

# Advisory Wire

REFERENCE NO:	AW700-34-0241, Rev 3	INFORMATION TYPE:	Maintenance Operational
ATA:	34-62	EFFECTIVITY:	Global Express / XRS (9002 - 9312, 9314 - 9380, 9384 - 9429)
SUBJECT:	<b>Data Loader DL-950 Loading Erratic</b>		Global 5000 (9127 to 9383, 9389 to 9400, 9404 to 9431 and 9998)

## 1. REFERENCES:

- 1.1. Global Express (GL700), Global 5000 (GL5000) and Global XRS (GLXRS) Aircraft Illustrated Parts Catalog (AIPC), ATA 34-62 – On-Board Data Loader System
- 1.2. Global Express (GL700), Global 5000 (GL5000) and Global XRS (GLXRS) Aircraft Maintenance Manual (AMM) – Part II, Task 34-62-01-970-801, Task 34-62-01-970-802 and Task 34-62-01-970-803
- 1.3. Honeywell VSB 7017300-22-122, AUTOFLIGHT – IC-800 INTEGRATED AVIONICS COMPUTER (IAC) – Hardware Modification (MOD) ‘U’ to IC-800, PN 7017300-61002 thru -61009, -61020, -61040, -61060; Modification to Address Failures Due to the Data Loader Not Being Able to Communicate With the FMS, dated Oct 07, 2007
- 1.4. Honeywell Service Information Letter (SIL) D201111000067, PRIMUS 2000XP – IC-800 INTEGRATED AVIONICS COMPUTER (IAC), PN 7017300-61XXX, Modification (MOD) ‘U’; Modification to Address Communication Failures With the DL-950 Data Loader on GEX Aircraft, dated Dec 09, 2011
- 1.5. Honeywell Service Information Letter (SIL) D201111000038, DL-950 Data Loader, PN G7226-01 and -02; Release of Gables Service Bulletin, Publication Number G7226-01-34-04 and G7226-02-34-04, Modification (MOD) ‘F’ to the DL-950, dated Dec 14, 2011
- 1.6. Honeywell Service Information Letter (SIL) D201302000052, DL-950 Data Loader, PN G7226-01 and -02; Release of Gables Service Bulletin, Publication Number G7226-01-34-05 and G7226-02-34-05, Modification (MOD) ‘G’ to the DL-950, dated Feb 22, 2013

References 1.1, 1.2, 1.3, 1.4, 1.5 and 1.6 are available on the Bombardier Customer Portal: [my.businessaircraft.bombardier.com](http://my.businessaircraft.bombardier.com) > Library > Search by Keyword

- 1.7. Honeywell Aerospace Software and Data Services (ASDS) web portal (<https://ads.honeywell.com/>) > Data NavDB > Tools > OneNav+

## 2. INTRODUCTION:

Revision 3 of this Advisory Wire is to inform operators of recent in-service reports and solution availability for the DL-950 Data Loader conditions that may inhibit databases upload into the Flight Management System (FMS) residing in the Integrated Avionics Computer (IAC).

### 3. DESCRIPTION:

Honeywell DL-950 Data Loader Part Number (PN) G7226-01 was developed to take advantage of the high uploading performance of the USB (Universal Serial Bus) connectivity and data storage capability. Bombardier introduced the DL-950 on the Global platform, as a replacement for the diskette-based DL-900 model via AIPC (Ref. 1.1) and baseline on the Global 5000 and XRS at 9204 and sub.

#### DL-950 and FMS/IAC impedance computability:

Following introduction of the DL-950, there have been a few reports received from some Global 5000 aircraft, where the Navigation Database (NavDB) and the Aircraft Database (ACDB) failed to upload into FMS/IAC 3.

The investigation revealed that an issue existed with the data bus RS-422 clock synchronous communication between the DL-950 and the FMS/IAC due to the longer wiring length of the data bus on the Global 5000. Note that this issue did not affect all Global 5000 equipped with DL-950, which indicated a marginal effect with the wiring, FMS/IAC and DL-950 impedance.

To address this condition Mod 'U' (Ref. 1.3) was introduced by Honeywell to all IACs in service during routine shop visit and in aircraft production early 2010. Since the introduction of Mod 'U' there have been no further report of loading issue in FMS/IAC 3 on the Global 5000.

However, a similar condition was reported in service on some Global XRS aircraft, after replacement of an IAC with Mod 'U' and on aircraft equipped with all Mod 'U' IACs in completion.

More specifically, the NavDB and ACDB may fail to upload at any of the positions (1, 2, or 3) where a Mod 'U' IAC is installed. In addition to the failure to load the database, the affected position Flight Management System (FMS) Control Display Unit (CDU) scratchpad would also display a 'CHECK DATA LOAD (02)' or 'CHECK DATA LOAD (85) message'.

Note that not all Global XRS equipped with a Mod 'U' IACs exhibit this behavior. Additional details are available in the Honeywell SIL reference 1.4 related to the continuation of the Mod 'U' implementation on the IACs.

The investigation on the affected Global XRS revealed an additional issue with the data bus RS-422 clock synchronous communication between the DL-950 and the FMS/IAC, where a specific combination of FMS/IAC, data loader and aircraft wiring would affect the circuit impedance and subsequently affect the clock signal.

A solution independent of the IAC modification status was introduced via hardware modification 'F' to the DL-950 Data Loader as detailed in the Honeywell SIL reference 1.5.

Until a DL-950 Mod 'F' is installed, operators experiencing this condition could follow the workaround alternative procedure described below as interim solution:

When performing any databases uploading procedures into the affected FMS/IAC as per the AMM Task (Ref. 1.2), do the following:

- Uploading Navigation Database:

Loading the NavDB from the data loader to all three (3) FMS/IAC simultaneously will work correctly even on the affected FMS/IAC. The load request should be initiated from one of the unaffected FMS CDU via the Data Load page, 'DEST SELECT FOR NAV DB' using the selection 'TO ALL FMS'.

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- Uploading ACDB and Custom Database:

Remove the non-affected IACs from their respective trays. Note that in some cases removing only one non affected IAC is sufficient to compensate for the impedence. Then perform the individual uploads onto the affected FMS/IAC. Re-install the previously removed IACs into their respective trays when loading is complete per AMM.

### Use of USB media set:

With the development of different USB media versions, formats and size over the years, Bombardier and Honeywell were contacted for issues identified as USB media compatibility. An investigation conducted by Honeywell revealed an incompatible issue with various USB memory devices and media formats resulting in having to use smaller USB sticks, older USB versions and only certain manufacturers. Mod 'G' (Ref. 1.6) was introduced by Honeywell making the DL-950 compatible with any USB media version, size, manufacturer and format.

As a reminder to prevent communication errors between the DL-950 and the FMS/IAC:

- For DL-950 prior to Mod 'G', use 2G or less USB stick with FAT format
- For DL-950 with Mod 'G' or later, use any USB stick size with FAT or FAT32 format
- Verify that the individual NavDB files are extracted onto the USB stick rather than saving the compressed zip file only
- When inserting the USB stick, up to ten (10) seconds may be required before the DL-950 recognizes the USB device as available for upload/download. Attempting to access or load databases prematurely may result in the scratchpad error message 'CHECK DATA LOAD (85)'

### Laptop operating system:

Bombardier and Honeywell were recently made aware by operators of issue related to laptop or computer operating with Windows 10 when downloading the latest NavDB cycle from the Honeywell ASDS (Aerospace Software and Data Services) web portal (Ref. 1.7).

If you are using a computer or a laptop operating with Windows 10, you may run into the following issues:

- Every time you try to load the NavDB you get a FMS CDU scratchpad 'CHECK DATA LOAD (85)' message with USB stick in either USB port
- You may also have observed a FMS CDU scratchpad 'NO DISK INSTALLED' message while trying to load the NavDB to the DL-950

The following may have already been attempted in order to resolve the issue:

- Various USB stick size and FAT format
- Different serviceable DL-950 Data loader units
- Downloading the NavDB from different accounts

After an investigation involving Bombardier and Honeywell, it was discovered that the tool used by many operators to download the NavDB from the ASDS web portal (Ref. 1.7) was not compatible with Windows 10. Before attempting to troubleshoot or replace parts, download the OneNav+ tool from the ASDS web

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portal (Ref. 1.7) as it is compatible with Windows 10 and will help compiling the NavDB on the USB stick in a compatible format for the DL-950 Data Loader.

#### 4. ACTION:

Operators should be aware of those conditions, their respective work around procedures as well as the DL-950 Mod 'G' availability as the final corrective action independent of the USB media version, size, manufacturer and format.

Operators should also download the OneNav+ tool from the ASDS web portal (Ref. 1.7) as it is a better and more reliable application.

For additional details and general information regarding loading of databases with the DL-950 Data Loader, a troubleshooting tip named 'DL-950 Data Loader issues when using a USB stick formatted from a Windows 10 operating system to download the NAV Database' was created and is available on SmartFix Plus under Global > Troubleshooting > By Tips > ATA 34- navigation.

SmartFix Plus is available on the Bombardier Customer Portal under Technical Publication.

Should you have any queries pertaining to this Advisory Wire (AW), please contact your Bombardier Field Service Representative (FSR) or the Customer Response Center (CRC).