Transport Canada Transports Canada

TP 7245E

No. CF-2002-37 1/3

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AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to ***Canadian Aviation Regulation*** **(CAR) 593**. Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard**.

This AD has been issued by the Continuing Airworthiness Division (AARDG), Aircraft Certification Branch, Transport Canada, Ottawa, telephone (613) 952-4357.

Number: **CF-2002-37**

Subject: **Bombardier Challenger (CL-604) – Flap Vane Brackets**

Effective: 30 August 2002

Applicability: Bombardier Inc. "Challenger" CL-600-2B16 (CL-604); S/N 5301 to 5499

Compliance: When indicated unless already accomplished.

Background: The aircraft assembly procedures used when installing the flap actuator beam vane brackets, referred to as the flap vane brackets, may have resulted in gaps between flap vane brackets and the adjacent lower skin and between the flap vane brackets and the vane actuator beam. This condition could result in the premature development of cracks in the flap vane brackets and, if not corrected, lead to in flight loss of the flap vane and subsequent reduced controllability of the aircraft.

Corrective Actions:

1. Part A, Part B and Part C of this directive are to be accomplished in accordance with the procedures detailed in the Bombardier Alert Service Bulletin ASB A604-27-007 revision 01 dated 08 July 2002 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

PART A – Special Check – Visual Inspection

2. In accordance with the following schedule:

   (i) For aircraft with 3000 landings or more, before accumulating 50 landings from the effective date of this directive.

   (ii) For aircraft with more than 1200 landings but less than 3000 landings, before accumulating 100 landings from the effective date of this directive.

   (iii) For aircraft with 1200 landings or less, before accumulating 1300 landings.

   Cary out the following in accordance with the Accomplishment Instructions, paragraph 2 B. Part A of the above referenced applicable ASB:

   A. Conduct a visual inspection of the twelve (12) flap actuator beam vane brackets (Part Number 600-14306-1 and -2) for cracks.

   B. If a crack is found in any flap vane bracket, comply with either Part B or Part C of this directive before further flight.

   C. If no cracks are found in any flap vane brackets, repeat the visual inspection at intervals not exceeding 100 landings.

3. The initial and repeat visual inspections for the flap vane brackets under Part A of this directive do not alleviate the requirement to comply with the Aircraft Maintenance Manual (AMM), Time Limits/Maintenance Checks for the flap vane brackets.

4. Compliance with Part B or with Part C of this directive provides terminating action to the visual inspection requirements of Part A of this directive.

PART B – Special Check/Modification

5. In accordance with the following schedule:

   (i) For aircraft with 2000 landings or more, before accumulating 400 landings from the effective date of this directive.

   (ii) For aircraft with less than 2000 landings, before accumulating 600 landings from the effective date of this directive.

   Carry out the following in accordance with the Accomplishment Instructions, paragraph, 2.C, Part B, of the above referenced applicable ASB:

   A. Inspect and measure all flap vane brackets (Part Number 600-14306-1 and -2) for gaps between the vane brackets and the adjacent skin. If gaps in excess of 0.100 in. (2.54 mm) are measured, contact Bombardier for repair instructions.

   B. Inspect and measure all flap vane brackets (Part Number 600-14306-1 and -2) for gaps between the vane brackets and the vane actuator beam. If gaps in excess of 0.020 in. (0.51 mm) are measured, contact Bombardier for repair instructions.

   C. Measure the minimum edge distances (MED) for the fastener holes in all flap vane brackets and actuator beams. If the MED requirements for any brackets or actuators do not meet the allowable values in Figure 2 of the applicable ASB, replace the out-of-tolerance brackets and/or actuator beams.

   D. Carry out a nondestructive test (NDT) inspection of flap vane brackets as detailed in Figure 1 of the applicable ASB and in CL-604, Non-Destructive Testing Manual, Part 6, Chapter 57-53-01.

   E. Replace any flap vane brackets that have cracks in accordance with paragraph 2.D of the applicable ASB. Ensure that the MED for the replacement brackets meet the requirements of Figure 2 of the applicable ASB.

   F. Remove any gaps between the flap vane brackets and the adjacent skin and between the flap vane brackets and the vane actuator beam for both the brackets that were not cracked and those that were installed under paragraph 5.E. of this directive.

6. Following completion of the checks and modifications under Part B of this directive, comply with the applicable, flap vane bracket Time Limits/Maintenance Checks inspection task at the interval determined from Part D of this directive.

PART C – Vane Bracket Replacement

7. Compliance with Part C of this directive, in accordance with the compliance schedule for Part B of this directive, provides an alternate means of compliance with Part B of this directive.

8. Replace the twelve (12) flap vane brackets (P/N 600-14306-1 and -2) in accordance with the Accomplishment Instructions, paragraph 2.F., Part C of the above referenced ASB. Ensure that the minimum edge distances (MED) for the fastener holes in all replacement flap vane brackets and in the actuator beams meet the dimension requirements of Figure 2 of the applicable ASB. Replace any actuator beams and reject any brackets that are out-of –tolerance. Remove any gaps between the flap vane brackets and the adjacent skin and between the flap vane brackets and the vane actuator beam.

9. Following replacement of the flap vane brackets under Part C of this directive, comply with the applicable, flap vane bracket Time Limits/Maintenance Checks inspection task at the interval determined from Part D of this directive.

PART D – Time Limits/Maintenance Checks

10. Following compliance with Part B or Part C of this directive, determine from the following Table, the threshold and repeat inspection intervals for the Time Limits/Maintenance Checks for the flap vane brackets.

Condition of Brackets and Gaps	**TLMC Threshold / Repeat Interval**
No gaps or cracks in all original vane brackets, or No gaps or cracks in some and all other vane brackets replaced.	Continue using existing TLMC brackets schedule as published in the AMM.
All 12 flap vane brackets replaced.	New threshold of 7200 landings from installation of new flap vane brackets. Repeat inspection remains at 1800 landings.
No cracks in any flap van brackets but shims added.	Repeat inspections remain at 1800 landings from rework.

PART E - Compliance with Basic Issue of ASBs

11. Aircraft that have been inspected and modified in accordance with Part B of ASBs A604-27-007 dated 29 November 2001 and meet the minimum edge distance (MED) dimension checks for the flap brackets and the actuator beams as specified in drawing K600-14251, including any required rework, meet the requirements of Part C of this directive. The aircraft to which this compliance is applicable are listed in paragraph 1.C. of ASB-A604-27-007 Revision 01 dated 08 July 2002.

Authorization: For Minister of Transport

for B. Goyaniuk
Chief, Continuing Airworthiness

Contact: Mr. Ian McLellan, Continuing Airworthiness, Ottawa, telephone (613) 952-4362, facsimile (613) 996-9178 or e-mail mclelli@tc.gc.ca or any Transport Canada Centre.