



WORKING PAPER

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

Rio de Janeiro, Brazil, 20 to 24 October 2014

Agenda Item 5: Review of provisions for the safe transport of lithium batteries

**5.4: Consideration of recommendations from the International Multidisciplinary
Lithium Battery Transport Coordination Meeting**

**LIMITATIONS ON OVERPACKS, CONSOLIDATIONS AND SHIPPER LOADED UNITS FOR
SECTION II OF PACKING INSTRUCTION 965 AND PACKING INSTRUCTION 968**

(Presented by D. Brennan)

SUMMARY

This working paper proposes that the provision for shippers to overpack multiple packages of lithium batteries under Section II of Packing Instructions 965 and 968 be reviewed, along with restrictions on shippers loading such packages into a unit load device and removal of the ability of freight forwarder to group these packages from one or more shippers into a consolidated consignment.

Action by the DGP-WG: The DGP-WG is invited to consider the options set out in the appendix for possible revisions to Section II of the Packing Instructions 965 and 968.

1. INTRODUCTION

1.1 At the first meeting of the Dangerous Goods Panel Working Group of the Whole on Lithium Batteries (DGP-WG/LB/1) in February 2012 the working group decided to amend the provisions of Section II of Packing Instructions 965 and 968 to significantly reduce the quantity of lithium cells and batteries permitted in a package to no more than eight cells or two batteries unless the cells or batteries were very small, in which case the permitted maximum net quantity was 2.5 kg.

1.2 This decision was taken to address concerns about “bulk” shipments of packages containing just lithium ion or lithium metal cells or batteries and the lack of operator checks and information to the pilot-in-command for these large shipments. (see paragraph 3.1.1 in the report of the meeting (DGP-WG/LB/1-WP/15))

1.3 The changes adopted by the DGP/WG were incorporated into the 2013–2014 Edition of the Technical Instructions with the expectation that shippers of small lithium cells and batteries would use the revised Section II provisions when shipping small quantities of such cells or batteries and that larger quantities would be shipped using Section IB of Packing Instruction 965 or Packing Instruction 968 which allowed for a larger number/mass of cells or batteries to be packed in a package.

1.4 Following implementation of the Packing Instruction 965 and 968 Section IB and Section II provisions in 1 January 2013 it has become apparent that many shippers, rather than moving to Section IB for larger quantities of lithium batteries, have instead simply stayed in Section II and are putting multiple packages together into overpacks.

1.5 The use of the overpack provisions in Section II of Packing Instructions 965 and 968 has raised concerns among IATA member airlines as in some cases the packagings used for the packages within the overpacks have been flimsy pasteboard that would not be sufficiently robust to meet the “normal conditions of transport”. The use of overpacks also potentially results in significant densities of lithium cells or batteries, which the change to the limits in Section II was aimed at addressing.

1.6 The issue of overpacks was also discussed at the second International Multidisciplinary Lithium Battery Transport Coordination Meeting that was held in Cologne (9 to 11 September 2014) with the meeting proposing a recommendation on the prohibition of such overpacks.

1.7 The recommendation from the multidisciplinary meeting to prohibit packages of Packing Instructions 965 and 968 Section II being placed in an overpack was discussed at the recent meeting of the IATA Dangerous Goods Board to consider the practical and operational ramifications of such a prohibition.

1.8 While there was general support for removing the ability for a shipper to place Section II packages into an overpack, it was identified that given the limited number of lithium cells and/or batteries that are permitted in a package the resultant packages will likely be quite small and this may present other safety and operational issues that need to be considered before a total prohibition on overpacks is adopted. Some specific issues to be considered are:

1.8.1 Defining or recommending a minimum size for a Section II “package”. At the current time there is no minimum size requirement for a package prepared in accordance with Section II of Packing Instructions 965 and 968. While a minimum size is specified for the lithium battery handling label, currently 105 mm wide x 74 mm high, there is nothing in Section II that requires the label to be only on one side of the package and not folded around more than one side as limited by Part 5;3.2.9. In addition to the regulatory requirement on what must be applied to a package containing dangerous goods, there is typically additional transport-related information that is applied to the outside of packages, or overpacks. This information includes a reference to the contract of carriage, i.e. air waybill number, or other appropriate operator information, routing information, i.e. origin, destination, and when subject to transshipment the point of transit.

1.8.2 There may be a greater risk of damage to Section II packages by virtue of their small size compared to overpacks where the packaging for the overpack may provide an additional level of protection. Packages in air transport are handled multiple times by the different entities between the shipper and the consignee. This includes manual handling, including being loaded into and unloading from a unit load device or aircraft cargo compartment, and potentially mechanical handling through package sort systems.

1.9 Based on these considerations it may be preferable to limit overpacks to a maximum number of packages rather than totally prohibiting overpacks.

2. **ACTION BY THE DGP-WG**

2.1 The DGP-WG is invited to consider the options set out in the appendix for possible revisions to Section II of the Packing Instructions 965 and 968.

APPENDIX

PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS

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Part 4

PACKING INSTRUCTIONS

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Chapter 11

CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

Parts of this Chapter are affected by State Variation US 2; see Table A-1

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Packing Instruction 965

Passenger and cargo aircraft for UN 3480

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II. SECTION II

With the exception of Part 1;2.3 (General — Transport of dangerous goods by post), [5:1.1 g](#), [5:1.1 j](#) ([Shipper's responsibilities — general requirements](#)), 7;4.4 (Operator's responsibilities — Reporting of dangerous goods accidents and incidents), 8;1.1 (Provisions concerning passengers and crew — Dangerous goods carried by passengers or crew) and paragraph 2 of this packing instruction, lithium ion cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

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II.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-32). [\[The package must be of such size that there is adequate space to affix the label on one side without the label being folded.\]](#)
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium ion cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
 - a telephone number for additional information.
- The words "lithium ion batteries, in compliance with Section II of PI965" must be placed on the air waybill, when an air waybill is used.
- [\[— Consignments of lithium ion batteries prepared in accordance with the provisions of Section II must not be consolidated with other shipments of dangerous goods or non-dangerous goods and must not be loaded into a unit load device before being offered to the operator.\]](#)
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

II.4 Overpacks

[Not more than [four] packages may be placed into an overpack.] When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

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Packing Instruction 968

Cargo aircraft only for UN 3090

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II. SECTION II

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II.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery, then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-32) and the cargo aircraft only label (Figure 5-26) .
 - the cargo aircraft only label must be located on the same surface of the package near the lithium battery handling label, if the package dimensions are adequate. [The package must be of such size that there is adequate space to affix all of the labels on the package without the labels being folded.]
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium metal cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
 - a telephone number for additional information.
- The words "lithium metal batteries, in compliance with Section II of PI968 — cargo aircraft only" or "lithium metal batteries, in compliance with Section II of PI968 — CAO" must be placed on the air waybill, when an air waybill is used.
- Consignments of lithium metal batteries prepared in accordance with the provisions of Section II must not be consolidated with other shipments of dangerous goods or non-dangerous goods and must not be loaded into a unit load device before being offered to the operator.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

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[Not more than [four] packages may be placed into an overpack.] When packages are placed in an overpack, the lithium battery handling label and the cargo aircraft only label (Figure 5-26) required by this packing instruction must either be clearly visible or the labels must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

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