

Subject: Diode Cooler Assembly Insulation - Inspection**Ref. Publications:**

- Bureau d'enquêtes et d'analyses pour la sécurité de l'aviation civile Final Report [BEA2020-0284](#) dated 27 December 2024.
- FAA Safety Team (FAASTeam) Notice No. [NOTC4938](#) dated 21 April 2026.

Applicability:

(Supplemental) Type Certificate holders, maintenance personnel, owners and operators of small aeroplanes (CS-23).

Description:

On 23 July 2020, a Piper PA-28RT-201T Arrow IV, manufactured in 1981, experienced an in-flight fire near Basel-Mulhouse Airport, France (BEA Final Report BEA2020-0284). During the flight, indications of an electrical system malfunction were observed, including an abnormally high alternator output and the presence of an electrical odour, and the pilot applied the in-flight fire emergency procedure and landed shortly after.

After landing, smoke and flames entered the cabin from the luggage compartment. The subsequent investigation determined that the event originated from an electrical failure within the diode cooler assembly. Particularly, the investigation concluded that, most likely, an insulation fault at a mounting point of the diode cooler assembly resulted in electrical continuity between this cooler assembly and the aircraft floor.

The investigation was unable to determine the exact origin of the insulation defect between the diode cooler assembly and the aeroplane floor which caused the short circuit. However, the defect may have been caused by a combination of:

- Wear of the insulating washers; and,
- An indirect consequence of the work carried out during the installation of the new avionics (unintentional impact on the device, introduction of ferrous residue during drilling operations, etc.).

Later on, Piper Aircraft, Inc. issued Service Bulletin (SB) No. 1428, providing instructions for dedicated recurring inspections and, depending on the inspection results, replacement of the diode cooler assembly insulators and attachment hardware, and the FAA issued the FAASTeam Notice No. NOTC4938, to highlight the importance of complying with that SB and to encourage pilots to remain familiar with AFM procedures for handling electrical anomalies and potential in-flight fire indications.

This is information only. Recommendations are not mandatory.



EASA determined that similar installations may also be present on other aeroplane types within the same category, where the applicable inspections, as defined in the applicable instructions for continued airworthiness (ICA), could not include reviewing proper status of the insulation means.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under Commission Regulation (EU) [748/2012](#), Part 21.A.3B.

Recommendation(s):

EASA recommends that:

Aircraft owners and operators should:

- Ensure that detailed inspections of diode cooler assemblies (or other equivalent designation) and their installations are included in the applicable aircraft maintenance programme.
- Where these inspections are not already included, perform them at the next scheduled maintenance inspection and repeat them at each subsequent scheduled maintenance inspection.

Maintenance personnel should:

- When performing inspections of diode cooler assemblies (or other equivalent designation) and their installations, look for signs of heat distress, loose or damaged wiring, improper mounting, degraded insulation, ferrous or other residue, and any evidence of arcing or component deterioration that could lead to electrical failure, by reference to applicable ICA and/or accepted aviation maintenance practices (e.g. FAA AC 43.13-1B).

Aircraft Manufacturers should:

- Review their design to assess fire risks derived from short circuits associated with diode cooler assembly installations and consider amending the applicable ICA to introduce or amend, as needed, regular detailed inspections.

Contact(s):

For further information contact the EASA Safety Information Section, Certification Directorate.

E-mail: ADs@easa.europa.eu.

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