



WORKING PAPER

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

The Hague, 3 to 7 November 2008

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 2011/2012 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

BATTERY POWERED MOBILITY AIDS

(Presented by G A Leach)

SUMMARY

This working paper proposes an amendment to Part 8;1.1.2 and invites the working group to discuss the wider issue of battery-powered equipment.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 In September 2008, the United Kingdom Civil Aviation Authority (CAA) was notified of an incident involving an electric wheelchair on a Boeing 757. Upon arrival, when the loaders opened one of the holds, they noticed sparks coming from the battery of the wheelchair. The loaders quickly removed the wheelchair from the hold, but in doing so, the wheelchair caught fire. The cause of the fire is currently being investigated.

1.2 Also in September 2008, another report was received concerning an electric wheelchair carried on a Boeing 747. Upon arrival it was found that a piece of passenger baggage had fallen onto the controls of an electric wheelchair in the hold, which had caused the wheelchair to operate in-flight and the motors to burn out. The report stated that acrid smoke nearly overcame the loading staff.

1.3 In December 2007, an air safety report detailed an in-flight incident where a droning noise was noticed in the passenger cabin of a Boeing 737 aircraft, but the source of the sound could not be located. An investigation by the aircraft operator found that the handlebars of a motorised scooter had been jammed against the hold ceiling. The battery was still connected and there was evidence that the

wheels had been turning, which was thought to be the cause of the droning noise noticed in the aircraft cabin.

1.4 In investigating the above incidents, two main areas of concern have been identified. Firstly, whilst Special Provision A67 requires battery powered equipment to be prepared so as to prevent unintentional activation, there does not appear to be a specific requirement when carrying a passenger's powered mobility aid.

1.5 Secondly, it is apparent from the United K CAA's investigations that for those employees at airports who actually receive powered mobility aids from passengers and who prepare them for transport, it is often very difficult for them to know how they should prepare each individual item. One of the problems is that there are very many different types of powered mobility aids; a simple internet search revealed that one company in the UK supply more than 30 different models of electric wheelchair and electric scooter.

1.6 During a visit to one manufacturer, it was noted that whilst some of their mobility aids provide relatively easy access to the batteries, for other models, it takes two people to partly dismantle the wheelchair before being able to access the batteries. Photographic examples are included in the attachment to this paper. It is suggested that it is difficult for personnel at an airport to understand how to do this. Often, the passenger themselves are not aware of the procedure, or there are communication difficulties between the passenger and the airport worker.

1.7 In all of the examples viewed by the UK CAA, the batteries were enclosed in containers and the leads were insulated. It appears that many operators require the batteries of mobility aids to be disconnected prior to flight but it is suggested that by trying to do this the likelihood of the batteries becoming capable of short circuit may actually increase. It is suggested the Technical Instructions are ambiguous with regard to battery disconnection; 8;1.1 f) requires spillable batteries to be disconnected but there is not such an explicit requirement for non-spillable batteries. For non-spillable batteries 8;1.1.2 e) refers the reader to Special Provision A67 intending (presumably) only to clarify what such a battery is. However, A67 has been amended such that disconnection is given as an example of how batteries can be protected from short circuit of batteries when in equipment and while this is only example, it is likely operators and handling agents will interpret this as a requirement.

1.8 It should be pointed out that there is a difference, certainly within the UK, between an electric scooter and an electric wheelchair. Electric scooters are turned on and off by means of a key. Removal of the key before flight immobilises the scooter and therefore, even if the controls are moved, the scooter will not operate. Typically, when a passenger checks in with an electric scooter, they will remove the key when the scooter is handed over.

1.9 Electric wheelchairs are different in that they are not normally operated by means of a key. Instead, they have a control box attached to one of the arm rests with an on/off button. Even so, it appears that the manufacturing standards are that each one will have a means of disabling the controls by operating the controls in a specific sequence. Once disabled, the wheelchair cannot be inadvertently operated unless another specific sequence of actions are carried out. Again, it is suggested that this is a preferable means of disabling an electric wheelchair rather than attempting to physically disconnect the batteries.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider amending Part 8;1.1.2 e) of the Technical Instructions as follows:

- e) with the approval of the operator(s), wheelchairs or other battery-powered mobility aids with non-spillable batteries (see Packing Instruction 806 and Special Provision A67), as checked baggage provided the battery terminals are protected from short circuits (e.g. by being enclosed within a battery container) and the battery is securely attached to the wheelchair or mobility aid. The operator(s) must ensure that wheelchairs or other battery powered mobility aids are carried in such a manner so as to prevent unintentional activation and that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;

2.2 The DGP-WG is further invited to discuss the wider issue of battery powered equipment, including the following issues:

- a) Why must spillable batteries be disconnected when non-spillable batteries are not so required?
- b) What is meant, in 8;1.1.2 e) by “see Packing Instruction 806 and Special Provision A67”? Amongst other things Packing Instruction 806 requires non-spillable batteries to be “securely packed in strong outer packagings” which would seem inappropriate for a wheelchair battery;
- c) What is a “mobility aid”? It could be argued that a battery powered golf trolley assists mobility, even if it is owned by someone fit and healthy;
- d) Should 8;1.1.2 be expanded to address lithium battery powered mobility aids?
- e) If a battery meets Special Provision A67, it is not subject to the Technical Instructions. How then is it possible to subject them to additional requirements in 8;1.1.2 e) i.e. operator approval and attached securely to the wheelchair/mobility aid?

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