RASG - APAC

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SAFETY ADVISORY

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THREAT: 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.

Background: Two known cabin fire events in the APAC region occurred in 2025 Q1 whereas one ended with a hull loss on ground and 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. Thankfully, 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, majority of energy storage devices, including batteries powering portable electronic devices (PEDs) contain lithium batteries due to their higher energy density and efficiency which is 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 battery or damage due to mishandling. Unlike other fires, lithium battery fires may be self-sustaining and requires special methods to handle. Fire propagation of such kind 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.

The 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 (e.g. power banks) may only be permitted in carry-on baggage subject to certain conditions and safety precautions. IATA has promulgated additional guidance on quantity limits with regard to spare lithium batteries and PEDs.

Currently, passengers could be 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 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 with the associated risks. Some have implemented measures, such as forbidding stowage of power banks in the cabin overhead compartment and enhancing preflight passenger briefings, in addition to the ICAO TI requirements as a result.

The general tactics of mitigation 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:

- *Conduct* a review of safety risk assessments on the carriage of lithium batteries by passengers; *get familiarized* with hazards of lithium batteries and potential consequences of incidents involving such batteries; and *keep abreast* of the latest technology / devices containing lithium batteries;
- *Adopt* mitigating measures that reduce the likelihood of inducing lithium battery fire in the cabin, and also measures that help to reinforce early detection and effective firefighting;
- *Review* the adequacy of aircraft emergency equipment, particularly on the provision for firefighting aboard aircraft;
- *Review* the operating procedures for the crew and *align* operating procedures with relevant guidance and requirements from ICAO, IATA, OEM and/or CAAs;
- *Review* and if necessary *reinforce* crew's competencies through Safety and Emergency Procedure training by drawing from experiences in mitigating lithium battery related incidents during flight;
- *Review* the effectiveness of current promulgation methods for dangerous goods information to passengers and *cooperate* with all stakeholders for communicating with passengers about relevant requirements such as through signage, messaging, etc.;
- *Report* safety issues to CAAs or IATA.

SSP/SMS Collaborations: 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 to *passengers* at airport terminals;
- *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 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 confusions to passengers, *coordinate* with stakeholders to enhance public awareness;
- *Align* State's requirements with international practices as far as practicable;
- *Share* findings, safety risks or concerns in local and international forums in a timely manner.