BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

Customer FORUM & Newsletter

TUESDAY, APRIL 5, 2011

VOLUME 08 / ISSUE 07

IN THIS ISSUE

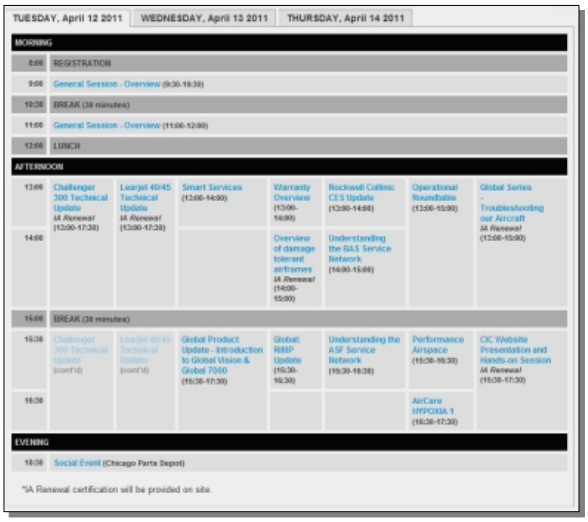
LEARJET, CHALLENGER AND GLOBAL SERIES

M&O APRIL 12-13-14 CHICAGO 2011 You. First.

Time is running out!
Don't miss this year's M&O! Register now!

Sign up for our upcoming Maintenance & Operations (M&O) conference in Chicago from April 12 – 14, 2011 and benefit from dozens of technical updates and operational sessions tailored for each aircraft program – Learjet, Challenger and Global. In order to offer you the best possible service, we encourage you to submit your registration by Friday, April 8, 2011.

A comprehensive schedule and registration details are available online, so please visit the Bombardier M&O website to register.



If you are unable to attend, watch James Hoblyn LIVE online – he will present our latest efforts to put you first. On Tuesday, April 12 at 9:00 CDT (14:00 GMT), log onto the CIC website and watch a LIVE video feed of the General Session.

For more information, comments or concerns, please contact Valerie Harvey at Valerie.Harvey@aero.bombardier.com.

Transport Canada takes over POC responsibility from CBAA

On April 1, 2011 Transport Canada assumed responsibility for certification and oversight of business aviation in Canada from the Canadian Business Aviation Association (CBAA). This transfer of responsibility was announced in March 2010.

There are no changes to existing Private Operator Certificate (POC) requirements for operators with a valid POC. However, there is a change regarding who is responsible for inspections, audits, renewals and the issuing of new certifications.

A Transport Canada Civil Aviation Private Operator Program Steering Committee was created to coordinate and direct all activities required to ensure a straightforward transition from the CBAA POC program to a Transport Canada Civil Aviation (TCCA) managed program, and to design and implement a framework for the new TCCA private operator program for the oversight of Canadian private operators.

Details on the transition can viewed in the interim order currently in effect at the following link:
http://www.tc.gc.ca/media/documents/ca-standards/2-109e_final.pdf

There is a two-year transition period – from April 1, 2011 until March 31, 2013. Thereafter, the interim order and individual exemptions will be replaced by the new regulations and all private operators registered in Canada will need to hold Transport Canada private operator certificates and comply with the new subpart 604.

For more information and detailed Q&A, please visit the Transport Canada website at:
http://www.tc.gc.ca/eng/civilaviation/standards/commerce-business.htm

Kitting Documentation Change

In an effort to improve our efficiency and eliminate waste in our day-to-day operations, we are implementing a slight modification involving the paperwork we provide on all new kits.

Our previous process called for duplicate copies of the Airworthiness Release Certificates (ARCs) to be included both on the inside and the outside of the kit. Beginning in early April 2011 the ARCs will no longer be inside the kit, and the outside label will be altered to reflect this change. The paperwork will continue to be on the outside of the kit, and the modification only applies to new kits being built and placed into stock. All existing kits currently in our inventory will not be affected by this change.

We ask for your support during this transition and hope this does not cause any inconvenience. Please contact your Customer Services Representative for any questions or concerns.

LEARJET SERIES

Learjet 40 and 45: Wire Bundle Chafing

It has been brought to the attention of Customer Support Engineering that on some Learjet 40 and 45 aircraft the wire bundles at FS602, WL 40 at the aft frame of the aft equipment bay door have a potential for chafing.

Customer Support Engineering inspected 15 aircraft and found three chafing. A customer inspected their fleet of 10 aircraft and found two chafing. It was also found that some aircraft already have cat track installed and some do not. In order to communicate the issue to the field, recommended Service Bulletins SB40-24-14 and SB45-24-19 have been released to inspect the wire bundle and install cat track protection on the frame behind the bundle as required. If the wire bundle has been damaged, you are directed to contact your Bombardier Field Service Representative.

CHALLENGER SERIES

Challenger 300: Brake Unit Leakage Rates Limits – ATA 29

Investigation of brake units returned for leakage have shown that some removals happened for wetness around brake adjuster pin or pucks and fluid amount was insufficient to form a drop.

To avoid such unnecessary removals, an Aircraft Maintenance Manual (AMM) – Part II Temporary Revision No 29-8 was issued on February 10, 2011 to add brake leakage limits to Task 29-00-00-790-801 - Hydraulic-Components Leakage Rates. This revision permits wetness condition and declares brake acceptable if leakage is not sufficient to form a drop after 5 minutes of parking brake application.

As mentioned in the SAE Aerospace Recommended Practices ARP 1084, static or dynamic seals seepage is normally present.

The causes of seepage can be as follows:

- A film of hydraulic fluid being retained by the finish of metal surfaces, such as piston rods, and being carried past the seal. However, this film is necessary for the lubrication of the seal.
- Pressure and temperature variation affecting the seals.
- Seals tending to take permanent set after a period of time.
- Detail parts such as felt rings, and cavities retaining fluids.

Leakage checks should not be immediately performed on aircraft hydraulic systems and components that have remained in a static depressurized condition for an appreciable period of time. The systems should be activated first and the components operated a number of times; then Hydraulic fluid leaks should be wiped off before doing a leakage checks.

During a leak check, where fluids dropping from a component may-be directly observed, do not wipe surfaces. Operate and cycle the component as required in AMM task 29-00-00-790-801 and record the elapsed time between drops falling free. Compare results with leakage criteria shown in the AMM table.

The allowable leakage for static and dynamic seals for various hydraulic components is listed in a table provided in AMM Task 29-00-00-790-801 Hydraulic-Components Leakage Rates.

Challenger 850: ADS Plus – Solving Problems in the Field

On a recent flight, the flight crew reported that after levelling at FL270, the pilot set cruise power. Passing 280 KTS, indicated (.718 mach) the aircraft experienced a slight but noticeable aerodynamic buffet. The pilot reduced power below 91.7% N1 and speed below 280 KTS and the buffet stopped. The pilot then increased power to slowly accelerate above 280 KTS. The aerodynamic buffet appeared again between 280 & 285 KTS—this time it was much more pronounced and high frequency. The pilot slowed the aircraft below 280 KTS and did not continue to the original destination. No abnormal flight characteristics were noted below 280 KTS.

Since this was an outstation, Contract Maintenance, under the direction of Maintenance Control, performed the applicable AMM and FIM task and found no discrepancies. The corrective action was: Performed visual inspection of fuselage, nose, tail, radome and flight controls. No discrepancies found.

To ensure safety, a Functional FLT was performed with no problems noted and the aircraft was returned to service.

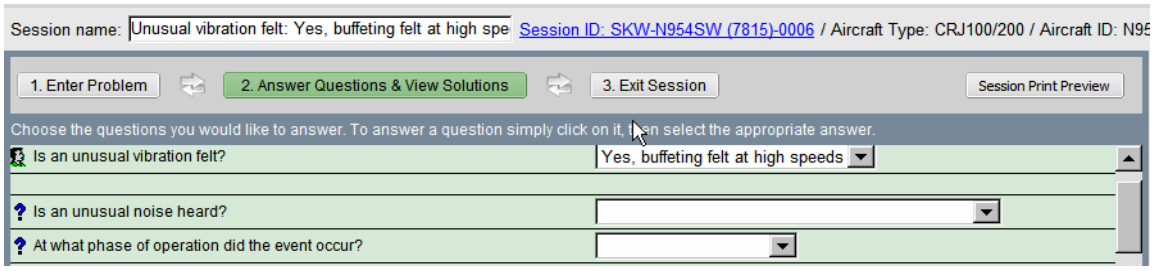
The next flight, the pilot reported aircraft aerodynamic buffeting anytime in climb and cruise and at high speeds above 250 KTS. The aircraft was removed from service and taken to the hangar.

What were the next steps? The AMM and FIM Task have not resolved the problem. A significant amount of manpower was expended troubleshooting this issue and then, the FSR suggested Maintenance check Aircraft Diagnostics Solutions Plus (ADS).

ADS Plus is a knowledge-based troubleshooting program that is provided by Bombardier to all operators, free of charge. Everyone with an iflybombardier.com account can access these excellent maintenance resources.

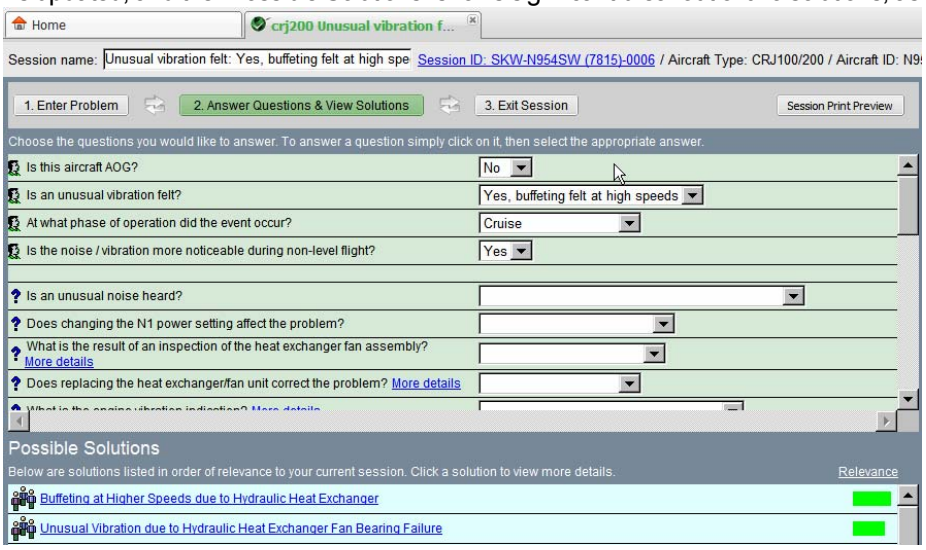
ADS Plus has added features, allowing maintenance to input Squawk details by "ATA," "Key Words" or "Images." Selecting Images" brings up the following view:

Clicking on the ear for Abnormal Noises, Vibration or Aural Warnings brings up the following questions:



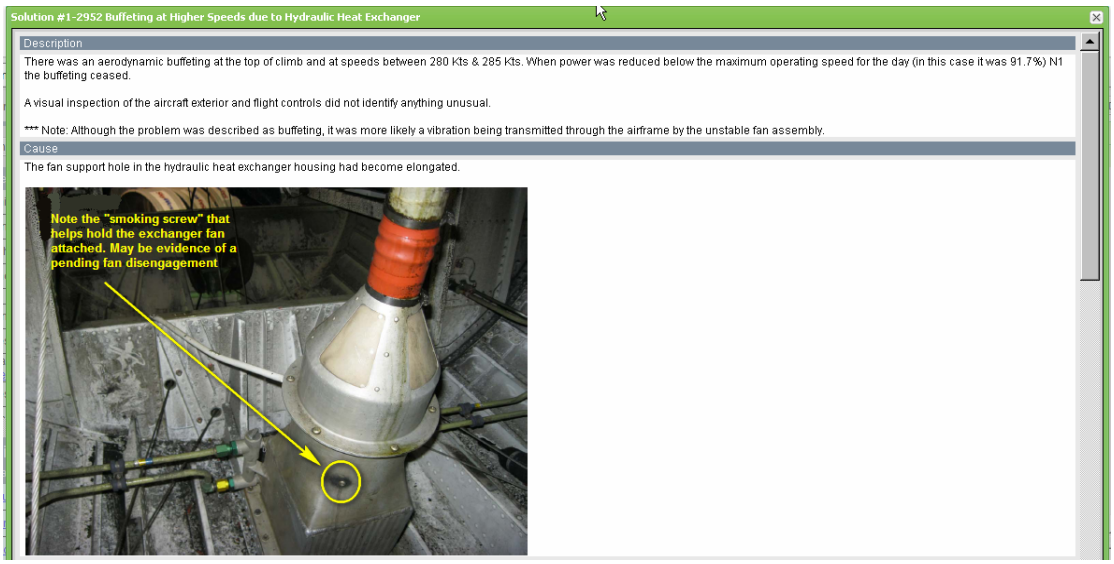
One question seems relevant right away – "Is an unusual vibration felt?" Clicking on the dropdown, the "Yes, buffeting felt at high speeds" is selected.

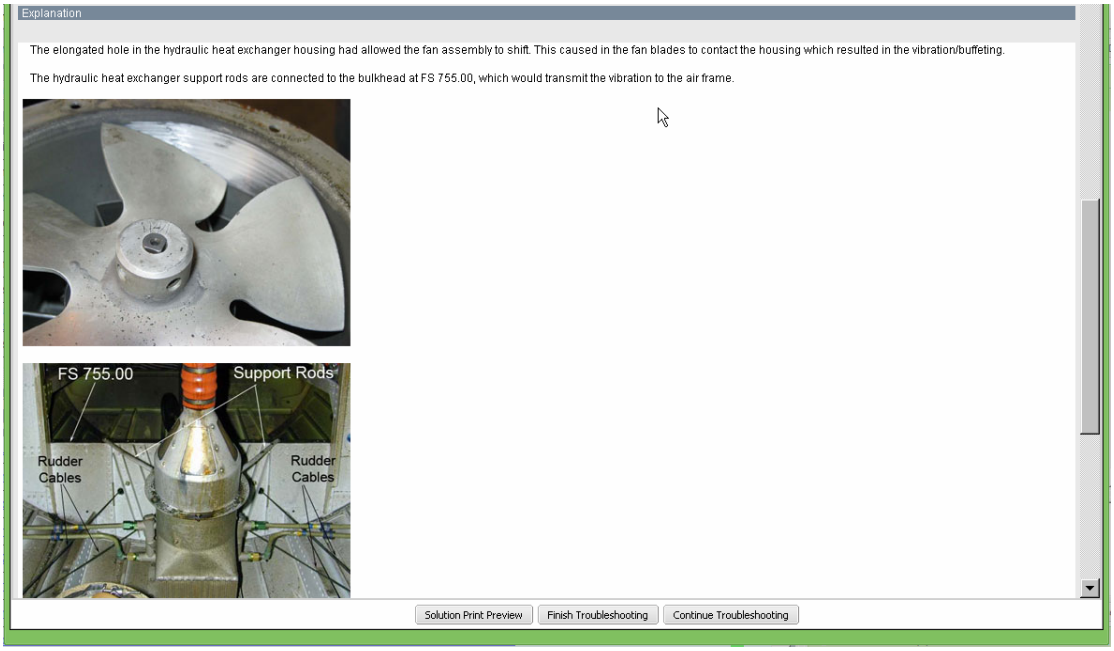
With the initial symptom selected, ADS Plus refines the questions. Maintenance should scan the questions and answer the ones they know. The ADS Session is updated, and the "Possible Solutions" shows significant breakout of two solutions, as shown below:



The top two "Possible Solutions" deal with the Hydraulic Heat Exchanger, which would seem totally unrelated to the Buffeting Problem. This is where ADS excels; the knowledge base uses the symptoms to highlight real world experiences.

Clicking on the top "Possible Solution" – Buffeting at Higher Speeds due to Hydraulic Heat Exchanger brings up the following:





Key Observations

You will typically see the following symptoms and test results when this problem occurs:

Unusual vibration felt	Yes, buffeting felt at high speeds
Unusual noise heard	Yes, in flight compartment
Phase of operation when the event occurred	Cruise
Changing the N1 power setting affects the problem	Reducing N1 stops vibration
Result of an inspection of the heat exchanger fan assembly More Details	Damage is evident
Replacing heat exchanger/fan unit correct problem More Details	Yes, corrects problem

The "Key Observations" are very telling, as the Possible Solution's "Key Observation"–symptoms are very closely matched to the details of the Squawk.

ADS *Plus* can work for everyone in Maintenance. If the squawk symptoms had been entered in ADS *Plus* when initially reported, the mechanic that first had to deal with the issue could have quickly checked the Hydraulic Heat Exchanger Fan. Then perhaps Maintenance would have found the root cause of the problem the first time. Using ADS *Plus* could have minimized the downtime and saved the expense of multiple functional check flights.

Once found, there was no doubt the Heat Exchanger Fan had failed. As shown in the pictures below:

Notice hole is now elongated, allowing movement of the motor. This allows the fan blades (shown in next image) to make contact with the housing.

The corrective action states: Upon inspection, found fan for Hydraulic Heat Exchanger worn and vibrating. Removed and replaced hydraulic heat exchanger IAW CRJ 200 AMM 29-11-42, OPS check good. Enter the "Symptoms," Consider the "Possible Solutions," troubleshoot to the root cause of the Squawk, and you are done.

When you have finished troubleshooting, it is very important that you finish the ADS Session, select "Exit Session" and then "Save and Exit" at the bottom of the screen.

Maintenance is encouraged to use ADS Plus every time they are troubleshooting. If the aircraft has been taken out of service for a Squawk, ADS Plus should be consulted. Simply enter the squawk symptoms and consider the questions and possible solutions. When there is significant breakout of a Possible Solution, open it up and consider it.

ADS Plus is located on the password-protected section of iflyBombardier.com under My Services and Tools > Services > Aircraft Diagnostics Solutions. Additional training on ADS Plus can be done through the ADS Plus Quick Start Tutorial.

Challenger 850: APU Oil Temperature and Auto-Shutdowns

A quick search of SkyTrack will show numerous APU Auto Shutdowns on the ground and APU OIL TEMP Caution messages in-flight due to Oil High Temperature faults. Bombardier has released SL 49-009, which recommended including a General Visual inspection of the APU Oil Cooler when placing an IDG on MEL in addition to the oil servicing checks currently required in MEL 24-11-01.

A mechanic can quickly evaluate the oil cooling system by using the APU ECU.

First, simple steps to take:

- Oil Servicing – Shut down the APU and wait a minimum of 5 minutes. The oil level should be halfway between the ADD and FULL mark.
- While you are in the APU compartment, place your finger in the Oil Cooler Fan Discharge Duct Vent Holes and feel the inside of the duct. Should you notice a wet, oily substance, the Oiler Cooler Fan Carbon seal is leaking. A leaking Oiler Cooler Fan Carbon seal will allow dirt to quickly build up on the Oil Cooler, decreasing the Oil Cooler efficiency.
- On the APU ECU press the SELECT Button to power up the display; wait for the "********" to go out. The ECU is at the Top Level Mode Display. Press ENTER to enter Status Information, and then use the SELECT Button to scroll down to OILT. OILT is a live display of the actual oil temperature. **Normal oil temperature of the APU is 160-180 °F**. While watching OILT, have a colleague move the High Oil Temperature (HOT) sensor wiring around slightly. If the oil temperature changes, there is a wiring issue that needs to be fixed.
- **Abort** to exit the Maintenance Mode of the ECU.

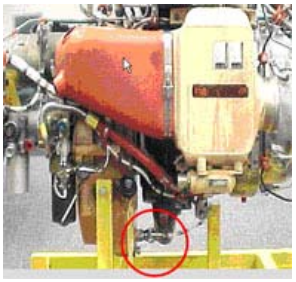
Maintenance has now confirmed the APU Oil Level is halfway between the ADD and FULL mark and the HOT sensor wiring is not faulty. Now the performance of the Oil Cooling System must be checked.

After completing the safety checks, start the APU. With the APU Running, go back to the APU ECU and check the OILT reading again. If the APU was cold, oil temperature should gradually increase and stabilize around the **160-180 °F** range. As the APU Oil Cooler ages, Oil Temperature may increase some, but should still remain well below the protective shutdown temperature of 325±10°F.

Oil temperatures to know:

- Oil temperature of 572 °F is an open circuit in the HOT Sensor wiring.
- Oil temperature ≥ 325 ±10 °F = **APU OIL TEMP** Caution.
- Oil temperature above 220 °F – Maintenance should inspect the Oil Cooling System before further operations.
- Oil temperature above 200 °F – Maintenance should generate an MCI to Inspect the Oil Cooling System at the next maintenance interval.
- Oil temperature rapidly changing indicates a HOT Sensor Wiring Issue.

Oil Temperature
APU ECU, Status Information



High Oil Temperature Sensor -

To increase the reliability and life of the APUs, Maintenance should keep the APU operating at peak performance. Oil Temperature is one critical parameter that Maintenance can easily check and correct if it's running hot. Anytime you are doing APU maintenance, it's a good idea to check and document the APU Oil Temperature.

GLOBAL SERIES

Passenger Door – Vent Flap Installation – ATA 52-11-73

Recently we have received two reports that the vent flap assembly has been found misassembled. One with the hardware in the incorrect sequence, the other with the hardware in the incorrect sequence with a washer that was not the correct part.

In the first case, the customer discovered the incorrect installation while trouble shooting a vent flap that was not aligning correctly. Further investigation, comparing two Globals, also revealed a variance in the way the vent flap was operating.

They discovered an incorrect washer with a smaller I.D. in the installation. Due to the smaller I.D., the washer would have sat on the bearing, rather than surrounding it. This would actually increase potential vent flap rotation rather than limit it.

In the second case, a Field Service Representative reported finding an incorrect hardware installation while trouble shooting.

Specifically, the area of concern is the installation of a washer that helps reduce "rotation" of the vent flap. The correct washer is P/N B0202008L10. If you refer to the IPC (52-11-01 {fig. 2 GX, Fig. 11 Global 5000, Fig. 21 XRS} view F), this washer (item 227) is to be installed between the vent flap bearing (item 255) and the spacer (item 230).

This washer will fit over the vent flap bearing ball and fills the space between the spacer and bearing ball, limiting possible side-to-side rotation of the bearing, thus limiting rotation of the vent flap.

Sometimes the washer is found installed between the spacer and the vent flap beam. This will not prevent rotation of the vent flap and will cause a minor misalignment between the vent flap and the vent flap beam.

Note: The washer is an optional installation; however it has become part of the standard build since A/C 9078.

A Quality Investigation Request was raised to address the possibility the misassembly occurred during the production or completion phases.

Although the IPC and AMM tasks are correct, a user comment was raised to add a caution to use the correct washer and emphasize the correct location of the washer.

BOMBARDIER TRAINING

We are pleased to inform you of the availability on the following technical training events. Please visit our Bombardier Aircraft Training website at www.batraining.com for the course descriptions.

Learjet Series

Course	Dates	Location
Learjet 40 / 45 Maintenance Refresher	April 18 - 22, 2011	Dallas, Texas

For additional information, please contact **Barbara Pichey** by e-mail at Barbara.Pichey@aero.bombardier.com or by phone at +1-469-791-6469.

Challenger 300

Course	Dates	Location
Challenger 300 Advanced Diagnostics	May 2, 2011	Dallas, TX, USA
Challenger 300 Initial/Type	May 10, 2011 June 14, 2011	Dallas, TX, USA
Challenger 300 Avionics (5 days) B2 (8 days)	June 6 - 10, 2011 B2: June 1 - 10	Dallas, TX, USA

For additional information, please contact **Monica Moreno** by e-mail at Monica.Moreno@aero.bombardier.com or by phone at +1-469-791-6457.

Challenger 600 Series

Course	Dates	Location
Challenger 604 / 605 A&P	April 11 - 27, 2011	Tucson, AZ, USA
Challenger 604 / 605 Familiarization	April 25 - 27, 2011	Montréal, Canada
Challenger 604 Electrical Interface	May 2 - 11, 2011	Montréal, Canada
Challenger 604 / 605 Initial Type	May 2 - 20, 2011 June 13 – July 1, 2011 July 18 – August 5, 2011	Montréal, Canada
Challenger 604 Avionics (5 days) B2 (9 days)	May 23 - 27, 2011 B2: May 23 - June 2	Montréal, Canada
Challenger 605 Avionics (5 days) B2 (9 days)	May 23 - 27, 2011 B2: May 23 - June 2 July 4 - 8, 2011 B2: July 4 - 14	Montréal, Canada
Challenger 604 / 605 Refresher Update	June 6 - 10, 2011	Montréal, Canada

For additional information, please contact **Micheline Bibeau** by e-mail at Micheline.Bibeau@aero.bombardier.com or by phone at +1-514-344-6648.

Global Series

Course	Dates	Location
Global Mechanical System	April 18 - 29, 2011	Dallas, TX, USA

For additional information, please contact **Maria Capozi** by e-mail at Maria.Capozi@aero.bombardier.com or by phone at +1-514-344-6607.

RECENT RELEASES

Advisory Wires / Communiqués / Service Letters / All Operator Messages**

Click here to view all the Advisory Wires / Communiqués.

* Applicable only for **Challenger 850** – Go to iflyBombardier.com to view Service Letters (SL) / All Operator Messages (AOM).

All models

Date of issue	Number	Revision	Subject
March 29	BCSBA COM 0364	-	2011 M&O Chicago – Last chance to register!
April 4	BCSBA COM 0370	-	Important changes to issuance of Private Operator Certificates in Canada

Learjet Series

Date of issue	Number	Revision	Subject
March 29	AW34-027R1	-	Universal Alert Service Bulletin 2XXX.X.X-34-3307B

Challenger Series

Date of issue	Number	Revision	Subject
March 23	AW600-34-2370	-	Challenger 600 and 601 Series: FMS Incorrect Placement of Top of Descent
March 23	AOM 1268	-	Challenger 850: Aircraft Exposure to Radiation
March 23	SL-00-0026	Rev. D	Challenger 850: Definition and charging policy for all documents types used to communicate information to the operator (non-chargeable) and used to provide technical solutions to operator queries (chargeable) by In-Service Engineering and Technical Support.
March 24	SL-78-0016	Rev. A	Challenger 850: Control logic diagrams of the Thrust Reverser System EICAS messages
March 28	AOM 1269	-	Challenger 850: FAA Airworthiness Directive (AD) 2011-01-09 "B/E Aerospace Protective Breathing Equipment P/N 119003-11"
March 28	AW600-27-2335	Rev. 1	Challenger 600 Series: "FLAPS FAIL" Troubleshooting Information
March 28	AW600-27-2372	-	Challenger 600 Series: Flap Power Drive Unit Potentiometer - No Fault Found Initiative Update
March 29	AW600-27-2371	-	Challenger 600 Series: Flap Brake Detector Unit (BDU) - No Fault Found Initiative

Global Series

Date of issue	Number	Revision	Subject
March 24	AW700-24-0313	Rev. 12	Variable Frequency Generator (VFG) – Rotor Diode Failures investigation
March 25	AW700-28-0072	Rev. 5	Centre Tank Fuel Transfer Pump
March 31	AW700-52-0294	Rev. 1	Passenger Door – Tensator Spring – Introduction of a 1500 Flight Cycle Life Limit
April 4	AW700-30-042	-	No.2 Pitot Static Probe Heater Indication Failure

Service Bulletins

Click here to view all the Service Bulletins.

Please go to iflyBombardier.com to view Service Bulletins applicable to Challenger 850.

Learjet Series

Date of issue	Number	Revision	Subject
April 4	AAK 85-2A	Rev. 1	[Opt.] Landing Gear - Replacement of Main Landing Gear Wheels
April 4	SB40-52-07; SB45-52-16	Rev. 2	[Rec.] Doors - Inspection/Replacement of the Baggage Bay Door Fire Barrier Seal

Challenger Series

Date of issue	Number	Revision	Subject
March 22	601R-53-075 (Challenger 850)	Rev. B	[Rec.] Fuselage - Fuselage Frame Reinforcement - Installation of Radius Washers on the Outer Flange of the Frame between FS220.00 and FS605.00
March 24	601R-32-102 (Challenger 850)	Rev. E	[Rec.] Landing Gear - Nose Landing Gear - Removal of the Check Valve of the Nose Landing Gear (NLG) Bypass Valve
March 25	601R-55-007 (Challenger 850)	Rev. D	[Rec.] Stabilizers - Horizontal Stabilizer - Test, Lubrication, and Rework of the Pivot Pins and Bushings
March 25	601R-52-068 (Challenger 850)	Rev. F	[Opt.] Doors - Passenger Door - Mechanism Interlock to Prevent Latch Pin Damage to the Fuselage
April 4	00 - SB Commercial Summaries (Challenger 850)	Rev. 12	SB Commercial Summaries for CRJ200
April 4	605-44-005	Rev. 1	[Rec.] Modification. – Cabin Electronic System (CES) – Eliminate Freeze Up of the Cockpit Touch Screen Equipment (CTSE) During Generator Switching

Global Series

Date of issue	Number	Revision	Subject
March 29	700-21-052; 700-1A11-21-025	Basic	[Rec.] Modification – Temperature Control – Replace Suspect Packings at Hot-Air Check Valve
March 29	700-1A11-25-024	Basic	[Opt.] Modification – Buffet / Galley – Installation of an Access Panel for the Chiller Filter
April 4	700-52-021	Rev. 3	[Opt.] Modification - Passenger Door - Installation of Aesthetic Side Covers
April 4	700-29-023; 700-1A11-29-006	Basic	[Rec.] Modification – Quick Disconnects – Relocate and Replace Hydraulic Hose in Both Pylons

Vendor Service Bulletin cover letters

Click here to reach the Service Bulletins menu and navigate to "By Vendor". Issued on March 31:

Challenger 300..... CH300-MAR/11-002

Challenger 600 Series..... CH605-MAR/11-002

Global Series..... GX-MAR/11-002; G5000-MAR/11-002

CALENDAR OF EVENTS

Date	Event	Location
April 6 – 9	AeroExpo 2011	Toluca, Mexico
April 9	Bombardier Service Center Customer Round Table	Dallas, TX, USA
April 11 – 14	Maintenance and Operations (M&O) Conference	Chicago, IL, USA
April 26 – 28	Global Series Advisory Committee	Montréal, Canada
May 4	Bombardier Service Center Customer Round Table	Fort Lauderdale, FL, USA
May 10 – 11	Challenger 800 Series Advisory Committee	Montréal, Canada
May 11	Bombardier Service Center Customer Round Table	San Antonio, TX, USA
May 17	Bombardier Service Center Customer Round Table	Portland, OR, USA
May 17 – 19	EBACE 2011	Geneva, Switzerland
June 7 – 8	Challenger 300 Advisory Committee	Montréal, Canada
June 9	Safety Standdown Asia	Shanghai, China
June 20 – 26	Paris Air Show	Le Bourget, France
August 10	Safety Standdown Latin America	São Paulo, Brazil
August 11 – 13	LABACE 2011	São Paulo, Brazil
August 29 – 31	NBAA Learjet Technical Committee	Wichita, KS, USA
September 7 – 8	Challenger 600 Series Advisory Committee	Montréal, Canada
September 14 – 16	Jet Expo Moscow 2011	Moscow, Russia
September 20 – 22	Regional M&O Conference Europe	Frankfurt, Germany
October 5 – 6	Challenger 300 Advisory Committee	Montréal, Canada
October 10 – 12	NBAA 2011	Las Vegas, NV, USA
October 24 – 27	Safety Standdown USA	Wichita, KS, USA
October 25 – 27	Global Series Advisory Committee	Montréal, Canada
November 9 – 10	Challenger 800 Series Advisory Committee	Montréal, Canada
November 13 – 17	Dubai Air Show	Dubai, UAE