Customer Services

Advisory Wire

REFERENCE NO:	AW700-32-0359, Rev 02	INFORMATION TYPE:	Maintenance Operational
ATA:	32-43	EFFECTIVITY:	Global Express / XRS (9002 - 9312, 9314 - 9380, 9384 - 9429) Global 5000 (9127 - 9383, 9389 - 9400, 9404 - 9431 and 9998) Global 5000 feat. Vision Flight Deck (9386, 9401, 9445 - 9862, and 9868 - 9997) Global 6000 (9313, 9381, 9432 to 9860, 9863 - 9871, 9873 - 9997 and 60005 - 61999) Global 5500, Global 6500 (9861, 9872, 60001 - 61999)
SUBJECT:	**Brake Control System – Data Gathering to Reduce the Brake Control Unit (BCU) No-Fault-Found (NFF) rate**		

1. REFERENCES:

   1.1. Advisory Wire AW700-32-0244 Rev 2, Operational Procedures to Prevent Freezing Brakes

   1.2. Advisory Wire AW700-32-0513 Rev 1, Wheel Speed Transducer – Brake System Nuisance Fault Messages

   1.3. SmartFix™ Plus (available on the CIC website: http://cic.bombardier.com)

   1.4. Detailed GX Brake System Troubleshooting Report, (available in SmartFix™ Plus procedure for the related brake EICAS messages

2. INTRODUCTION:

   This Advisory Wire is being updated to Revision 02 to add aircraft models and serial numbers to the effectivity.

   This Advisory Wire is to advise Operators on the action taken by Bombardier in order to improve the reliability and reduce the number of No Fault Found (NFF) of the Brake Control System (BCS).

   The Brake Control Unit (BCU) has been identified as having a high NFF rate on the Global. Several factors are attributed to this condition:

   - Low reliability of some BCS parts
   - Misleading troubleshooting information reported to CAIMS or the OMS by the BCU
   - Occasional multi-parts removal for a single issue, (Shotgun approach), and inadequate troubleshooting by Operators

   This Advisory Wire also contains a list of actions to be taken by the operators, listed in section 4.0 of this AW, in the event of a tire burst, a BRAKE FAULT and/or BRAKE 50% DEGRADED message posted on Engine Indication and Crew Alerting System (EICAS)

3. DESCRIPTION:

Bombardier Engineering along with the vendor are requesting more information regarding the aircraft status when the following messages are posted on the EICAS.

BRAKE FAULT:

The BRAKE FAULT message is posted when there is a discrepancy between the input provided to both channels of the BCU or loss of ARINC communication between the BCU and the DAU/DMC (i.e.: A single channel failure of any of the Brake system components). All BRAKE FAULT events should be troubleshot in accordance with SmartFix™ plus procedures. It is to be noted that a nuisance BRAKE FAULT CAS message could be induced on aircraft equipped with Wheel Speed Transducer GW415-1050-7, as described in ref.1.2 advisory wire (AW700-32-0513).

BRAKE 50% DEGRADED:

The BRAKE 50% DEGRADED indicates that the Inboard or outboard SOV has been closed for one of the following reasons:
Shutoff valve failure Channel A and B
Pressure greater than commanded on one Brake Control Valve (BCV) Channel A and B
Any BCV failures Channel A and B

- A failure of the BCU Pressure Pulse test, caused by pressure more than commanded on one wheel when lowering the Gears

BRAKE 50% DEGRADED should be troubleshot in accordance with the SmartFix™ Plus.

TIRE BURST:

Although rare, Main Landing Gear tire burst may happen and can be caused by one of the following conditions:

- Frozen Brake (refer to AW700-32-0244)
- Uncommanded braking from the BCU
- Faulty Brake Control Valve

4. ACTION:

Before removing any BCS parts, Bombardier is requesting that a GX Brake System Troubleshooting Report sheet be filled and forwarded to your Bombardier Field Service Representative (FSR) or the Bombardier Customer Response Center (CRC) at ac.yul@aero.bombardier.com.

The information contained in this report will allow Bombardier to gather data on the reported issues and assist in the troubleshooting if required.

The GX Brake System Troubleshooting Report sheet is available in the SmartFix™ Plus procedure under BRAKE FAULT, BRAKE 50% DEGRADED EICAS messages. The information requested in this questionnaire includes:

- Fault Warning Computer CAS messages download
- GX BCU Brake System Troubleshooting Report sheet including:
  - CAIMS / OMS messages
  - CAIMS / OMS fault history regarding Brake System
  - Weather and outside temperature during pre-flight
  - When did the issue happen? (Take-off, Taxi, cruise, Landing, Gear down selection)
  - Troubleshooting performed
  - Any maintenance performed on the brake system prior to the flight on which the message was posted?
- BCU NVM download
- FDR or QAR (if available) download of the last three flights

This information will be forwarded to engineering for analysis.

At the same time, Bombardier will keep working with the vendor to insure that their internal troubleshooting processes will detect all types of failures whether intermittent or permanent.

Should you have any questions or require more information, please contact your Field Service Representative (FSR) or the Customer Response Center (CRC).