



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-FIFTH MEETING**

**Montréal, 19 to 30 October 2015**

**Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2017-2018 Edition**

**BATTERY POWERED MOBILITY AIDS**

(Presented by M. Paquette)

**SUMMARY**

This working paper proposes revisions to the provisions for battery powered mobility aids. The purpose is to simplify the provisions.

**Action by the DGP:** The DGP is invited to revise Part 7;2 and Part 8 as shown in the appendices to this working paper.

**1. INTRODUCTION**

1.1 Mobility aid provisions have been modified significantly throughout the years. The panel has had to adapt to the introduction of different battery types and technologies, the allowance for spare lithium batteries carried in the cabin, and the features of mobility aids (e.g. their ability to fold or collapse).

1.2 The existing provisions for mobility aids in Table 8-1 are complex. In addition, most of the passenger provisions relating to mobility aids are not under the passenger's control. It is strictly the operator's responsibility to:

- load, stow, secure and unload the mobility aid;
- protect mobility aid from being damaged by the movement of baggage, mail, stores or other cargo;
- remove the battery, if necessary, and package it safely; and

- inform the pilot-in-command of the location of the mobility aid with an installed battery or the packed battery.

1.3 The proposed Table 8-1 of Part 8 merges all three entries for mobility aids (items 5), 6), and 7) into one entry and limits the provisions to what passengers need to know and do with their mobility aid.

1.4 Proposed amendments to Part 7;2 to incorporate provisions for the loading of battery powered mobility aids. In the proposed revised Part 7;2.13, we have:

- copied the existing provisions of Table 8-1;
- clarified that collapsible mobility aids may retain their batteries when they are not collapsed, and that not all mobility aids require the removal of the batteries in order to collapse or fold them; and
- removed the requirements for a mobility aid separated from its batteries – a mobility aid on its own is not considered dangerous goods.

## 2. ACTION BY THE DGP

The DGP is invited to revise Part 7;2 and Part 8 as shown in the appendices to this working paper.

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## APPENDIX A

### PROPOSED AMENDMENT TO PART 7 OF THE TECHNICAL INSTRUCTIONS

## Part 7

### OPERATOR'S RESPONSIBILITIES

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#### Chapter 2

#### STORAGE AND LOADING

*Parts of this Chapter are affected by State Variations CA 1, CA 4, IR 2, IR 4, JP 9, JP 10, JP 11, JP 12, US 15; see Table A-1*

#### 2.1 LOADING RESTRICTIONS ON THE FLIGHT DECK AND FOR PASSENGER AIRCRAFT

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

2.13.1 Battery powered mobility aids must be protected from being damaged by the movement of baggage, mail, stores or other cargo.

2.13.2 The operator must verify that:

a) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and

b) the battery is either:

1) securely attached to the mobility aid and the electrical circuits are isolated; or

2) removed from the electric mobility aid when it is necessary to do so in accordance with 2.13.3, 2.13.4 or 2.13.5.

2.13.3 When non spillable batteries are removed in order to collapse the mobility aid for carriage, they must be carried in strong, rigid packagings and be protected from short circuit. Batteries must only be removed when the battery is not afforded any protection when left in the mobility aid.

2.13.4 When lithium ion batteries are removed in order to collapse the mobility aid for carriage, they must be carried in the cabin and be protected from damage (e.g. by placing each battery in a protective pouch). Batteries must only be removed when the battery is not afforded any protection when left in the mobility aid.

2.13.5 Spillable battery powered mobility aids must be loaded, stowed, secured, and unloaded in an upright position, where possible. If the mobility aid cannot be loaded, stowed, secured and unloaded always in an upright position, the battery(ies) must be removed and carried in strong, rigid packagings, as follows:

a) packagings must be leak-tight, impervious to battery fluid and be protected against upset by securing them to pallets or by securing them in cargo compartments using appropriate means of securement (other than by bracing with freight or baggage) such as by the use of restraining straps, brackets or holders;

b) batteries must be protected against short circuits, secured upright in these packagings and surrounded by compatible absorbent material sufficient to absorb their total liquid contents; and

c) these packagings must be marked "Battery, wet, with wheelchair" or "Battery, wet, with mobility aid" and be labelled with a "Corrosive" label (Figure 5-23) and with package orientation labels (Figure 5-27) as required by 5.3.

2.13.6 The removal of the battery(ies) must be done following the instructions of the manufacturer or passenger.

2.13.7 The operator must inform the pilot-in-command of the location of any mobility aids with an installed spillable or lithium ion battery(ies) or any packed battery(ies).

Note. — Passengers wishing to carry spare non-spillable batteries must offer them for transport as cargo.

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*Renumber* subsequent paragraphs accordingly

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APPENDIX B

PROPOSED AMENDMENT TO PART 8 OF THE TECHNICAL INSTRUCTIONS

Part 8

PROVISIONS CONCERNING  
PASSENGERS AND CREW

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Chapter 1

PROVISIONS FOR DANGEROUS GOODS  
CARRIED BY PASSENGERS OR CREW

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1.1 DANGEROUS GOODS CARRIED BY PASSENGERS OR CREW

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

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
Medical necessities						
...						
5) <del>Mobility aids (e.g. wheelchairs) powered by non-spillable wet batteries or batteries which comply with Special Provision A123 or A199, 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)</del>	Yes	No	No	Yes	<del>(see 5 d) iv))</del>	<del>a) non-spillable wet batteries must comply with Special Provision A67 or the vibration and pressure differential tests of Packing Instruction 872;</del> <del>b) the operator must verify that:</del> <del>— i) the battery is securely attached to the mobility aid;</del> <del>— ii) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and</del> <del>— iii) electrical circuits have been isolated;</del> <del>c) mobility aids must be carried in a manner such that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;</del> <del>d) where the mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible):</del> <del>— i) the battery(ies) must be removed; the</del>

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
						<p>mobility aid may then be carried as checked baggage without restriction;</p> <p><del>ii) the removed battery(ies) must be carried in strong, rigid packagings which must be stowed in the cargo compartment;</del></p> <p><del>iii) the battery(ies) must be protected from short circuit; and</del></p> <p><del>iv) the pilot in command must be informed of the location of the packed battery;</del></p> <p>e) it is recommended that passengers make advance arrangements with each operator.</p>
6) Mobility aids (e.g. wheelchairs) powered by spillable batteries, 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)	Yes	No	No	Yes	Yes	<p>a) where possible, the mobility aid must be loaded, stowed, secured and unloaded always in an upright position. The operator must verify that:</p> <p><del>i) the battery is securely attached to the mobility aid;</del></p> <p><del>ii) battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and</del></p> <p><del>iii) electrical circuits have been isolated;</del></p> <p>b) if the mobility aid cannot be loaded, stowed, secured and unloaded always in an upright position, the battery(ies) must be removed and carried in strong, rigid packagings, as follows:</p>
						<p><del>i) packagings must be leak tight, impervious to battery fluid and be protected against upset by securing them to pallets or by securing them in cargo compartments using appropriate means of securement (other than by bracing with freight or baggage) such as by the use of restraining straps, brackets or holders;</del></p> <p><del>ii) batteries must be protected against short circuits, secured upright in these packagings and surrounded by compatible absorbent material sufficient to absorb their total liquid contents; and</del></p> <p><del>iii) these packagings must be marked "Battery, wet, with wheelchair" or "Battery, wet, with mobility aid" and be labelled with a "Corrosive" label (Figure 5-22) and with package orientation labels (Figure 5-27) as required by 5.3;</del></p> <p><del>The mobility aid may then be carried as checked baggage without restriction;</del></p> <p>c) mobility aids must be carried in a manner such that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;</p> <p>d) the pilot in command must be informed of the</p>

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
						<p>location of the mobility aid with an installed battery or the location of a packed battery;</p> <p><del>e) it is recommended that passengers make advance arrangements with each operator; also, unless batteries are non-spillable they should be fitted, where feasible, with spill-resistant vent caps.</del></p>
7) Mobility aids (e.g. wheelchairs) powered by lithium ion batteries, 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)	Yes	(see 7.d))	No	Yes	Yes	<p><del>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;</del></p> <p><del>b) the operator must verify that:</del></p> <p><del>— i) the battery is securely attached to the mobility aid;</del></p> <p><del>— ii) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and</del></p> <p><del>— iii) electrical circuits have been isolated;</del></p> <p><del>c) mobility aids must be carried in a manner such that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;</del></p> <p><del>d) where the mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible):</del></p>
						<p><del>i) the battery(ies) must be removed and carried in the passenger cabin;</del></p> <p><del>ii) the battery terminals must be protected from short circuit (by insulating the terminals, e.g. by taping over exposed terminals);</del></p> <p><del>iii) the battery must be protected from damage (e.g. by placing each battery in a protective pouch);</del></p> <p><del>iv) removal of the battery from the mobility aid must be performed by following the instructions of the manufacturer or device owner;</del></p> <p><del>v) the battery must not exceed 300 Wh; and</del></p> <p><del>vi) a maximum of one spare battery not exceeding 300 Wh or two spares not exceeding 160 Wh each may be carried;</del></p> <p><del>e) the pilot-in-command must be informed of the location of the lithium ion battery(ies);</del></p> <p><del>f) it is recommended that passengers make advance arrangements with each operator.</del></p>

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
5) <u>Battery powered mobility aids (e.g. wheelchairs)</u>	<u>(see c)ii)</u>	<u>(see c)ii)</u>	<u>No</u>	<u>Yes</u>	<u>Yes</u>	<p><u>a) The mobility aid must be 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);</u></p> <p><u>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 disconnect the battery); and,</u></p> <p><u>c) In the case of lithium batteries that have been removed from the mobility aid:</u></p> <p><u>1) one spare not exceeding 300 Wh is permitted or two spares not exceeding 160 Wh each are permitted; and</u></p> <p><u>2) both removed and spare battery(ies) must be carried in the cabin and be protected from damage (e.g., by placing each battery in a protective pouch).</u></p>

*Renumber subsequent paragraphs accordingly*