



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-2014-02R1

Effective Date:

6 October 2015

ATA:

27

Type Certificate:

A-131

Subject:

Flight Controls – Rudder Control System – Cracking of the Pilot-Side Rudder Pedal Tubes

Revision:

Supersedes AD CF-2014-02, issued 8 January 2014.

Applicability:

Bombardier Inc.:

Model CL-600-2C10 aeroplanes, serial numbers 10002 through 10340;
Model CL-600-2D15 & CL-600-2D24 aeroplanes, serial numbers 15001 through 15318;
Model CL-600-2E25 aeroplanes, serial numbers 19001 through 19039.

Compliance:

As indicated below, unless already accomplished.

Background:

There have been two in-service reports of fracture of the rudder pedal tubes installed on the pilot-side rudder bar assembly on CL-600-2B19 model aeroplanes.

Laboratory examination of the fractured rudder pedal tubes found that in both cases, the fatigue cracks initiated at the aft taper pin holes where the connecting rod fitting is attached. Fatigue testing of the rudder pedal tubes confirmed that the fatigue cracking is due to loads induced during parking brake application. Therefore, only the rudder pedal tubes on the pilot's side are vulnerable to fatigue cracking as the parking brake is primarily applied by the pilot.

Loss of pilot rudder pedal input during flight would result in reduced yaw controllability of the aeroplane. Loss of pilot rudder pedal input during takeoff or landing may lead to a runway excursion.

Although there have been no reported failures to date on any CL-600-2C10, -2D15, -2D24 and -2E25 model aeroplanes, the same torque tubes part number (P/N) 600-90204-3 are installed which may be prone to premature fatigue cracking.

The original issue of this AD mandated initial and repetitive inspections of the pilot-side rudder pedal tubes, P/N 600-90204-3, until the terminating action is accomplished.

Revision 1 of this AD is issued to remove the aeroplanes from the Applicability section of the AD that have already incorporated the terminating action during production.

Corrective Actions:

Part I – Initial Inspection

- A. Prior to accumulating 26 000 total flight cycles, perform a Detailed Visual Inspection (DVI) or eddy current inspection of both pilot side rudder pedal tubes in accordance with the Accomplishment Instructions in Part A of the Bombardier Service Bulletin (SB) 670BA-27-065, Revision A, dated 22 December 2014, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

- B. If a crack is found around the aft tapered holes, before further flight, replace the rudder bar assembly in accordance with the Accomplishment Instructions in Part B of the above-mentioned SB.
- C. If any other damage is found, contact the Bombardier Technical Help Desk for a Transport Canada approved repair and incorporate the repair before further flight. The approved repair must specifically reference this AD.
- D. If no cracks or damage are found, repeat the inspection of the pilot-side rudder pedal tubes in accordance with Part II of this AD until the terminating action in Part III of this AD is accomplished.

Inspection and rectification of both pilot-side rudder pedal tubes, as required, in accordance with the Accomplishment Instructions of the Bombardier SB 670BA-27-065, Initial Issue, dated 15 November 2013, prior to the effective date of this AD, also meets the requirements of Part I of this AD.

Part II – Repetitive Inspections

- A. Perform a DVI or eddy current inspection of the pilot-side rudder pedal tubes in accordance with the Accomplishment Instructions in Part A of Bombardier SB 670BA-27-065, Revision A, dated 22 December 2014, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, in accordance with the following schedule:
 - 1. Within 750 flight cycles from the previous DVI inspection; or
 - 2. Within 1250 flight cycles from the previous eddy current inspection.
- B. If a crack is found around the aft tapered holes, before further flight, replace the rudder bar assembly in accordance with the Accomplishment Instructions in Part B of the above-mentioned SB.
- C. If any other damage is found, contact the Bombardier Technical Help Desk for a Transport Canada approved repair and incorporate the repair before further flight. The approved repair must specifically reference this AD.
- D. If no cracks or damage are found, repeat the inspections of the pilot-side rudder pedal tubes in accordance with Part II of this AD until the terminating action in Part III of this AD is accomplished.

Part III – Terminating Action

Replacement of both pilot-side rudder bar assemblies in accordance with the Accomplishment Instructions in Part B of Bombardier SB 670BA-27-065, Revision A, dated 22 December 2014, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada, constitutes terminating action for the inspections in Part I & II of this AD.

Replacement of both pilot-side rudder bar assemblies in accordance with the Accomplishment Instructions in Part B of Bombardier SB 670BA-27-065, Initial Issue, dated 15 November 2013, prior to the effective date of this AD, also constitutes terminating action for the inspections in Part I & II of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 23 September 2015

Contact:

Anthony Wan, Continuing Airworthiness, Ottawa, telephone 613-952-4357, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.

