European Union Aviation Safety Agency

Safety Information Bulletin

Airworthiness – Operations

SIB No.: 2022-08

Issued: 12 October 2022

Subject: **Mitigation of Flight Deck Fires Originating from Lithium Batteries that are not Part of the Aircraft Design**

Ref. Publications:

- EASA Special Condition SC-G25.1585-01 Issue 2, "Mitigation of flight deck fires originating from lithium batteries that are not part of the aircraft design," dated 26 April 2022.
- EASA Safety Information Bulletin (SIB) 2009-22R1 dated 07 April 2015.
- EASA SIB 2017-01R1 dated 29 September 2020.
- EASA SIB 2016-08 dated 15 July 2016.

Applicability:

All large aeroplanes operators.

Description:

Personal Electronic Devices (PEDs) powered by lithium batteries are commonly transported on the flight deck of large aeroplanes, e.g. electronic flight bags (EFBs) or devices carried by the flight crew for personal convenience and communication (smartphones, tablets, computers, e-readers, audio players, etc.). In addition to PEDs, also power banks and spare batteries may be transported on the flight deck by flight crew members.

Lithium batteries, including the ones that power PEDs and controlled PEDs (as defined in the EASA SC-G25.1585-01) can go into thermal runaway. A thermal runaway event may result in the release of heat, smoke, flames and explosions.

The increase on the number of lithium batteries, mainly contained in PEDs, carried by the flight crew in large aeroplanes results in an increase on the risk of in-flight battery fire on the flight deck.

Typical locations for PEDs on the flight deck may be in the available stowage compartments or on mounting brackets. If allowed by the applicable operational procedures, PEDs' lithium batteries may be connected to a power supply available on the flight deck or to a power bank. On certain large aeroplanes, the flight deck stowage compartments may be located in close proximity to, or above, critical systems, such as oxygen lines.
In case of a lithium battery fire originating from a PED, a power bank or a spare battery, hazardous conditions may develop on the flight deck, such as generation of heat, smoke and flames, as well as explosions. Such events may seriously affect the operation of the aeroplane. A lithium battery fire affecting critical aeroplane systems (e.g. oxygen lines routed on the flight deck) may lead to a catastrophic occurrence.

EASA published the referenced Special Condition SC-G25.1585-01 to ensure that the design of newly certified large aeroplanes can withstand the threat of a flight deck fire originating from a lithium battery that is not part of the aircraft design.

EASA has also started the process of reviewing the design of already certified large aeroplanes to determine, if any unsafe condition exists due to a PED fire.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant either an Airworthiness Directive (AD) action under Regulation (EU) 748/2012, Part 21.A.3B, or a Safety Directive (SD) action under Commission Regulation (EU) 965/2012, Annex II, ARO.GEN.135(c).

Recommendation(s):

EASA recommends the large aeroplane operators to:

- Ensure that no PEDs, spare batteries or power banks are transported on the flight deck, unless, when not in use, they can be placed or stowed in flight deck stowage compartments that have been specifically designated to stow PEDs, power banks and spare batteries by the relevant design approval holder.
- Implement Service Bulletins published by TC holders to address the lithium battery fire events on the flight deck.
- For EFBs, ensure that the battery fire scenario is addressed in the risk assessment performed to authorize their use on the flight deck. In such risk assessment no credit should be given to existing EASA approvals of mounting brackets installations, as regards to withstanding the effects of a lithium battery thermal runaway, unless there is the evidence that EASA Special Condition SC-G25.1585-01 was part of the certification basis considered for the related projects.

Contact(s):

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