



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-2017-09

Effective Date:

8 March 2017

ATA:

27

Type Certificate:

A-131

Subject:

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

Applicability:

Bombardier Inc aeroplanes:

Model CL-600-1A11, serial number 1004 to 1085
Model CL-600-2A12, serial number 3001 to 3066
Model CL-600-2B16, serial number 5001 to 5194
Model CL-600-2B16, serial number 5301 to 5665
Model CL-600-2B16, serial number 5701 to 5988
Model CL-600-2B16, serial number 6050 to 6099

Compliance:

As indicated below, unless already accomplished.

Background:

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

This AD mandates initial and repetitive inspections of both pilot-side rudder pedal tubes, part number (P/N) 600-90204-3 until the terminating action in Part III of this AD is accomplished.

Corrective Actions:

Part I - Initial Inspection

- A. 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 applicable Bombardier Service Bulletin (SB) shown in Table A below, or later revisions of these SBs approved by the Chief, Continuing Airworthiness, Transport Canada:

Table A

Aeroplane Model	Applicable Service Bulletin
Model CL-600-1A11, serial numbers - 1004 through 1085	600-0770, Revision 01, dated 31 March 2016
Model CL-600-2A12, serial numbers - 3001 through 3066	601-0643, Revision 01, dated 31 March 2016
Model CL-600-2B16, serial numbers - 5001 through 5194	601-0643, Revision 01, dated 31 March 2016
Model CL-600-2B16, serial numbers - 5301 through 5665	604-27-037, Basic issue, dated 31 March 2016
Model CL-600-2B16, serial numbers - 5701 through 5988	605-27-008, Basic issue, dated 31 March 2016
Model CL-600-2B16, serial number 6050 to 6099	650-27-002, Basic issue, dated 30 June 2016

- B. The DVI or Eddy Current Inspection required by paragraph A above shall be performed according to the schedule in Table B below:

Table B

Initial Threshold	Phase-In Period
For aeroplanes with less than 8250 Flight Cycles (FC) since Entry into Service (EIS).	Before the aeroplane reaches 9000 FC since EIS.
For aeroplanes that have accumulated more than or equal to 8250 FC since EIS and less than 16625 FC since EIS.	Within 24 months or 750 FC, whichever occurs first from the effective date of this AD.
For aeroplanes with 16625 FC or more since EIS.	Within 12 months or 375 FC, whichever occurs first from the effective date of this AD.

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

Part II – Repetitive Inspection

- A. Perform a DVI or Eddy Current inspection of both pilot-side rudder pedal tubes in accordance with the Accomplishment Instructions in Part A of the applicable Bombardier Service Bulletin shown in Table C below, or later revisions of these SBs approved by the Chief, Continuing Airworthiness, Transport Canada:

Table C

Aeroplane Model	Applicable Service Bulletin	Repetitive Inspection interval
Model CL-600-1A11, serial numbers – 1004 through 1085	600-0770, Revision 01, dated 31 March 2016	
Model CL-600-2A12 – serial numbers – 3001 through 3066	601-0643, Revision 01, dated 31 March 2016	

Model CL-600-2B16, serial numbers - 5001 through 5194	601-0643, Revision 01, dated 31 March 2016	Every 600 FC if a DVI is performed, OR, Every 1000 FC if an Eddy Current Inspection is performed.
Model CL-600-2B16, serial numbers - 5301 through 5665	604-27-037, Basic issue, dated 31 March 2016	
Model CL-600-2B16, serial numbers - 5701 through 5988	605-27-008, Basic issue, dated 31 March 2016	
Model CL-600-2B16, serial number 6050 to 6099	650-27-002, Basic issue, dated 30 June 2016	

- B. If a crack is found around the aft tapered holes, before further flight, replace both rudder pedal bar assemblies in accordance with the Accomplishment Instructions in Part B of the applicable above-mentioned SB.
- C. If any other damage is found, contact the Bombardier Customer Response Center 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 is found, repeat the inspections of both 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 the SBs mentioned in Part I Table A and Part II Table C above constitutes the terminating action for the inspections in Part I & II of this AD.

Part B of SB 600-0770 Basic Issue, dated 31 August 2015 and Part B of SB 601-0643 Basic issue, dated 31 August 2015 do not constitute a terminating action to this AD. These earlier revisions of the SB's allow operators to replace cracked pilot side rudder pedal tubes with new parts, 600-90204-3. However, the replaced rudder pedal tubes shall be serialized and subjected to the inspection requirements in Part I – initial inspection and Part II – repeat Inspection.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 22 February 2017

Contact:

Craig McAllister, Continuing Airworthiness, Ottawa, telephone 1-888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.