International Civil Aviation Organization

DGP-WG/18-WP/12
10/9/18

**WORKING PAPER**

# DANGEROUS GOODS PANEL (DGP)
# WORKING GROUP MEETING (DGP-WG/18)

**Montréal, 1 to 5 October 2018**

**Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods**

**1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2021-2022 Edition**

**1.3: Develop proposals, if necessary, for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2021-2022 Edition**

## PROPOSED AMENDMENT TO SPECIAL PROVISION A88 AND INSERTION OF PACKING INSTRUCTION 910 IN THE TECHNICAL INSTRUCTIONS

(Presented by P. Privitera)

**SUMMARY**

This working paper proposes to move Packing Instruction 910 from the Supplement to the Technical Instructions and to amend the reference to the packing instruction in Special Provision A88 of the Technical Instruction accordingly.

**Action by the DGP :** The DGP-WG is invited to provide their views and consider a proposal to move Packing Instruction 910 from the Supplement to the Technical Instructions and to amend the reference to the packing instruction in Special Provision A88 as shown in the appendix to this working paper.

## 1. INTRODUCTION

1.1 Provisions for pre-production prototypes of lithium batteries or cells to be transported for testing without having been tested in accordance with subsection 38.3 of the UN *Manual of Tests and Criteria*, subject to the approval of the appropriate authority of the State of Origin, were revised by the twenty-fifth meeting of the Dangerous Goods Panel (DGP/25). The panel agreed to move much of the provisions to a new packing instruction (Packing Instruction 910) which was included in the Supplement.

1.2 Packing Instruction 910 is not readily visible to the shipper since it is contained in the Supplement and not the Technical Instructions. It is therefore up to the appropriate authority to inform the shipper of the contents of Packing Instruction 910 each time an approval is sought.

1.3 Including Packing Instruction 910 in the Technical Instructions would allow the shipper to know the minimum requirements to be respected for shipment before seeking an approval, allowing for more efficient and timely processing of approvals.

## 2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider:

a) amending Special Provision A88 as shown in Appendix A to this working paper; and

b) moving Packing Instruction 910 from Part S-4;11 of the Supplement to Part 4;11.1 of the Technical Instruction as shown in Appendices B and C to this working paper respectively.

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**APPENDIX A**

**PROPOSED AMENDMENT TO PART 3 OF THE TECHNICAL INSTRUCTIONS**

# Part 3

# DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

## Chapter 3

## SPECIAL PROVISIONS

**Table 3-2. Special provisions**

| *TIs* | *UN* | |
|---|---|---|
| . . . | | |
| | A88 | Pre-production prototypes of lithium batteries or cells, when these prototypes are transported for testing, or low production runs (i.e. annual production runs consisting of not more than 100 lithium batteries or cells) of lithium batteries or cells that have not been tested to the requirements in Part III, 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 requirements in Packing Instruction 910 ~~of the Supplement~~ are met.<br><br>A copy of the document of approval including the quantity limitations must accompany the consignment. Transport in accordance with this special provision must be noted on the dangerous goods transport document.<br><br>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. |
| . . . | | |

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**APPENDIX B**

**PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS**

# Part 4

# PACKING INSTRUCTIONS

## Chapter 11

## CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

### 11.1 PACKING INSTRUCTIONS

*Move* Packing Instruction 910 from the Supplement as shown here:

### Packing Instruction 910

Cargo aircraft only

**Introduction**

≠ This instruction applies to UN Nos. 3090, 3091, 3480 and 3481 production runs consisting of not more than 100 cells or batteries and to pre-production prototypes of cells or batteries when these prototypes are transported for testing.

**General requirements**

Part 4, Chapter 1 requirements must be met.

**ADDITIONAL PACKING REQUIREMENTS**

— Packagings must meet the Packing Group I performance requirements.
— Cells and batteries must be protected against short circuit. Protection against short circuits 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 an electrically non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

*Cells and batteries, including when packed with equipment*

≠ 1) Batteries and cells, including equipment, of different sizes, shapes or masses must be packaged in an outer packaging of a tested design type listed below provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;

2) Each cell or battery must be individually packed in an inner packaging and placed inside an outer packaging;

3) Each inner packaging must be completely surrounded by sufficient non-combustible and electrically non-conductive thermal insulation material to protect against a dangerous evolution of heat;

4) Appropriate measures must be taken to minimize the effects of vibration and shocks and prevent movement of the cells or batteries within the package that may lead to damage and a dangerous condition during transport. Cushioning material that is non-combustible and electrically non-conductive may be used to meet this

≠

requirement;

5) Non-combustibility must be assessed according to a standard recognized in the State where the packaging is designed or manufactured;

6) A cell or battery with a net mass of more than 30 kg must be limited to one cell or battery per outer packaging.

*Cells and batteries contained in equipment*

1) Equipment of different sizes, shapes or masses must be packed in an outer packaging of a tested design type listed below provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;

2) The equipment must be constructed or packaged in such a manner as to prevent accidental operation during transport;

3) Appropriate measures must be taken to minimize the effects of vibration and shocks and prevent movement of the equipment within the package that may lead to damage and a dangerous condition during transport. When cushioning material is used to meet this requirement it must be non-combustible and electrically non-conductive; and

4) Non-combustibility must be assessed according to a standard recognized in the State where the packaging is designed or manufactured.

*Equipment or batteries not subject to Part 6 of these Instructions*

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 under conditions specified by the appropriate national authority. Additional conditions that may be considered in the approval process include, but are not limited to:

1) The equipment or the battery must be strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between cargo transport units and between cargo transport units and warehouses as well as any removal from a pallet for subsequent manual or mechanical handling; and

2) The equipment or the battery must be fixed in cradles or crates or other handling devices in such a way that it will not become loose during normal conditions of transport.

**OUTER PACKAGINGS**

| *Boxes* | *Drums* | *Jerricans* |
|---|---|---|
| Aluminium (4B) | Aluminium (1B2) | Aluminium (3B2) |
| Fibreboard (4G) | Fibre (1G) | Plastics (3H2) |
| Natural wood (4C1, 4C2) | Other metal (1N2) | Steel (3A2) |
| Other metal (4N) | Plastics (1H2) | |
| Plywood (4D) | Plywood (1D) | |
| Reconstituted wood (4F) | Steel (1A2) | |
| Plastics (4H1, 4H2) | | |
| Steel (4A) | | |

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**APPENDIX C**

**PROPOSED AMENDMENT TO PART S-4 OF THE SUPPLEMENT OF THE TECHNICAL INSTRUCTIONS**

# Part S-4

# PACKING INSTRUCTIONS

# (ADDITIONAL INFORMATION FOR PART 4 OF THE TECHNICAL INSTRUCTIONS)

## Chapter 11

## CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

~~Packing Instruction 910~~

~~Cargo aircraft only~~

**~~Introduction~~**

≠ ~~This instruction applies to UN Nos. 3090, 3091, 3480 and 3481 production runs consisting of not more than 100 cells or batteries and to pre-production prototypes of cells or batteries when these prototypes are transported for testing.~~

**~~General requirements~~**

~~Part 4, Chapter 1 requirements must be met.~~

**~~ADDITIONAL PACKING REQUIREMENTS~~**

~~— Packagings must meet the Packing Group I performance requirements.~~
~~— Cells and batteries must be protected against short circuit. Protection against short circuits 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 an electrically non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.~~

~~*Cells and batteries, including when packed with equipment*~~

≠ ~~1) Batteries and cells, including equipment, of different sizes, shapes or masses must be packaged in an outer packaging of a tested design type listed below provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;~~

2) Each cell or battery must be individually packed in an inner packaging and placed inside an outer packaging;

3) Each inner packaging must be completely surrounded by sufficient non-combustible and electrically non-conductive thermal insulation material to protect against a dangerous evolution of heat;

4) Appropriate measures must be taken to minimize the effects of vibration and shocks and prevent movement of the cells or batteries within the package that may lead to damage and a dangerous condition during transport. Cushioning material that is non-combustible and electrically non-conductive may be used to meet this requirement;

5) Non-combustibility must be assessed according to a standard recognized in the State where the packaging is designed or manufactured;

6) A cell or battery with a net mass of more than 30 kg must be limited to one cell or battery per outer packaging.

*Cells and batteries contained in equipment*

1) Equipment of different sizes, shapes or masses must be packed in an outer packaging of a tested design type listed below provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested;

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**OUTER PACKAGINGS**

| *Boxes* | *Drums* | *Jerricans* |
|---|---|---|
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| Fibreboard (4G) | Fibre (1G) | Plastics (3H2) |
| Natural wood (4C1, 4C2) | Other metal (1N2) | Steel (3A2) |
| Other metal (4N) | Plastics (1H2) | |
| Plywood (4D) | Plywood (1D) | |
| Reconstituted wood (4F) | Steel (1A2) | |
| Plastics (4H1, 4H2) | | |
| Steel (4A) | | |

— END —