

# Lithium Battery Guidance Document

*Transport of lithium Metal and Lithium Ion Batteries  
Revised for the 2013 Regulations*

**EDITED\***

## **IATA Lithium Battery Guidance Document - 2013**

### Passenger Provisions

#### **Transport within Passenger Baggage**

Certain restrictions apply to the carriage of lithium metal and lithium ion batteries even when carried by passengers as baggage. Once again, only batteries that have successfully passed the Tests outlined in Part III, Sub-Section 38.3 of the UN Manual of tests and criteria may be carried.

As said before batteries manufactured, distributed or sold by major companies do meet this requirement, however, certain replacement batteries which are not OEM or aftermarket batteries but simply low-cost copies of those – also called “fakes” – may not have undergone the required tests. Untested batteries are consequently excluded from air transport.

Users of equipment powered by lithium metal and lithium ion batteries should therefore be vigilant when buying replacement batteries from unknown sources, such as on markets or Internet auction platforms. The differences between genuine and copied battery types may not be visible but could be very dangerous; such untested batteries may have a risk of overheating or causing fires.

Because of the risks associated with the carriage of spare batteries these may not be transported within passenger checked baggage. Spare batteries must be in carry-on baggage.

These requirements are stipulated by subparagraph 2.3.5.9 of the IATA Dangerous Goods Regulations:

#### **2.3.5.9 Portable Electronic Devices containing Batteries**

2.3.5.9.1 Portable electronic devices (such as watches, calculating machines, cameras, cellular phones, lap-top computers, camcorders, etc.) containing batteries when carried by passengers or crew for personal use, which should be carried in carry-on baggage. Spare batteries must be individually protected to prevent short circuits by placement in the original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch, and carried in carry-on baggage only. In addition, lithium batteries are subject to the following conditions:

(a) . each installed or spare battery must not exceed:

1. for lithium metal or lithium alloy batteries, a lithium content of not more than 2 g; or
2. for lithium ion batteries, a watt-hour rating of not more than 100 Wh.

(b) batteries and cells must be of a type that meets the requirements of the UN *Manual of Tests and Criteria*, Part III, subsection 38.3;

(c) if devices are carried in checked baggage the passenger/crew member must take measures to prevent unintentional activation.

There is also provision, with the approval of the airline, for larger lithium ion batteries with a watt-hour rating in excess of 100 Wh, but not more than 160 Wh in equipment and no more than two spare lithium ion batteries as set out in subparagraph 2.3.3.2 as follows:

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**2.3.3.2** Lithium ion batteries exceeding a watt-hour rating of 100 Wh but not exceeding 160 Wh may be carried as spare batteries in carry-on baggage, or in equipment in either checked or carry-on baggage. Batteries must be of a type that meets the requirements of the UN *Manual of Tests and Criteria*, Part III, subsection 38.3. No more than two individually protected spare batteries per person may be carried.

Although the text provided above does not impose a limit on the number of lithium metal and lithium ion batteries that fall under the 2 g or 100 Wh limitation (See 2.3.5.9) being carried as spares within a passenger's carry-on baggage it must be emphasized that the number of spares must be “reasonable” in the context of the equipment used by the passenger and his or her itinerary. Furthermore, these must be intended to power portable electronic devices (including, but not limited to, cameras and professional film equipment, laptop computers, MP3 players, cell phones, Personal Digital Assistants (PDA's), pocket calculators etc).

Batteries which are carried for the purpose of resale or beyond personal needs are clearly not covered.

The regulations imposed on these commodities by the United States competent authorities (Department of Transportation and FAA) match the ICAO / IATA regulations addressed in this document.

Lithium-ion battery powered 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 (e.g. broken leg), are permitted in air transport but subject to the following conditions:

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(a) the batteries must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3;

(b) the operator must verify that:

(1) battery terminals are protected from short circuits, e.g. by being enclosed within a battery container,

(2) the battery must be securely attached to the wheelchair or mobility aid; and

(3) electrical circuits have been inhibited.

(c) the mobility aids must be carried in a manner such that they are protected from being damaged by the movement of baggage, mail, or other cargo;

(d) where a battery powered or other similar mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible)

(1) the battery(ies) must be removed. The wheelchair / mobility aid may then be carried as checked baggage without restriction;

(2) the battery(ies) must be protected from short circuit by insulating the terminals (e.g. by taping over exposed terminals);

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(3) the removed battery(ies) must be protected from damage (e.g.) by placing each battery in a protective pouch. The battery(ies) must be carried in the passenger cabin;

(4) removal of the battery from the device must be performed by following the instructions of the manufacturer or device owner;

5. (5) the battery must not exceed 300 Wh;;

6. (6) a maximum of one spare battery not exceeding 300 Wh or two spares each not exceeding 160 Wh may be carried; and

(e) the pilot-in-command must be informed of the location of the mobility aid with an installed battery or the location of the lithium battery when removed and carried in the cabin.

(f) It is recommended that passengers make advance arrangements with each operator.

*Note: most scooters have a key which can be switched to the off position, removed and given to the passenger for safe keeping. However, most power chairs are switched on and off with a push-button which could be reactivated in flight by the inadvertent movement of baggage or cargo. Accordingly, further steps are required to inhibit the circuits of such devices, for example separating the power supply between the batteries and the control mechanism by disconnecting cable plugs or connectors, or inserting an inhibiting plug. Any exposed electrical terminals must be insulated to prevent short circuit. Batteries should not be routinely disconnected or removed, since this is often very difficult to do, and if not done properly can increase the risk of a fire.*

*To check that electrical circuits have been inhibited, prior to loading place the device into drive mode (i.e. not freewheel mode), try to power up the device by pressing the on/off switch and see if use of the joystick results in the mobility aid moving. A check should also be made that batteries are securely attached to the mobility aid and battery terminals are protected from short circuit. If it is evident that an electric mobility aid has not been made safe, it must not be loaded.*

*Once loaded onboard the aircraft or into a ULD, the electric mobility aid should be returned to drive mode as this will help prevent it moving with the potential for damage. Devices must be secured to prevent movement and may require load- spreading (consult the airline ground handling manual for details).*

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\* This is an edited version of the IATA document, reproducing only pages 12 - 14.

Note: As of the 2015, 56th edition, there have been no changes to this section of the regulations since 2013.

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### Additional advice from Scooters Australia:

1. Keep the cardboard battery box that was delivered to you with your Luggie as a storage box when taking the battery on board an aircraft – it will ensure that the terminals are isolated.
2. Always contact the airline prior to booking so that you are not surprised by a staffperson who does not know the IATA regulations (eg a subcontracted terminal ground staff) and may prohibit you boarding the aircraft.