



AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2022-44

Effective Date:

24 August 2022

ATA:

36

Type Certificate:

A-234

Subject:

Pneumatic – Non-Conforming Bleed Air Leak Detection System Sensing Elements

Applicability:

Bombardier Inc. model BD-100-1A10 (Challenger 300/350) aeroplanes, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

Bombardier Inc. received disclosure letters from the supplier of overheat detection sensing elements which reported a manufacturing quality escape in which some of the sensing elements were manufactured with insufficient salt fill. As these sensing elements are used by the bleed air leak detection system for temperature detection in the event of a hot bleed air leak, this insufficient salt fill can result in an inability to detect hot bleed air leaks, which can cause damage to surrounding structures and systems that can prevent continued safe flight and landing.

As interim action to address this unsafe condition, this AD mandates the temporary revision (TR) to the Airplane Flight Manual (AFM) to include an Advisory BLEED LOOP FAULT (A) Non-Normal Procedure to prevent the take-off of an aeroplane with an active bleed air leak annunciated while on the ground. This AD also prohibits the installation of any sensing element that may have insufficient salt fill as a replacement part on applicable aeroplanes.

This AD is considered interim action and further AD action may follow.

Corrective Actions:

For the purpose of this AD, the following definitions apply:

LTS SB: Liebherr-Aerospace Toulouse SAS (LTS) Service Bulletin (SB) CFD-F1958-26-01, Initial Issue, dated 6 May 2022.

Kidde SB: Kidde Aerospace and Defense SB CFD-26-1, Revision 6, dated 28 February 2022, or earlier revisions of this SB.

Affected part: A sensing element marked with a date code before A2105 and having an LTS/Kidde part number as defined in the LTS SB, unless that sensing element:

- a. Has been tested in accordance with Section 3 of the Accomplishment Instructions of the Kidde SB and found to be serviceable; and
- b. Has been marked on one face of its connector hex nut and is packaged in accordance with Section 3.C. of the Accomplishment Instructions – Identification Procedure of the Kidde SB.

Serviceable part: A sensing element that is not an affected part.

Group 1 aeroplanes: Model BD-100-1A10 (Challenger 300) aeroplanes, serial numbers 20001 through 20457.

Group 2 aeroplanes: Model BD-100-1A10 (Challenger 350) aeroplanes, serial numbers 20501 through 20906.

Group 3 aeroplanes: Model BD-100-1A10 (Challenger 350) aeroplanes, serial numbers 20907 and subsequent.

Part I – AFM TR – Applicable to Group 1 and Group 2 Aeroplanes

- A. Within 30 days from the effective date of this AD, amend the applicable Transport Canada approved AFM by incorporating the applicable TR to the AFM in accordance with Table 1 below.

Table 1

Aeroplane Model	AFM Procedure	AFM TR
BD-100-1A10 CH300	Non-Normal Procedures in Section 05-42	AFM CSP 100-1 TR-93, issued 12 July 2022, or later revisions of this procedure approved by Transport Canada.
BD-100-1A10 CH350	Non-Normal Procedures in Section 05-42	AFM CH 350 TR-24, issued 12 July 2022, or later revisions of this procedure approved by Transport Canada.

- B. Advise all flight crews of the changes introduced by the approved Transport Canada AFM TRs listed above and thereafter operate the aeroplane accordingly.

Part II – Parts Installation Prohibition – Applicable to Group 1, Group 2 and Group 3 Aeroplanes

As of the effective date of this AD, an affected part is not eligible for installation as a replacement part on Group 1, Group 2 and Group 3 aeroplanes.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Philippe Ngassam
Director, National Aircraft Certification
Issued on 10 August 2022

Contact:

Audrey Vézina-Manzo, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca or any Transport Canada Centre.