ADVISORY WIRE
AW300-34-0091, Rev. 4

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FROM: BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

ADVISORY WIRE

REFERENCE NO: AW300-34-0091, Rev. 4

SUBJECT: Loss of Primary Communications and Intermittent Multi Function Display Information

EFFECTIVITY: BD100-1A10 (20003 - 20999)

ATA: 34-00

This Advisory Wire contains Operational and Maintenance Information

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1.0 REFERENCES:

1.1 Airplane Flight Manual CSP100-1, Section 05-17-01, through section 05-17-05

1.2 Reversion Panel Ground Checkout Procedure (attached with Rev. 2 of this AW)

1.3 AW600-31-2317 Loss of VHF and Intermittent MFD Information

All manuals are available on the CIC website (http://www.cic.bombardier.com) within the Technical Library > Manuals > Maintenance & Flight Manuals > Maintenance and Flight Manuals > for Challenger > Challenger 300 Publications.

2.0 INTRODUCTION:

Revision 4 to this Advisory Wire (AW) is to provide Operators with an update to the status of the revisions to the Airplane Flight Manual (AFM) and Master Minimum Equipment List (MMEL).

Revision 3 to this AW provides Operators with an update to the status of the investigation of this issue, some information about changes to the MMEL and AFM and some details of a recent Communication Navigation anomaly that occurred on a Challenger 605.

Revision 2 to this AW was to provide Operators with a ground maintenance test procedure (Ref. 1.2) that can be used for more detailed testing and reporting if this issue occurs on your aircraft.

The initial issue of this AW informed Operators of cases reported where, during flight, some or a combination of, the Communication radio frequency information along with Navigation (NAV) and Air Traffic Control Transponder frequencies indications on the Multi Function Display (MFD) and Control Display Unit (CDU) turned amber.

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3.0 DESCRIPTION:

There have been several in-service reports of radio frequency information on the MFD & CDU turning amber and sometimes the frequency was changing. In some cases, other information on the MFD display such as flight control position and engine indication information was flickering.

In many cases, resetting the power after landing cleared the condition and in one case, replacing the MFD cleared the issue. When analysing the Maintenance Data Computer (MDC) information on some aircraft during troubleshooting of the issue, no faults were recorded, while in other cases MDC codes were reported, but not always the same codes.

Our investigation into this issue has revealed there have been ten similar cases reported since 2005. To date, after troubleshooting, there has not been any recurring case; however, in many cases, the component removed due to troubleshooting ended up being No Fault Found.

The only confirmed failure that has been proven to cause this issue was the MFD that had a graphical card failure.
On November 12, two Operators reported cases of FMS navigation issues. In both cases, the FMS red flag came up and navigation was partially lost. The Pilots continued the flights using alternate means of navigation (VOR/ADF) or by being vectored by air traffic control. Communications were functioning normally in both cases.

We believe these latest cases are not related to communication or intermittent MFD information. We are continuing to assist the Customers in troubleshooting these issues.

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All units associated with the communications system and displays from an aircraft that recently experienced this issue were tested on the Rockwell Collins system test rig. The system experts from Rockwell Collins and Bombardier were on site for this testing and to do an in-depth analysis of the failures reported to determine the cause of these issues.

Our investigation has shown that, in some cases, even though the frequency information displayed was amber or incorrect, communication on the last entered frequency was still possible.

We continued the investigation by completing detailed tests and inspections on a service A/C that most recently experienced this issue:

- Power and grounds checked for all components related to the issue
- Visual & physical inspection of all accessible cockpit connectors
- Completed ring-out of databus wiring of associated components
- Completed Reversion Panel Ground Check Procedure from AW300-34-91 Rev. 2
- Performed FDR Data download of the event
- Performed ground runs using APU only and then, with single and both engines, to verify the impact while exercising electrical / electronic equipment from cockpit, cabin as well as hand held devices

No anomalies were noted other than one open chassis ground for the DCU, which we believe is unrelated at this time.

The Ref. 1. 1 AFM Radio Tuning Failure procedures have been revised to include all reversion modes and a CDU power reset. TR 54 is posted on the CIC website in the Recent Temporary Revision section. The paper version of TR 54 will be distributed as part of the complete AFM re-issue schedule for release before the end of January 2009.

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The CL 300 MMEL has been revised to state that one GPS and one FMS must be operative for dispatch. This will ensure an alternate, reliable means of navigation to compare and confirm navigation information. TR 4 for the Transport Canada MMEL BD100-1A10 Rev. 2 was published December 10, 2008. The FAA BD-100-1A10 Rev. 3 Draft MMEL revision was posted January 5, 2009 for comments on the FAA Opspecs website and can be found at: http://www.opspecs.com/AFSData/MMELs/Draft/.

On December 16, 2008, a Challenger 605 Operator also reported experiencing a flight deck anomaly related to the communication and navigation systems. In that case, the MFD and CDU radio menu for VHF 1 and 2 Com and Nav were displaying erratic frequency information and at the same time, the MFD 2 lower format window was displaying incorrect information.

The avionics teams from Bombardier and Rockwell Collins are investigating all of the issues from both models to determine the root cause. Details of the CL605 event are provided in Ref 1.3 AW available on the CIC website.

4.0 ACTION

Pilots should be familiar with the Non-Normal Procedures in the AFM related to this condition (Ref. 1.1). TR 54 should be incorporated into your AFM as soon as practical. Also, as this is a communications issue, pilots should be aware of ATC telephone contact information to use as an alternate means to communicate.

To verify if communications are still available, when following the AFM Radio Tuning Failure procedure, attempt communications between steps even if the tuning information is amber or incorrect.

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If you have had this issue, if possible, prior to shutting down the aircraft power after the flight:

- Perform the ref. 1.2 ground test procedure
- Do an MDC download
- Provide both results to your Field Service Representative or the CRC

We will keep you informed of our investigation of this issue through updates to this AW and other communications.

If you have experienced or are experiencing this issue, please contact your Field Service Representative or call the CRC Hot Line at: 1-866-538-1247.