



# 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-2024-01

**Effective Date:**

25 January 2024

**ATA:**

32

**Type Certificate:**

A-142

**Subject:**

Landing Gear – Main Landing Gear – Brake Fuse/Shuttle Valve Assembly – Failure Caused by Assembly Error

**Applicability:**

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

**Compliance:**

As indicated below, unless already accomplished.

**Background:**

An in-service event was reported where the crew received a #2 isolation valve (ISO #2) caution message followed by a #1 isolation valve (ISO #1) caution message. After the caution lights illuminated, it was noted by the crew that the pressure on both systems still showed normal (3000 psi). The landing gear was extended via an alternate extension system as the crew prepared for landing. Upon landing, the crew used the parking (emergency) brake to stop the aeroplane. The aeroplane stopped safely within the runway limits.

Subsequent maintenance activity discovered an external leak from the Main Landing Gear (MLG) brake assembly and it was found that the fuse/shuttle valve assembly did not function properly.

Further investigation revealed that the fuse/shuttle valve assembly failure resulted from a factory assembly error which occurred on a limited number of fuse/shuttle valves. The assembly error can cause valve deformation leading to premature wear, and eventually fuse/shuttle valve failure.

This issue, if not corrected, could result in the loss of powered landing gear extension/retraction, outboard and inboard spoilers, nose wheel steering, normal braking, and possibly a runway excursion.

To address this unsafe condition, this AD mandates a De Havilland Aircraft of Canada Limited (DHC) Service Bulletin (SB) to inspect fuse/shuttle valve serial numbers, and if the fuse/shuttle valve is listed as a potentially affected unit, to remove and replace the fuse/shuttle valve.

**Corrective Actions:**

- A. Within 8000 hours air time, or 48 months, whichever occurs first, from the effective date of this AD, perform an inspection of the fuse/shuttle valve assembly serial numbers in accordance with Section 3.B. of the Accomplishment Instructions of DHC SB 84-32-175, Initial Issue, dated 1 September 2023 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- B. If any fuse/shuttle valve assemblies with the listed serial numbers are found during the inspection in paragraph A above, remove and replace the affected fuse/shuttle valve before the next flight in accordance with Section 3.B. of the Accomplishment Instructions of DHC SB 84-32-175, Initial Issue, dated 1 September 2023 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

**Authorization:**

For the Minister of Transport,

*ORIGINAL SIGNED BY*

Jenny Young  
Chief, Continuing Airworthiness  
Issued on 11 January 2024

**Contact:**

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