Advisory Wire

REFERENCE NO: AW700-36-0826, Rev. 06

ATA: 36-12

EFFECTIVITY: Global Express
Global XRS
Global 5000
Global 5000 feat. Vision Flight Deck
Global 6000
Global 5500
Global 6500

SUBJECT: Kidde Bleed Leak Detection Loops Notice of Escape

1. REFERENCES:

   1.1. Transport Canada (TC) Master Minimum Equipment List (MMEL) Global BD-700-1A10 / BD-700-1A11 Rev 7
   1.2. Federal Aviation Administration (FAA) MMEL BD-700-1A10 / BD-700-1A11 Rev 15
   1.3. European Aviation Safety Agency (EASA) MMEL BD700-1A10 / BD700-1A11 Rev 8
   1.4. Applicable Dispatch Deviation Guide (TC)
   1.5. Applicable Dispatch Deviation Guide (FAA)
   1.6. Applicable Dispatch Deviation Guide (EASA)
   1.7. TC Airworthiness Directive AD CF-2022-38 Issued July 13, 2022
   1.8. EASA Airworthiness Directive AD CF-2022-38 Issued July 14, 2022
   1.9. Bombardier Service Bulletins (SB) 700-36-026, 700-1A11-36-005, 700-36-5002, 700-36-6002, 700-36-5501 and 700-36-6501
   1.10. TC Airworthiness Directive AD CF-2023-17 , Effective date March 22nd, 2023
   1.11. EASA Airworthiness Directive AD CF-2023-17, Effective date March 22nd, 2023
   1.12. FAA Airworthiness Directive AD 2024-03-08, Effective date May 3rd, 2024
   1.13. FAA Global AMOC to AD 2024-03-08 for all Bombardier Inc. BD700-1A10 and BD700-1A11 aircraft models. (Log number 24-26 Letter Number 756-24-00148) (attached)

2. INTRODUCTION:

   This Advisory Wire (AW) is to inform Operators about a potential non-conformance to specification with some bleed air Leak Detection Loop (LDL) elements.

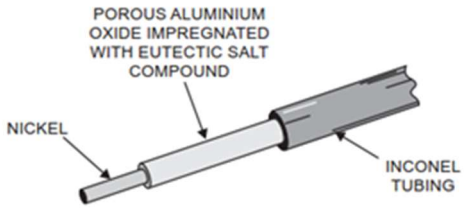
   This Advisory Wire revision 06 is to clarify the references in the Airworthiness Directives (ADs) (ref. 1.10,1.11 and 1.12) concerning the airplane date of manufacture.

3. DESCRIPTION:

Bombardier was notified of a potential defect affecting LDL elements manufactured by Kidde Aerospace & Defense, Collins Aerospace (Kidde). Approximately 1-2% of the LDL elements produced by Kidde between November 24,2004 and January 31,2021 are non-conforming.

This non-conformance impacts all aircraft Original Equipment Manufacturers (OEMs) that have Kidde LDL elements installed. Although all Global Express aircraft may be impacted by this issue, no in-service events related to the defect have been reported on the fleet to date. Following the notification by the supplier, Bombardier has ensured that aircraft 60053 and subs had conforming LDL elements. However, some operators may have unknowingly installed faulty LDL elements after delivery.

LDL elements contain thermo-resistive eutectic salt compounds embedded between an inner conductor and an outer casing. A local temperature increase causes the salt compound to become conductive resulting in a resistance drop between the inner conductor and outer casing which subsequently sets off the appropriate cockpit warnings.



Due to a manufacturing process error, some LDL elements may not be fully filled with eutectic salt, and this could result in the LDL elements being unable to detect a bleed air leakage in the affected area.

Through-out the Global bleed air systems, LDL elements are installed in redundant pairs (elements A and B) along the lengths of the monitored ducts. Per the Bleed Management Controller (BMC) logic, both LDL elements in the pair (A and B) need to detect a leak in order to post the Caution CAS messages R BLEED LEAK, L BLEED LEAK, TRIM AIR LEAK or WING A/ICE LEAK.

If only one LDL element (A or B) detects a leak, then that LDL element (A or B) will be considered faulty and an Advisory CAS message L BLEED FAULT, R BLEED FAULT, TRIM AIR FAULT or WING A/ICE FAULT will be posted.

In a standard dispatch case, with one of the ADVISORY messages posted, the Master Minimum Equipment List (MMEL) (Ref. 1.1 to 1.3) provides relief for dispatch by complying with the provisos and the instructions in the Dispatch Deviation Guide (DDG) (Ref. 1.4 to 1.6). If a bleed air leak were to occur following dispatch, the BMC logic would detect the leak with the adjacent LDL element and post a Caution CAS message R BLEED LEAK, L BLEED LEAK, TRIM AIR LEAK or WING A/ICE LEAK.

However, the current MMEL provisos and DDG instructions do not make a distinction between a faulty LDL element (shorted or open element) or an actual duct leak in the presence of a non-conforming LDL element from the Kidde manufacturing defect. Dispatch with a non-conforming LDL element may present a risk of not being able to detect a leak. Therefore, dispatch instructions in the DDG (Ref. 1.4 to 1.6) for a single loop failure have been modified to eliminate this risk. The current allowance/alleviation for the following MMEL / DDG dispatch items are impacted:

- 36-12-01 Bleed Leak Detection Loop
- 36-12-01 Wing Anti-Ice Leak
- 36-12-01 Trim Air Leak

TC and EASA have released Airworthiness Directives AD (Ref. 1.7 and 1.8) effective respectively July 22nd and July 27th, 2022. FAA has released Airworthiness Directives AD (Ref 1.12) effective May 3rd,2024 and a Global AMOC (Ref 1.13) on July 1st, 2024. The ADs are prohibiting the installation of affected sensing elements and are providing new instructions to prevent dispatch with an active bleed leak. The TC, EASA and FAA DDG (Ref. 1.4 to 1.6) have been updated accordingly to align with the AD.

In some ADs, reference is made concerning airplane date of manufacture as identified in the aircraft maintenance logbook. There may be cases where there are different references to manufacturing dates in the logbook and may create confusion. To clarify, the date of manufacture in the aircraft logbook that should be used is the date that the Statement of Conformity Form AI-100 is signed.

4. ACTION:

Bombardier recommends operators to familiarize themselves with the content of this AW. It is very important that operators follow the specific instructions in the ADs, AMOC and future DDG revisions (August 16th,2022 or later) (Ref. 1.4 to 1.6) when dispatching the aircraft with any of the above Advisory CAS messages posted. The modified steps in the DDG are required to confirm that the messages are not related to a heat event that could result in an un-annunciated bleed air leak and subsequently damage the aircraft.

Bombardier has released SBs (Ref. 1.9) to test and replace any defective LDL elements on the affected aircrafts. The SBs are mandated by the ADs (Ref. 1.10 to 1.12) within 2000 Flight-hours or 120 months, whichever comes first, from the ADs effective date. It is recommended (when possible) that the incorporation of the SB be planned during a scheduled maintenance event as described in the SBs.

FAA operators should be aware of the AMOC (Ref. 1.13) and familiarize themselves with its content.

Bombardier will continuously update this AW as new information becomes available.

Should you have any questions pertaining to this AW or require additional information, please contact your Bombardier Field Service Representative (FSR) or the Customer Response Center (CRC 24/7).