



RASG - APAC

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SAFETY ADVISORY

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Lithium Battery Fires in Passenger Cabin

Subject: Raising Awareness of Risks of Cabin Fire and Smoke Events Associated with Lithium Batteries Carried by Passengers

Intended Audience: Air Operators, Aerodrome Operators and States' Civil Aviation Authorities

Revision: This RSA revises No. 25-002 published in June 2025. Additional guidance has been provided.

Background: Two known cabin fire events in the APAC region occurred in 2025 Q1. One resulted in a hull loss on the ground while the other occurred at cruising altitude with the fire extinguished during the flight. Both events were suspected to have been caused by lithium battery power banks stowed in the cabin overhead compartment. Fortunately, neither event resulted in loss of life, but both have drawn attention from governments, industry stakeholders and the general public about risks of lithium batteries carried by passengers.



Nowadays, most energy storage devices, including batteries powering portable electronic devices (PEDs) contain lithium batteries due to their higher energy density and efficiency which are suitable for compact applications. However, these benefits come with risks, especially when not handled properly.

A lithium battery fire can be started by heating, overcharging, crushing or internal short circuit triggered by poor manufacturing quality, aged batteries or damage due to mishandling. Unlike other fires, lithium battery fires may be self-sustaining and require special methods to handle. Fire propagation may be fueled by the heat released from burning batteries, which may potentially escalate into a catastrophic event if not properly managed in a timely manner.

ICAO Doc 9284 - Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) permits passengers to carry devices containing lithium batteries (e.g. mobile phones, tablets and laptops) in carry-on baggage or checked baggage while spare lithium batteries (including power banks) may only be permitted in carry-on baggage subject to certain conditions and safety precautions. ICAO Doc 9284 and IATA Dangerous Goods Regulations also provide additional guidance on quantity limits with regard to spare lithium batteries (including power banks) and PEDs.

Currently, passengers are generally advised about the restrictions of items carried as baggage at various touch points such as check-in and during pre-flight passenger briefings etc. Lithium batteries with not more than a specified energy capacity, and not exceeding a specified number of batteries, may be permitted for carriage by passengers without prior approval from air / aerodrome operators.

After the recent cabin fire events, civil aviation authorities (CAAs) and air operators have become more conscious about the associated risks.

The general measures to mitigate for such risks include measures to minimize opportunities that induce battery failures; support early detection in case of fire; and reinforce effectiveness of firefighting procedures, etc.

Recommendations: To mitigate the risk of lithium battery fires in cabins, RASG-APAC recommends the following:

To Air Operators:

- *Ensure* appropriate safety management actions are taken in addressing potential hazards and related risks associated with the carriage of lithium batteries including rechargeable batteries (e.g. power banks) and other rechargeable devices (e.g. laptops) within the passenger compartment and *keep abreast* of the latest technology / devices containing lithium batteries;
- *Adopt* mitigating measures (such as restriction on using rechargeable batteries) that reduce the likelihood of inducing lithium battery fire in the cabin, and measures (such as limitation on stowage location of rechargeable batteries and ensuring accessibility) that help to reinforce early detection and effective firefighting;
- *Ensure* the adequacy of aircraft emergency equipment, particularly on the provision for firefighting aboard aircraft; and *align* operating procedures with relevant guidance and requirements from ICAO, IATA, OEMs and/or CAAs particularly in terms of watt-hour and quantity limits;
- *Review* and, if necessary, update existing firefighting procedures to ensure they remain aligned with applicable regulations and are appropriate to mitigate the current level of risk associated with lithium battery-related incidents during flight;

- *Ensure* effective promulgation and communication of dangerous goods information, restrictions and requirements, such as rechargeable devices must be protected from damage and inadvertent activation, at all passenger touch points; and
 - *Report* safety issues to its CAA.
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SSP/SMS Collaboration: CAAs may coordinate efforts amongst stakeholders on enhancing safety awareness of passengers to achieve "Prevention, Early Detection and Coordinated Actions to Mitigate Risks of Power Banks and other Lithium Battery Devices"

To Aerodrome Operators:

- *Promulgate* dangerous goods information and relevant requirements to *passengers* at airport terminals; and
- *Cooperate* with all stakeholders to enhance effectiveness of campaigns to raise passenger awareness on inherent risks of lithium batteries and advise them on the actions needed for securing the safe carriage (and disposal) of lithium batteries and associated consumer products.

To Civil Aviation Authorities:

- *Take* proactive safety management actions, *assess* operators' risk management processes, *consult and engage* operators in harmonizing practices to minimize confusion to passengers, *coordinate* with stakeholders to enhance public awareness;
- *Acknowledge and address* potential variations in operator policy about the number of spare lithium batteries (including power banks) permitted to be carried by passengers, noting that lack of standardization in such policies may introduce an unintended risk of passengers checking in excess batteries and power banks against regulations.
- *Align* State's requirements with international practices as far as practicable; and
- *Share* findings, safety risks or concerns at local and international forums in a timely manner.

About RSAs: A Regional Aviation Safety Group – Asia Pacific Safety Advisory (RSA) contains important safety information shared by the RASG-APAC and/or its contributing bodies with the aviation community which may contain recommendations for consideration. The purpose of the RSA is to inform air operators, air navigation service providers, aerodrome operators, industry associations, CAAs and other aviation service providers of a potential threat to safety in the region. RSAs are designed to be concise while RASG-APAC analyzes the safety issue further to develop comprehensive recommendations if necessary. RASG-APAC members are advised to take note of the Advisory to evaluate the occurrence of the identified safety issue in their operations with the purpose of mitigating it. **This does not supersede State regulation/advisories or Original Equipment Manufacturer guidance.**
