



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) with ADs.

Number:

CF-2020-06R1

Effective Date:

21 January 2021

ATA:

51

Type Certificate:

A-142

Subject:

Standard Practices/Structures – Introduction of Barrel Nut Inspections

Revision:

Supersedes AD CF-2020-06, issued 13 March 2020.

Applicability:

De Havilland Aircraft of Canada Limited (formerly Bombardier Inc.) model DHC-8-100, DHC-8-200, DHC-8-300 and DHC-8-400 series aeroplanes, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

In-service findings related to cracked barrel nuts at the wing front spar and horizontal stabilizer to vertical stabilizer joint have resulted in the issuance of ADs CF-2011-24R1 and CF-2015-13R1 to address the unsafe condition at those locations. Barrel nuts are also installed at other locations on the aeroplane. An investigation determined that the cracking is initiated by corrosion, due to inadequate cadmium plating on the barrel nuts manufactured to the DSC-228 specification. Failed barrel nuts could compromise the structural integrity of the affected joints and could lead to loss of control of the aeroplane.

AD CF-2020-06 mandated the adoption of repetitive Maintenance Review Board Report (MRBR) inspection tasks of the barrel nuts at multiple locations. The purpose of these inspections is to detect and correct damage to the barrel nuts before failure.

Task 5440/09 should have applied to all aeroplane models and not only to Post Mod 8/1702 aeroplanes. A Maintenance Program Manual (MPM) Temporary Revision (TR) has been issued to include Task 5440/09 for model DHC-8-100, DHC-8-200 and DHC-8-300 series aeroplanes. This AD modifies paragraph 3.d. and Table 1 to include Task 5440/09 for all aeroplanes. Phase-in times are prescribed within the Maintenance Review Board (MRB) document itself.

Corrective Actions:

1. Within 60 days from the effective date of AD CF-2020-06, 27 March 2020, accomplish the actions as required by paragraphs 3 to 5 of this AD, as applicable to each aeroplane model.
2. Compliance with later revisions of these tasks, approved by Transport Canada, also satisfies the requirements of this AD.
3. For model DHC-8-100, DHC-8-200 and DHC-8-300 series aeroplanes: Amend the Transport Canada approved maintenance schedule to incorporate the following tasks in accordance with Part 1 MRBR of the appropriate MPM, as indicated in Table 1:
 - a. 2720/08 Borescope Inspection of the barrel nuts at the rudder adjustment mechanism lever

- b. 5310/35 Detailed Visual Inspection of the barrel nuts at the windshield side post, LH and RH
- c. 5310/36 Detailed Visual Inspection of the barrel nuts at the nose landing gear trunnion plate assemblies
- d. 5440/09 Detailed Visual Inspection of the barrel nuts at the lower longeron attachment, LH and RH
- e. 5520/03 Detailed Visual Inspection of the barrel nuts at the elevator inboard hinge and at the elevator lever support bracket
- f. 5530/13 Detailed Visual Inspection of the barrel nuts at the front, mid and rear spar horizontal stabilizer to vertical stabilizer attachments
- g. 5710/12 Detailed Visual Inspection of the barrel nuts at the wing rib YW8.68 bathtub fitting attachment, LH and RH at the front and rear spar locations
- h. 5710/13 Detailed Visual Inspection of the barrel nuts at the wing rib YW23.858 assembly, LH and RH at the front and rear spar locations
- i. 5710/14 Detailed Visual Inspection of the barrel nuts at the wing rib YW42.00 assembly, LH and RH at the front and rear spar locations

Table 1 Maintenance Program Manual References

Aeroplane Model and MPM Reference	MPM Revision All tasks except 2720/08, 5310/36, 5520/03, and 5440/09	MPM Temporary Revision (TR) Task 2720/08	MPM Revision Task 5310/36	MPM TR Task 5520/03	MPM TR Task 5440/09
DHC-8-100 Series PSM 1-8-7	Revision 29 dated 3 April 2017	TR MRB-159 dated 4 October 2019	Revision 30 dated 15 December 2017	TR MRB-158 dated 4 October 2019	TR MRB-160 dated 21 May 2020
DHC-8-200 Series PSM 1-82-7	Revision 20 dated 3 April 2017	TR MRB 2-38 dated 4 October 2019	Revision 21 dated 15 December 2017	TR MRB 2-37 dated 4 October 2019	TR MRB 2-39 dated 21 May 2020
DHC-8-300 Series PSM 1-83-7	Revision 29 dated 3 April 2017	TR MRB 3-167 dated 4 October 2019	Revision 30 dated 15 December 2017	TR MRB 3-166 dated 4 October 2019	TR MRB 3-168 dated 21 May 2020

4. For model DHC-8-400 series aeroplanes: Amend the Transport Canada approved maintenance schedule to incorporate the following tasks in accordance with PSM 1-84-7 Maintenance Requirements Manual (MRM) Part 1 MRBR, at the revision or TR indicated below:
- a. 272000-213 Special Detailed Inspection (Borescope) of the Barrel Nuts at the Rudder Adjustment Mechanism Lever, in accordance with MRM TR MRB-0109 dated 4 October 2019
 - b. 531007E202 Detailed Inspection of the Barrel Nuts at Flight Compartment Windshield Side Post, LH and RH (CPCP), in accordance with MRM Revision 13 dated 15 March 2017
 - c. 533004E203 Detailed Inspection of the Barrel Nuts at the Front Spar Wing to Fuselage Attachment Joint Strut at YW42.00 and at the Channel Fitting at YW25.258 (CPCP), LH and RH, in accordance with MRM Revision 13 dated 15 March 2017
 - d. 533006E203 Detailed Inspection of the Barrel Nuts at the Rear Spar Wing to Fuselage Attachment Joint Strut at YW42.00 and at the Channel Fitting at YW25.258 (CPCP), LH and RH APPLICABILITY: Pre Modsum 4-459193, in accordance with MRM Revision 13 dated 15 March 2017
 - e. 533010E203 Detailed Inspection of the Barrel Nuts at the Rear Spar Wing to Fuselage Attachment Joint Strut at YW42.00 and at the Channel Fitting at YW25.258 (CPCP), LH and RH APPLICABILITY: Post Modsum 4-459193, in accordance with MRM Revision 13 dated

15 March 2017

- f. 553001E202 Detailed Inspection of the Barrel Nuts at the Vertical Stabilizer Pitch Feel Trim Frame (CPCP) , in accordance with MRM Revision 13 dated 15 March 2017
 - g. 571001E202 Detailed Inspection of the Barrel Nuts at Wing Rib YW8.68 Bathtub Fitting Attachment, Front and Rear Spar Locations (CPCP), LH and RH, in accordance with MRM Revision 13 dated 15 March 2017
5. Within the thresholds and intervals in the tasks identified above, accomplish all applicable maintenance tasks.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 7 January 2021

Contact:

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