December 15, 2017

A FOCUS ON SAFETY

ALL: The annual reference review for cold weather operations...2

TOP STORIES

Astra SPX™/G100™/G150™: During the Manual Mode check, the right engine would accelerate uncommanded from idle to 65% N1 RPM...3

G200™: An update on fleet status, program highlights, and dispatch critical components...4

G280™: An operator contacted Gulfstream after noting a white "CPC 500 full pressure cycles" CAS Status message...6

GII™/GIII™/GIV™/G300™/G400™: A GII's 36-100 APU was intermittently shutting down after flight...7

GIV™/G300™/G400™/G350™/G450™: An update on the aft pressure bulkhead...7

G450™: An update on new capabilities, improvements, forthcoming action, and dispatch reliability...8

GV™/G500-5000™/G550™: After the left engine is started and at idle, there is a 300-400 PSI pressure rise in the Aux Hydraulic System...9

G650™/G650ER™: How Gulfstream is addressing corrosion underneath the APU exhaust fairing...10

G650™/G650ER™: A recommended technique for starter air valve water purging during cold weather...11

THE SERVICE EDGE

ALL: Gulfstream continues to expand the worldwide network of distribution centers...12

CALENDAR / NEWS INFORMATION

12 FSI GIV and GV Upgraded Simulator Training
13 GII/GIII Spare Parts Price Reduction
13 Gulfstream Company Store Reopens in Savannah
13 Contact for Tech Bulletin Distribution
13 Last Gulfstream Journal for 2017
14 The Gulfstream Journal Tips
14 MyGulfstream.com Support
14 Gulfstream Contacts

OTHER NEWS

14 Action Items Published
15 Master Technician Recognition
16 AIN Reports
16 Email Subscription Management

TECHNICAL BULLETINS

16 Maintenance and Operations Letter Update
ALL: Gogo ATG 4000/5000 Software

16 Alert/Customer Bulletin Update
G650/G650ER: Wire Routing on REER Bulkhead

Upcoming Events
Refer to MyGulfstream.com for detailed information and registration for all upcoming Gulfstream events.
Jan 23 – Flight Operations Forum, Zurich
Jun 3-7 – 2018 Operators & Suppliers Conference

Other Events
Jan 24 – NBAA Regional Forum at PBI

The Gulfstream Journal
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FOCUS ON SAFETY

ALL (ATA 5/9/12): Cold Weather Operations Review
By Sean Sheldon, Flight Operations

Gulfstream publishes multiple resources to provide guidance in preparing and operating your aircraft in challenging cold weather conditions. The Airplane Flight Manual (AFM), Aircraft Operating Manual (AOM), Quick Reference Handbook (QRH), Operating Manual Supplement GAC-OMS-01 – Operations in Extremely Cold Temperatures, and the Cold Weather Operations Manual (CWOM) will provide the needed information and guidance to manage cold weather operations. They each contain the appropriate considerations and guidance for preparing the aircraft for flight and securing the aircraft in freezing conditions. There are two separate CWOMs, one for the Large Cabin models (GI – G650ER), updated September 29, 2017, and one for the Astra, G100/SPX, G150, G200, and G280, also updated September 29, 2017.

AFM Limitations and the National Authority regulations, such as Federal Aviation Regulations CFR 91.527 or 135.227, must always guide operating procedures and decision making. The FAA has published the 8900.431, Revised FAA-Approved Deicing Program Updates, Winter 2017-2018, which addresses deice and anti-ice fluids and procedures, and is available from https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1031651. There are several important changes in this update that pilots should review.

One of the most comprehensive web pages for information and links is located within Skybrary.aero at http://www.skybrary.aero/index.php/Holdover_Time_(HOT)_Tables.


References for towing, servicing levels, anti-icing/deicing procedures and fluid inspection/cleaning, and cold weather operation for Gulfstream aircraft are as follows:

- **Astra, Astra SPX/G100** – Maintenance Manual Chapters 05-50-00, 9, and 12; Ground Handling and Servicing Handbook; AFM Supplement 8; Deicing/Anti-Icing Fluid Application Guide
- **G150** – Maintenance Manual Chapters 05-50-00, 9, and 12; Ground Handling and Servicing Handbook; Deicing/Anti-Icing Fluid Application Guide; AFM Supplement 4
- **G200** – Maintenance Manual Chapters 05-50-00, 9, and 12; Ground Handling and Servicing Handbook; Deicing/Anti-Icing Fluid Application Guide
- **G280** – Maintenance Manual Chapters 05-50-00, 9, and 12; AFM Supplement 8; Operating Manual Chapter 7; Quick Reference Handbook
- **GI** – Maintenance Manual Chapters 9 and 12; AFM Appendix A, Adverse Weather/Abnormal Atmospheric Conditions
- **GII/GIIB** – Maintenance Manual Chapters 05-05-00, 9, and 12; Operational Information Supplement G1159/OIS-4, Cold Weather Operation; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook
- **GIII** – Maintenance Manual Chapters 05-05-00, 9, and 12; Operational Information Supplement G1159A/OIS-1, Cold Weather Operation; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook
- **GIV** – Maintenance Manual Chapters 05-05-00, 9, and 12; AFM Appendix E, Adverse Weather/Abnormal Atmospheric Conditions; Operating Manual Chapter 07; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01
- **G300** – Maintenance Manual Chapters 05-50-00, 9, and 12; AFM Appendix D, Adverse Weather/Abnormal Atmospheric Conditions; GIV Operating Manual Chapter 07; Operational Information Supplement G300-OIS-01, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01
- **G400** – Maintenance Manual Chapters 05-50-00, 9, and 12; AFM Appendix D, Adverse Weather/Abnormal Atmospheric Conditions; GIV Operating Manual Chapter 07; Operational Information Supplement G400-OIS-01, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01
• **G350** – Maintenance Manual Chapters 05-50-00, 9, and 12; G450 Operating Manual Chapter 07; Operational Information Supplement G350-OIS-01, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01

• **G450** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement G450-OIS-01, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01

• **GV** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement GV-OIS-02, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01

• **G500-5000** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement G500-OIS-03, Contaminated Runway Operations; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01

• **G550** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement G550-OIS-03 Revision 2, Contaminated Runway Performance; Deicing/Anti-Icing Fluid Application Guide; Ground Handling and Servicing Handbook; Supplement GAC-OMS-01

• **G650** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement G650-OIS-01, Contaminated Runway Performance; Deicing/Anti-Icing Fluid Application Guide

• **G650ER** – Maintenance Manual Chapters 05-50-00, 9, and 12; Operating Manual Chapter 07; Operational Information Supplement G650ER-OIS-01, Contaminated Runway Performance; Deicing/Anti-Icing Fluid Application Guide

Any specific questions regarding cold weather operations may be directed to Gulfstream Customer Support at 800-810-GULF (4853) or 912-965-4178 (phone), 912-965-4184 (fax), or technical.operations@gulfstream.com, or Gulfstream Flight Operations at 912-965-3047 (phone) or 912-965-7024 (fax).

**TOP STORIES**

**Astra SPX™/G100™/G150™ (ATA 73): Uncommanded Engine Acceleration during Manual Mode Check**

By Robert Lamb, Customer Support Mid-Cabin Mechanical Systems

A G150 operator reported that when the pilots performed their daily engine Manual Mode check per the Airplane Flight Manual (Page IV-20), the right engine would accelerate from idle to 65% N1 without throttle lever input. No EICAS messages or other engine operational issues were reported when the Digital Electronic Engine Control (DEEC) switch was selected back to AUTO.

Technical Operations recommended that the P3 drain line on the bottom of the Fuel Control Unit (FCU, see photo) be checked for any obstructions. Then verify the throttle rigging was correct per G150 Aircraft Maintenance Manual Chapter 76-10-00 to ensure the Power Lever Angle (PLA) was reading 20° in the FCU sight glass window, with the throttle set to idle and the engine not operating.

These inspections were carried out with no issues noted. The decision was made to replace the FCU, which was the most likely failed item; since the FCU is mechanically controlling the idle set point in manual mode.

A replacement FCU, PN 3070800-49, was installed, restoring normal operation. Please note the -49 FCU is the latest configuration available per Honeywell Service Bulletin TFE731-73-5141 and was cut into production at G150 SN 303. The -49 fuel control provides the following improvements:

1. Redesigned manual mode and overspeed solenoid for increased reliability
2. Redesigned power lever angle (PLA) shaft seal system to reduce PLA shaft leakage
3. Internal modifications designed to maintain the required performance levels if the main turbine engine fuel control assembly is exposed to contaminants in the fuel

*Continued*
G200™ (ATA 00): Fleet Status Update
By Andy Watson, Program Manager, Mid Cabin Aircraft, and Mark Gonzales, Mid Cabin Model Manager

Fleet Status
There are 245 G200 aircraft in the service fleet with over a combined 1,000,000 hours and 650,000 landings. The fleet leader has accumulated over 10,000 hours and 7,000 landings. Through the end of 3rd Quarter 2017, the G200 National Business Aviation Association (NBAA) dispatch reliability rate has held steady at 99.85%, which continues to solidify the G200’s position as one of the most dispatch reliable aircraft in the mid cabin segment.

Program Highlights
There have been two service bulletins released this year for the G200. SB 200-32-417 (Landing Gear – Main Landing Gear – Indication Harness Repair and Rerouting) was released in February in response to several reports of Main Landing Gear (MLG) indication faults attributed to moisture intrusion in MLG electrical connectors 44G1 and 45G1 (primarily post SB 200-32-384 aircraft). To prevent moisture intrusion on two specific pins (44G1J and 45G1J) in the MLG connector, the SB denotes a modification and rerouting of the harnesses. The SB is available for aircraft SNs 004 through 250.

The second of the released service bulletins, SB 200-55-423 (Stabilizers – Vertical Stabilizer – Rear Attachment Bolts Torque Value Inspection and Repair) now includes a revision (Rev 1), which removes the inspection requirement for most of the fleet. (It denotes only those aircraft for which a recorded removal requires the inspection.)

Dispatch Critical Components
Dispatch Critical items are reviewed quarterly to identify any new trends and ensure resources are dedicated to solving the issues that have been found to have the potential to affect the fleet. Shown below are the top ten dispatch items for the G200 fleet through the end of 3rd quarter 2017. This Dispatch Critical Component List (DCCL) represents a 12-month rolling average.

Continued
Starter-Generator

The improved configuration of the starter-generator is in environmental qualification testing for an enhancement to the commutator. We anticipate receiving TSO for the starter-generator in the coming months. Until then, we are closely managing Gulfstream’s -230 configuration inventory (and core returns) to ensure availability within the fleet. Due to this certification activity, SBs 322 and SB 326 have been put on hold for aircraft serial numbers 004 thru 162 trying to upgrade to the Thales starter-generator. Maintenance and Operations Letter G200-MOL-17-0007 was also issued to communicate this to the fleet.

Uplock Switch

The uplock switch has recently climbed into the number two position due to a change to the Aircraft Maintenance Manual (AMM). To ensure reliability of the uplock pin and switch, AMM Chapter 05-20-00 (Revision 29) adds a new detailed inspection of the MLG uplock roller assembly. This inspection specifically checks the condition of the oven-cured lubricant.

Fluid Quantity Management Computer

We are seeing an increase in the mortality of the early FQMS computer hardware in earlier fleet members. An improvement to the computer hardware (-005) was cut into production at serial number 134 and subsequently placed into the Illustrated Parts Catalog (IPC) as a preferred spare.

Engine Compressor Bleed Valve Solenoid

Pratt & Whitney Canada (PWC) has issued SB 25401 Rev 4 that installs upgraded bleed valve solenoids, PN 30B7178-02, front core wiring harness, and P3 air supply tubing. This upgrade improves the reliability of the system by modifying the connection mounting locations between the solenoids and the harness and filtering the P3 supply air. To date, over 357 engines have been modified per this SB and are demonstrating much increased system reliability.

Horizontal Stabilizer Trim Actuator (HSTA)

The majority of the HSTA failures are of the earlier configuration units. An improved HSTA, part number 376700-1021, introducing a new motor for increased reliability, was cut into production at serial number 236 and subsequent. This configuration is also available as a replacement per Illustrated Parts Catalog 27-40-00 for all other aircraft.

Finally, operators are encouraged to sign up for the Gulfstream aircraft-specific newsletters. Signup includes being placed on the e-mail invitation list for the newsletter WebEx held the week following the release of each model newsletter. Please continue to visit MyGulfstream.com for the latest Gulfstream Journal articles and webcasts, including maintenance and flight operations topics designed to keep your aircraft and crews in top condition.

Have a safe and enjoyable holiday season. We look forward to continuing to create and deliver the world’s finest aviation experience into 2018 and beyond.
G280™ (ATA 45): Resetting the CPC Life Cycle Recording in Onboard Maintenance System  
By Christian Henzler, Customer Support Mid-Cabin Systems Group

A G280 operator contacted Gulfstream after noting a white “CPC 500 full pressure cycles” Crew Alerting System (CAS) Status message. This message indicates the Onboard Maintenance System (OMS) has automatically latched a life cycle parameter record from the Cabin Pressure Controller (CPC).

When the fault was reviewed (see graphic), it noted for the CPC that “500 or more full pressure cycles have occurred. This message will be active until the ‘Differential Press Above 8.5 PSID’ Lifecycle Parameter value has been reset to a value less than 500.”

The OMS captures the number of airframe pressure cycles for monitoring stresses on the aircraft structure. This cycle is completed by the aircraft climb, cruise altitude, and descent for landing. After the aircraft climbs to cruise altitude, the differential pressure between the interior and exterior of the aircraft can be as high as 9.2 PSI under normal conditions. Recording this event provides tracking data, should there be any reason for future maintenance or inspection requirements relating to structural fatigue.

This Life Cycle message is simply a notification. It can be extinguished by changing the component life cycle data using the Utility Functions Menu of the OMS Maintenance Manager (shown below) as outlined in Aircraft Maintenance Manual 45-00-00 step 13. No further action is required. →
**Scenario**
The Director of Maintenance (DOM) on a GII aircraft reported that the aircraft’s 36-100 Auxiliary Power Unit (APU) was intermittently shutting down after flight.

**Question**
What could cause the APU to shut down?

**Answer**
Troubleshooting began by defining the situation. When asked, the DOM said the APU could be restarted and there were no faults showing on the Fault Indicating box in the tail compartment.

Troubleshooting had begun with reviewing the auto shutdown features of the APU. The GTCP36-100 Maintenance Manual 49-20-00, Page 2 states the following:

*Automatic Shutdown Features*
- Overspeed ........................................................................................................ 110 ±1 percent
- Overtemperature ...................................................................................... 704°C to 732°C (1300°F to 1350°F) at 100 percent
- Overcurrent ....................................................................................................... 4.0 amps max.
- Low Oil Pressure (10 ±2 sec above 95 percent) ........................................................ below 31 psig
- Loss of EGT ............................................................................................... Open thermocouple circuit
- Loss of RPM ............................................................................................... Open motional pickup transducer circuit
- High Oil Temperature ............................................................................. 141°C to 147°C (286°F to 297°F)

Because no faults were showing and there was no flight deck indication of overspeed or excessive temperature, the DOM elected to forego testing of the Low Oil Pressure and High Oil Temperature switches and Monopole generator. This left the possibility of a loss of RPM or EGT signal.

The manual states the proper troubleshooting procedure for the EGT thermocouple is to disconnect the chromel (white) wire from the thermocouple post and measure resistance across the thermocouple posts. The DOM found the chromel wire to have loosened, which was providing an erratic signal to the ECU, resulting in an auto shutdown event.

Securing the wires in accordance with Honeywell Maintenance Manual 49-60-45, Page 201 rectified the problem, and the aircraft was returned to service.

The ability to use aircraft system knowledge and deductive reasoning is a skill that is developed through experience and practical application. It often becomes the difference between quick, efficient troubleshooting, which returns an aircraft to service, and extended downtime. Advanced level courses such as FlightSafety’s Advanced Troubleshooting and Operational Maintenance Procedures (OMP) provide the opportunity to develop and practice these skills.

For more information about these programs, contact your FlightSafety Maintenance Training Support Representative. For a list of training centers, visit [www.flightsafety.com](http://www.flightsafety.com).

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**GIV™/G300™/G400™ (ATA 53): Aft Pressure Bulkhead Update**
By Service Engineering

The aft pressure bulkhead on the GIV/G300/G400 and G350/G450 aircraft is graphite composite construction and is made in three separate sections. The lower panel of the composite pressure bulkhead disbonded on three GIV aircraft. The disbonds were in multiple locations, and most of the bulkhead skins were oil canned and bulging away from the core material. These three documented skin disbonds were found during the following scheduled maintenance inspections:

- 24-month Baggage Compartment Behind Panel – Inspection (visual) for both 12/24 and MSG-3 Maintenance Programs **Continued**
• 72-month Aft Pressure Bulkhead – Inspection (Tap Test) – 12/24 only

There was no loss of pressure or abnormal conditions reported on any of these three aircraft. The initial disbond was on a very early serial number aircraft.

Due to the initial disbonded bulkhead, Customer Bulletin (CB) 229 was released on February 4, 2014 to tap test inspect the aft pressure bulkheads. This CB was issued for GIV S/Ns 1001-1050, as this enveloped a specific bond technique. Completion of the CB revealed no further disbonded bulkheads on the inspected aircraft. However, since the CB was closed out, two aircraft have been found with disbonded bulkheads.

A safety assessment of this condition has been accomplished, and there is no significant impact on safety margins with the observed disbonds. All the possible scenarios of failure are within design limits for decompression, and the tail compartment would vent prior to any over pressurization concerns.

Stress analyses showed that a GIV Aft Pressure Bulkhead with a complete disbond of the face-sheets still had the capability of carrying GV Burst Pressure loads. Full-scale testing applied both fatigue and static loads to validate this analysis. The burst pressure test was taken up to 28.5 PSI with no ultimate failure.

Gulfstream plans to issue another CB similar to CB 229 to inspect all MSG-3 aircraft. The forthcoming CB is being issued in coordination with the FAA for GIV/G300/G400 S/Ns 1001-1535 that are on the MSG-3 maintenance plan, including those that have converted to MSG-3 using Aircraft Service Change (ASC) 416A. Also included will be G350/G450 S/Ns 4001-4004, as they have the GIV type bulkhead installed.

Gulfstream will add an Aircraft Maintenance Manual Chapter 5 (MSG-3 Aircraft) inspection that will consist of a 72-month visual and tap test (same as 12/24 Aircraft). If disbonds are found, contact Gulfstream Service Engineering for repair instructions. Gulfstream Service Letter GSL405345001 provides instructions if panel replacement is required.

The FAA has communicated to Gulfstream that they are planning to issue an Airworthiness Directive (AD) to mandate the CB inspections. A GSL is available to provide the procedure for removal and replacement on the Aft Pressure Bulkhead in the remote chance a disbonded panel is discovered. That GSL will be revised as appropriate following AD issuance to ensure Gulfstream is prepared to support operator needs. As a reminder, all GSLS require a Service Engineering disposition, but that disposition and the GSL are provided to the customer at no charge.

If there are questions regarding the GIV/G450 Aft Pressure bulkhead, contact Technical Operations at 1-800-810-GULF (4853), 1-912-965-4178, or technical.operations@gulfstream.com.

G450™ (ATA 00): Program Update
By Mark VanZwoll, Program Manager, G450/G550

New capabilities and improvements for the G450 are approaching. The Jet ConneX Ka-Band in-flight connectivity system will become an option for the G450 by the end of December. The database loading software resident to the maintenance computer has been revised, and the new version will soon be available to operators, offering a reduction of 10-15 minutes in the duration of database loads without any modification to the aircraft. Also, the G450 will be added to the Gulfstream Performance Application in the first quarter of 2018, easing takeoff and landing performance planning.

The fourth quarter also introduces changes for some operators. The release of FAA Airworthiness Directive (AD) 2017-20-08 represents the formalization of rulemaking proposed by the authorities in January. Details have been provided in the 4Q G450/G550 Program Update (newsletter) available on MyGulfstream.com to help operators understand the implications of this new ruling and the scope and timing of remediating actions.

G450 Dispatch Reliability
The G450 fleet completed over 49,500 missions in the last 12 months with an exceptional overall NBAA dispatch reliability of 99.90%. From the standpoint of Dispatch Critical Issues, the robustness of the fleet is apparent in the fact that the most critical component turned in only three failures in the 12 months ending September 30, 2017.

Accidental Damage was the most dispatch critical issue in the third quarter, with a jump from five to six events from 2Q to 3Q2017. In most cases, accidental damage is the result of a poorly-conceived action, though inaction can be just as hazardous. For instance, failure to remove protective engine inlet covers was at the root of two of the events captured in the third quarter. FlightSafety and Gulfstream have partnered to develop online training courses for FBOs to provide guidance for the ground handling and servicing of Gulfstream aircraft. Encourage the FBOs you frequent to expose their personnel to this training. Operators themselves are a prominent cause of accidental damage, coming in a close second behind FBO handling damage regarding frequency of events. Operators are reminded to remain extremely vigilant while moving the aircraft or positioning equipment near it.

The Avionics Specialties Conical Angle of Attack (AOA) Probe holds the number two position this period with three failures. This unit was superseded in production by a more reliable vane-style probe at...
aircraft serial number (S/N) 4143. The installation of a vane-style probe via Aircraft Service Change (ASC) 055A is recommended for operators of S/Ns 4001 - 4142 who have not yet done so.

The **Nosewheel Steering Unit** was the cause for three cancellations in the 12 months ending September 30. Operators are reminded that the Aircraft Maintenance Manual (AMM) requirements for lubrication of this unit have been reduced, and severe over-greasing of the unit could lead to premature failures. Moisture ingress and subsequent failure of Rotary Variable Differential Transducers (RVDTs) is the most common failure mode. Gulfstream is in dialogue with the component supplier to determine if further design action could improve reliability of the units.

For operators who have taken advantage of Gulfstream’s Regional Operators Forums this year, thank you for making the time to attend. We wrapped up the annual tour in White Plains, NY, on November 7. These events are an excellent way for you to directly interact with various elements of Gulfstream, as well as network with other operators in your area. We appreciate the feedback received at these events and hope to see you at an upcoming session. The [2018 Operators and Suppliers Conference](https://www.gulfstream.com/2018-operators-and-suppliers-conference) dates are now posted on MyGulfstream.com.

**GV™/G500-5000™/G550™ (ATA 29): Auxiliary Pressure Rise When Left Engine Is Started**

By Michael David Smith, Customer Support Large-Cabin Mechanical Systems Group

Technical Operations has received calls from operators concerning the following issue. After the Number 1 (left) engine is started and at idle, the crew notices a 300-400 PSI pressure rise in the Auxiliary Hydraulic System.

This has been corrected by replacing the 1159SCH209-106 check valve on and between the 1159HL50046-19AUXP and 1159HL50046-21AUXP auxiliary system pressure lines between Fuselage Station 890-905 left-hand side just aft of the converter rack.

The reason is that when the check valve begins to fail, it allows left main hydraulic system pressure going to the rudder actuator to back feed to the aux pressure transmitter through the aux system pressure line to the rudder actuator.

Make sure the arrow on the check valve is pointing at the deactivation valve for proper flow path orientation (reference Illustrated Parts Catalog 29-00-00 Figure 32 Item 65).
G650™/G650ER™ (ATA 49/53): Fuselage Corrosion Underneath APU Exhaust Fairing
By Ryan Capriglione, Structural Design Engineer

In mid-2017, there were several documented reports of corrosion forming on the lower unprimed fastener heads hidden underneath the G650 APU exhaust fairing (shown in Figure 1). Corrosion was found on aircraft of widely varying flight times and flight cycles.

Root Cause

After examining the design of the APU exhaust fairing and fuselage skin underneath the fairing, two main design features were identified that contribute to the fastener head corrosion.

The primary design issue is a mislocated drain hole in the APU exhaust fairing. With the aircraft on the ground, the drain hole position is not allowing all trapped water to drain out of the area underneath the APU fairing (shown in Figure 2).

The secondary design issue that contributed to corrosion is lack of surface protection on the fuselage skin underneath the exhaust fairing. The fastener heads are bare and exposed directly to the environment within the fairing. Additionally, the skin underneath the exhaust fairing does not have a protective topcoat applied.

These two design deficiencies - incorrect drain hole location and lack of surface protection – were the root cause for the corrosion issue seen on several aircraft in service.

Continued
Solution
To address the corrosion underneath the APU exhaust fairing, moisture that may collect in the fairing should be removed with greater efficiency and additional surface protection means should be applied to the fuselage skin.

The fairing drain hole will be moved approximately 6 inches aft, which is the lowest point on the fairing when the aircraft is resting on the ground (shown in Figure 3).

All fastener heads underneath the APU exhaust fairing will be touched up with primer. Then, the entire surface of the fuselage skin underneath the exhaust fairing will be covered with topcoat protective coating. The primer and topcoat will offer additional protection from any moisture that may remain in the exhaust fairing environment after drainage.

Implementation
Engineering work for the improved corrosion protection is now complete for all future aircraft. The enhanced surface protection will be implemented at G650 S/N 6315. The exhaust fairing with the relocated drain hole will be implemented at G650 S/N 6350. For G650 S/N 6315-6349, the exhaust fairing will have two drain holes, one in the original location and one in the new location. For G650 aircraft prior to S/N 6315, a retrofit Aircraft Service Change package is in work and targeted for 1Q2018 release.

G650™/G650ER™ (ATA 80): Starter Air Valve Water Purge Technique for Cold Weather Operation
By Powerplant Engineering and Flight Operations

G650/G650ER engine starter air valve (SAV) failures in cold weather can be caused by water that has condensed within the SAV over multiple starts. When the unit is exposed to freezing ambient temperatures for extended periods of time, the resulting ice can prevent the SAV from opening/operating properly. This Journal article provides a preventative technique for pilots to execute if the airplane will be exposed to freezing temperatures for a prolonged period of time after landing. A "prolonged period of time" is dependent on the outside air temperature and may be as short as 60 minutes if the ambient temperature is -40°C.

After landing, if the airplane will be exposed to freezing temperatures for a prolonged period of time prior to the next engine start, then Gulfstream recommends performing three (3) engine dry crank cycles for ten (10) seconds each on each engine, using APU bleed air (reference Airplane Flight Manual section 02-05-50: Engine Cranking Cycle). These short engine crank cycles should purge accumulated water out of the SAV and prevent ice from obstructing the air passages of the SAV during the subsequent engine start. Dry cranking longer than 10 seconds is not advised because the affected air passages in the SAV will not keep purging water the longer you crank the engine.

This information is being provided so that air crews can utilize this technique to prevent starter air valves from freezing. Gulfstream is working with the supplier to improve reliability of the valve.
THE SERVICE EDGE

ALL (ATA 00): Worldwide Spare Parts Support Update
By Paula Coulomb, Sr. Manager, Spare Parts Sales/Pricing

In the on-going plan to provide our customers with a world-class level of support, Gulfstream continues to expand the worldwide network of distribution centers. The most recent addition to this network is in Melbourne, Australia.

With this new addition, Gulfstream now has 12 distribution centers (logistics hubs, distribution centers, and forward stocking locations) around the world to support your parts requirements in an expedient fashion and, in most cases, with reduced freight costs.

Distribution centers are initially stocked with high-demand parts. Replenishment is then based on usage, which is reviewed on a weekly basis. There is the potential for parts to be added and/or removed based on orders processed from each distribution center.

Distribution centers are currently located at:
- On Time Express — Hong Kong
- Jet Aviation — Singapore
- OTAS — Beijing
- Topcast — Hong Kong
- ST Aerospace — Singapore
- Gulfstream — Melbourne
- Gulfstream — London Heathrow
- Jet Aviation — Dubai
- Kuehne + Nagel LLC — Dubai
- Jet Aviation — Basel
- Gulfstream — Van Nuys, CA
- Flightpath Services — Teterboro, NJ

At the same time, Gulfstream continues to support from our main logistics hub, the Savannah Product Support Distribution Center.

Gulfstream’s goal is to ship your order from the closest location based on stock availability. For questions or concerns, please contact any of the Spare Parts Sales Specialists for assistance: 1-800-810-GULF (4853) or 1-912-965-4178, Option 1.

NEWS AND ANNOUNCEMENTS

Calendar / News Information

- Train as You Fly with FlightSafety’s GIV and GV Simulator Upgrades — FlightSafety will provide the training you need with enhanced initial and recurrent training courses for Gulfstream GIV and GV aircraft equipped with PlaneDeck technology. Upgraded simulators will provide an in-depth experience with the functionality of the new DU-885 displays and other advanced features of Gulfstream’s PlaneDeck technology.

Gulfstream PlaneDeck is a retrofit of the cockpit’s primary flight displays. It features Honeywell’s DU-885 display technology. Specifically designed for SPZ-8000/8400 and SPZ-8500 series avionics systems, this upgrade also provides growth capabilities for future Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) functions. PlaneDeck can be expanded for upcoming requirements such as WAAS-LPV, RNP, FANS 1/A, and ADS-B (In). It also offers the integration of XM® graphical weather, and Jeppesen electronic charts and maps with geo-referenced and video displays, all accessed through a cursor control interface.

FlightSafety’s GIV and GV simulators have also been updated with the FMS 6.1 system upgrade. This upgrade will provide a better understanding of Wide Area Augmentation System (WAAS), Lateral...
Precision with Vertical Guidance (LPV), and Required Navigation Performance (RNP).
FlightSafety is the only training provider with PlaneDeck technology and the FMS 6.1 system upgrade. By upgrading their simulators, they can offer the ability to train as you fly and prepare you for safe and efficient flight operations.
For more information please contact one of the FlightSafety Learning Centers below:

• **Dallas/Fort Worth Learning Center**
  Amanda Mullenax, Center Sales Manager
  866.486.8733 | 972.534.3200 | Amanda.Mullenax@FlightSafety.com

• **Long Beach Learning Center**
  Karen Bahena, Customer Support Manager
  800.487.7670 | 562.938.0121 | Karen.Bahena@FlightSafety.com

• **Savannah Learning Center**
  Andrew Wyatt, Center Sales Manager - Gulfstream GV
  800.625.9369 | 912.644.1000 | Andrew.Wyatt@FlightSafety.com
  Kendra Shanahan, Center Sales Manager - Gulfstream GIV
  800.625.9369 | 912.644.1000 | Kendra.Shanahan@FlightSafety.com

• **Wilmington Learning Center**
  Yeni Ocampo, Center Sales Manager
  800.733.7548 | 302.221.5100 | Yeni.Ocampo@FlightSafety.com

• **GII/GIII Spare Parts Price Reduction** — Gulfstream is pleased to announce price reductions on spare parts commonly used on the Gulfstream II and III aircraft.
  To assist operators in identifying the discounted parts, a consolidated list has been placed in the Notice section of the MyGulfstream.com Spare Parts page. Operators interested in this initiative are encouraged to use the list in conjunction with the MyGulfstream Spare Parts Search page to identify savings opportunities.
  If you have any inquiries concerning the price reduction initiative or would like to place an order, please contact Spare Parts Sales at 1-800-810-GULF (4853) or 1-912-965-4178, Option 1.

• **Gulfstream Company Store Reopens in Savannah** — The redesigned company store is open at the Product Support Cafe in Savannah, adjacent to the Service Center. Complementing the online store, the refreshed retail space is a brand showcase inspired by Gulfstream's aircraft design.
  "We wanted to represent our brand and the quality of our products, so we drew inspiration from the sleek design of our planes to modernize the look of our store," says Melissa Strudgeon, Marketing corporate merchandiser. "Every detail reflects our brand."
  Gulfstream's new logo and "G" symbol appear on many items. And the Royal Cinemas movie passes are back by popular demand.
  The store is open 10 a.m. to 5:30 p.m., Monday through Friday.

• **Contact for Technical Bulletin Electronic Distribution** — If you have stopped receiving electronic distribution for Maintenance and Operations Letters, Customer Bulletins, Service Bulletins, Cabin Service Bulletins, Aircraft Service Changes, and Operator Memorandums, please send an email to rebecca.saturday@gulfstream.com. In your response, include your name, email address, aircraft model(s), and contact number. Please allow 48 hours/two business days for activation.

• **Last Gulfstream Journal for 2017** — Due to the upcoming Christmas and New Year’s holiday weeks, this will be the last Gulfstream Journal for 2017. The print and video versions will resume with the January 12, 2018 edition.
The Gulfstream Journal Tips — Here are some useful tips to help you get the most out of newsletter resources:

- **Printing the entire issue** — From MyGulfstream.com, navigate to The Gulfstream Journal home page (Communications > Gulfstream Network > The Gulfstream Journal > Journal Library) and select the PDF Version for the issue you want to print (Adobe® Acrobat® Reader is required).

- **Search Tips for The Gulfstream Journal** — In the Search Center source area, select Gulfstream Journal in the pull-down menu. Enter your search term(s) and click the Search icon.

- **Mobile Access** – The Gulfstream Journal can be accessed via MyGulfstream.com on your mobile device. Additionally, all features of MyGulfstream.com and Gulfstream.com are available for and compatible with mobile devices.

- **MyGulfstream.com Support** — For MyGulfstream.com questions or problems, call the Support Hotline at 912-965-5999. Staff are available to help you Monday – Friday between 8:00 a.m. and 4:30 p.m. Eastern Time (USA). You can also submit your request online using the Need Help? link.

  If you do not yet have access to the site, you will need to set up a personal account. Simply complete and submit the online form at [http://www.gulfstream.com/mygulfstream/](http://www.gulfstream.com/mygulfstream/).

- **Gulfstream Contacts** — For a complete listing of Gulfstream contacts, including Product Support Sales, Field Service Representatives, and Aircraft Sales, visit [http://www.gulfstream.com/contacts/](http://www.gulfstream.com/contacts/).

OTHER NEWS

**Action Items Published / Database Search on MyGulfstream.com**

At Gulfstream, an important part of how we improve our products and services is through feedback from our customers. Action items are taken from customer forums such as the Operators Conference, Regional Forums, and the Customer Advisory Board. Action items are customer suggestions or comments taken on a variety of subjects including, but not limited to, flight operations, cabin operations, maintenance operations, and product reliability. These actions are researched, reviewed, and implemented as appropriate.

The results of the action items are often beneficial to all customers, not just the originator of the suggestion or comment. Therefore, The Gulfstream Journal will publish action items and responses in each issue so that everyone can review this valuable information.

Additionally, the action items can be viewed at any time from MyGulfstream.com. To access the Action Items Database, log into MyGulfstream.com, mouse over the Events header, and select Action Items Database. You may search for responses to actions by applicability, date, year or detailed description of the action.

We look forward to your continued feedback. Comments concerning action items should be directed to Action.Item.Administrator@gulfstream.com.

The following action was taken during the March 2017 Customer Advisory Board:

- **Action Item:** The FQMS MAINT RQD CAS message does not define if there is a fuel issue or oil issue. Review if the CMC contains sufficient data to determine the system affected.

- **Resolution:** The blue advisory “FQMS MAINT RQD” CAS message is triggered by faults in either the fuel quantity or oil quantity measurement systems. The CMC chapter for FQMS can be consulted to determine if the fault is related to fuel or oil quantity.

The following action was taken during the 2016 Operators Conference:

- **Action Item:** Create an FAQ database for the Astra/SPX/G100 aircraft.

- **Resolution:** Due to major configuration differences between the models, there cannot be a combined FAQ. There are not enough aircraft in either fleet to justify an FAQ for each model. Therefore, there are no plans to produce an FAQ for the Astra/SPX/G100.
FlightSafety Master Technician Recognition

FlightSafety International's Master Technician Training Program is a comprehensive, progressive-step series of courses that provides a career development path for maintenance technicians and serves as noteworthy evidence of their superior proficiency and achievement. The path requires that a technician complete a prescribed menu of courses during a certain period and at an elevated proficiency level. To learn more about Master Technician certification, visit http://www.flightsafety.com/fs_maintenance_training.php.

Gulfstream is proud to be a training partner with FlightSafety, and we are very proud of those individuals who have clearly demonstrated their commitment to excellence. Congratulations to Christopher Garofolo (The Traveler’s Indemnity Company) for achieving G550 Master Technician status on November 17, 2017, at Gulfstream Westfield following completion of the G550 Advanced Troubleshooting course.

Congratulations also to the following individuals for achieving Master Technician status on December 8, 2017, at the Savannah Learning Center: Joseph M. Denne (Goodyear Tire & Rubber Company, G350/G450), Matt Baker (Haworth, Inc., G350/G450), Philip Grose (Onex Flight, G650), Andrew S. Wiegman (Abbott Laboratories, Inc., G350/G450), Dean G. Theodore (Disney Aviation Group, G650), Jeffrey S. Harmon (Gulfstream, G350/G450), Bradley J. Burdue (Owens-Illinois, Inc., G350/G450), and Jack Rountree (Gulfstream, G550).

Continued
Advanced Information Notice Reports

No Advanced Information Notices (AINs) were issued from 12/06/2017 to 12/12/2017. Current notices can be viewed on MyGulfstream.com in the Online Manuals section of the Publications menu. They are listed by Aircraft, Library, and Advanced Information Notice Index.

Email Subscription Management

Visit the Email Subscription Center to manage your Gulfstream email subscriptions. Use the online form to choose your model(s) and sign up for or change your preferences for The Gulfstream Journal/Breakfast Minutes.

From the MyGulfstream.com home page, click Home > Additional Resources > Help > Email Preferences Management.

Technical Bulletins

Maintenance and Operations Letter Update

The following Maintenance and Operations Letter (MOL) has been released:
- **ALL-MOL-17-0026**, 12/8/17, Gogo Business Aviation Customer Communication - ATG 4000/5000 Software, Version 2.8

Alert/Customer Bulletin Update

The following Alert/Customer Bulletins (ACBs/CBs) have been released:
- **G650 CB 203, G650ER CB 203**, Inspection - Wire Routing on REER Forward Bulkhead; Effectivity: Aircraft serial numbers 6003 through 6264, 6266, 6269, 6272, 6275, 6278, 6283, 6285 and 6289.
Alert/Service Bulletin Update
No Alert/Service Bulletins (ASBs/SBs) have been released since the last update.

Cabin Service Bulletin Update
No Cabin Service Bulletins (CSBs) have been released since the last update.

Aircraft Service Change Update
No Aircraft Service Changes (ASCs) have been released since the last update.

Operator Memorandum Update
No Operator Memorandums (OMUs) have been released since the last update.

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Note: Maintenance Manual changes normally affect the Chapter 5 inspection program (Continued Airworthiness). If your company is not on current revision status with Gulfstream's Technical Publications Department for either the Maintenance Manual or Chapter 5, consideration should be given to re-establishing these services to ensure your aircraft's Continued Airworthiness. These services may be obtained by contacting us at 800-8110-4853 or 912-965-4178 Option 3 (phone), 912-965-3520 (fax), or pubs@Gulfstream.com (e-mail).

Contact Information: The Gulfstream Journal welcomes your questions, comments, or ideas. Our communication lines are open to our readers by phone: 912-965-4827 (Monday – Friday, 8 a.m. – 4:30 p.m. ET) or e-mail: gary.arms@Gulfstream.com. The mailing address is The Gulfstream Journal, P.O. Box 2207, M/S SW3C, Savannah, GA 31402-2206.

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The Gulfstream Journal