

Advisory Wire

REFERENCE NO:	AW700-34-0741	INFORMATION TYPE:	Maintenance Operational
ATA:	34-60	EFFECTIVITY:	Global Express / XRS (9002 - 9312, 9314 - 9380, 9384 - 9429) Global 5000 (9127 to 9383, 9389 to 9400, 9404 to 9431 and 9998)
SUBJECT:	FMS – Honeywell Primus 2000XP – Summary of Observations and Known Conditions		

1. REFERENCES:

- 1.1. Bombardier Service Bulletin (SB) 700-31-030 / 700-1A11-31-014, Modification – Integrated Avionics Computer (IAC) System – Batch 3 Software Upgrade
- 1.2. Bombardier Service Bulletin (SB) 700-31-034 / 700-1A11-31-017, Modification – Integrated Avionics Computer (IAC) System – Batch 3.3 Software Upgrade
- 1.3. Bombardier Service Bulletin (SB) 700-31-039 / 700-1A11-31-021, Modification – Integrated Avionics Computer (IAC) System – Batch 3.4 Software Upgrade
- 1.4. Advisory Wire AW700-31-0357 – Availability Update for Batch 3 Upgrade
- 1.5. Advisory Wire AW700-31-0563 – Batch 3.3 Software Upgrade – In-service Observations
- 1.6. Advisory Wire AW700-31-0647 – Batch 3.4 Software Upgrade – Availability and Update
- 1.7. Customer Forum & Newsletter / Wed., Nov.13, 2019 / Volume 16 / Issue 23 – A New Way for Flight Crew Communication – Flight Operation Notifications (FON) Manual

References 1.1 to 1.7 are available on the Bombardier Customer Portal:
(my.businessaircraft.bombardier.com) > Library > Search by Keyword

2. INTRODUCTION:

This Advisory Wire (AW) reviews operational Flight Management System (FMS) conditions and observations following the release of Batch 3 (Ref. 1.1), Batch 3.3 (Ref. 1.2) and Batch 3.4 (Ref. 1.3) software upgrades. This summary list was developed with Batch 3 (Ref. 1.1) as the reference starting point since the FMS NZ6.1 version introduced with this software upgrade is the prerequisite for any future options and provisions implemented. In addition, this Advisory Wire (AW) includes summary tables listing FMS AWs issued to date and details on software versions that corrected the condition, including items with associated maintenance actions where applicable.

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3. DESCRIPTION:

3.1 Batch 3 Software

An upgrade to the Primus 2000XP avionics suite known as Batch 3 (Ref. 1.1) that included changes to the Flight Management System (FMS), Automatic Flight Control System (AFCS) and Electronic Display System (EDS) which introduced new capabilities and provisions for future options was developed by Bombardier & Honeywell and released in December 2012. The intent of Batch 3 (Ref. 1.1) as part as the upgrade to the FMS NZ6.1 software version was also to bring corrections to previous FMS NZ5.8 software. Batch 3 software upgrade improvements are outlined in the Bombardier Batch 3 SB (Ref. 1.1) and in the Advisory Wire AW700-31-0357 (Ref 1.4).

3.2 Batch 3.3 software

Following the release of the Batch 3 software upgrade, Bombardier committed to do a follow up software load to address a list of four (4) certification authorities required changes. In addition to this cleanup load, through a joint effort, Bombardier and Honeywell managed to include a number of FMS corrections, following the deployment of the Batch 3 software upgrade. Batch 3.3 software upgrade corrections relating to operation of the EDS and the FMS functions are outlined in the Bombardier Batch 3.3 SB (Ref. 1.2) and in the Advisory Wire AW700-31-0563 (Ref. 1.5).

3.3 Batch 3.4 software

Batch 3.4 software change became necessary when Honeywell notified Bombardier that the latency timer monitor function, part of the FANS 1/A+ functionality to meet DO-258A (Interoperability Requirements for ATS Applications using ARINC 622 Data Communications) introduced with FMS software version NZ6.1 was not implemented per specification. Bombardier and Honeywell corrected this condition as well as additional items. Batch 3.4 software upgrade corrections relating to operation of the FMS - Datalink function is outlined in the Bombardier Batch 3.4 SB (Ref. 1.3) and in the Advisory Wire AW700-31-0647 (Ref. 1.6).

3.4 FMS observation not related to an Integrated Avionics Computer (IAC) software anomaly

The Advisory Wires listed below identify items where the FMS operates per design or associated to systems often reported as FMS observations. Therefore, no corrective action is planned for these.

AW Number	AW Subject	Correction	Workaround
AW700-34-0241	Data Loader DL-950 Loading Erratic	Mod 'G' to the DL-950	Work around provided in AW
AW700-34-0348	Control Display Unit (CDU-820) – Intermittent blanking display and No Fault Found (NFF) update	N/A	Work around provided in AW
AW700-34-0471	FMS – Late descent with a common waypoint of departure and arrival procedure	N/A	For information only All NZ FMS software
AW700-34-0481	Post Batch 3, Batch 3.3 and Batch 3.4 – FMS setting on FLIGHT CONFIG pages	N/A	For information only
AW700-34-0491	FMS – Removal of Vertical Descent Angle (VDA) from non-precision approach charts (FAA SAIB HQ-14-25)	N/A	For information only All NZ FMS software
AW700-34-0552	CDU-820 – Transferring line select data to scratchpad	N/A	Work around provided in AW All NZ FMS software

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3.5 FMS and correction Advisory Wires status

The table that follows identifies AWs relating to FMS, Datalink, Auto Throttle (AT), etc. conditions including details and workarounds, where applicable. It identifies which software upgrade addressed the condition, if any applicable.

AW Number	AW Subject	Correction	
		Batch 3.3	Batch 3.4
AW700-22-0423	Unexpected retarding of both thrust levers with Auto Throttle (AT) engaged	✓	
AW700-23-0432	Post Batch 3 – Data Link OFF & ON report missing airport code information and FMS block data	✓	
AW700-23-0532	Post Batch 3 – FAA Data Comm DCL (Departure Clearances) using CPDLC messaging <ul style="list-style-type: none"> - a. Unable to load a REVISED CLEARANCE when prepended with FREE TEXT HEADER - b. CPDLC message element [REQUEST CLEARANCE] is not sent as expected 	a.✓	b.✓
AW700-23-0578	Post Batch 3.3 – ‘ACARS DMU FAILED’ CDU scratchpad message		✓
AW700-23-0642	Post Batch 3 – Logic change for CPDLC uplink message latency delay timer & update user page on the CDU for latency timer function (seconds)		✓
AW700-31-0453	Post Batch 3 – Vertical track alert double C-Chord aural tone logic	✓	
AW700-31-0563	Post Batch 3.3 – FMS reset upon flight plan winds update when large uplinks are sent from Ground Service Providers (GSP)		✓
AW700-34-0327	FMS anomalies and associated NavDB changes*Except Item Q other items listed below in the Honeywell SIL corrected <ul style="list-style-type: none"> - J, K, L, M, N, O, P and R (C, G, H and I previously corrected with Batch 3) 	✓	
AW700-34-0449	Post Batch 3 – FMS performance	✓	
AW700-34-0457	Post ADS-B Out – Transponder preselected altitude logic change	✓	
AW700-34-0468	Post Batch 3 – FMS drop from DUAL to SINGLE mode	✓	
AW700-34-0470	FMS – Speed restriction anomaly	✓	
AW700-34-0476	Post Batch 3 – FMS – Single engine Go-Around (GA) speeds		
AW700-34-0486	FMS – Change of destination not allowed when first leg in missed approach procedure is type ARC (AF or RF leg)	✓	
AW700-34-0487	FMS – Duplicate waypoints in airways portion of AOC and FANS uplink not properly defined <ul style="list-style-type: none"> - a. Duplicate waypoint in airways portion of AOC - b. Duplicate waypoint in airways portion of FANS 	a.✓	b.✓
AW700-34-0488	Post Batch 3 – FMS - LNAV drop to ROLL mode when aircraft sequence the first heading to altitude termination (VA) leg on SID	✓	
AW700-34-0500	FMS – Control Display Unit (CDU) blanking caused by uplinked flight plan	✓	
AW700-34-0501	FMS – Descent angle changes upon Place-Distance (PD) HOLD insertion		
AW700-34-0502	FMS – LNAV guidance issues commanding a turn in an opposite direction	✓	
AW700-34-0505	Post Batch 3, Batch 3.3 and Batch 3.4 – FMS – Incorrect level off at an altitude constraint Partial fix post B3.3 where final approach vertical path is correctly intercepted		
AW700-34-0506	FMS – STAR procedure re-entry anomaly	✓	
AW700-34-0507	FMS – Melding of TO waypoint with common waypoint in new arrival	✓	
AW700-34-0512	AFM Net Takeoff Obstacles Figures		
AW700-34-0539	Post Batch 3 – FMS – LNAV early intercept capture while in HDG mode		
AW700-34-0560	Post Batch 3, Batch 3.3 and Batch 3.4 – FMS – Fly vectors to intercept leg deleted resulting in incorrect course on CDU		
AW700-34-0561	FMS – Racetrack pattern entry with Course to Fix (CF-CF) leg types		
AW700-34-0580	FMS – Holding pattern speed anticipation function		
AW700-34-0590	Post Batch 3, Batch 3.3 and Batch 3.4 – FMS – Incorrect ceiling altitude displayed on FMS		
AW700-34-0591	FMS – Not honoring speed constraint when the TOGA button is activated on a missed approach and aircraft is in GA mode		

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AW Number	AW Subject	Correction	
		Batch 3.3	Batch 3.4
AW700-34-0603	FMS – Incorrect placement of *INT waypoint results in the missing of the waypoint in departure	✓	
AW700-34-0604	FMS – Incorrect distance calculation for Equal Time Point (ETP)		
AW700-34-0605	Post Batch 3.3 and Batch 3.4 – FMS – Incorrect FLY OR ASSIGNED heading on NZ6.1		
AW700-34-0606	Post Batch 3 – FMS – Missed approach course display anomaly	✓	
AW700-34-0607	FMS – NavDB altitude constraint missing from the active flight plan	✓	

4. ACTION:

Operators and flight crews should be familiar with the content of this Advisory Wire as well as previously published AWs relating to Flight Management System (FMS) operational observations and conditions. This may prevent flight interruptions resulting from unnecessary queries.

As indicated in a Customer Forum & Newsletter (Ref. 1.7), Bombardier developed Flight Operation Notifications (FON) manual to gradually transition from the current Operational AW process. The manual contains FON providing flight crews with readily accessible information relating to items related to FMS and flight operations.

Technicians should be familiar with section 3.4 and refer to SmartFix Plus for recommended maintenance actions, such as in the event of FMS settings on FLIGHT CONFIG pages, angle not at the default value following an IAC software upgrade, CDU-820 or Data Loader issues.

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).