



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-2023-22

Effective Date:

13 April 2023

ATA:

32

Type Certificate:

A-142

Subject:

Landing Gear – Nose Landing Gear (NLG) and Doors – Loss of Pivot Pin Retention Bolt

Replacement:

Supersedes AD CF-2009-29R4, issued 1 October 2021.

Applicability:

De Havilland Aircraft of Canada Limited (formerly Bombardier Inc.) model DHC-8-401 and DHC-8-402 aeroplanes, serial numbers 4001 and 4003 through 4633.

Compliance:

As indicated below, unless already accomplished.

Background:

Two in-service incidents have been reported on DHC-8 Series 400 aeroplanes in which the NLG trailing arm pivot pin retention bolt part number (P/N) NAS6204-13D was damaged. One incident involved the left-hand NLG tire, which ruptured on take-off. Investigation determined that the retention bolt failure was due to repeated contact of the castellated nut with the towing device including both the towbar and the towbarless rigs. The loss of the retention bolt allowed the pivot pin to migrate from its normal position and resulted in contact with and rupture of the tire. The loss of the pivot pin could compromise retention of the trailing arm and could result in a loss of directional control due to loss of nose wheel steering. The loss of an NLG tire or the loss of directional control could adversely affect the aeroplane during take-off or landing.

To mitigate the potential failure of the pivot pin retention bolt, AD CF-2009-29R4 maintained the requirements to replace the special bolt P/N 47205-1 or 47205-3 with new retention bolt P/N NAS6204-14D, to implement a life limit for bolt P/N NAS6204-14D and to perform the repetitive lubrication of the trailing arm, introduced by AD CF-2009-29R3, while also providing clarifications for the lubrication of the trailing arm.

This AD requires the removal of pivot pin P/N 47127-1 or P/N 47127-3 and tow fitting assembly P/N 47160-1, and their replacement with pivot pin P/N 47127-5 and tow fitting assembly P/N 47160-3, as terminating action to the requirements of AD CF-2009-29R4. The pivot pin P/N 47127-5 is now attached directly to the new tow fitting lug and no longer requires the use of a retention bolt.

This AD maintains the requirements of AD CF-2009-29R4 until the pivot pin replacement required by Part IV of this AD is completed.

Corrective Actions:**Part I – Applicable to Aeroplane Serial Numbers 4001 and 4003 through 4622 with Special Bolt P/N 47205-1 or 47205-3 Installed on NLG P/N 47100 – Removal of Special Bolt P/N 47205-1 or 47205-3 and Replacement with New Retention Bolt P/N NAS6204-14D**

- A. Within 1600 FC or 9 months, whichever occurs first, from the effective date of AD CF-2009-29R3 (29 September 2021), perform the modifications to the NLG shock strut assembly as required by Section 3.B. of the Accomplishment Instructions of De Havilland Aircraft of Canada Service Bulletin (SB) 84-32-161, Revision A, dated 27 January 2021, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.
- B. Within 30 days from the completion of Part I.A. of this AD, amend the TC approved maintenance schedule by revising Structures Safe Life Task 32-21-01-701 and adding Task 32-21-01-702 as indicated in Temporary Revision (TR) ALI-0223, dated 15 October 2020, of the DHC-8-400 Maintenance Requirements Manual (MRM), PSM 1-84-7.

Incorporation of superseding TRs or later revisions of the above-mentioned tasks approved by TC, also meets the requirements of Part I.B. of this AD.

- C. Following completion of Part I.A. and Part I.B. of this AD, remove and replace bolt P/N NAS6204-14D in accordance with MRM PSM 1-84-7 Structures Safe Life Task 32-21-01-702.

Part II – Applicable to all Aeroplane Serial Numbers with Pivot Pin Retention Bolt P/N NAS6204-14D Installed on NLG Assembly – Introduction of Safe Life Limit

- A. Within 30 days from the effective date of AD CF-2009-29R3 (29 September 2021), amend the TC approved maintenance schedule by revising Structures Safe Life Task 32-21-01-701 and adding Task 32-21-01-702 as indicated in TR ALI-0223, dated 15 October 2020, of the DHC-8-400 MRM, PSM 1-84-7.

Incorporation of superseding TRs or later revisions of the above-mentioned tasks approved by TC, also meets the requirements of Part II.A. of this AD.

- B. Following completion of Part II.A. of this AD, remove and replace bolt P/N NAS6204-14D in accordance with MRM PSM 1-84-7 Structures Safe Life Task 32-21-01-702.
- C. If replacement of bolt P/N NAS6204-14D was already performed in accordance with De Havilland Aircraft of Canada SB 84-32-161, Revision A, dated 27 January 2021, or Initial Issue, dated 7 April 2020, remove and replace bolt P/N NAS6204-14D within 3 months from the effective date of AD CF-2009-29R3 (29 September 2021), or 800 FC from the replacement performed, in accordance with SB 84-32-161, whichever occurs later.

Part III – Repetitive Lubrication of the Trailing Arm

Within 30 days or 400 FC, whichever occurs first, from the effective date of AD CF-2009-29R3 (29 September 2021), and thereafter at intervals not exceeding 400 FC, lubricate the trailing arm, in accordance with Section 3.B. of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-167, Initial Issue, dated 26 July 2021, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part IV – Replacement of NLG Pivot Pin and Tow Fitting Assemblies

Within 8000 hours air time or 48 months, whichever occurs first, from the effective date of this AD, remove pivot pin linkage components and replace pivot pin P/N 47127-1 or P/N 47127-3 and tow fitting assembly P/N 47160-1 with pivot pin P/N 47127-5 and tow fitting assembly P/N 47160-3, in accordance with Section 3.B. of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-173, dated 30 November 2022, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Accomplishment of Part IV of this AD constitutes a terminating action to the initial and repeat requirements of Part I, Part II, and Part III of this AD.

Part V – Parts Installation Prohibition

As of the effective date of this AD, it is prohibited to install pivot pin P/N 47127-1 or P/N 47127-3 as a replacement part for pivot pin P/N 47127-5 on De Havilland Aircraft of Canada model DHC-8-401 and DHC-8-402 aeroplanes.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 30 March 2023

Contact:

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