Customer Services

Advisory Wire

REFERENCE NO: AW300-36-0008, Rev 05

ATA: 36-21

EFFECTIVITY: Challenger 300
Challenger 350

SUBJECT: **"WING ANTI-ICE LEAK" EICAS Message During Climb**

1. REFERENCES:

1.1. Airplane Flight Manual, Rev 56 (Challenger 300) and Rev 22 (Challenger 350). Procedure 03-27-01,

1.2. Service **Bulletin SB 100-21-05** "Modification – Cabin-Pressure Control System – Software Change of the Integrated Air System Controller", released Feb 22/2006

1.3. Service **Bulletin SB 100-21-10** "Modification – Cabin-Pressure Control System – Software Change of the Integrated Air System Controller", released Feb 23/2010

1.4. Service **Bulletin SB 100-30-04** "Modification – Ice Detection System – Replacement of the Ice Detectors for Use as Primary Means of Detection", released Mar 26/2007.

1.5. **Service Bulletin SB 100-36-04** "Modification – Bleed Air Leak – Detection System – Improvement or Robustness of Leak-Detection Element Connectors in the Leading Edges", released Dec 12/2008.

1.6. **Service Bulletin SB 100-36-08 and SB 350-36-001** "Modification - Bleed-Air Leak-Detection System - Outboard Leading Edge Bleed-Air Leak-Detection Loop and Harness Replacement", released Sep 12/2015.

1.7. **Service Bulletin SB 100-57-12** "Modification – Leading Edges – Correction of the Wing Leading Edge Heat Shield Damping Material", released Aug 26/2009.

1.8. Flight Operation Notifications Manual (FONM) FON ICE-001-NC , issued Nov 9th, 2022.

2. INTRODUCTION:

This revision is issued to advise operators that a Flight Operation Notification (FON) (Ref 1.8) was released to provide guidance for the crew to identify a WING ANTI-ICE LEAK nuisance message. The information in this AW was converted in a format that allow crew to identify a nuisance and increase dispatchability.

3. DESCRIPTION:

Some aircraft intermittently experience a “WING ANTI-ICE LEAK” warning CAS message during climb at max power while the wing anti-ice system is in operation.

Investigation has revealed that in some conditions, the temperature inside the outboard leading may reach the set point of the Leak Detection Elements, thus initiating the message and the system automatic switches off.

In order to assist Operators in determining if the “WING ANTI-ICE LEAK” warning is false, the ref. 1.1 AFM procedure allows turning the system off and resetting after 2 minutes in attempt to clear the CAS message in flight.

To help reducing the number of occurrences, the Ref 1.2 Service Bulletin has been issued to modify the control of the wing anti-ice valves.

The Ref 1.3 Service Bulletin has been issued to improve the display of the leak location by showing the Wing / Fuselage station and the percentage of the length of the bleed leak detection sensing element.

The Ref 1.4 Service Bulletin has been issued to install improved ice detectors than can be used as a primary means of ice detection at speeds above 210 KIAS. As a result, the anti-ice system can be turned to OFF at speeds above 210 KIAS if the ICE DETECTED Amber CAS message is not shown.

The Ref 1.5 Service Bulletin has been issued to install improved Bleed-Leak Detection element connectors in the wingtips to prevent to damage to the elements and the connectors.

The Ref 1.6 Service Bulletin has been issued to install improved Bleed-Leak Detection Element in the outboard leading-edges.

The Ref 1.7 Service Bulletin has been issued to install a new improved insulation material to avoid the heat shield from delaminating and falling on the Bleed-Leak Detection Element resulting in false EICAS overheat messages.

4. ACTION:

Operators should be aware of the above information and solutions that have been released related to the WING ANTI-ICE LEAK" CAS message. They should also familiarize themselves with the FON-ICE-001 to help crew identify a nuisance message and reduce downtime.

Upon experiencing a "WING ANTI-ICE LEAK" CAS message during climb at max power, the Ref. 1.1 AFM procedure must be followed. Bombardier recommends that prior to the next flight, the following steps or the FON ICE-001 (Ref 1.8) are carried out to establish whether it is a nuisance message or not.

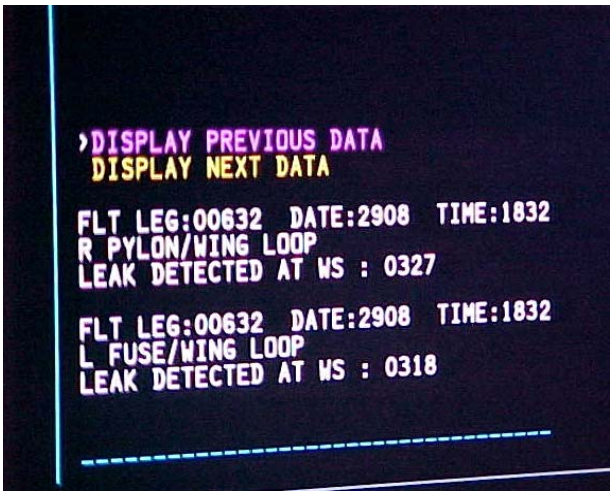
1. Identify the leak location/area, using the MDC, by accessing LRU TEST, IASC-1B or IASC-2B and leak event location history.

2. The leak location is displayed:

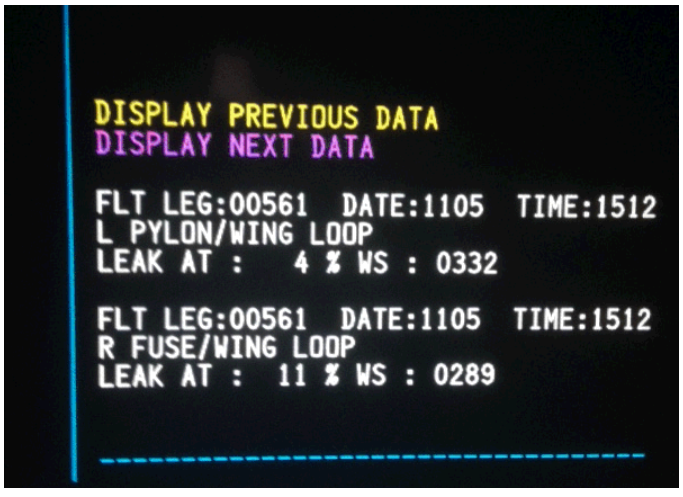
- In Wing Station or Fuselage Station when the IASC is P/N 92175A030400 – Post SB 100-21-05 (Left picture).

- In Wing Station or Fuselage Station and percentage when the IASC is P/N 92175A030500 – Post SB 100-21-10 (Right picture).

Example of leak displayed in fuse/wing station



Example of Leak displayed in fuse/wing station and percentage



3. If the leak location is confirmed to be less than 15% of both the PYLON/WING and FUSE/WING loop (from Wing Station WS 262 to WS 356), and the “WING ANTI-ICE LEAK” CAS message did not illuminate the second time after the 2 minutes of the WING ANTI-ICE switch Off/On in CLB power set (REF. 1.1 AFM), perform the Operational Test of the wing anti-ice system per Aircraft Maintenance Manual (AMM) TASK 30-10-00-710-801 by maintenance personal or the AFM Normal Procedure (Section 04-03) by flight crew.
4. If the procedure is completed with no anomalies noted, it can be concluded that the message was related to the known nuisance condition.

5. If the leak location is reported to be elsewhere or the “WING ANTI-ICE LEAK” CAS illuminated the second time after the 2 minutes of the WING ANTI-ICE switch Off/On in CLB power set (REF. 1.1 AFM), perform required corrective action by referring to the troubleshooting procedure that is available in Smart Fix Plus under ATA36.

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