

# ADVISORY WIRE

## AW300-34-0139, Rev. 3

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**FROM:** BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

### ADVISORY WIRE

**REFERENCE NO:** AW300-34-0139, Rev. 3

**SUBJECT:** Loss of GPS Signal in Flight

**EFFECTIVITY:** Challenger 300 aircraft (20003 to 20999)

**ATA:** 34-55

**This Advisory Wire contains Operational and Maintenance Information**

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### 1.0 REFERENCES:

- 1.1 AW300-34-0139 basic issue released March 16, 2011
- 1.2 AFM TR-60
- 1.3 FCOM TR-27
- 1.4 QRH TR-12
- 1.5 Recommended Service Bulletin 100-34-35 (Released April 5, 2012)
- 1.6 Rockwell Collins Recommended Service Bulletin GPS-4X00()-34-503

### 2.0 INTRODUCTION:

Revision 3 to this Advisory Wire (AW) is to provide Operators with the final update to this issue and provide details about the Ref. 1.5 bulletin that introduces the solution to this issue.

### 3.0 DESCRIPTION:

Some Operators reported to Bombardier where they experienced loss of satellite reception on both GPSs during flight. Crew noticed that the GPS was showing "acquisition mode", but was not able to acquire any satellite signal. Although not an AFM procedure, resetting the breakers did recover both GPSs to normal operation in all cases.

As an interim measure, the Ref. 1.2, 1.3, 1.4 temporary revisions to the AFM, FCOM and QRH, which allow the Flight Crew to reset the GPS circuit breakers during flight, were released May 30, 2011.

Note that the time it takes to reset the circuit breakers allows adequate time for the GPS signal recovery. In all reported events, when this procedure was used, GPS signal was fully recovered. A recovery could take between 2 and 15 minutes.

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The Rockwell Collins investigation has determined the root cause. The issue occurs when the GPS 4000S tracks satellites that are below the local horizon line in areas covered by satellite PRN 133. In this rare case, the software is unable to process the satellite information correctly and causes the GPS receiver to lock up.

The Ref. 1.6 bulletin introduces a software update to the GPS-4000S receiver to prevent lockup. The modification will change P/N 822-2189-002 to P/N 822-2189-004.

#### **4.0 ACTION:**

Operators whose aircraft are equipped with GPS 4000S P/N 822-2189-002 installed by Service Bulletin 100-34-23 should comply with the Ref. 1.5 bulletin when possible to avoid loss of GPS signal.

If GPS 4000S P/N: 822-2189-002 was installed using Rockwell Collins STC ST01433WI-D, Operators should contact Rockwell Collins to have the Ref. 1.6 bulletin applied to their GPS units.

Pilots should familiarize themselves with the Ref. 1.2, 1.3, 1.4 AFM, FCOM and QRH Temporary Revisions and be aware of alternate procedures in case the GPS signal is lost.

If aircraft is equipped with Rockwell Collins Flight Management System (FMS) version 4.1.1 which introduces Localizer Performance with Vertical Guidance (STC ST01611Wi-D), a preventive measure can be accomplished by disabling SBAS service providers, in the FMS via CDU, when flying trans-oceanic routes.

Have any suggestions or comments?

Please take a moment to fill out our Advisory Wire survey:

<http://csefeedback.aero.bombardier.com/index.php?sid=93439&newtest=Y&lang=en>