



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-SECOND MEETING

Montréal, 5 to 16 October 2009

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:

5.3: Review of provisions for dangerous goods relating to batteries:

- a) **lithium batteries**
- b) **battery-powered devices**
- c) **battery-powered mobility aids**

PROTOTYPE AND LOW PRODUCTION LITHIUM BATTERIES

(Presented by PRBA - The Rechargeable Battery Association)

SUMMARY

This paper contains proposed amendments to Special Provision A88 and Packing Instructions 950, 951 and 952 of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) that were agreed to in principle at the May 2009 meeting of the Dangerous Goods Panel Working Group of the Whole. The paper also contains a new proposal to remove the 24 cell and 12 battery limitations in Special Provision A88.

Action by the DGP: The DGP is invited to consider the proposed changes to Special Provision A88 and to the Packing Instructions 950, 951 and 952 as presented in the appendix..

1. INTRODUCTION

1.1 At the May 2009 meeting of the Dangerous Goods Panel Working Group of the Whole (DGP-WG09, Auckland, 4 to 8 May 2009), PRBA's proposal to amend Special Provision A88 and Packing Instructions 950, 951 and 952 was agreed to in principle (see DGP/22-WP/3, paragraph 3.5.1.13). However, several editorial questions were raised regarding how PRBA's proposed provisions in Special Provision A88 impact the existing provisions. To address these editorial concerns, PRBA has reformatted its proposal. (The provisions from PRBA's original proposal to amend Packing Instructions 950, 951 and 952 remain unchanged.)

1.2 Accordingly, in this document PRBA is proposing to amend Special Provision A88 to allow, with the approval of the appropriate authority of the State of Origin, lithium batteries with a mass of 12 kg or greater and having a strong, impact resistant outer casings, and assemblies of such batteries, to be packed in strong outer packagings or protective enclosures not subject to the requirements of Part 6 of these Instructions, and, as prepared for transport, to have a mass exceeding 35 kg G

1.3 PRBA also is proposing in this document to delete the limitation of “not more than 24 cells or 12 batteries per packaging” contained in Special Provision A88. This limitation has caused significant confusion with competent authorities who have interpreted this to mean that a battery with more than 24 cells cannot be shipped by cargo aircraft pursuant to Special Provision A88. This is an incorrect interpretation since the number of cells and batteries are considered mutually exclusive. That is, cells in batteries should not be counted against the 24 cell limitation.

1.4 Removing the 24 cell and 12 battery limitations helps to simplify Special Provision A88 and align it with the requirement in Special Provision in 310 in the UN Model Regulations and IMDG Code. Competent authorities would still be able to limit the number of cells and batteries per package through the Approval process if it is deemed to be appropriate.

APPENDIX

AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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A88

Prototype or low production (i.e., annual production runs consisting of not more than 100 lithium batteries or cells) lithium batteries and or cells to be tested that are packed with not more than 24 cells or 12 batteries per packaging that have not been tested to the requirements in subsection 38.3 of the UN Manual of Tests and Criteria may be transported aboard cargo aircraft if approved by the appropriate authority of the State of Origin and the following requirements are met:

- a) Except as provided in paragraph c), the cells and or batteries must be transported in an outer packaging that is a metal, plastic or plywood drum or a metal, plastic or wooden box and that meets the criteria for Packing Group I packagings; and
- b) Except as provided in paragraph c), each cell and or battery must be individually packed in an inner packaging inside an outer packaging and surrounded by cushioning material that is non-combustible, and non-conductive. Cells and or batteries must be protected against short circuiting.

c) Lithium batteries with a mass of 12 kg or greater and having a strong, impact resistant outer casing, or assemblies of such batteries, may be packed in strong outer packagings or protective enclosures not subject to the requirements of Part 6 of these Instructions. The batteries or battery assemblies must be protected against short circuiting.

Irrespective of the limit specified in column 13 of Table 3-1, the battery or battery assembly as prepared for transport may have a mass exceeding 35 kg G.

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Attachment 4

REFORMATTED PACKING INSTRUCTIONS (APPLICABLE FROM 1 JANUARY 2011)

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CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

Packing Instruction 950

Passenger and cargo aircraft for UN 3166 only
(See Packing Instruction 951 for flammable gas-powered vehicles and engines or
Packing Instruction 952 for battery-powered equipment and vehicles)

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Batteries

All batteries must be installed and securely fastened in the battery holder of the vehicle, machine or equipment and must be protected in such a manner so as to prevent damage and short circuits. In addition:

- 1) if spillable batteries are installed, and it is possible for the vehicle, machine or equipment to be handled in such a way that batteries would not remain in their intended orientation, they must be removed and packed according to Packing Instruction 492 or 870 as applicable;
- 2) if lithium batteries are installed, they must be of a type that has successfully passed the tests specified in the UN Manual of Tests and Criteria, Part III, subsection 38.3, unless otherwise approved by the appropriate authority of the State of Origin, must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner so as to prevent damage and short circuits; and
- 3) if sodium batteries are installed they must conform to the requirements of Special Provision A94.

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Packing Instruction 951

Cargo aircraft only for UN 3166 only
(See Packing Instruction 950 for flammable liquid-powered vehicles and engines or
Packing Instruction 952 for battery-powered equipment and vehicles)

Batteries

All batteries must be installed and securely fastened in the battery holder of the vehicle, machine or equipment and must be protected in such a manner so as to prevent damage and short circuits. In addition:

- 1) if spillable batteries are installed, and it is possible for the vehicle, machine or equipment to be handled in such a way that batteries would not remain in their intended orientation, they must be removed and packed according to Packing Instruction 492 or 870 as applicable;
- 2) if lithium batteries are installed, they must be of a type that has successfully passed the tests specified in the UN Manual of Tests and Criteria, Part III, subsection 38.3, unless otherwise approved by the appropriate authority of the State of Origin, must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner so as to prevent damage and short circuits; and
- 3) if sodium batteries are installed they must conform to the requirements of Special Provision A94.

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Packing Instruction 952

Passenger and cargo aircraft for UN 3171 only
(See Packing Instruction 950 for flammable liquid-powered vehicles and engines or
Packing Instruction 951 for flammable gas-powered vehicles and engines)

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Batteries

All batteries must be installed and securely fastened in the battery holder of the vehicle, machine or equipment and must be protected in such a manner so as to prevent damage and short circuits. In addition:

- 1) if spillable batteries are installed, and it is possible for the vehicle, machine or equipment to be handled in such a way that batteries would not remain in their intended orientation, they must be removed and packed according to Packing Instruction 492 or 870 as applicable;
- 2) if lithium batteries are installed, they must be of a type that has successfully passed the tests specified in the UN Manual of Tests and Criteria, Part III, subsection 38.3, unless otherwise approved by the appropriate authority of the State of Origin. must be securely fastened in the vehicle, machinery or equipment and must be protected in such a manner so as to prevent damage and short circuits; and
- 3) if sodium batteries are installed they must conform to the requirements of Special Provision A94.

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