



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-2022-69

Effective Date:

30 December 2022

ATA:

32

Type Certificate:

A-142

Subject:

Landing Gear – Alternate Extension System – Cam Assembly Failures

Applicability:

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

Compliance:

As indicated below, unless already accomplished.

Background:

Several in-service occurrences have been reported whereby the main landing gear (MLG) aft doors could not be opened by the maintenance crew using the MLG alternate extension system (AES). An investigation found that the associated cam assembly lever was fractured. In some cases, the cam assembly failures resulted from a damaged spring box assembly or a broken alternate release cable assembly. In cases where it is necessary to deploy the MLG using the AES, the failure of the MLG AES cam assembly or alternate release cable assembly on one side could lead to an asymmetric MLG configuration at landing, and potentially a subsequent runway excursion.

This AD mandates:

- a one-time inspection of the spring box assembly and repeat inspections of the cam assembly and the alternate release cable assembly, in both left and right engine nacelles, to mitigate the risk of MLG AES failure; and
- the replacement of the alternate release cable assembly, part number (P/N) 48503-3, with the redesigned alternate release cable assembly, P/N 48503-5; and
- the use of revised instructions for certain maintenance procedures to ensure that any spring box assembly damage or cam assembly damage, if it exists, is detected and corrected.

Corrective Actions:

Part I – Initial Inspection of MLG AES Cam Assemblies and Alternate Release Cable Assemblies, and One-time Inspection of the Spring Box Assemblies

Within 2400 hours air time or 12 months, whichever occurs first, from the effective date of this AD, perform, on the left and right MLG, an inspection of the cam assemblies and alternate release cable assemblies, and a one-time inspection of the spring box assemblies, in accordance with Section 3.B. Part A of the Accomplishment Instructions of De Havilland Aircraft of Canada Service Bulletin (SB) 84-32-159, dated 28 June 2019, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any discrepancy is discovered in the cam assembly, alternate release cable assembly, or spring box assembly, rectify before further flight, in accordance with Section 3.B. Part B of the Accomplishment

Instructions of De Havilland Aircraft of Canada SB 84-32-159, dated 28 June 2019, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part II – Repeat Inspection of MLG AES Cam Assemblies and Alternate Release Cable Assemblies

Following completion of Part I of this AD, repeat, on the left and right MLG, at intervals not to exceed 2400 hours air time or 12 months, whichever occurs first, the inspection of the cam assemblies and the alternate release cable assemblies, in accordance with Section 3.B. Part A of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-159, dated 28 June 2019, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

If any discrepancy is discovered in the cam assemblies or alternate release cable assemblies, rectify before further flight, in accordance with Section 3.B. Part B of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-159, dated 28 June 2019, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

For aircraft that were inspected in accordance with Section 3.B. Part A of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-159, dated 28 June 2019 prior to the effective date of this AD, repeat the inspections mandated by Part II of this AD within 2400 hours air time or 12 months, whichever occurs first, from the effective date of this AD.

Part III – Replacement of Left and Right MLG Alternate Release Cable Assemblies

Within 5500 hours air time or 30 months, whichever occurs first, from the effective date of this AD, replace the left and right MLG alternate release cable assemblies P/N 48503-3 with the redesigned alternate release cable assembly P/N 48503-5, in accordance with Section 3.B. of the Accomplishment Instructions of De Havilland Aircraft of Canada SB 84-32-172, dated 16 August 2022, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part III of this AD constitutes terminating action only for the repeat inspections of the alternate release cable assemblies required by Part II of this AD.

Part IV – Parts Installation Prohibition

As of the effective date of this AD, it is prohibited to install the alternate release cable assembly P/N 48503-3 as a replacement part on De Havilland Aircraft of Canada model DHC-8-401 and DHC-8-402 aeroplanes.

Part V – Maintenance Task Requirement

As of the effective date of this AD, when installing an MLG AES cam assembly and/or installing an alternate release cable assembly, the following Aircraft Maintenance Manual tasks must be used:

- A. Task 32-34-16-400-804 Installation of the Alternate Extension Cables – Center Fuselage to Nacelle, dated 5 September 2021, or later revisions approved by Transport Canada.
- B. Task 32-34-26-400-801 Installation of the MLG Alternate-Extension Cam-Mechanism Assembly, dated 5 September 2021, or later revisions approved by Transport Canada.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 16 December 2022

Contact:

Mihaela Kramer, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca or any Transport Canada Centre.