



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2017-2018 Edition

**CLARIFICATION ON THE ASSIGNMENT OF UN NUMBERS
TO VEHICLES POWERED BY LITHIUM BATTERIES**

(Presented by D. Brennan)

SUMMARY

This working paper proposes to clarify that where lithium batteries are in or power vehicles that they do not have to be assigned to one of the UN numbers applicable to lithium batteries.

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

- a) revising Part 2;9.3 as shown in Appendix A to this working paper; or
- b) revising Packing Instructions 950, 951 and 952 as shown in Appendix B to this working paper.

1. INTRODUCTION

1.1 The opening sentence to Part 2;9.3.1 suggests that lithium batteries of any configuration must be assigned UN 3090, UN 3091, UN 3480 or UN 3481.

1.2 Notwithstanding that the sentence only refers to “equipment”, the wording of this sentence has created some confusion for shippers of vehicles powered by lithium batteries as to whether vehicles powered by only a lithium ion battery can be assigned to UN 3171. The misunderstanding has been somewhat supported by the reference in Packing Instructions 950, 951 and 952 to lithium batteries having to meet the provisions of Part 2;9.3, which of course then refers just to UN Nos. 3090, 3091, 3480 and 3481.

1.3 To remove any ambiguity it is proposed to make it clear that for vehicles that UN 3166 or UN 3171, as applicable, may be assigned, or alternatively to clarify that for vehicles it is only subparagraphs a) to e) of Part 2;9.3.1 that apply.

1.4 This working paper therefore has two alternative proposals. The first is to modify the initial sentence of Part 2;9.3 to make specific reference to UN 3166 or UN 3171 as being appropriate assignment when the lithium batteries are part of a vehicle. The second is to modify Packing Instructions 950, 951 and 952 to limit the application of Part 2;9.3.1 to subparagraphs a) to e).

2. **ACTION BY THE DGP**

1.1 The DGP is invited to consider either:

- a) revising Part 2;9.3 as shown in Appendix A to this working paper; or
- b) revising Packing Instructions 950, 951 and 952 as shown in Appendix B to this working paper.

APPENDIX A

PROPOSED AMENDMENT TO PART 2 OF THE TECHNICAL INSTRUCTIONS

Part 2

CLASSIFICATION OF DANGEROUS GOODS

Chapter 9

**CLASS 9 — MISCELLANEOUS DANGEROUS
SUBSTANCES AND ARTICLES, INCLUDING
ENVIRONMENTALLY HAZARDOUS SUBSTANCES**

Parts of this Chapter are affected by State Variations DE 5, NL 4; see Table A-1

9.1 DEFINITION

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9.3 LITHIUM BATTERIES

9.3.1 Except when installed in vehicles and assigned to UN Nos. 3166 or UN 3171, as appropriate. Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment, containing lithium in any form must be assigned to UN Nos. 3090, 3091, 3480 or 3481 as appropriate. They may be transported under these entries if they meet the following provisions:

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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

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

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)

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 meet the provisions of Part 2;9.3.1 [a\) to e\)](#), unless otherwise approved by the appropriate authority of the State of Origin, must be securely fastened in the vehicle, machine 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.

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)

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ADDITIONAL PACKING REQUIREMENTS

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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 meet the provisions of Part 2;9.3.1 [a\) to e\)](#), 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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ADDITIONAL PACKING REQUIREMENTS

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 in a vehicle, they must meet the provisions of Part 2;9.3.1 [a\) to e\)](#), unless otherwise approved by the appropriate authority of the State of Origin, must be securely fastened in the vehicle 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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