



Cabin Safety Guidance Personal Transportation Devices

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NOTICE

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Section 1—Background

Personal Transportation Devices (PTDs) powered by lithium batteries are for recreational use and are not to be confused with wheelchairs or other similar mobility aids for use by passengers whose mobility is restricted by either a disability, their health or age, or a temporary mobility problem. Devices carried by such passengers may be accepted for carriage in accordance with restrictions detailed in the IATA Dangerous Goods Regulations. 2.3.2.4.

Personal Transportation Devices for recreational use have a variety of trade names and may differ in their operation but where they are powered by rechargeable lithium batteries, they are classified as Portable Electronic Devices (PEDs) for the purposes of carriage on board aircraft and are included in the IATA Dangerous Goods Regulations 2.3.4.7.



Examples of device types and names include:

- Segway™ and mini-Segway™;
- Hoverboard;
- Self-balancing scooter;
- Airwheel;
- Solowheel;
- Balance wheel.

Where obtained from reputable manufacturers and suppliers who have followed strict manufacturing and testing processes, these devices are generally safe, however the widespread availability of cheaper substandard lithium batteries and the higher likelihood of damage caused by the use of these devices raises safety concerns as these can be more prone to overheating and thermal runaway. There have been several reports of these devices igniting and causing significant damage to surrounding areas.

Section 2—Dangerous goods regulations

As these devices contain lithium ion batteries and are classified as PEDs, the battery Watt Hour (Wh) rating must be determined in order to identify the restrictions on carriage. Some devices contain multiple batteries so the total combined battery power of each device must be considered.

Note: Due to the high power usage of these mobility devices, it is likely that the Wh rating will be above 100 and close to or exceeding 160.

Battery rating	Under 100 Wh	100 Wh – 160 Wh	Over 160 Wh
Permitted in checked baggage	Yes	Yes	No
Permitted in carry-on baggage	Yes	Yes	No
Airline approval required	No	Yes	N/A

The watt hour rating is calculated by multiplying the voltage (V) by the ampere hours (Ah).

Where the amperage is shown as milliampere hours (mAh) divide the mAh value by 1,000 to establish the Ah.

Section 3—Operators’ experience and risk assessment

Most operators who have encountered PTDs have completed safety risk assessments to determine whether to accept them for carriage. Many have refused their carriage based on the following risks and observations:

1. One operator reported that when trying to remove a battery, damage occurred resulting in thermal runaway and ignition of the device.
2. It is unlikely that an operator will carry a storage container on board which is large enough to contain and submerge a device of this size following thermal runaway. Therefore it is not possible to carry out effective lithium battery firefighting procedures.
3. PTDs generally contain batteries with high Wh power ratings of 160 Wh or more, making them too large for carriage as checked and carry-on baggage.
4. PTDs are often heavier and larger than the maximum permitted carry-on baggage allowance and do not allow for safe stowage in the cabin as they may cause injury if they fall from overhead stowages.
5. Documentation supporting the Wh rating for batteries often states a rating of marginally below the 160 Wh maximum permitted for carriage (e.g. 158.4 Wh).

Section 4—Recommended practice

4.1 Airlines

It is recommended that the following are considered before determining a policy on whether to permit such devices for carriage:

- These items should be restricted to carry-on baggage only and operators should assess whether this is permitted in accordance with their stated carry-on baggage size and /or weight restrictions.
- Suitable stowage locations which will prevent the item from falling or causing injury.
- The availability of appropriate firefighting equipment including containers to submerge the device in water if necessary.

When permitted for carriage, these devices should not be charged on board and should be protected from accidental activation either by being in their original manufacturer's packaging, or by taping over the on/off switch.

Airlines should consider developing passenger awareness information for display on websites, social media platforms, self-service check in kiosks and check in counters, to alert passengers to the conditions applicable for the carriage of Personal Transportation Devices powered by lithium batteries.

Cabin crew should be made aware of the restrictions for carriage and how to determine the battery rating in order that they can offload any devices which do not comply and have not been identified or declared until passenger boarding commences.

4.2 Airports

At airports in areas where such items are readily available or popular, operators may wish to bring this matter to the attention of the airport operator's committee so that a coordinated and consistent message is presented to passengers. The airport operator's committee may also wish to coordinate with the airport operator to ensure that on-airport retailers are made aware of the restrictions that apply to the carriage of these devices by passengers, and to restrict or prohibit the sale of these devices with a lithium battery rating 100 Wh or more.

Passenger handling staff and ground service providers should be made aware of the restrictions for carriage and how to determine the battery rating in order to ensure that the devices are handled correctly.

Section 5—References

International Air Transport Association (IATA) [Small vehicles powered by lithium batteries - cargo provisions.](#)

International Civil Aviation Organization (ICAO) Electronic Bulletin 2016/01 - [Small lithium battery powered personal transportation devices including hover boards.](#)

EASA SIB 2016-04 [Carriage of Personal Transportation Devices](#)

