

# ADVISORY WIRE

## AW700-34-0247

**DATE:** 21 November 2008

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**FROM:** BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

### ADVISORY WIRE

**REFERENCE NO:** AW700-34-0247

**SUBJECT:** FMS TOLD - Brake Temperature Indication

**EFFECTIVITY:** BD700-1A10 (9002 - 9999)  
BD700-1A11 (9127 - 9999)

**ATA:** 34-61

**This Advisory Wire contains Operational Information**

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### 1.0 REFERENCES:

- 1.1 Global 5000 Airplane Flight Manual (AFM), CSP700-500-1, and Global Express Airplane Flight Manual (AFM), CSP700-1 and CSP700-1A (Available on CIC Website).
- 1.2 Global 5000 Flight Crew Operating Manual (FCOM), CSP700-5000-6 and Global Express Flight Crew Operating Manual (FCOM), CSP700-6 (Available on CIC Website).

### 2.0 INTRODUCTION:

This Advisory Wire is to inform Flight Crews of an observation made where the Brake Temperature indication is different between the Flight Management System (FMS) Take-off and Landing Data (TOLD) calculation and the actual brake temperature.

### 3.0 DESCRIPTION:

Recently, an Operator reported that while performing the TOLD calculation using the FMS, the BRAKE TEMP indication on "TAKEOFF INIT" page 3/6 was lower than the highest Brake Temperature Monitor System (BTMS) temperature displayed on the Status Synoptic Display. Further investigation revealed that the FMS is displaying the highest temperature of the left outboard or right inboard wheel brake temperature sensor without considering all four wheel brake temperature sensors. The FMS uses the brake temperature information to determine the Take-off Weight Limited by Brake Energy Available, per Figure 06-03-2 of the Reference 1.1 AFM, in Chapter 6 – Performance.

The FMS design assumes that both Inboard and Outboard brake temperatures on each wheel assembly to be approximately same temperature value. Therefore, the FMS requires only one brake sensor per side to determine this limiting weight. As a result, with the current design, any large discrepancies between the left and right landing gear are accounted for in the calculation, however, large differences between paired wheel brakes assemblies are not accounted for by the FMS. Subsequently, these temperature differences may go unnoticed by the flight crews when inserting TOLD information.

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### 3.0 DESCRIPTION cont:

Flight Crews are reminded that the BTMS indication displayed on the Status Synoptic Display is the approved source for field performance calculations. If there are any discrepancies between the FMS BRAKE TEMP indication and the BTMS display, then the takeoff calculations must be based on the highest indicated brake temperature. Flight crews are further reminded of the Reference 1.1 AFM, Supplement 9 Limitation for Flight Management System Take-Off and Landing Data (TOLD), which states that the FMS TOLD computed V speeds, Engine Pressure Ratio (EPR) values and distances must be verified with the AFM or other approved documents prior to acceptance.

Finally, while it is considered acceptable to experience a significant temperature differences between the left and right landing gear assemblies, it is not normal for there to be such large differences between paired wheel brake assemblies. Therefore, if operators note significant temperatures differences between paired wheel brake assemblies, maintenance action may be required to resolve the reason for the difference.

In order to ease operation, FMS software version 6.1 logic will use all four wheel brake temperature sensors which will be available in the upcoming IAC Batch 3 software upgrade introduced by Service Bulletin SB 700-31-030 and SB 700-1A11-31-01, scheduled for release early 2009.

### 4.0 ACTION:

Flight Crews should be aware of the observations described above and are reminded to adhere to the respective procedures in the Reference 1.1 AFM and 1.2 FCOM for performance calculations. Also a reminder that the Brake Temperature readout on the Status Synoptic Display is the approved source for field performance calculation.