



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/23)**

Rio de Janeiro, Brazil, 15 to 19 May 2023

- Agenda Item 2: Managing air-specific safety risks and identifying anomalies (REC-A-DGS-2025)**
2.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2025-2026 Edition

**ADD CLARITY ON THE WATT-HOUR RATING LIMIT OF LITHIUM BATTERY(IES) THAT
REMAIN INSTALLED IN MOBILITY AIDS**

(Presented by D. Brennan)

SUMMARY

This working paper proposes inserting a note related to the Watt-hour limit of lithium batteries should they remain installed in mobility aids.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 Under Part 7;2.13.3.2 b) 2) c), when batteries are removed from mobility aids powered by lithium ion batteries, each removed battery must not exceed 300 Wh. Since this requirement was introduced in the 2013–2014 Edition of the Technical Instructions, there have been questions from both operators and passengers whether or not there is also a Watt-hour rating limit on the lithium batteries when they remain installed in the mobility aids.

1.2 It has been well understood that based on the provisions, only removed batteries have Watt-hour rating limits; however, as this has not been explicitly written, some have a perception that the same Watt-hour rating limit applies to batteries that remain installed.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider inserting a note to Part 7;2.13.3.2 as shown in the appendix to this working paper.

APPENDIX

PROPOSED AMENDMENT TO PART 7 OF THE TECHNICAL INSTRUCTIONS

Part 7

OPERATOR'S RESPONSIBILITIES

...

Chapter 2

STORAGE AND LOADING

...

2.13 LOADING OF BATTERY-POWERED MOBILITY AIDS
CARRIED UNDER THE PROVISIONS OF PART 8

...

2.13.3 Loading of mobility aids powered by lithium ion batteries

2.13.3.1 An operator must secure, by use of straps, tie-downs or other restraint devices, a battery-powered mobility aid with installed battery(ies). The mobility aid, the battery(ies), electrical cabling and controls must be protected from damage including by the movement of baggage, mail or cargo.

2.13.3.2 An operator must verify that:

- a) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container);
- b) the battery(ies) is either:
 - 1) adequately protected against damage by the design of the mobility aid and securely attached to the mobility aid. The electrical circuits must be isolated following the manufacturer's instructions; or
 - 2) removed from the mobility aid, following the manufacturer's instructions; and
- c) each removed battery does not exceed 300 Wh. A maximum of one spare battery not exceeding 300 Wh or two spare batteries each not exceeding 160 Wh may be carried.

Note.— When the lithium battery(ies) remain installed in the mobility aid, there is no Watt-hour limit.

2.13.3.3 An operator must ensure that any battery(ies) removed from the mobility aid and any spare battery(ies) is (are) carried in the cabin and protected from damage (e.g., by placing each battery in a protective pouch) and the battery terminals protected from short circuit (by insulating the terminals, e.g. by taping over exposed terminals).

2.13.3.4 The operator must inform the pilot-in-command of the location of any mobility aids with installed lithium ion battery(ies), removed battery(ies) and spare battery(ies).

...

Part 8

**PROVISIONS CONCERNING
PASSENGERS AND CREW**

Chapter 1

**PROVISIONS FOR DANGEROUS GOODS
CARRIED BY PASSENGERS OR CREW**

...

Table 8-1. Provisions for dangerous goods carried by passengers or crew

<i>Dangerous Goods</i>	<i>Location</i>		<i>Approval of the operator(s) is required</i>	<i>Restrictions</i>
	<i>Checked baggage</i>	<i>Carry-on baggage</i>		
Batteries				
4) Mobility aids (e.g. wheelchairs) powered by: <ul style="list-style-type: none"> – spillable batteries; – non-spillable wet batteries; – dry batteries; – nickel-metal hydride batteries; or – lithium ion batteries 	Yes	(see e))	Yes	a) 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); b) the passenger should make advance arrangements with each operator and provide information on the type of battery installed and on the handling of the mobility aid (including instructions on how to isolate the battery); c) in the case of a dry battery or nickel-metal hydride battery, each battery must comply with Special Provision A123 or A199, respectively; d) in the case of a non-spillable wet battery: <ul style="list-style-type: none"> i) each battery must comply with Special Provision A67; and ii) a maximum of one spare battery may be carried per passenger; e) in the case of a lithium ion battery: <ul style="list-style-type: none"> i) each battery must be of a type which meets the requirements of each test in the <i>UN Manual of Tests and Criteria</i>, Part III, subsection 38.3; ii) when the mobility aid does not provide adequate protection to the battery: <ul style="list-style-type: none"> – the battery must be removed in accordance with the manufacturer's instructions; – the battery must not exceed 300 Wh; – the battery terminals must be protected from short circuit (by insulating the terminals, e.g. by taping over exposed terminals); – the battery must be protected from damage (e.g. by placing each battery in a protective pouch); and – the battery must be carried in the cabin; iii) a maximum of one spare battery not exceeding 300 Wh or two spare batteries not exceeding 160 Wh each may be carried. Spare batteries must be carried in the cabin.

<i>Dangerous Goods</i>	<i>Location</i>		<i>Approval of the operator(s) is required</i>	<i>Restrictions</i>
	<i>Checked baggage</i>	<i>Carry-on baggage</i>		
				<i>Note.— When the lithium battery(ies) remain installed in the mobility aid, there is no Watt-hour limit.</i>

...

— END —