



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

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 2013-2014 Edition

BATTERY POWERED DEVICES CONTAINING NON-SPILLABLE BATTERIES

(Presented by M. Evans)

SUMMARY

This paper proposes that the requirements for the carriage of equipment containing non-spillable batteries be included in the passenger provisions.

Action by the DGP: The DGP is invited to amend Part 8;1.1.2 as proposed in Appendix A to this working paper.

1. INTRODUCTION

1.1 Special Provision A67 states that non-spillable batteries meeting the requirements of Packing Instruction 872 are not subject to the Technical Instructions if, at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case and that the battery must not contain any free or unabsorbed liquid.

1.2 Also included within Special Provision A67 are the requirements that must be met if the battery or battery powered device has the potential of creating a dangerous evolution of heat. These include the disconnection of the battery and the protection of the exposed terminals, and measures taken to prevent unintentional activation.

1.3 Currently the special provision implies that a passenger may carry one or more of these batteries if it can be shown that they meet the requirements of the special provision. The possible amendment to this special provision to only apply when the batteries are carried as cargo will mean that all of these types of batteries will now be classed as dangerous goods and will therefore not be permitted for carriage by passengers.

1.4 There is a huge variation in the sizes and types of these batteries that meet the requirements for a non-spillable battery. These range from 12 volt 200 Ah rated batteries down to small 4 volt 4.6 Ah rating. They may be used for car, motorbikes, golf buggies or storage batteries down to small camping lanterns, mosquito repellent devices or other small electrical goods.

1.5 Due to the large size of some of these batteries it is felt that some restrictions should be put in place that will allow for the carriage of items containing the smaller batteries, but will restrict the carriage of the larger automotive type batteries. These restrictions could be similar to the restrictions in place that allows the carriage of lithium batteries by passengers.

1.6 Examples of the various types of non-spillable batteries that comply with Special Provision A67 are shown in Appendix B to this working paper. A study of the batteries most commonly used in camping equipment or small toys indicated that they are generally in the 4 volt to 6 volt range with the occasional 12 volt battery. The maximum amp hour (Ah) rating for the items identified was 8.0 Ah for a 6 volt battery and 7.5 Ah for a 12 volt battery.

1.7 Using the same allowance as for lithium batteries, a limitation on the watt-hour rating of 100 Wh would cover all of the various types of lanterns, torches and other articles that were readily available for purchase by the consumer, and this limit would allow the carriage of the 12V 7.5 Ah battery which has a rating of 90 Wh. However, this size of battery was not common and the panel may prefer a maximum limit of 50 Wh which would cover all of the 6 volt batteries that were found. This would still allow the carriage of a 12 volt battery but with a maximum rating of only 4 Ah.

1.8 The study also indicated that where a non-spillable rechargeable battery was identified as being installed within the item, checks of the battery manufacturers indicated that they all meet the requirements of Special Provision A67. As this information would also not be readily available to the passenger, reference to the special provision is not seen as being appropriate.

1.9 To allow the carriage of these items it is proposed that they be included within the provisions for dangerous goods carried by passengers or crew.

APPENDIX A

AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

Part 8

PROVISIONS CONCERNING
PASSENGERS AND CREW

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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Consumer articles

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x) energy efficient light bulbs when in retail packaging intended for personal or home use.

y) battery powered devices containing a non-spillable lead acid battery provided the battery has a watt-hour rating of no more than 100 Wh [50 Wh]. The battery must be protected from short circuit by the prevention of inadvertent activation, or the disconnection of the battery and protection of exposed terminals.

Renumber subsequent paragraphs accordingly

APPENDIX B

EXAMPLES OF THE VARIOUS TYPES OF NON-SPILLABLE BATTERIES THAT COMPLY WITH SPECIAL PROVISION A67



Examples of items containing non-spillable batteries removed from passengers as the requirements of Special Provision A67 could not be verified.



Examples of non-spillable batteries that conform to Special Provision A67. The larger batteries are predominately used for automotive purposes or for electrical storage and have the bolt and nut type terminals. The smaller batteries subject to this paper are in the foreground and generally have the spade type terminals.

Examples of some of the items which typically contain the smaller non-spillable batteries.



Torch 6 volt 4 Ah battery (24 Wh)



Lantern 6 volt 4.5 Ah battery (27 Wh)



Mosquito repellent 4 volt 4.6 Ah battery (18.4 Wh)

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