



# AIRWORTHINESS DIRECTIVE

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*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-2019-11

**Effective Date:**

5 April 2019

**ATA:**

53

**Type Certificate:**

A-177

**Subject:**

Aft Fuselage – Rudder Quadrant Support Channel Cracking

**Applicability:**

Bombardier Inc. model BD-700-1A10 and BD-700-1A11 aeroplanes, serial numbers 9001 through 9844 and 9998.

**Compliance:**

As indicated below, unless already accomplished.

**Background:**

During maintenance, an operator discovered cracking on a channel within a structural support member for the rudder quadrant, rudder feel unit assembly, and environmental control system. Investigation by Bombardier determined that the observed cracking was the result of fatigue.

If allowed to propagate, cracking in the rudder quadrant support structure can lead to progressive deterioration in the performance of the systems it supports, which may eventually lead to uncommanded rudder movement and/or bleed air leakage.

To detect and correct any cracking before it affects the systems, this AD mandates initial and repetitive inspections of the affected area, as well as a modification to strengthen the structural member which terminates the inspection requirements.

**Corrective Actions:**

**Part I – Initial and Repetitive Inspection**

- A. For aeroplanes that have accumulated less than 2900 total flight cycles (FC) as of the effective date of this AD and do not meet the requirements of Part II of this AD, inspect the rudder quadrant box assembly in accordance with the Accomplishment Instructions of the applicable Bombardier Service Bulletin (SB), as shown in Table 1 below, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. Perform the initial inspection within the compliance time specified below, and thereafter at intervals not to exceed 1000 FC:
  - a. For aeroplanes that have accumulated less than 2000 total FC as of the effective date of this AD, complete an initial inspection within 1000 FC from the effective date of this AD.
  - b. For aeroplanes that have accumulated 2000 total FC or more but less than 2900 total FC as of the effective date of this AD, complete an initial inspection within 100 FC from the effective date of this AD.
- B. If a crack is found during any of the inspections required by Part I which exceeds the limits outlined within the applicable SB, complete Part II of this AD within 100 FC of the time of inspection.

**Table 1 – Inspection SBs**

<b>Aeroplane Model</b>	<b>Bombardier SB</b>	<b>Date</b>
BD-700-1A10	700-53-054, Basic Issue	1 October 2018
BD-700-1A10	700-53-6012, Basic Issue	1 October 2018
BD-700-1A11	700-1A11-53-029, Basic Issue	1 October 2018
BD-700-1A11	700-53-5013, Basic Issue	1 October 2018

**Part II – Modification to Rudder Quadrant Box Assembly**

- A. Perform the inspections, part replacements and reinforcements of the rudder quadrant box assembly in accordance with the Accomplishment Instructions of the applicable Bombardier SB, as shown in Table 2, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada within the following compliance times:
- For aeroplanes that have accumulated 2900 total FC or less as of the effective date of this AD, compliance with Part II paragraph A is required within 60 months or before accumulating 3000 total FC, whichever occurs first, from the effective date of this AD.
  - For aeroplanes that have accumulated more than 2900 total FC as of the effective date of this AD, compliance with Part II paragraph A is required within 100 FC or 12 months, whichever occurs first, from the effective date of this AD.
- B. Aeroplanes that have incorporated any of the following modifications, or later revisions of these modifications approved by the Chief, Continuing Airworthiness, Transport Canada, also meet the intent of Part II of this AD:
- Bombardier Inc. Repair Modification R700T400669 Revision C, dated 19 January 2018, or Revision G, dated 30 May 2018;
  - Bombardier Inc. In-Service Modification IS700-53-0024 Revision A, dated 24 July 2018;
  - Bombardier Inc. Service Request for Product Support Action (SRPSA) 000220372; or
  - SRPSA 000271526.

**Table 2 – Retrofit SBs**

<b>Aeroplane Model</b>	<b>Bombardier SB</b>	<b>Date</b>
BD-700-1A10	700-53-052, Basic Issue	1 October 2018
BD-700-1A10	700-53-6010, Basic Issue	1 October 2018
BD-700-1A11	700-1A11-53-027, Basic Issue	1 October 2018
BD-700-1A11	700-53-5011, Basic Issue	1 October 2018

- C. Completion of paragraph A or B of Part II terminates the initial and repetitive inspections required by Part I of this AD.

**Authorization:**

For the Minister of Transport,

*ORIGINAL SIGNED BY*

Rémy Knoerr  
Chief, Continuing Airworthiness  
Issued on 22 March 2019

**Contact:**

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