Safety message

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Passenger and crew awareness on the risks of lithium batteries

Reference: EASA safety information bulletin 2025-03

Purpose

This safety message provides recommendations to aircraft operators, aerodrome operators, and ground handling service providers on how to inform passengers of the restrictions and conditions for carrying lithium batteries on passenger aircraft. This includes power banks and portable electronic devices (PEDs) powered by lithium batteries.

It's important for passengers to understand the risks of lithium battery fires and the limitations/restrictions of carrying them. This awareness is a key safety control measure.

Civil Aviation Rules Part 92.179 state that operators **must** inform passengers of dangerous goods that are forbidden on board, and the limitations and restrictions of items that are allowed on board. Passengers should acknowledge this information before entering the aircraft as per the ICAO Technical Instructions.

Background

Lithium battery incidents on aircraft are increasing. Additionally, passengers are typically travelling with more PEDs, and the battery size in these devices are also increasing.

Recent incidents of in-flight fires show that **power banks** are particularly dangerous. They can ignite or explode with little warning, and those fires are difficult to control. That's why power banks are forbidden in checked baggage. CAR 92.13 and the ICAO Technical Instructions stipulate this requirement.

A common response to qualitative research in New Zealand shows the travelling public assume dangerous goods belong in the hold, which is incorrect.

Devices such as **hoverboards**, **scooters**, and **drones** are higher risk because the batteries in these devices may not be manufactured to the required quality standards, and they are much more likely to be damaged through daily use. These devices can overheat and catch fire or explode without warning. Some aircraft operators have prohibited these higher risk batteries from being on an aircraft, putting in place more restrictive measures than the ICAO Technical Instructions. These transportation devices should not be mistaken with mobility aids such as wheelchairs, which are subject to specific limitations.

E-cigarettes are also particularly dangerous. They can easily be activated, causing their temperature to rise quickly. In some cases, they may explode and ignite nearby items.

In 2017, the Federal Aviation Administration (FAA) performed tests on a PED (a fully charged laptop) in a checked bag. The test showed that if the PED were to start a thermal runaway and catch fire alongside permitted hazardous materials like cosmetic items, there's a low chance that the cargo compartment fire protection systems could contain the fire.

The test concluded that **the risk of an uncontrolled cargo fire would be very high**. The risks of transporting PEDs in checked baggage, such as phones, laptops, or tablets, have been further studied by the European Union Aviation Safety Agency (EASA). Their study confirms the FAA's strong recommendation to carry all PEDs containing lithium batteries in the cabin of an aircraft. This way cabin crew can react to a PED battery fire quickly.

Changes to regulations

In addition to the current restrictions on power banks, ICAO is planning to introduce changes to the Technical Instructions which will include further restrictions on carrying power banks. The upcoming changes include:

1. power banks must not be charged while on board an aircraft
2. power banks should not be used to charge a portable device while on board
3. no more than two power banks may be carried per person.

Carrying power banks in checked baggage will remain prohibited.

It's also recommended that power banks be carried in a seat pocket or under the seat rather than in the overhead locker. This way smoke or fire can be quickly noticed and more readily dealt with by cabin crew.

All operators will be responsible for implementing and communicating these changes, and passengers must follow the restrictions.

Requirements

The following requirements must be followed by aircraft operators and/or their ground handling service providers.

1. Ensure flight crew, cabin crew, and ground handling personnel are aware of the restrictions that apply to lithium batteries permitted to be carried by passengers and crew. This includes power banks, e-cigarettes, and spare lithium batteries which are not permitted in checked baggage. This is In line with CAR 92.175.

2. Communicate these restrictions to passengers at the time of check-in, including examples of what is and is not allowed. Operators should ensure that passengers acknowledge this information as part of the process. This may be done by displaying

visual examples of devices powered by lithium batteries, or otherwise. This is in line with CAR 92.179 and the ICAO Technical Instructions.

3. Instruct passengers to remove power banks, lithium batteries, and e-cigarettes from their cabin baggage when baggage cannot be carried in the cabin (because there's not enough space or is taken from them at the boarding gate or on-board). These items must remain with the passenger in the cabin. This is in line with CAR 92.13 and the ICAO Technical Instructions.
4. Ensure all personnel who may encounter lithium batteries in passenger baggage are trained and aware of the characteristics of lithium battery fires and the related fire procedures. This is in line with CAR 92.173, 92.175, and the ICAO Technical Instructions
5. Ensure that any PED carried in checked baggage is:
    a. completely switched off and protected from accidental activation, including disabling any application, alarm, or pre-set configuration that may activate the device in-flight (if a PED has a lithium-ion battery less than 2.7 Wh or lithium metal battery less than 0.3 g this requirement does not apply)
    b. protected from the risk of accidental damage by applying suitable packaging or casing, or by being placed in a rigid bag protected by adequate cushioning such as clothing
    c. not packed adjacent to flammable or pressurised material such as perfumes or aerosols.

Number 5 (a, b, and c) are in line with CAR 92.13 and the ICAO Technical Instructions.

Recommendations

In addition to the mandatory requirements above, it is highly recommended that aircraft operators and/or their ground handling service providers follow the steps below.

1. Develop ways to make passengers aware of the risks associated with lithium batteries and devices powered by them, and the restrictions applied to carrying them. This information must advise passengers that:
    a. power banks, lithium batteries, and e-cigarettes must be carried in the cabin
    b. power banks must not be charged during the flight
    c. all spare batteries and power banks must be protected from short-circuit by carrying them in their original package, taping their terminals, or putting them inside a plastic bag or pouch
    d. power banks, lithium batteries, and PEDs are limited to 100 Wh or, with the operator's approval, 160 Wh.

    The information given to passengers should also include strong recommendations to:

    a. carry all lithium battery powered PEDs in the cabin

b. carry all e-cigarettes and power banks in a location where the passenger can monitor them during flight, such as the seat pocket or under the seat in front of the passenger

c. not use power banks to charge PEDs during the flight

d. only use the aircraft power supply to charge PEDs when the PED is being monitored by the passenger

e. ensure that all PEDs are protected from inadvertent activation, protected from damage, and stowed as far as possible away from other PEDs, batteries, or flammable items.

2. Ensure all crew members are aware of the risks of storing PEDs and lithium batteries in overhead compartments, particularly close to the oxygen systems. Crew should be trained and aware of the characteristics of lithium battery fires and fully understand the procedures established by the operator to extinguish such fires.
3. Ensure all equipment and procedures for combatting lithium battery fires are proven to be effective against the largest lithium batteries allowed for carriage by passengers and crew by the operator. Particularly, to ensure that suitable containers and sufficient non-alcoholic liquids are on board in case they are needed during the cooling process.
4. Inform passengers of the risks if a PED battery is damaged, such as being caught in a seat's moveable parts or otherwise damaged during flight, and instruct them to immediately alert cabin crew or other staff if this occurs.
5. Make passengers aware of the signs of a potential lithium battery event such as excessive heat, swelling, smoke, or fumes, as well as what actions need to be taken immediately. This includes switching the device off and cooling the device.
6. Review the risk assessment process of carrying power banks, lithium batteries, and PEDs through their safety management system.

Further information on safely transporting lithium batteries for passengers is available on the CAA's Lithium Batteries web page.