

Advisory Wire

REFERENCE NO:	AW300-34-0311 Rev.2	INFORMATION TYPE:	Maintenance Operational
ATA:	34-41	EFFECTIVITY:	Challenger 300 (20408-20500) or A/C post SB 100-34-33
SUBJECT:	RTA-4114 MultiScan Weather Radar Issue		Challenger 350 (20501-20999)

1. REFERENCES:

- 1.1. Collins Aerospace Service Bulletin [RTA-41XX-34-6](#) (CPN: 523-0824664) NAVIGATION - RTA-41XX - DSP COM FAULT RELIABILITY IMPROVEMENT, dated December 20, 2017
- 1.2. Collins Aerospace Service Bulletin [RTA-41XX-34-7](#) (CPN: 523-0825583) NAVIGATION - RTA-41XX - DSP COM FAULT RELIABILITY IMPROVEMENT AND REVERSION OF THE SOFTWARE, dated July 25, 2018
- 1.3. Service Bulletin (SB) 100-34-33, MODIFICATION - WEATHER RADAR SYSTEM - INTRODUCTION OF MULTISCAN WEATHER RADAR
- 1.4. Forum News Article (FNA) - [VOLUME 15, ISSUE 9](#), dated May 2, 2018
- 1.5. [IDOC 0171-19](#) Rev.2 - Collins Aerospace, RTA-41XX NVM Clearing Tool Summary for Bombardier Challengers
- 1.6. Bombardier Reference Instruction Letter (RIL) [BD-0073](#) Rev.A, WXR Receiver/Transmitter Assembly (RTA) Part Number 822-2255-001 Post Collins SB RTA-41XX-34-4 or RTA-41XX-34-7 resetting of Non-Volatile Memory (NVM)
- 1.7. Facility List with RTA-41XX NVM Reset Capability (Attached)

References are available on Bombardier Customer Portal (<https://my.businessaircraft.bombardier.com>).

2. INTRODUCTION:

This Advisory Wire (AW) revision 2 is to inform operators about an update to ref. 1.5 & 1.6 to adding some clarification on the NVM reset procedure applicability and Collins Aerospace coverage policy. We have also added a list of known facilities with RTA NVM clearing support capability (Ref.1.7).

3. DESCRIPTION:

As described in the ref 1.4 FNA, the ref 1.1 SB was issued by Collins Aerospace to improve the hardware and software reliability of the RTA-4114 (P/N 822-2255-001) as follows:

- Hardware replacement of the existing interconnect cable, which showed evidence of premature wear, causing loss of boresight alignment, erratic antenna movement and in some cases, noise, indicating that the unit is hitting the stops. The interconnect cable has been redesigned to provide longer service life.

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- Software upgrade to resolve the Digital Signal Processor (DSP) COM Fault and boresight alignment data NVM capacity anomaly which limits the number of data blocks that can be stored to 991 writes. Surpassing this memory limit corrupts antenna offset values which will cause subsequent RTA-4114 power cycles to use invalid alignment data resulting in erratic antenna movement. The estimated number of flight legs to reach 991 NVM writes is approximately 250. This is an estimate and may differ based on the conditions for logging the weather radar offsets into NVM.

Since the introduction of the ref 1.1 SB, Collins Aerospace and Bombardier have received reports from operators about intermittent WX FAULT messages posted for a few seconds. Occurrence of radar resets have also been reported. The radar functionality did return back to normal operation after a few sweeps without any flight crew action. These issues have only been seen when operating the radar in AUTO mode.

Collins Aerospace is currently investigating these issues and have decided to discontinue the ref. 1.1 SB. They have released the ref. 1.2 SB that supersedes the ref. 1.1 SB until a final fix is available. The SB7 reverts the RTA-4114 software back to pre SB6 and only installs the improved interconnect cable described above.

An interim optional on-wing procedure (Ref. 1.5 & 1.6) to clear the NVM prior to the aforementioned 991 writes is being made available at designated Bombardier Service Centers and Collins Aerospace authorized dealers (i.e. not operators). Clearing the NVM prior to 991 writes prevents the fault condition and can be applied to any RTA with exceptions of units with SB6 (Ref. 1.1) installed. However, if both SB6 (Ref. 1.1) and SB7 (Ref. 1.2) are installed, the procedure is applicable. As there is no direct correlation between NVM writes and flight hours or cycles, Collins Aerospace is recommending a reset at every 250 flight legs.

4. ACTION:

Operators should be familiar with the failure description and the availability of an interim solution (Ref. 1.5 and 1.6). Flight crews should monitor weather radar operation for similar persistent faults. If this is the case and the RTA-4114 has had SB6 incorporated, we recommend that operators schedule replacement with an SB7 RTA-4114 unit.

When replaced by attrition, the RTA-4114 will have SB7 incorporated as part of its repair, which will benefit from the reliability improvements provided with the new interconnect cable and the RTA NVM cleared. New production aircraft will also be fitted with RTA-4114 units with SB7, however, Bombardier does not recommend to pursue customer-owned unit upgrade for SB7 (was SB6) as previously proposed in the Customer Forum & Newsletter (Ref 1.4). Instead, operators should wait for the complete solution which will include a software upgrade and is targeted to be available by end of Q2/2020 (i.e. SB 8).

In the meantime, operators who wish to perform the interim NVM clear procedure should coordinate with a Bombardier Service Centers or with Collins Aerospace authorized dealers to confirm they have this support capability and have the RTA NVM cleared. Operators can also consult the Facility List (Ref. 1.7) with confirmed support capability. The list will be updated without a revision of this AW as more facilities becomes available.

Collins Aerospace will covers 1 man-hour of labor for the NVM clear. Additional costs associated with the use of Mobile Response Teams (MRT) or Line Stations are not covered by Bombardier or Collins Aerospace. Bombardier recommends to perform the NVM clear during maintenance visits to service facilities or in conjunction with other maintenance opportunities. This task should be performed prior to

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250 flight legs from last RTA installation or last NVM reset. If the RTA reached the full capacity of 991 writes causing a failure to be logged, it must be replaced.

In addition, until a permanent solution is deployed, for units in and out of warranty, Collins Aerospace will cover NVM clearing for which they confirmed the unit was removed and returned due to the NVM count issue.

Operators will be kept updated via revision to this AW as new information is made available by Collins Aerospace regarding the associated software solution.

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