



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-2018-34

Effective Date:

31 December 2018

ATA:

27

Type Certificate:

A-142

Subject:

Flight Controls – Elevator Power Control Unit Bracket Cracking

Applicability:

Bombardier Inc. model DHC-8-400, -401 and -402 aeroplanes, serial numbers 4001 through 4580

Compliance:

As indicated below, unless already accomplished.

Background:

There have been five in-service reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar, and two reports of cracking on the elevator front spar. In one case, the PCU bracket cracking led to detachment of the bracket during pushback. An investigation found that the force-flight loads induced by elevator PCUs not rigged to the required tolerance is the common factor in cracking of both the elevator PCU bracket and of the elevator front spar. A secondary contributor to the elevator PCU bracket cracking is the bracket flange preload that may be induced during production installation. Failure of an elevator PCU bracket or progression of the elevator front spar cracking into two segments may cause the affected elevator to jam. Failure of an elevator bracket on both elevators, or progression of elevator front spar cracking into two segments on both elevators, could cause a loss of aeroplane pitch control.

This AD mandates a one-time inspection of the elevator PCU brackets, the horizontal stabilizer rear spar and elevator front spar with reporting of inspection findings. Any brackets found cracked are to be replaced with new brackets with improved strength. For any spar found cracked, obtain instructions to repair the spar from Bombardier and repair the spar accordingly. Additional corrective action may be considered depending on the results of the inspections findings.

Corrective Actions:

1. Within the compliance time indicated below, inspect the elevator PCU brackets, horizontal stabilizer rear spar and elevator front spar for cracks in accordance with the accomplishment instructions of Bombardier Inc. Service Bulletin (SB) 84-55-09, Initial Revision, dated 7 June 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. Replace any brackets found cracked in accordance with the above-mentioned SB before further flight. For any cracks or damage found on either spar, contact Bombardier for an approved repair and incorporate the repair before further flight.

Complete the inspection indicated above no earlier than 7500 total hours air time but before accumulating an additional 8000 hours air time from the effective date of this AD.

2. Within 30 days of completing the inspection indicated above, report inspection findings to Bombardier Inc. in accordance with the applicable instructions of SB 84-55-09, Initial Revision, dated 7 June 2018, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 17 December 2018

Contact:

Daniel Gosselin, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.

SUPERSEDED