part I. A. In addition, Part II was added to provide instructions for newly affected aircraft and aircraft that have replaced nacelle attachment fittings.

This AD revision, CF-2010-30R2, is issued to add Part III to modify the rear spar fitting and nacelle attaching structure, which includes a new nacelle attachment fitting that does not require the repetitive inspection. This modification is the terminating action of this AD. In addition, the aircraft Serial Number Applicability is updated based on the production incorporation of the new fittings.

Corrective Actions:

Part I - Applicable to Aeroplane 4001 through 4304, 4314 and 4315:

A. DVI and Conductivity Check of the Nacelle Attachment Fitting Assembly Part Number (P/N) 85414663:

Within 100 hours air time from the effective date of AD CF-2010-30R1, 28 September 2010, conduct a DVI and conductivity check on each of the four (4) nacelle attachment fittings, in accordance with the Accomplishment Instructions in Section 3 of the Bombardier Service Bulletin (SB) 84-54-14 Revision K, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

1. If any nacelle attachment fitting is found cracked, before further flight, replace the cracked nacelle

attachment fittings and associated structure with nacelle attachment fittings, P/N 8Z9305, in accordance with Part III.A.2. of this AD.

2. If the conductivity of any test points on the fitting is found to be less than 38.0% International Annealed Copper Standard (IACS), proceed to Part I.B. of this AD.

3. If the conductivity of any test points on the fitting is found to be 38.0% IACS or greater, but not exceeding 45.0% IACS, proceed to Part I. C. of this AD.

4. If the conductivity of any test points on the fitting is found to be greater than 45.0% IACS, proceed to Part I.B. of this AD.

Incorporation of previous revisions of Bombardier SB 84-54-14, prior to the effective date of AD CF-2010-30R1, 28 September 2010, meets the requirements of Part I. A of this AD.

As of the effective date of AD CF-2010-30R1, 28 September 2010, aeroplanes that were within 100 hours air time of a repeat inspection interval, or are beyond 300 hours air time from the last DVI, must conduct a DVI within 100 hours air time from the effective date of AD CF-2010-30R1, 28 September 2010.

B. Conductivity less than 38.0% IACS, or greater than 45.0% IACS:

1. Conduct a daily repeat DVI of the nacelle attachment fitting until Part I.B.3. of this AD is completed, in accordance with the Accomplishment Instructions in Section 3 of the Bombardier SB 84-54-14 Revision K, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

2. If any nacelle attachment fitting is found cracked, before further flight, replace the cracked nacelle attachment fittings and associated structure with new nacelle attachment fittings, P/N 8Z9305, in accordance with Part III.A.2. of this AD.

3. Replace the nacelle attachment fitting, in accordance with Part III.A.2. of this AD, within 300 hours air time after the initial DVI carried out in Part I.A. of this AD.

C. Conductivity 38.0% IACS or greater, but not exceeding 45.0% IACS:

1. Conduct a DVI of the nacelle attachment fitting in accordance with the Accomplishment Instructions in Section 3 of the Bombardier SB 84-54-14 Revision K, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, at intervals not to exceed 300 hours air time after the initial DVI carried out in Part I.A. of this AD.

2. If any nacelle attachment fitting is found cracked, before further flight, replace the cracked nacelle attachment fittings and associated structure with new nacelle attachment fittings, P/N 8Z9305, in accordance with Part III.A.2. of this AD.

Part II - Applicable to Aeroplane Serial Number 4305 through 4313, 4316 through 4380 and Aeroplanes that have replaced nacelle attachment fitting(s) with P/N 85414663:

A. DVI of replacement Nacelle Attachment Fitting Assembly P/N 85414663:

Within 1200 hours air time from the date of the newly installed fitting, conduct a DVI of the nacelle attachment fitting, in accordance with the Accomplishment Instructions in Section 3 of the Bombardier SB 84-54-14 Revision K, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

1. Subsequently, at intervals not to exceed 300 hours air time after the initial DVI carried out in Part II. A. of this AD, conduct a DVI of the nacelle attachment fitting, in accordance with the Accomplishment Instructions in Section 3 of the Bombardier SB 84-54-14 Revision K, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

2. If any nacelle attachment fitting is found cracked, before further flight, replace the cracked nacelle attachment fittings and associated structured with new nacelle attachment fittings, P/N 8Z9305, in accordance with Part III.A.2. of this AD.

Part III - Applicable to Aeroplane Serial Number 4003 through 4380 with Nacelle Attachment Fitting P/N 85414663:

A. Modification to the Rear Spar Fitting and Nacelle Attaching Structure:

1. Compliance with Part III.A. of this AD is required before accumulating 8000 hours air time or within 4 years, whichever occurs first, from the effective date of this AD, unless directed to replace the fitting earlier in Part I or Part II of this AD in which case Part III.A. of this AD must be

completed within the compliance time, indicated in Part I or II of this AD, as applicable.

2. Incorporate the modification to replace the rear spar nacelle attachment fitting and associated structure with a new nacelle attachment fitting, P/N 8Z9305, in accordance with Part B. Procedure of the Accomplishment Instructions of Bombardier SB 84-54-16 Revision D, dated 7 August 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.
3. Incorporation of Bombardier SB 84-54-16 Initial Revision, dated 29 April 2011, or Revision A, dated 1 August 2011, or Revision C, dated 31 January 2017, prior to the effective date of this AD, meets the requirements of Part III of this AD.
4. Bombardier SB 84-54-16 Revision B, dated 6 Oct 2016, Section 1.E Approval, incorrectly stated that Airworthiness Limitations (AWLs) and/or Damage Tolerance Inspections (DTIs) are not affected. Operators that have incorporated Bombardier SB 84-54-16 Revision B are instructed to refer to applicable AWLs for Post/Pre Modification Summary (ModSum) 4-113697 and Bombardier SB 84-54-16 in the Maintenance Requirements Manual, to meet the requirements of Part III of this AD.

B. Termination of Repetitive Inspection Requirements

Incorporation of the modification to the rear spar fitting and nacelle attaching structure in accordance with Part III.A. of this AD terminates the DVI and conductivity check requirements of Part I and Part II of this AD.

Part IV – Applicable to All Aeroplanes Indicated in the Applicability Section of this AD:

As of the effective date of this AD, it is prohibited for anyone to allow the installation of a rear spar nacelle attachment fitting P/N 85414663 on De Havilland model DHC-8-400, -401 and -402 aeroplanes.

The use of Bombardier ModSum Package IS4Q5400012 Revision B, dated 11 July 2012, provides acceptable instructions to apply sealant to each fitting and access panel as an alternative to Bombardier SB 84-54-14 Revision J, dated 17 September 2010, Section 3. C. (1).

Completion of a DVI, conductivity check or replacement of a nacelle attachment fitting in accordance with the following Bombardier SBs, before the effective date of this AD, meets the requirements of the applicable paragraphs of Part I and Part II of this AD:

a. SB 84-54-14 Revision J dated 17 September 2010; and
b. SB 84-54-15 Initial issue dated 20 August 2010, Revision A dated 25 October 2010, Revision B dated 2 February 2017, or Revision C dated 7 August 2018.

Installation of a replacement attachment fitting with P/N 85414663-011 prior to the effective date of this AD is acceptable provided it is inspected for conductivity in accordance with Bombardier Repair Drawing 8/4-54-1986, dated 13 September 2017, and it is inspected as required by Part II of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 30 July 2019

Contact:

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