

# ADVISORY WIRE

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REFERENCE NO:	AW700-32-0581	INFORMATION TYPE:	Maintenance Operational
ATA:	32-43	EFFECTIVITY:	Global Express (9002 to 9153)
SUBJECT:	<b>Wheel Speed Transducer (WST)</b>		Global 5000 (9127 to 9413, 9415 to 9442, 9998)
			Global Express XRS (9159 to 9431)
			Global 5000 feat. Bombardier Vision (9386, 9401, 9445 to 9997)
			Global 6000 (9313, 9381, 9432 to 9997)

## 1. REFERENCES:

- 1.1 Advisory Council item # 32-34-M-989, voted at meeting #34 (October 2016)
- 1.2 Rework - Brake Control System – Application of Sealant at the Axle Trailing Arm and Wheel Speed Transducer-Harness. Service bulletin SB 700-32-028 Rev.: 1, 700-1A11-32-015 Rev.:1, 700-32-5010 Rev.:1 and 700-32-6010 Rev.:1. Released April 1, 2015
- 1.3 Advisory Wire AW700-32-0573, Basic issue released September 13<sup>th</sup>, 2016 - Main Landing Gear Trailing Arm Water Ingress Survey

## 2. INTRODUCTION:

This Advisory Wire is to inform operators of a series of Wheel Speed Transducer (WST) atypical failures that occurred on Global aircraft.

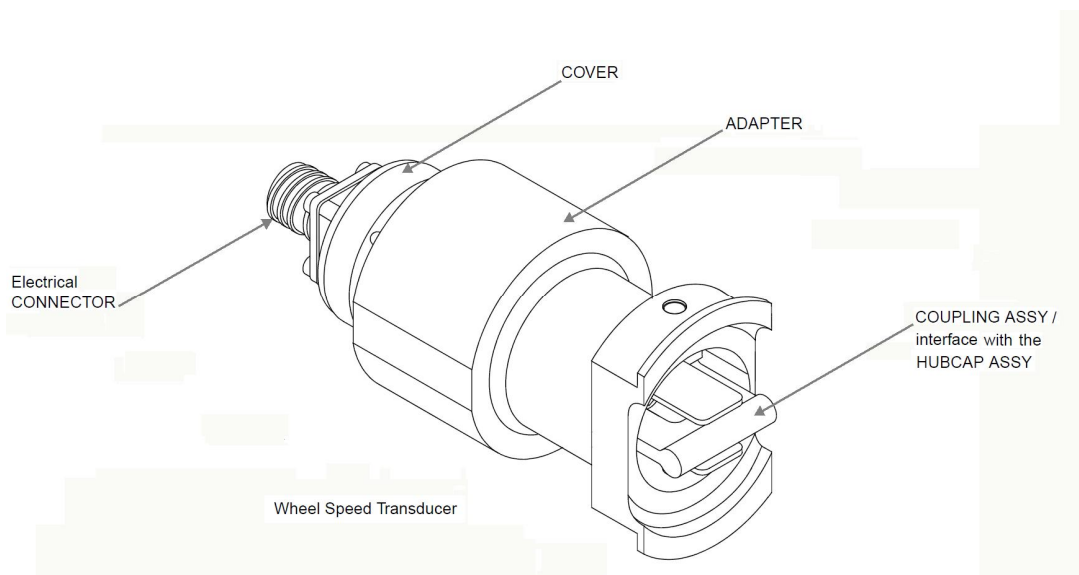
## 3. DESCRIPTION:

Recently, Bombardier has seen an increase in reported in service cases of atypical WST failures. The latest event occurred on landing when the crew was alerted by a R OUTBD BRAKE FAIL (caution) message on the Engine Indication and Crew Alerting System (EICAS). The Flight Crew achieved an uneventful landing. After landing, inspection revealed that the WST (MLG OUTBOARD) electrical harness had sheared from the WST inside the landing gear axle. It appears that the WST cover, including the electrical connector, had rotated causing the harness to spin and shear.

There have been three (3) other WST events of this type since January 2016 on the Global Express that resulted in the replacement of the electrical harness. Bombardier has also been informed of a fifth event where the WST Hub Cap Assembly was damaged, the condition of the unit revealed that the WST shaft had locked causing the WST Spring Coupling Assembly to break.

In all cases, there was no collateral damage to the Gear Axle or Landing Gear Assembly. The WST and wiring harness or Hub Cap were replaced and the aircraft were returned to service.

The Wheel Speed Transducer was voted as part of the TOP 20 issues at the last Advisory Council meeting. (Ref: 1.1)



Preliminary observation indicates that only the WST's BA Part Number GW415-1050-7 and GW415-1050-9 located at the LH or RH OUTBOARD position are impacted, regardless of SB (Ref 1.2) incorporation.

The Failure Analysis Reports (FAR) provided by the vendor did not reveal a single root cause that can be attributed to all failures. In some cases, insufficient torqueing of the adapter or lack of application of loctite may have caused the rotation of the cover. However, in all cases, traces of water have been found inside the analyzed WSTs.

Bombardier has launched an investigation into these events and is focusing on water infiltrating in the landing gear trailing arm. Although not confirmed, Bombardier is suspecting that the presence of water in the axle may contribute to this failure mode.

Bombardier is working with the respective supplier in order to determine the root cause.

#### 4. ACTION:

There is no a particular action required at this time. However, BA reminds operators that have complied with the SB (Ref 1.2) to report your findings as instructed by the Advisory Wire AW700-32-0573 (Ref 1.3). We also suggest that flight crews review the appropriate non-normal Airplane Flight Manual (AFM) procedures associated with a L/R OUTBD BRAKE FAIL.

Should you have any technical queries pertaining to this Advisory Wire please contact your local Field Service Representative (FSR).