International Civil Aviation Organization

DGP/25-WP/40
2/9/15

WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

Agenda Item 6: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:

6.4: Consideration of transitional measures for amendments to the Technical Instructions

TRANSITIONAL CONSIDERATIONS

(Presented by D. Brennan)

SUMMARY

This working paper proposes that engines, currently assigned to UN 3166, be permitted to move under the existing UN number as Class 9 for a three-month period to allow shippers to transition to the new UN numbers for engines that are assigned to Division 2.2, Class 3 and Class 9.

It is also proposed that rather than a two-year transitional period for the introduction of the new lithium battery mark and the phase-out of the lithium battery handling label, that instead the transitional period be reduced to one year.

Action by the DGP: The DGP is invited to consider:

a) implementing a three-month transitional period for the changes to UN 3166 provisions for engines as shown in Appendix A to this working paper; and

b) reducing the two-year transitional period for the lithium battery mark to one-year as shown in Appendix B to this working paper.

1. INTRODUCTION

1.1 There has been some discussion over the course of this biennium proposing an allowance for a general transitional period during which the provisions in the previous edition of the Technical Instructions could still be applied.

1.2 The DGP did not support adding a standard transitional period to the Technical Instructions, but rather agreed that at the Panel meeting at the end of each biennium, consideration be given to providing for a transitional period for certain changes where it was appropriate to allow shippers time to comply with the requirements in the new edition of the Technical Instructions.

1.3 For the 2017-2018 edition of the Technical Instructions it is believed that consideration should be given to allowing shippers of UN 3528, **Engine, fuel cell, flammable liquid powered**, UN 3528 **Engine, internal combustion, flammable liquid powered**, UN 3529, **Engine, fuel cell, flammable gas powered**, UN 3529, **Engine, internal combustion, flammable gas powered** and UN 3530, **Engine, internal combustion** a three-month transitional period until 31 March 2017 during which time they could continue to ship engines under the entries in the 2015-2016 Technical Instructions, being UN 3166, **Engine, fuel cell, flammable liquid powered**, **Engine, internal combustion, flammable liquid powered**, **Engine, fuel cell, flammable gas powered** or **Engine, internal combustion, flammable gas powered**.

1.4 The other issue on transitional arrangements for consideration is in relation to the two-year transitional period that is proposed for the introduction of the new lithium battery mark, see DGP/25-WP/15, page 9 (English), paragraph 2.4.16.

1.5 This mark is being adopted as part of the harmonisation of the Technical Instructions with the changes adopted into the 19th revised edition of the UN Model Regulations. For the UN Model Regulations and other modal regulations there is currently no requirement for packages containing lithium batteries that meet UN Special Provision 188 (Section II of Packing Instructions 965 – 970) to bear a specific mark or label, although they must bear some indication to identify that the package contains lithium batteries.

1.6 The Technical Instructions however has had for some time the lithium battery handling label, which must be applied to packages containing lithium batteries shipped under Section IB of Packing Instructions 965 and 968 and Section II of Packing Instructions 965 – 970.

1.7 The new lithium battery mark replaces the lithium battery handling label and brings an additional level of granularity in the rather than text describing the type of lithium battery in the package, “lithium ion batteries” or “lithium metal batteries”, the new mark must contain the UN number(s) of the contents, UN 3090, UN 3091, UN 3480 or UN 3481.

1.8 The replacement of the text by the UN number provides an opportunity for the operators to identify what the packages contain and, if the operator determines necessary implement additional loading restrictions.

1.9 As one of the recommendations from the 3rd multidisciplinary meeting is that “operators perform a safety risk assessment in order to establish if they could manage the risks associated with the transport of lithium batteries as cargo on passenger or all-cargo aircraft to an acceptable level of safety. In order to perform a safety risk assessment, information on the types and quantities of lithium batteries and cells being transported would need to be considered. The very limited capabilities of the fire protection system in a lithium battery fire event would also need be considered.”

1.10 Reducing the transitional period for the new lithium battery mark from 31 December 2018 to instead be 31 December 2017 would assist the operators to be in a position to identify packages of lithium batteries vs. lithium batteries packed with or contained in equipment should they wish to do so.

2. ACTION BY THE DGP

2.1 The DGP is invited to consider:

a) implementing a three-month transitional period for the changes to UN 3166 provisions for engines as shown in Appendix A to this working paper; and

b) reducing the two-year transitional period for the lithium battery mark to one-year as shown in Appendix B to this working paper.

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APPENDIX A

PROPOSED AMENTDMNET TO PART 3 OF THE TECHINICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

Chapter 3

SPECIAL PROVISIONS

Table 3-2. Special provisions

The following amendment is proposed to new Special Provision A208 which has been proposed in DGP/25-WP/13 for the sake of harmonization with the UN Model Regulations.

[A208 (363) a) This entry applies to engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units).

c) Engines and machinery containing fuels meeting the classification criteria of Class 3, must be consigned under the entries UN 3528 — **Engine, internal combustion, flammable liquid powered** or UN 3528 — **Engine, fuel cell, flammable liquid powered** or UN 3528 — **Machinery, internal combustion, flammable liquid powered** or UN 3528 — **Machinery, fuel cell, flammable liquid powered**, as appropriate.

d) Engines and machinery containing fuels meeting the classification criteria of Division 2.1, must be consigned under the entries UN 3529 — **Engine, internal combustion, flammable gas powered** or UN 3529 — **Engine, fuel cell, flammable gas powered** or UN 3529 — **Machinery, internal combustion, flammable gas powered** or UN 3529 — **Machinery, fuel cell, flammable gas powered**, as appropriate.

Engines and machinery powered by both a flammable gas and a flammable liquid must be consigned under the appropriate UN 3529 entry.

e) Engines and machinery containing liquid fuels meeting the classification criteria for environmentally hazardous substances and not meeting the classification criteria of any other class or division, must be consigned under the entries UN 3530 — **Engine, internal combustion** or UN 3530 — **Machinery, internal combustion**, as appropriate.

Note.— Until 31 March 2017, shippers may identify engines as Class 9, UN 3166 using the proper shipping names and Packing Instruction 950 or 951 as shown in the 2015-2016 Edition of these Instructions. In that instance the dangerous goods transport document must indicate the packing instruction number and the UN number and proper shipping name in effect in the 2015-2016 Edition of these Instructions. The marks and labels applied, when required, must be consistent with the information shown on the dangerous goods transport document.

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Part 5

SHIPPER'S RESPONSIBILITIES

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Chapter 4

DOCUMENTATION

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4.1 DANGEROUS GOODS TRANSPORT INFORMATION

4.1.1 General

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4.1.4 Information required on the dangerous goods transport document

4.1.4.1 *Dangerous goods description*

The dangerous goods transport document must contain the following information for each dangerous substance, material or article offered for transport:

a) the UN or ID number preceded by the letters "UN" or "ID" as appropriate;

b) the proper shipping name, as determined according to 3;1.2, including the technical name enclosed in parenthesis, as applicable (see 3;1.2.7);

c) the primary hazard class or, when assigned, the division of the goods, including for Class 1 the compatibility group letter. The words "Class" or "Division" may be included preceding the primary hazard class or division numbers;

d) subsidiary hazard class or division number(s) corresponding to the subsidiary risk label(s) required to be applied, when assigned, must be entered following the primary hazard class or division and must be enclosed in parenthesis. The words "Class" or "Division" may be included preceding the subsidiary hazard class or division numbers;

e) where assigned, the packing group for the substance or article which may be preceded by "PG" (e.g. "PG II").

Note.— Until 31 March 2017, shippers may identify engines as Class 9, UN 3166 using the proper shipping names and Packing Instruction 950 or 951 as shown in the 2015-2016 Edition of these Instructions. In that instance the dangerous goods transport document must indicate the packing instruction number and the UN number and proper shipping name in effect, in the 2015-2016 Edition of these Instructions. The marks and labels applied, when required, must be consistent with the information shown on the dangerous goods transport document.

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APPENDIX B

PROPOSED AMENTDMNET TO PARTS 4 AND 5 OF THE TECHNICAL INSTRUCTIONS IN RELATION TO THE PROPOSED NEW LITHIUM BATTERY MARK

Part 4

PACKING INSTRUCTIONS

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Chapter 11

CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

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Packing Instruction 965

Passenger and cargo aircraft for UN 3480

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IB. **SECTION IB**

IB.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 marked with the appropriate lithium battery mark (Figure 5-3) in addition to the Class 9 hazard label.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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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 rigid 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 marked with the appropriate lithium battery mark (Figure 5-3).
  — the package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

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II. **SECTION II**

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II.2 **Additional requirements**

- Lithium ion cells and batteries must:
  - be placed in inner packagings that completely enclose the cell or battery, then placed in a strong rigid outer packaging; or
  - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid 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.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- The number of cells or batteries in each package must not exceed the appropriate number for the equipment's operation, plus two spares.
- Each package of cells or batteries, or the completed 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 marked with the appropriate lithium battery mark (Figure 5-3).
  - the package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Packing Instruction 967

Passenger and cargo aircraft for UN 3481 (contained in equipment) only

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II. **SECTION II**

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II.2 **Additional requirements**

— The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
— Cells and batteries must be protected so as to prevent short circuits.
— The equipment must be packed in strong rigid outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
— Each package must be marked with the appropriate lithium battery mark (Figure 5-3). The package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.
  — this requirement does not apply to:
    — packages containing only button cell batteries installed in equipment (including circuit boards); and
    — packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Packing Instruction 968

Cargo aircraft only for UN 3090

IB. **SECTION IB**

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IB.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 marked with the appropriate lithium battery mark (Figure 5-3) in addition to the Class 9 hazard label and the cargo aircraft only label (Figure5-28).

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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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 rigid 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 marked with the appropriate lithium battery mark (Figure 5-3) and the cargo aircraft only label (Figure 5-28).
  — the package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.
  — the cargo aircraft only label must be located on the same surface of the package near the lithium battery handling mark, if the package dimensions are adequate.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

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II. **SECTION II**

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II.2 **Additional requirements**

- Lithium metal cells or batteries must:
  - be placed in inner packagings that completely enclose the cell or battery, then placed in a strong rigid outer packaging; or
  - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid 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.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- The number of cells or batteries in each package must not exceed the appropriate number for the equipment's operation, plus two spares.
- Each package of cells or batteries, or the completed 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 marked with the appropriate lithium battery mark (Figure 5-3).).
  - the package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

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II. **SECTION II**

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II.2 **Additional requirements**

— The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
— Cells and batteries must be protected so as to prevent short circuits.
— The equipment must be packed in strong rigid outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
— Each package must be marked with the appropriate lithium battery mark (Figure 5-3). The package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.
  — this requirement does not apply to:
    — packages containing only button cell batteries installed in equipment (including circuit boards); and
    — packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.

The following amendment is proposed to the new note which has been proposed in DGP/25-WP/14 for the sake of harmonization with the UN Model Regulations.

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

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Part 5

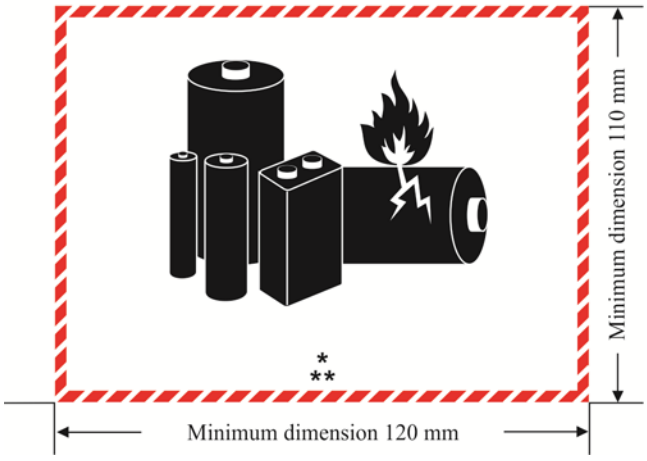
SHIPPER'S RESPONSIBILITIES

Chapter 2

PACKAGE MARKINGS

2.4.16 Special marking requirements for lithium batteries

The following amendment is proposed to the new mark which has been proposed in DGP/25-WP/15 for the sake of harmonization with the UN Model Regulations.



* Place for UN Number(s)
** Place for telephone number for additional information

Note.— Figure 5-32 and the provisions for a lithium battery handling label as contained in the 2015-2016 Edition of these Instructions may continue to be used until 31 December ~~2018~~2017.

Figure 5-3. Lithium battery mark

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