TOP ISSUES

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TOP 20 ISSUES

- CIC WEBSITE PERSONALIZED TO AIRCRAFT
- NO BIOCIDE AVAILABLE FOR FUEL TANK IN EU
- CLAMP CUSHION DEGRADATION
- WHEEL SPEED TRANSDUCER HARNESS TWISTING
- NOSE WHEEL STEERING ACTUATOR RELIABILITY
- BCU & BCV RELIABILITY
- PRESSURE REGULATING VALVE RELIABILITY
- PACK INLET TEMPERATURE SENSOR RELIABILITY
- PACK DISCHARGE TEMP SENSOR RELIABILITY
- TRU CORROSION IN-SERVICE SUPPORT
- ENVIRONMENTAL DAMAGE MANAGEMENT PROGRAM
- INBOARD FLAP CORROSION
- VERTICAL STABILIZER SKIN CORROSION
- MAGAIR TOILET RELIABILITY
- WATER SYSTEM DRAIN VALVE FAILURE
- WINDSHIELD FAILURE
- G6000 – 4.5 SELECTED SPEED HOLD (NAV TO NAV TRANSFER ISSUES)
- VISION – SVS FAIL POSTING
- FUTURE ON-BOARD DIAGNOSTICS
- APU EGT PROBES

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Top Issue 00-23-G-787

NEW CUSTOMER PORTAL - Latest Activities

- **Official Customer Portal launch March 20th**
- Modifications and adjustments based on user group feedback
- User migration from CIC to new Customer Portal
- Support and sustainment of new Customer Portal
- Ongoing progress on enhanced on-line parts ordering platform

Customer Portal evolution is part of a much broader initiative to enhance our on-line customer experience

DATE RAISED	RAISED BY	ACTION BY
APR 11	T. NOONAN	M. ELBAZ

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Top Issue 00-23-G-787

PORTAL FUNCTIONALITIES – What has changed?

- Complete redesign
- Enhanced online offering
- Customer Support Processes Enablement
- Multi-device interface (Mobile and Desktop)
- Enhanced document search experience
- Information relevant to your fleet

Delivering on three key objectives and laying the ground work for continued innovation

1. Simplified navigation
2. Mobile friendly
3. Contextualized to fleet

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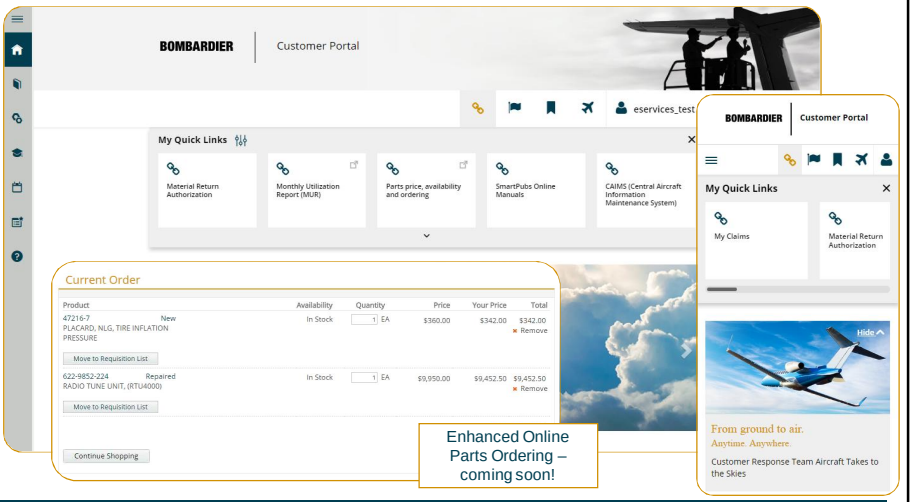
Top Issue 00-23-G-787

NEW CUSTOMER PORTAL



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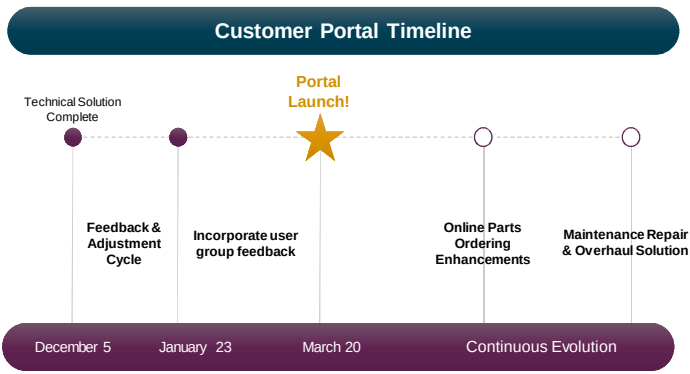
NEW CUSTOMER PORTAL - Timeline



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Top Issue 28-33-M-973

NO BIOCIDE AVAILABLE FOR FUEL TANK IN EU

Biobor JF, Biocide additive to be used for Biocidal treatment of the fuel tanks (AMM tasks 12-11-01-620-801 and 28-10-00-620-801) Bombardier consumable reference 11-001 is not available for sale within the EU as per the Biocidal products regulation.

Investigation Status:

- Biobor JF:
  - Confirmed Biobor JF is currently not registered under the EU Biocidal registry, therefore not allowed for resale/distribution in the EU countries
- Kathon FP 1.5:
  - Alternate biocide used in the industry which is on the EU Biocidal registry.
    - ✓ Rolls Royce and Honeywell (APU) have Kathon FP 1.5 as an approved additive
    - Parker do not have Kathon FP 1.5 approved on the Global

Next Step:

- Kathon FP 1.5 approval project launched with Parker.
  - Biocide approval and AFM update ECD: Q3/2017.

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Top Issue 29-34-M-986

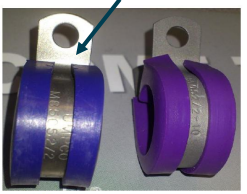
CLAMP CUSHION DEGRADATION

Cushion Degradation of M85052/2 Hydraulic line blue clamps, currently the cost is on the customer, both for the clamps and the R&R which can be numerous if replacing all the clamp not only in the aft compartment.

Background:

- Sub-standard cushion on hydraulic system clamps P/N M85052/2-XX causing cushion degradation, leading to metal band to chafe on tubing. Suspected clamps are identifiable by its blue color in lieu of purple.
- Industry-wide issue; Affecting the Global fleet.
- Bombardier's airworthiness analysis revealed no concern to aircraft safety.
- Bombardier inventories (including production, Spares, BAS and ASF) were purged.
- AW700-29-0528 basic released Sep/2015

Clamps subjected to degradation



Blue Purple

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Top Issue 29-34-M-986

CLAMP CUSHION DEGRADATION

Investigation status:

- Evaluation of the quantity of clamps: grouped by zones & size (dash numbers)
  - Over 589 potential clamps installed on any hydraulic systems
  - 10 different sizes of clamps

H-Stab / V-Stab
Estimated Qty:42

Nose / FWD Fuselage
Estimated Qty:157

Rear Fuselage / Pylon
Estimated Qty:26

Wing / CTR Fuselage
Estimated Qty:364

- Service Bulletin is not a viable solution

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Top Issue 29-34-M-986

CLAMP CUSHION DEGRADATION

Evaluation of the scheduled inspection tasks by zones and interval

- 53-10-00-210-818 GVI of the Nose Wheel Well - 450L
- 32-20-00-210-801 GVI of the Nose Landing Gear (NLG) Assembly - 450L
- 53-10-00-210-807 GVI of the Lower Nose Compartment – Internal RH - 60M
- 53-10-00-210-809 GVI of the Mid Lower Fuselage, Slat Drive Compartment –Internal 60M
- 53-20-00-210-813 GVI of the Lower Forward Fuselage, Between FS280.00 and FS557.00 – External - 60M
- 53-20-00-210-816 GVI of the Lower Forward Fuselage, Between FS280.00 and FS557.00, and Between STR22L and STR22R – Internal - 60M
- 53-10-00-210-820 GVI of the Forward Avionics Compartment - 60M
- 53-10-00-210-806 GVI of the Lower Nose Compartment – Internal LH 120M

- 55-10-00-210-808 GVI of the Rear Spar of the Horizontal Stabilizer – External 60M
- 55-30-00-210-804 GVI of the Vertical Stabilizer-Internal 120 M

- 53-40-00-210-812 GVI of the Aft Fuselage – Internal 30M
- 53-61-09-210-801 GVI of the Aft Wing–to–Fuselage Fairing – Internal 60M
- 57-20-00-220-804 Detailed Inspection of the Aft Face of the Rear Spar and Auxiliary Spar of the Wing 60M
- 54-50-00-220-802 Detailed Inspection of the Pylon Center Box Internal Structure PS30.00 to PS151.00 - 60M

- 27-11-25-720-801 Functional Test of the Aileron Power–Control Unit (PCU) 1500 H
- 32-10-00-210-801 GVI of the Main Landing Gear Assembly 450L
- 53-30-00-210-807 GVI of the Main Landing Gear Wheel Well 60M
- 53-30-00-210-806 GVI of the Lower Mid–Fuselage External 120M

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Top Issue 29-34-M-986

CLAMP CUSHION DEGRADATION

- After the 60 months inspection:
  - 15 of 18 relevant inspection tasks are completed.
  - Cover approximately 83% (486/589) of the installed clamps on hydraulic systems.

Communication:

Raise awareness level of the potential presence of blue clamps.

- General Visual Inspection (GVI) task revision to ensure the suspected clamps are identified and replaced.
  - ✓ Temporary Revisions (TR 20-05) to the SPM : released Apr/2017

> – Signs of deterioration of clamps that attach the tubing or wire harness. (Pay particular attention to the blue–cushioned clamps that attach the hydraulic tubes. If the blue–cushioned clamps that attach the hydraulic tubes are found to be damaged, replace them with purple–cushioned clamps).

- Advisory Wire AW700-29-0528 Rev.1 released: Apr/2017
  - To include the locations where the suspected clamp could be installed
  - To highlight the GVI and detailed inspection tasks revisions

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Top Issue 32-34-M-989

WHEEL SPEED TRANSDUCER HARNESS TWISTING

Outboard Brake Fail CAS message posted after landing due to the WST harness shear.

Background:

- 6 in-service reports of WST back-end assembly rotation resulting in MLG harness shearing. (from Jan/2016 to Apr/2017)
  - All failures occurred on outboard positions
  - 1 additional event reported since the last advisory council meeting (April 2017)

Investigation status:

- BBA witness teardown of two (2) WST at Vendor facility (Nov/2016):
  - Water contamination found in all cases.
  - WST material and dimensions were meeting design's specifications
  - Enhanced procedure introduced at vendor in Jan/2017 to ensure proper clamping/seating of the WST's internal components.
    - Not considered as the root cause of the water ingress
  - AW700-32-0581 – Wheel Speed Transducer (WST) (Released Dec/2016)

Water ingress in the axle suspected to be a major contributor to this failure mode

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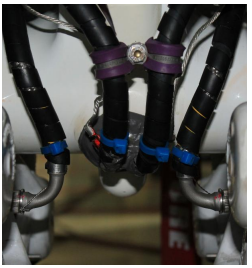
Top Issue 32-34-M-989

WHEEL SPEED TRANSDUCER HARNESS TWISTING

Advisory Council action in monitoring: 32-27-M-878 – Trailing Arm Water Ingress

Initiative to prevent water ingress in axle:

- ✓ Jun/2012: SB700-32-028; SB700-1A11-32-015 Basic issue
  - Application of sealant to the WST grommet using suction to force sealant migration in harness' mesh
- ✓ Apr/2015: SB700-32-028; SB700-1A11-32-015 Rev1 & SB700-32-5010/SB700-32-6010 Basic issue
  - Addition of a heat shrink tubing on the WST harness and improve sealant application, still using suction
- ✓ Oct/2015: SB700-32-028; SB700-1A11-32-015 Rev2 & SB700-32-5010; SB700-32-6010 Rev1
  - Minor changes to Rev1 with no retroactive action required



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Top Issue 32-34-M-989

WHEEL SPEED TRANSDUCER HARNESS TWISTING

Request for feedback:

- AW700-32-0573 - Main Landing Gear Trailing Arm Water Ingress Survey (released Sep/2016)
- Survey form available in SmartFix™ Plus since Jan/2017 for the following tasks:
  - NORM BRAKE FAIL
  - BRAKE 50% DEGRADED
  - BRAKE FAULT
  - L/R INBD/OUTBD BRAKE FAIL
- Limited feedback received so far.

Next Steps:

- Sealant application on aircraft post 9705 (production cut-in of Service Bulletins) inspected:
  - Several harness were found with voids in the sealant
    - New SB to be released to capture aircraft having non-compliant sealant application during the production cycle
      - Draft VSB and BBA SB under revision
      - Production process rectified cut-in: 9791 and subs
- In-service feedback via survey form is needed to determine requirement for additional corrective action

Sealant application Post 9790

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Top Issue 32-30-M-938

NOSE WHEEL STEERING ACTUATOR RELIABILITY

Reliability of Steering Actuators P/N 1287A0000-02 (LH) and P/N 1288A0000-02 (RH).

NOSE STEER FAIL CAS message and LVDT feedback fail OMS/CAIMS caused by moisture ingress resulting in corrosion

Short Term solution:

- Application of sealant on LVDT crimped area of the conduit to prevent moisture ingress
- BBA Service Bulletin,
  SB700-32-038; SB700-32-1A11-025; SB700-32-6014; SB700-32-5014
  - ✓ Released: Mar/2016

Long Term solution:

- New conduit qualification testing completed with success
  - ✓ Mar/2017
- LVDT assembly design improvement (conduit & new LVDT) in-service availability:
  - Q4/2017

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Top Issue 32-30-M-938

NOSE WHEEL STEERING ACTUATOR RELIABILITY

LEAKAGE – Cylinder gland nut seal leakage

- 7 different design samples were tested at vendor's facility
  - ✓Completed: Dec/2016
- New designed retained: "one bushing – single seal" :
  - Passed the development testing campaign
    - Completed Jan/2017

Next Step:

- Launch qualification testing of the newly selected design:
  - ECD: Q3/2017
    - Pending manufacturing of the of the new design parts.

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Top Issue 32-28-M-903

BCU & BCV RELIABILITY

Need to investigate the reliability of the Brake Control Unit (BCU) and the Brake Control Valve (BCV).

Main BCU/BCV removal reasons:

- « 50% BRAKE DEGRADED » CAS message
- « BRAKE FAULT » CAS message

Root Cause:

Sudden pressure variation in the brake system degrades the BCV and results in fault annunciation.

Solutions:

3 Shut-off Valve (SOV) design configurations under testing to reduce the transient pressure spike in the system

- Result observed at vendor's facility was confirmed by aircraft level testing
  - Completed Mar/2017
- Pre-qualification testing resumed at vendor facility
  - Completion ECD: Q3/2017

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PRESSURE REGULATING VALVE RELIABILITY

PRSOV - P/N GG436-1055-1 Amdt A

- ✓ Root causes identification phase completed since Sept/2016.
- ✓ Terminating check procedure change implemented in AFM/FCOM/QRH.
  - To reduce the APU BLEED DISABLE condition, thus reducing NFF rate of the PRV.
- ✓ Solutions addressing PRSOV root causes identified since Dec/2016:
  - Improved microswitch installation.
  - Increased robustness on ATP microswitch position indication settings.
  - Design change mitigating pollution ingress (NRV on Regulator S/A)
  - Parts material upgrade for corrosion robustness.
  - Change to more reliable Solenoid S/A with pollution deflector fixture.
  - Systematic ball bearings replacement upon shop return.
- o Solution Implementation:
  - Redesigned valve (P/N: GG436-1055-3) certification. ECD: Q4/2017
  - Implementation strategy under definition
    - ➢ In-service availability: ECD: Q1/2018

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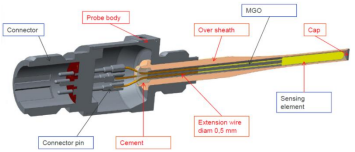
PACK INLET TEMPERATURE SENSOR RELIABILITY

PITS - P/N GG436-2005-3
Common P/N to PITS / CDTS / Humidifier Boiler Temp Sensor.

- ✓ Root causes identification phase completed since Sept/2016
- ✓ Solutions addressing PITS root causes identified since Dec/2016
  - Removal of RTV potting inside probe body.
  - Reinforced probe over sheath with new probe assembly.
  - Reinforced sensing element wiring.
  - ➢ Proven reliability on similar design is used since 2010 on commercial aircraft application.
- o Solution Implementation:
  - Redesigned sensor (P/N: GG436-2005-5) certification. ECD: Q4/2017
  - Implementation strategy under definition
    - ➢ In-service availability ECD: Q1/2018



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PACK DISCHARGE TEMPERATURE SENSOR RELIABILITY

PDTS - No change to P/N GG436-2015-3
ACSC - P/N GG546-2040*

- ✓ Root causes identification phase completed since Sept/2016
  - ➢ No issue with PDTS, root cause lies with ACSC software.
- ✓ Solutions addressing spurious PACK FAULT root causes are identified since Dec/2016:
  - Optimization of RS422 transmission to smoothen CPU workload.
    Known as the PACK FAULT in CAIMS/OMS mode active (Ref: AW700-21-0160)
  - Default active channel implementation at start up.
    Known as the Trim Air issue unavailable (Ref: AW700-21-0389)
- ✓ Solutions addressing spurious cockpit AV FAN FAIL and HCU FAIL also identified.
- o Solution Implementation:
  - ACSC software certification (P/N GG546-2040-15). ECD: Q4/2017
  - In-service implementation strategy under definition.
    - ➢ In-service availability ECD: Q1/2018

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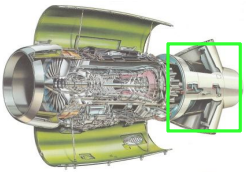
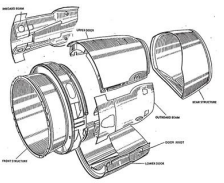
BR710 TRU Corrosion In Service Support



Top Issue 78-34-M-990

Date raised: Oct 2016 By: Committee



Problem Definition

- Corrosion repair on TRU flange has been lengthy and the required material was not available in the field

Root Cause Identification

- Safran 24/7 support too slow
- Material for TRU front flange repair not available

Problem Containment

- Increased TRU damage acceptance limits via RTV end March 2017
- Lessons learnt discussions between RR OSD and Safran 24/7 helpdesk in place
- Manual update to underline importance of TRU flange protection at TRU removal/storage and inspection/repair before re-installation

Solution

- Establish 24/7 support from Safran
- Publish standard TV's to cover corrosion on the TRU
- Make available material required to perform repair

Problem Defined	Problem Contained	Root Cause Identified	Solution Agreed	Solution Deployed
16-Dec-16	*18-Aug-17*	*16-Dec-16*	*TBD*	*TBD*

Completed
Hazard to Plan
On-Plan
Significant Hazard

Dates shown are actual completion dates in the past or forecast dates in the future

Rolls-Royce

78-34-M-990 TRU Corrosion In-Service Support

Solution – Safran 24/7 support

- 24/5 service out of LeHavre is currently available on week days. During week ends, handover for AOG cases is to SNECMA.
- From end Q2 2017 onwards the dedicated Safran service out of LeHavre for the BR710 TRU will be available as well on weekends. No more handover to SNECMA during weekends to ensure better continuity of support.
- The working together between the RR OSD and Safran 24/7 will be improved via regular quarterly review meetings on lessons learnt.

Rolls-Royce

78-34-M-990 TRU Corrosion In-Service Support

Solution – TRU repair in-service

- Increased on wing repair acceptance limits available as per RTV‘s end March and will be incorporated in EMM.
- TRU flange repairs in service should be possible as long as the flange doesn’t need to be replaced.
  In-service repair depends on extent of the corrosion, the timeline when the A/C needs to fly again, the capabilities of the Service Center and if required, a mobile repair team from either Safran or OWC is available.
- Currently reviewing all required parts and their availability.

Rolls-Royce

78-34-M-990 TRU Corrosion In-Service Support

Solution – TRU repair at Safran

- Flange repair beyond the aforementioned limits and all flange exchanges will have to be done at Safran.
- Safran Indianapolis is now approved by RR for repair of BR710 TRU. They have produced necessary tooling to replace flange.
  Repair capacity is increased with the availability of an additional facility in the USA, complementing the existing facility in France.
- TRT and price for repair at Safran depends on extent of damage. TRT is max 45 calendar days.

Rolls-Royce

Top Issue 00-33-M-981

ENVIRONMENTAL DAMAGE MANAGEMENT PROGRAM

Creation of a corrosion protection prevention package.

Creation of a Environmental Corrosion Control and Prevention Guidelines to include list of:

- Reduced schedule inspection intervals
- Recommended AMM tasks
- ISMODSUMS per ATA
- General REO per ATA
- Service Bulletin per ATA

This document will be updated and published yearly as an INFOSERVICE publication:

Global
Environmental Corrosion Control and Prevention Guidelines

- ✓ Document released December 2016
- ✓ Forum News Article published April 2017
- ✓ Communication to Service Centers published April 2017

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Top Issue 57-33-M-975

INBOARD FLAP CORROSION

L/H & R/H inboard flaps outboard castings found corroded (...) Due to the fact that there is zero tolerance we have been forced to replace all parts. Parts availability is a concern.

Suspected root causes:

- Water ingress.
- Insufficient water drainage.
- Material protection at the electrical bonding surface area.

Solutions:

1- Corrosion resistance and drainage improvement with no skin removal

- Drain hole in lower skin and in “P” Seal.
- Drain path inboard side of leading edge.
- Corrosion inhibiting compound (CIC) application via drain holes.
- Maintain clearance between rear spar and trailing edge.

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Top Issue 57-33-M-975

INBOARD FLAP CORROSION

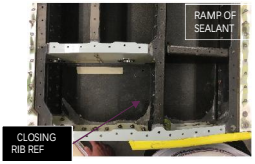
Solutions (cont'd):

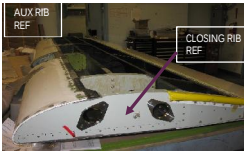
2- Improvements if removal of skin is required:

- Includes in-service protection improvements listed on previous slide.
- Introduction of silver plated nut plate shells (dome nuts).
- Sealant around & on top of nut plate shells.
- Ramp of sealant.

Both improvements available via Modsum IS700-57-0009 rev.B

Production implementation plan in final definition phase. Target 9767





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Top Issue 57-33-M-975

INBOARD FLAP CORROSION

Service Bulletins for Bushing Migration temporarily on hold due to logistical issues. (AW700-57-0559)

• SB700-57-048	GX & XRS
• SB700-1A11-57-014	Global 5000
• SB700-57-6003	Global 6000
• SB700-57-5003	Global 5000 Vision

Service Bulletin reinstatement planned for mid-2017

Action Plan

- Sufficient downtime should be planned
- Preferably during 60 months checks
- GSE availability confirmation
- Customers must schedule SB through Bombardier Aerospace

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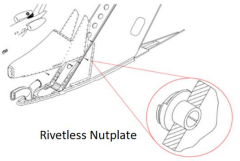
Top Issue 55-31-M-960

VERTICAL STABILIZER SKIN CORROSION

Corrosion was found on the upper vertical stabilizer skins. Corrosion was 50% of skin thickness in several places. Replacing the skins will be costly. Submitting this as a new issue to determine whether this corrosion affects the entire Global fleet.



Root causes

- Moisture ingress and environmental contamination
- Rivetless nutplate material

Solutions:

- SB 700-55-007; 700-1A11-55-003; 700-55-5002; 700-55-6002.
  - Released: Feb/2017
  - Part A - rivetless nutplate replacement + internal CIC
  - Part B - Bullet fairing drainage + external CIC
  - Part C - Dorsal fairing drainage + external CIC
- TLMC revision (approved by the ISC – Oct/2016)
  - Threshold and repeat will be set to 60 months applicable to all A/C
  - New dedicated inspection task will be created.

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APR 15	B. SNYDER	D. FIELD

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Top Issue 38-29-M-926

MAGAIR TOILET SYSTEM SUPPORT AND RELIABILITY

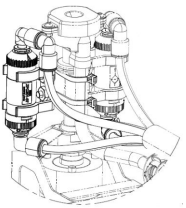
Magair reliability improvement

Troubleshooting guide based on toilet fault codes
- Available on SmartFix™ Plus

Supplier repair process audited

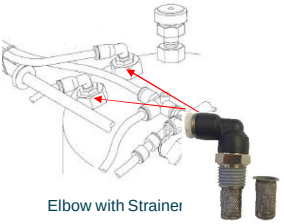
Identified proper In-line filter location and position

Upgrade version in field testing
- Additional In-line filter and transfer tank strainers


Additional Line Filter

Field Evaluation:

Trial period: 6 months (Completed Feb/2017)
- ✓ No failure reported over the complete period


Elbow with Strainer

Implementation plan:

Improvements implemented at vendor during overhaul

DATE RAISED	RAISED BY	ACTION BY
APR 14	B. STERN	D. FIELD

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Top Issue 38-32-M-966

WATER SYSTEM DRAIN VALVE FAILURE

The water system will not operate when drain valve fails which includes purging, draining and servicing. Unable to manually drain/purge the system to allow removal and installation of a serviceable valve especially in freezing conditions. Access to the valve requires maintenance personnel. In addition, few in-service reports of un-commanded purge in-flight.

Actions Closed:

✓ **Water entrapment and means of expulsion**

- Reference Information Letter (RIL) GX-0163 published (Customer Portal Website)
- 80% of water in system lines drained through drain masts by gravity
- Remaining water trapped can be drained with air pressure

✓ **Uncommanded purge in flight**

- Multiple override will empty the system (defective UV filter)
  - System override on the Galley touchscreen
  - Mechanical By-Pass
- Reference Information Letter (RIL) GX-0155 available on Customer Portal Website

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Top Issue 38-32-M-966

WATER SYSTEM DRAIN VALVE FAILURE

Information for possible new Advisory Item (Special Advisory call Dec/2016)

Drain Valves Reliability data:

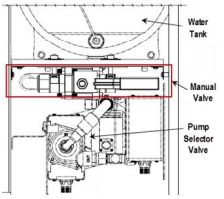
Valves	MTBUR (FH)
Tank Drain valve (4E4348-1)	57,566
Drain valve (4E4348-4)	230,265
Drain valve (4E4348-5)	25,585

Estimate for manual valve to isolate the water tank:

Non-Recurring:

Engineering + Certification	$35,000*
Recurring	
Hardware	$21,000
Labor:	$ 8,000
Total:	**$64,000***

* Price May be lower pending number of orders



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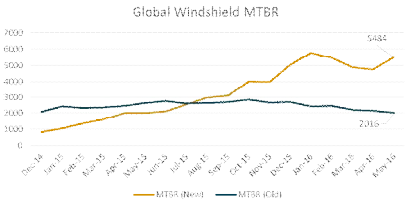
Top Issue 56-34-M-985

WINDSHEILD FAILURE

Pilots windshield shattered at 43,000 feet clear air. Part number GC331-0001-13 serial number 3483 and was built 4/16.The windshield only has 28.7 hours and 10 cycles since it was replaced. When I ordered the part last month there were 4 windshields in stock in ORD. I just ordered the last one in stock meaning there have been 4 failures in one month time frame. Please advise if there is an ongoing issue with the new supposed fix -13 that was closed on 7 Oct 2014.

Windshield GC331-0001-13 (2014) Improvements

- Aerodynamic Sealant
- Bus bar material
- Heater coater flow lines
- Video thermography inspection
- Data shows better performance



On-going investigation:

- Glass failure (FOD impact damage)
- Delamination - Acquiring data on delamination progression (pro-active removal)

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Top Issue 56-34-M-985

WINDSHEILD FAILURE

FOD Impact investigation (Bombardier Quality Control)

1. Crack pattern analysis
2. Potential origin analysis
3. Origin appearance

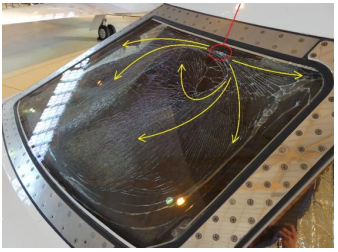
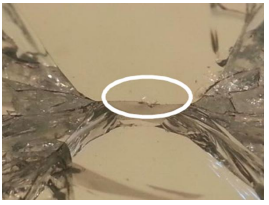


Figure 1

« Cat Eye » pattern

Figure 2



Surface chip

Figure 3

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Top Issue 56-34-M-985

WINDSHEILD FAILURE

FOD Impact Investigation (PPG)

1. Crack origin confirmation
2. Surface damage identification
   Fracture origin is examined using high magnification tool (up to 200x)

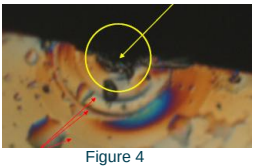

Figure 4

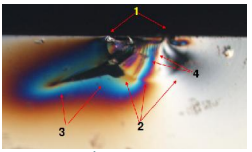

Figure 5

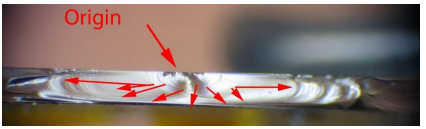

Figure 6

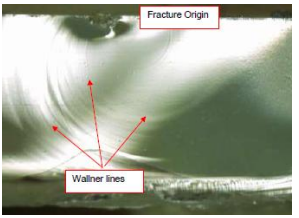

Figure 7

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BOMBARDIER

Global Vision Version 5.1.5 Software Schedule & Update

Q3-2016			Q4-2016			Q1-2017			Q2-2017		
Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

V5.1.4 TCCA → V5.1.5 Development → V5.1.5 Testing → V5.1.5 LOI → V5.1.5 Campaign

- V5.1.4 TSO Approval Jul 15th
- V5.1.3 TCCA Approval Jul 22nd
- V5.1.3 FAA Approval Aug . 31st
- V5.1.5 TSO Approval Dec 2016
- V5.1.5 TCCA/FAA Approval Dec 2016
- V5.1.5 EASA Approval Jan 2017
- START OF CAMPAIGN Feb 2017
- V5.1.5 SB Feb 2017
- AFM TR Release

V5.1.5; Resolves 3 FMS Reset Issues.

- Certified and released via Service Bulletin 700-34-5021/ 700-34-6021 on Feb 13th , production cut in 9779
  - V5 initially released with a AFM limitation prohibiting the use of CPDLC
  - TR released on 23 Mar/17 to remove CPDLC limitation
  - Version 5 difference E-Learning training module available via Bombardier Aerospace Training Center (BATC)

Campaign Status:

- 356 in service aircrafts targeted to be completed by end 2018
- Currently 148 scheduled via ISIT
- 9 aircraft completed

Service Bulletin released Feb 13th

BOMBARDIER

Top Issue 34-27-F-877 (34-26-F-869)

SELECTED SPEED HOLD & NAV to NAV TRANSFER

Per Advisory request action merged with 34-26-M-869, NAV to NAV TRANSFER

34-26-F-869
Global Vision, Automatic FMS to LOC capture function works about 20% of the time. On parallel runways several times it takes you into the approach path of the incorrect runway

- Advisory Wire (AW) provides best practices/methods to optimize NAV-to-NAV transfer AW700-34-0399 released on Jan/13
- Software change to improve the NAV to NAV transfer and LOC capture logic

34-27-F-877
Continual Speed Target (CST);
With version V4.5 upon power shutdown or at IAS transition below 60 knots at landing, the aircraft does not hold "default speeds" inserted via the VNAV THRUST page and G/A tab.

- Allow user selected speeds to remain active when;
  - A flight plan is entered or deleted
  - Go-around selected
  - IAS transition from above to below 60 knots

✓ **Both actions are addressed in V5 software**

SB700-34-5021/-6021 released Feb/2017

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APR 13		T. TAYLOR		D. FIELD

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Top Issue 34-29-F-917

VISION – SVS FAIL POSTING

SVS Fail posting due to SVM T5 reporting "INSUFFICIENT TERRAIN DATA" OMS message. Crew reporting that the system takes a long time to have the fail message clear until well after takeoff. Reloading of the SVM and CCM card seemed to fix it but its a constant issue in some form or another. It may not appear for some time and then it comes in a rash of failures. The system is not as robust as it should be. Too many failures with the same reason. Upgrading the CCM to a -002 seemed to help for a while but the issue came back.

SVS Software (SW) improvements in V5:

- ✓ Reduce SVS FAIL CAS message nuisance posting associated to normal operation
- ✓ Addition of color coding for airport bubbles and magenta runway on approach
- ✓ Reduction SVS Obstacles FAIL CAS message with increased obstacle processing
- ✓ Correct frozen image condition
- ✓ New detailed OMS fault codes for troubleshooting

SVM Hardware (HW) Production Reliability Improvements:

- ✓ Introduced since S/N 42TRPN, A/C 9657

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APR 14		SKYSERVICE		D. FIELD

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Top Issue 34-29-F-917

VISION – SVS FAIL POSTING

In-service implementation status:

- ✓ SmartFix™ Plus procedures;
  - New OMS messages procedures introduced by V5, released Jun/2016
- ✓ SVM modules upgraded to new production standard:
  - Attrition since Dec/2015
  - Proactive in-service deployment for reliability improvement
    - SB700-34-5025; SB700-34-6025 released Nov/2016
    - SVM replacement units scheduled by ISIT team
- ✓ SVS software improvement addressed with V5
- ✓ AW700-34-0410 Rev. 3 released Mar/2017 provides updates on:
  - Workarounds and troubleshooting tips for V4.5 and V4.9
  - Information on SVS V5 improvements

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Top Issue 45-21-M-707

FUTURE ON-BOARD DIAGNOSTICS

Bombardier BD700 Green Aircraft Publications in DVD format. This function of the PMAT is now useless. The maintenance and troubleshooting tool provided with the aircraft does not operate as advertised nor does it perform to the expectations of the operator

Mitigation:

Smart Pubs removed the hyperlink to publication and Fault Isolation Manual (FIM) and as a workaround solution

- The CAIMS faults code can be noted and then simply entered in SmartFix™ Plus for further troubleshooting
  Note: FIM is no longer updated and all faults isolation / troubleshooting migrated to SmartFix™ Plus, which contain all required links to Aircraft Manuals
- BA & HW reached consensus in Jan/2016, that the current RMA project is not commercially viable

Honeywell new proposed solution see next slide for details:

- Bombardier requested that this solution address the integration with SmartFix™ Plus tool to resolve the hyperlink to publication and Fault Isolation Manual (FIM) issue on the current PMAT

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APR 10		B. GULLINGSRUD		D. FIELD

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Top Issue

PMAT PROJECT UPDATE

Issue #: 45-21-M-707

Topic:

- Status to support of PMAT I and II repair capabilities and plan for PMAT III
  - PMAT I - P/N 7023300-913
  - PMAT II - P/N 7023300-801

Repair Support Status:

- Ability to support repairs for PMAT I and II is 18 months / Q3 2018
  - Key components no longer procurable
  - Support timing based on expected repair rates
    - Recurring review of usage to be accomplished by Honeywell
    - Continuing to identify efforts to source parts

Exchange Support:

- Honeywell continuing to maintain Exchange Stock for PMAT I and II

Accomplishments Since October Advisory:

- Identified detailed requirements and sourcing options
- Honeywell completed Statement of Work for Next GEN PMAT

Honeywell

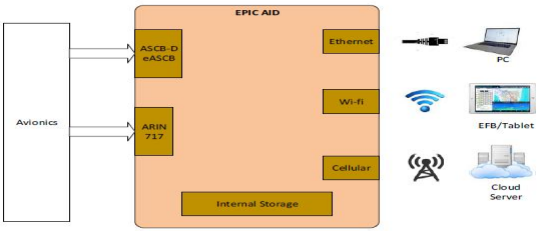
Top Issue

PMAT PROJECT UPDATE

Issue #: 45-21-M-707

Next GEN PMAT Scope:

- Maintain current capabilities of existing PMAT and exploring capabilities to restore SmartFix™ Plus hyperlink
- Wireless based I/O embedded in aircraft
- Maintenance Application (CAIMS) transitioned to Windows based tablet PC



Next Steps:

- Design Review with Bombardier – May 2017
- Vendor Selection - June 2017
- Remaining Schedule to be provided post Vendor Selection – June 2017
  - Planning in-work with timeline to support Q3 2018 obsolescence

Honeywell

Top Issue

APU EGT PROBES

Issue #: 49-28-M-908

Topic:

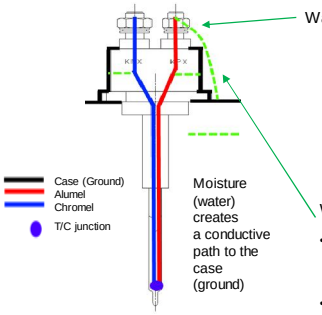
- EGT Probes having short to ground failures

Accomplishments Since October Advisory

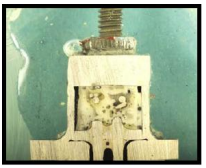
- Identified improvements to sealant process being utilized in Production
- Performed Engineering testing to baking process for previously removed EGT Probes

Root Cause Analysis:

- Moisture can cause a conductive path from the thermocouple circuit to the EGT probe chassis creating a condition where the ECU detects and annunciates a short to ground (STG) fault



Water can create a path externally on the probe



Water can create a path internally in the probe

- The probe/Junction box braze has voids
  - None contributed to failure mode
    - Validated through testing of new and returned units
- The insulating material and between insulation and chassis in post region is not hermetically sealed

Honeywell

Top Issue

APU EGT PROBES

Issue #: 49-28-M-908

Testing Accomplished:

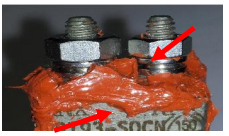
- Submerged previously removed EGT for 4 days
  - Separate tests immerged, sprayed and dripped water EGT Terminal Ends
- Performed baking process for 1 hour at 400 degrees
  - Performed insulation resistance testing with all positive conclusive results

Corrective Action:

- RTV Solution initially incorporated June 2015 via Service Bulletin (SB) RE220-49-8169
  - Implementation at Repair & Overhaul Facilities / Production accomplished with 76 APU's In-Service
    - No removals have been identified for this population – Accumulated 10,000+ Flight Hours
      - Highest Hour Aircraft with implementation during production process is 975 hours
  - Post-SB failures seen attributed to insufficient RTV coverage. Lessons learned to be incorporated in SB
    - RTV Application Visual:

Proper

Insufficient



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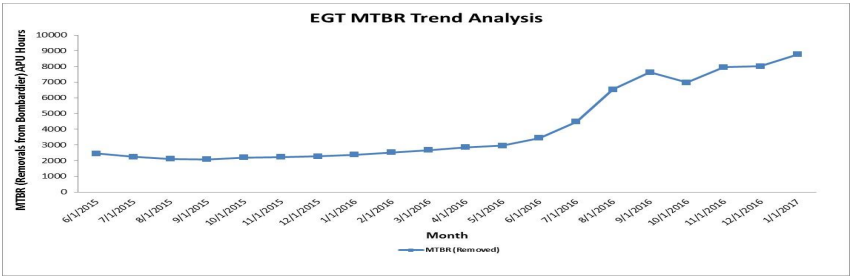
Top Issue

APU EGT PROBES

Issue #: 49-28-M-908

Reliability Since Improvement in June 2015:



Next Steps:

- Incorporate best practices to revision of Service Bulletin – 5/5/17
  - Clarification to pictures for RTV application location
  - Primer application prior to RTV
  - Modify baking process to 400 degrees for 1 hour
  - Compliance document to be included for traceability of SB incorporation to include pictures
    - Documentation is critical for reliability improvement data
- Amend AMM task 49-61-05-400-801 to incorporate best practice
  - To include documentation of newly received probe will not require baking process upon installation

Honeywell

Top Issue

APU EGT PROBES

Issue #: 49-28-M-908

Service Bulletin (SB) RE220-49-8169 Rev 3:

- Recommended
- To be incorporated at any HON Authorized Service Center
- Covered for all Operators
  - Up to 4 hours of labor & $75 USD in material

EGT Probe Failure Event :

- Probe replacement covered via normal OEM warranty & MSP process
- Special probe pricing available for Aircraft not under warranty
  - Specific to Global platform, contact Bombardier for ordering
- Upon EGT probe failure, Operators are recommended to implement (SB) RE220-49-8169 Rev 3

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