



No.	CF-2001-43	1/4
Issue Date	23 November 2001	

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-2001-43

Subject: Bombardier DHC-8 - De-Icing Boot Patch Limits

Effective: 28 December 2001

Applicability: Bombardier Inc. DHC-8 Series 100, 200 and 300.

Compliance: As indicated below, unless already accomplished.

Background: The Bombardier Aircraft Maintenance Manuals (AMM) have been revised to include new limits for the size and number of patches that can be used for repair of wing leading edge de-icer boots. Exceeding these limits, which are based on the aerodynamic smoothness of the boots, may adversely impact the stall margin of the aircraft.

Corrective Actions:

1. Within 60 days from the effective date of this directive, perform a one-time visual inspection of the wing leading edge de-icer boots to determine compliance with the repair patch limits for the wing critical zone. The applicable repair patch limits for the critical zone were most recently published in the Bombardier Aircraft Maintenance Manuals at the revisions detailed below:

Aircraft Series Maintenance Manual Revision

Series 100	PSM 1-8-2, Revision 49, dated 3 October 2001; Chapter 30-10-48
Series 200	PSM 1-82-2, Revision 11, dated 19 October 2001; Chapter 30-12-00
Series 300	PSM 1-83-2, TR 30-21, dated 30 October 2001; Chapter 30-10-48

2. For those aircraft with wing de-icer boots which exceed the patch size and/or patch number limits in the critical zone defined in the above-mentioned AMM Chapters, perform the following:
 - (a) Before the next flight after assessing the boots, insert a copy of this directive in the front of the Aircraft Flight Manual (AFM) and advise flight crews of the performance penalties detailed in the table below:

AFM Sections	AFM Limits With De-Ice Boot Patch Limits Exceeded
	Note: Flap settings as applicable to aircraft model.
T/O Speed: Sub-Section 5-2	
V ₁ , V _r & V ₂	Add: 5 kt (flap 0°) 5 kt (flap 5°) 5 kt (flap 10°) 5 kt (flap 15°)
Final T/O Climb Speed	Add: 5 kt (flap 0°)

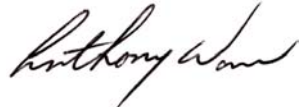
AFM Sections	AFM Limits With De-Ice Boot Patch Limits Exceeded Note: Flap settings as applicable to aircraft model.
<u>T/O WAT Limit:</u> Sub-section 5-3 Note: Weight reduction not required when limited by maximum structural weight.	<i>Subtract:</i> 180 kg, 400 lb. (flap 0°) 90 kg, 200 lb. (flap 5°) No change (flap 10°) No change (flap 15°)
<u>T/O Climb:</u> Sub-Section 5-4 1 st Seg. Gradient 2 nd Seg. Gradient Final Seg. Gradient	<i>Subtract:</i> 0.008 (flap 0°) 0.004 (flap 5°) 0.004 (flap 10°) 0.004 (flap 15°) <i>Subtract:</i> 0.005 (flap 0°) 0.002 (flap 5°) 0.002 (flap 10°) 0.002 (flap 15°) <i>Subtract:</i> 0.009 (flap 0°)
<u>T/O Field Length:</u> Sub-Section 5-5 TOR, TOD & ASD	<i>Add:</i> 16% (flap 0°) 16% (flap 5°) 16% (flap 10°) 16% (flap 15°)
<u>Net T/O Flight Path:</u> Sub-Section 5-6 Ref Gradient 4 th Seg. Net Gradient Flap Retraction Initiation Speed	<i>Subtract:</i> 0.005 (flap 0°) 0.002 (flap 5°) 0.002 (flap 10°) 0.002 (flap 15°) <i>Subtract:</i> 0.012 (flap 0°) <i>Add:</i> 5 kt (flap 5°) 5 kt (flap 10°) 5 kt (flap 15°)

AFM Sections	AFM Limits With De-Ice Boot Patch Limits Exceeded Note: Flap settings as applicable to aircraft model.
<u>Enroute Climb Data:</u> Sub-Section 5-7 Enroute Climb Speed: Net Climb Gradient OEI-Climb Ceiling	<i>Add:</i> 5 kt <i>Subtract:</i> 0.004 <i>Subtract:</i> 1200 ft
<u>Landing Speed:</u> Sub-Section 5-8 Approach, Go-around & Vref . .	<i>Add:</i> 5 kt (flap 5°) 5 kt (flap 10°) 5 kt (flap 15°) 5 kt (flap 35°)
<u>Landing WAT Limit:</u> Sub-Section 5-9 Note: Weight reduction not required when limited by maximum structural weight.	<i>Subtract:</i> 860 kg, 1900 lb. (flap 10°) 225 kg, 500 lb. (flap 15°) 180 kg, 400 lb. (flap 35°)
<u>Landing Climb Data:</u> Sub-Section 5-10 Approach Gross Climb Gradient Balked Landing Gross Climb Gradient	<i>Subtract:</i> 0.010 (flap 5°) 0.003 (flap 10°) 0.002 (flap 15°) <i>Subtract:</i> 0.035 (flap 10°) 0.017 (flap 15°) 0.016 (flap 35°)
<u>Landing Field Length:</u> Sub-Section 5-11	<i>Add:</i> 23% (flap 10°) 16% (flap 15°) 10% (flap 35°)

AFM Sections	AFM Limits With De-Ice Boot Patch Limits Exceeded Note: Flap settings as applicable to aircraft model.
<u>Brake Energy:</u> Sub-Section 5-12 Accel/Stop B.E. Landing B.E.	Add: 7% (flap 0°) 7% (flap 5°) 7% (flap 10°) 7% (flap 15°) Add: 30% (flap 10°) 20% (flap 15°) 8% (flap 35°)

- (b) Within 24 months of the effective date of this directive, replace any wing de-icer boot(s) that exceed(s) the critical zone repair limits.
- (c) When the wing de-icer boots for both wings are within the repair limits for the critical zone, remove the copy of this directive that was inserted in the AFM in accordance with Paragraph 2(a) above.
3. From the effective date of this directive, no person shall install de-icer boot patches in the critical zone of the wing de-icer boots that exceed the AMM limits referenced in paragraph 1 of this directive.

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.