



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Montréal, 15 to 19 October 2012

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 2015-2016 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

ELECTRIC MOBILITY AIDS

(Presented by G A Leach)

SUMMARY

This paper proposes a slight amendment to the recently agreed text for electric mobility aids, clarifying what must be done in respect of immobilizing the device.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 Addendum 4 to the 2011-2012 Edition of the Technical Instructions introduced enhanced requirements for the safe transport of electric mobility aids. One of these requirements is that “electrical circuits have been isolated”. Scooters typically 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. Batteries should not routinely be disconnected or removed, as this is often very difficult to do and if not done correctly can increase the risk of fire. On reflection it is suggested the word “isolated” within the requirements for the carriage of electric mobility aids was inappropriate as this could still be interpreted as requiring a battery to be disconnected at its terminals, which was partially what the new text was trying to avoid.

1.2 A very simple way of preventing the drive mechanism of an electric mobility aid from inadvertently operating is the insertion of an inhibiting plug (an example of which is in Appendix A to this working paper). This makes the device think it is being charged. Even if the device is accidentally

turned on, the joystick will not activate the drive wheels, so the associated risk of fire due to friction or electrical load is minimized. Whilst inhibiting plugs do not address the circuits of supplemental powered motorized systems, such as seating systems, these are fitted to a relatively low number of power chairs. Furthermore, such systems usually have easily identifiable power cable connectors that can be separated to inhibit the supplemental circuit as they tend to be bespoke, optional fittings, often supplied by a different manufacturer to the chair. A procedure to prepare power chairs for safe carriage using inhibiting plugs (and separating power cables of supplemental motorised systems) is considered reasonable and would reduce the need for detailed training to be provided to personnel tasked with making devices safe for carriage.

1.3 In view of the above, it is suggested that “inhibit” would be a safer and more accurate term to use.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to make the amendments to Table 8-1 of the Technical Instructions as presented in Appendix B to this working paper.

APPENDIX A

EXAMPLE OF AN INHIBITING PLUG



Airsafe™ - the **quickest** and **most cost effective** way to immobilise electric mobility equipment for transport



Simply plugs into each vehicle's standard charging socket and immobilises.

Part No	Quantity				
	1000	2500	5000	10,000	50,000
ASP1	£3.75	£3.50	£3.00	£2.50	£2.15

- Prices subject to VAT.
- Prices ex-works.
- Warranty 12 months from date of purchase.
- Price includes lanyard.
- Private label & colour available (minimum quantities apply).
- Lead time initially 12-14 weeks, then as required.

The plug-in for safer flying.



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APPENDIX B

PROPOSED AMENDMENT TO THE TECHNICAL INSTRUCTIONS

Part 8

PROVISIONS CONCERNING
PASSENGERS AND CREW

Chapter 1
PROVISIONS FOR DANGEROUS GOODS
CARRIED BY PASSENGERS OR CREW

Parts of this Chapter are affected by State Variations CH 1, US 15; see Table A-1

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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			
...						
5) Mobility aids (e.g. wheelchairs) powered by non-spillable wet batteries or batteries which comply with Special Provision A123, 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	(see 5 d) iv))	a) non-spillable wet batteries must comply with Special Provision A67 or the vibration and pressure differential tests of Packing Instruction 872; b) the operator must verify that: <ul style="list-style-type: none"> i) the battery is securely attached to the mobility aid; ii) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and iii) electrical circuits have been isolated inhibited;

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			
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> <ul style="list-style-type: none"> i) the battery is securely attached to the mobility aid; ii) battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and iii) electrical circuits have been isolated <u>inhibited</u>; <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>...</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>a) the batteries must be of a type which meets the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, subsection 38.3;</p> <p>b) the operator must verify that:</p> <ul style="list-style-type: none"> i) the battery is securely attached to the mobility aid; ii) the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container); and iii) electrical circuits have been isolated <u>inhibited</u>; <p>...</p>

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