

Advisory Circular

GUIDANCE FOR CARRIAGE OF PERSONAL TRANSPORTATION DEVICES POWERED BY SMALL LITHIUM BATTERY

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1. **GENERAL.** Pursuant to paragraph 88B of the Air Navigation Order, the Director General of the Civil Aviation Authority of Singapore (DGCA) may, from time to time, issue advisory circulars (ACs) on any aspect of safety in civil aviation. This AC contains information about standards, practices and procedures acceptable to CAAS. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.
2. **PURPOSE.** This AC is to provide guidance for the carriage of personal transportation devices powered by small lithium battery that are classified as dangerous goods when transported by air.
3. **APPLICABILITY.** This AC applies to all Singapore air operators, foreign air operators operating aircraft into and from Singapore, postal operators, ground handling agents, cargo agents and shippers intending to carry or involved in the carriage of lithium batteries as cargo and baggage. Cargo agents are strongly encouraged to disseminate the contents of this AC to your customers/shippers. This AC also applies to entities offering dangerous goods training programmes.
4. **CANCELLATION.** This is the first AC issued on this subject.
5. **EFFECTIVE DATE.** This AC is effective from 15 January 2016.
6. **REFERENCES.**
 - Air Navigation Order (ANO); and
 - ICAO Technical Instructions (TI) for the Safe Transport of Dangerous Goods by Air (Doc 9284).
7. **BACKGROUND.**
 - 7.1 Paragraph 50E and the Nineteenth Schedule of the ANO require the air operator and shipper to, among other responsibilities, ensure that all dangerous goods including lithium batteries are properly:
 - Classified;
 - Packed;
 - Marked;

- Labeled and stored;
 - Loaded, stowed and checked; and
 - Documented.
- 7.2 Personal transportation devices powered by small lithium ion batteries are being carried by air as cargo and by passengers in checked and/or carry-on baggage in increasing numbers. Examples of these devices include hover boards, self-balancing single or multi-wheels and mini segways. There have been media reports of safety concerns due to such devices catching fire hence they present a safety risk when transported by air in passenger checked in/carry-on baggage or as cargo.

8. COMPLIANCE WITH THE TECHNICAL INSTRUCTIONS.

- 8.1 To address and mitigate the potential risk of such devices catching fire, air operators, shippers, and their agents should pay particular attention to the requirements in the ICAO TI regarding the carriage of lithium batteries either as checked in / carry-on baggage or as cargo.

CARRIAGE OF PERSONAL TRANSPORTATION DEVICES AS CARGO POWERED BY SMALL LITHIUM BATTERY

- 8.2 When transported as cargo, such devices containing lithium ion batteries must be assigned to UN3171 – Battery-Powered Vehicle and are subjected to compliance with packing instructions 952 and all applicable requirements of the ICAO TI.
- 8.3 Batteries not contained in the device must be assigned to UN3480 – Lithium Ion Batteries and subjected to compliance with packing instructions 965 and all applicable requirements of the ICAO TI.

CARRIAGE OF PERSONAL TRANSPORTATION DEVICES POWERED BY SMALL LITHIUM BATTERY BY PASSENGERS AND CREW

- 8.4 When personal transportation devices containing lithium ion batteries are carried by passengers or crew, the requirements applicable to portable electronic devices containing lithium ion cells or batteries would apply to the carriage of such devices. To mitigate the risk to safety, such devices should not be carried in checked in baggage. They are recommended to be carried in carry-on baggage in the cabin where any incident can be immediately mitigated.
- 8.5 The air operator may allow devices containing lithium ion batteries having a Watt-hour rating not exceeding 100Wh to be carried by passengers or crew. Devices containing lithium ion batteries having a Watt-hour rating exceeding 100Wh but not more than 160Wh may be carried subject to approval by the air operator.
- 8.6 Passengers and crew are not permitted to carry portable electronic devices containing lithium ion batteries exceeding 160Wh. Charging of these devices in the cabin is also prohibited.
- 8.7 Refer to AC DGR-2 for more guidance on the carriage of lithium batteries by air.

9. PENALTY.

- 9.1 If convicted, any person who contravenes paragraph 50E and the Nineteenth Schedule of the ANO shall be liable to a fine not exceeding S\$100,000 or to imprisonment for a term of not more than five years, or both.

10. TRAINING SERVICE PROVIDERS.

- 10.1 Entities offering dangerous goods training programmes are to address the understanding of the ICAO TI requirements associated with the carriage of lithium batteries by air and to emphasize the need to comply with these requirements in the interest of safety.

11. CONTACT PERSON AND INFORMATION.

- 11.1 Should you have any queries relating to the contents of this advisory circular, please e-mail to us at CAAS_Dangerousgoods@caas.gov.sg.