



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

**Montréal, 15 to 19 October 2012**

**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 2015-2016 Edition**

**2.4: Part 4 — Packing Instructions**

**APPLICATION OF PROVISIONS FOR LITHIUM BATTERIES**

(Presented by D. Brennan)

**REVISED**

(Note.— The only revision in this paper is to the amendment proposed in the appendix; i.e.: in Packing Instruction 952, paragraph 2), the words “, machinery or equipment” have been marked with *strikeout*.)

**SUMMARY**

This working paper proposes that the requirements for lithium batteries shown in Part 2;9.3 be included in the packing instructions for vehicles which permit lithium batteries.

Action by the DGP-WG is in paragraph 2.

**1. INTRODUCTION**

1.1 The 2013-2014 Edition of the Technical Instructions includes in Part 2;9.3 new provisions for lithium batteries that include requirements that lithium batteries must be manufactured under a quality management programme. This quality management programme, while not required to be third-party certified, may be subject to review by the appropriate national authority.

1.2 Reference to Part 2;9.3 was included into all of the lithium battery packing instructions, Packing Instructions 965 to 970. There are though other packing instructions that specifically reference, and permit lithium batteries. These are the packing instructions for vehicles, flammable liquid-powered (Packing Instruction 950), vehicles, flammable gas-powered (Packing Instruction 951) and battery-powered vehicles (Packing Instruction 952).

1.3 Each of these packing instructions contains a statement to the effect that if lithium batteries are installed (in the vehicle), the lithium batteries must be of a type that has passed the test in

subsection 38.3 of the UN *Manual of Tests and Criteria*. It is believed that there should also be a reference to the requirements set out in Part 2;9.3.1 a) to e) as this requires more than just compliance with the applicable UN tests.

1.4 In addition, it was noted that the paragraph specifying the requirements for lithium batteries in Packing Instruction 952 still makes reference to “equipment” containing lithium batteries. However, Special Provision A21 in the 2013-2014 Edition of the Technical Instructions was amended to specifically require that equipment powered only by lithium batteries must be consigned under the applicable lithium battery entry and not to Packing Instruction 952 and UN 3171. As such it is believed that the text in Packing Instruction 952 referring to equipment should be deleted.

## 2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to revise Packing Instructions 950, 951 and 952 as shown in the appendix of this working paper.

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APPENDIX

PROPOSED AMENDMENT TO THE TECHNICAL INSTRUCTIONS

Part 4

PACKING INSTRUCTIONS

INTRODUCTORY NOTES

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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*

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)

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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 be of a type that has successfully passed the tests specified in the ~~UN Manual of Tests and Criteria, Part III, subsection 38.3~~ 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 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 be of a type that has successfully passed the tests specified in the ~~UN Manual of Tests and Criteria, Part III, subsection 38.3~~ 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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##### *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 be of a type that has successfully passed the tests specified in the ~~UN Manual of Tests and Criteria, Part III, subsection 38.3~~ 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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