

Implementation of RASG-APAC Safety Advisory (RSA) as a New Regional Safety Awareness Mechanism

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Why RSAs?

- Lengthy development process for Safety Enhancement Initiatives (SEIs)
- Need to strike balance between longer-term SEIs and timely dissemination of safety information
- Inspired by RASG-PA/PA-RAST's Regional Safety Issue Alert mechanism. Key functions:
 - **Raise awareness** about a specific hazard among stakeholders in the region
 - **Highlight existing guidance material** to address the identified hazard
 - **Encourage further sharing** about an emerging risk being faced by some in the aviation community



First two RSAs issued

Lithium-ion battery fires

Mid-Air Collision risks in Reduced Vertical Separation Minima airspace

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SAFETY ADVISORY
June 2025 No. 25-002

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. One resulted in a hull loss on ground and 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, the majority of 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.

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 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 may be permitted for carriage by passengers without prior approval from air / aerodrome operators.



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Elevated Mid-Air Collision (MAC) risk in Reduced Vertical Separation Minima (RVSM) Airspace

Subject: Risk of Mid-Air Collision at Flight Information Region (FIR) airspace boundaries within RVSM airspace due to ATC Unit to ATC Unit coordination errors.

Intended Audience: Civil Aviation Authorities responsible for State Safety Oversight of Air Navigation Services, and Air Navigation Service Providers (ANSPs)

Background: Any reduction in separation minima requires a safety monitoring mechanism as a part of its implementation. Therefore, States are required to establish safety monitoring arrangements for their Reduced Vertical Separation Minima (RVSM) airspace. An annual assessment of Mid-Air Collision risk in such airspace is one of these existing monitoring arrangements. Airspace occurrence reports from applicable States are crucial to this process as they are a key measure of MAC risk in RVSM airspace. An airspace occurrence report that contributes to vertical MAC risk is called a Large Height Deviation, or LHD.

By definition, a LHD is a vertical deviation from an ATC assigned or coordinated altitude that results in an error of 300 ft or more. The deviation may be the result of human error, equipment malfunction or environmental factors. However, LHDs are not just altitude deviations. Essentially, a LHD happens when an aircraft occupies a space unexpected by ATC, leading the trajectory anticipated by ATC to no longer correspond to the actual trajectory. Not knowing that the space is occupied, ATC may clear another aircraft to that location, which increases the risk of a mid-air collision. Therefore, LHDs could be all instances where an aircraft occupies a point in

space unknown by ATC as the result of an operational error or condition affecting the flight.

Regional Monitoring Agencies (RMAs), established by each ICAO region's Planning and Implementation Group, use LHDs to calculate airspace collision risk and identify airspace Hot Spots. States involved in the identified Hot Spots are expected to coordinate measures for minimizing the causal factors of the LHDs.

Category E LHDs are defined as **coordination errors in the ATC-unit-to-ATC-unit transfer of control responsibility because of human factors issues (e.g., late, or non-existent coordination, incorrect time estimate/actual, flight level, ATS route etc. not in accordance with agreed parameters).**

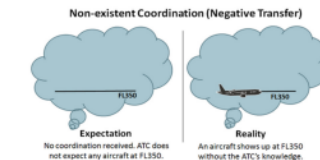


Figure 1: Category E LHD due to non-existent coordination.

Sharing safety issues

- States/Administrations are encouraged to share safety issues using the Issue Review Request Form.
 - Issues need not affect all States/Administrations in the region at once
 - RSAs are intended to be proactive before an issue becomes widespread
- Requests will be evaluated by APRAST OPS WG

Scan for Issue Review
Request Form



<https://go.gov.sg/aprast-rsa-issue>

The Meeting is invited to:

- a) Encourage States and International Organisations to share published RSAs with appropriate stakeholders to enhance safety awareness and promote implementation of recommended mitigations;
- b) Encourage relevant stakeholders within their States/Administrations to consider and implement the safety recommendations contained in published RSAs; and
- c) Submit safety concerns warranting regional attention to the APRAST OPS WG for consideration as potential RSAs using the APRAST Issue Review Request Form.