



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-FOURTH MEETING

Montréal, 28 October to 8 November 2013

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

5.1: Review of provisions for the transport of lithium batteries

TRANSPORT OF LITHIUM BATTERIES FOR DISPOSAL OR RECYCLING

(Presented by PRBA — The Rechargeable Battery Association)

SUMMARY

This paper proposes the addition of a new special provision and packing instruction for the Supplement to the Technical Instructions to provide guidance for national authorities who may issue approvals authorizing the transport by air of lithium ion and lithium metal cells and batteries and equipment containing them for disposal or recycling.

Action by the DGP: The DGP is invited to provide guidance to national authorities who may consider issuing approvals authorizing the transport of lithium batteries for disposal or recycling by adopting a special provision and packing instruction for the Supplement to the Technical Instructions.

1. INTRODUCTION

1.1 Special Provision A183 of the Technical Instructions prohibits the transport of waste lithium batteries unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

1.2 At the forty-second session of the UN Sub-Committee of Experts on the Transport of Dangerous Goods, a new special provision and packing instruction were adopted authorizing the transport of lithium batteries for disposal or recycling. The special provision and packing instruction adopted by the Sub-Committee were based on proposals submitted in 2011 and 2012 by PRBA — The Rechargeable Battery Association and the European Association for Advanced Rechargeable Batteries (RECHARGE). The new special provision and packing instruction were incorporated into the UN Recommendations on the Transport of Dangerous Goods Model Regulations, Eighteenth Revised Edition. It is proposed that the Technical Instructions and the Supplement to the Technical Instructions be amended as shown in the appendices to this working paper.

APPENDIX A

PROPOSED AMENDMENT TO PART 3 OF 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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A183	Waste batteries and batteries being shipped for recycling or disposal are forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator (see Special Provision A2XX in Part S-3:6 of the Supplement to these Instructions) .
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APPENDIX B

PROPOSED AMENDMENT TO THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS

Part S-3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND QUANTITY LIMITATIONS

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Chapter 4

SUPPLEMENTARY DANGEROUS GOODS LIST

Classes 3 to 9

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Name 1	UN No. 2	Class or division 3	Subsidiary risk 4	Labels 5	State variations 6	Special provisions 7	UN packing group 8	Excepted quantity 9	Passenger aircraft		Cargo aircraft	
									Packing instruction 10	Max. net quantity per package 11	Packing instruction 12	Max. net quantity per package 13
Lithium ion batteries (including lithium ion polymer batteries)	3480	9		Miscellaneous	US 3	A51 A88 A99 A154 A164 A183 A2xx	II	E0	See	965	See	965
Lithium ion batteries contained in equipment (including lithium ion polymer batteries)	3481	9		Miscellaneous	US 3	A48 A99 A154 A164 A181 A185 A2xx	II	E0	967	5 kg	967	35 kg
Lithium ion batteries packed with equipment (including lithium ion polymer batteries)	3481	9		Miscellaneous	US 3	A88 A99 A154 A164 A181 A185 A2xx	II	E0	966	5 kg	966	35 kg
Lithium metal batteries (including lithium alloy batteries)	3090	9		Miscellaneous	US 2 US 3	A88 A99 A154 A164 A183 A2xx	II	E0	See	968	See	968

Lithium metal batteries contained in equipment (including lithium alloy batteries)	3091	9		Miscellaneous	US 2 US 3	A48 A99 A154 A164 A181 A185 <u>A2xx</u>	II	E0	970	5 kg	970	35 kg
Lithium metal batteries packed with equipment (including lithium alloy batteries)	3091	9		Miscellaneous	US 2 US 3	A99 A154 A164 A181 A185 <u>A2xx</u>	II	E0	969	5 kg	969	35 kg

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Chapter 6

SPECIAL PROVISIONS

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A2XX (377) Lithium ion and lithium metal cells and batteries and equipment containing such cells and batteries transported for disposal or recycling, either packed together with or packed without non-lithium batteries, may be packaged in accordance with Packing Instruction 9XX.

Cells and batteries are not subject to the requirements of Part 2:9.3 of the Technical Instructions. Additional exemptions may be provided under the conditions defined by the appropriate national authority. Packages must be marked "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".

Identified damaged or defective batteries are prohibited from being transported under this special provision and Packing Instruction 9XX.

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Part S-4**PACKING INSTRUCTIONS**

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Chapter 11**CLASS 9 — MISCELLANEOUS DANGEROUS GOODS****Packing Instruction 9XX**

Passenger and cargo aircraft for UN Nos. 3090, 3091, 3480 and 3481 transported for disposal or recycling

This packing instruction applies to UN Nos. 3090, 3091, 3480 and 3481 transported for disposal or recycling, either packed together with or packed without non-lithium batteries:

General requirements

- 1) Part 4, Chapter 1 requirements must be met.
- 2) Cells and batteries must be packed in accordance with the following:
 - a) Packagings must conform to the Packing Group II performance level.
 - b) Metal packagings must be fitted with a non-conductive lining material (e.g. plastics) of adequate strength for the intended use.
- 3) However, lithium ion cells with a Watt-hour rating of not more than 20 Wh, lithium ion batteries with a Watt hour rating of not more than 100 Wh, lithium metal cells with a lithium content of not more than 1 g and lithium metal batteries with an aggregate lithium content of not more than 2 g may be packed in accordance with the following:
 - a) In strong outer packaging up to 30 kg gross mass, that conform to Part 4:1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1); and
 - b) Metal packagings must be fitted with a non-conductive lining material (e.g. plastics) of adequate strength for the intended use.
- 4) For cells or batteries contained in equipment, strong outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use, may be used. Packagings need not meet the requirements of Part 6 of these Instructions.
- 5) In addition, for cells or batteries with a gross mass of 12 kg or more employing a strong, impact resistant outer casing, strong outer packagings constructed of suitable material and of adequate strength and design in relation to the packagings capacity and its intended use, may be used. Packagings need not meet the requirements of Part 6 of these Instructions.

OUTER PACKAGINGS**Boxes**

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

ADDITIONAL PACKING REQUIREMENTS

- 1) Cells and batteries must be designed or packed to prevent short circuits and the dangerous evolution of heat.
- 2) Protection against short circuits and the dangerous evolution of heat includes, but is not limited to:
 - individual protection of the battery terminals,
 - inner packaging to prevent contact between cells and batteries,
 - batteries with recessed terminals designed to protect against short circuits, or
 - the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.
- 3) Cells and batteries must be secured within the outer packaging to prevent excessive movement during transport (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastics bag).

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