



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:

Agenda Item 5.1: Review of provisions for the transport of lithium batteries

SECONDARY LITHIUM ION BATTERIES

(Presented by H. Brockhaus)

SUMMARY

This paper proposes an amendment to Special Provision A99 in order to enable safe transport of lithium batteries larger than 35 kg gross mass. This working paper is presented in follow up to discussions at the DGP Working Group of the Whole meeting in Abu Dhabi (DGP-WG/11, 7 to 11 November 2010) (DGP-WG/10-IP/2 refers), comments received from members and on requests for clarification following the meeting in Atlantic City (DGP-WG/11, 4 to 8 April 2011) on the possible implementation provisions in the Technical Instructions.

Action by the DGP: The DGP is invited to consider amending Special Provision A99 as shown in Appendix A to this working paper and to consider issuing an Addendum to the 2011/2012 Edition of the Technical Instructions, which will contain the equivalent amendment to the special provision as shown in Appendix A.

1. INTRODUCTION

1.1 The DGP Working Group of the Whole meeting in Abu Dhabi was provided information surrounding the need for adopting existing rules for the transport of large lithium batteries coming from series production, meeting the requirements of each test of the United Nations *Manual of Tests and Criteria*, Part III, sub-section 38.3.

1.2 The members of the panel were invited to give their comments to the offered proposals and ideas. Based on several comments during the discussion and further helpful comments from several States, we were encouraged to present a working paper which first was presented during DG-WG/11 in

Atlantic City earlier this year. This first draft was considered to be completed with further restrictions and clarifications.

1.3 Based on those inputs and comments, the working paper was modified. Some additional clarification is given in Appendix B.

APPENDIX A

PROPOSED AMENDMENT TO THE 2011/2012 EDITION OF
THE TECHNICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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A99	Irrespective of the quantity limits for cargo aircraft specified in column 13 of Table 3-1, and in Section I of Packing Instructions 965, 966, 967, 968, 969 and 970, a lithium battery or battery assembly (i.e. UN 3090 or UN 3480), including when packed with equipment or contained in equipment (i.e. UN 3091 or UN 3481) that meets the other requirements of Section I of the applicable packing instruction, may have a mass exceeding 35 kg, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.
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An approval in accordance to this Special Provision and Packing Instructions 965 and 968 is not necessary for large lithium batteries or battery assemblies (UN 3090 or UN 3480) with a single weight exceeding 35 kg under the following conditions:

Maximum net mass of each large battery or battery assembly does not exceed 800 kg and each single battery or battery assembly is packed individually and the packaging is able to successfully pass a drop test according to 6.4.3 of the Technical Instructions with a drop height of 1.2 meter.

APPENDIX B

ADDITIONAL INFORMATION

The requested amendment to A99 shall only affect batteries and battery assemblies UN 3090 and UN 3480 but not any batteries packed with or in equipment.

As described in the proposed amendment all other requirements including appropriate Packing Instructions 965 and 968 remain unchanged except for the fact that a packaging for a battery must meet the Packaging Group II performance requirements because packagings are limited up to a maximum net mass of 400 kg. Nevertheless the packagings must be able to successfully pass a drop test in accordance with 6.4.3 of the Technical Instructions.

Packaging must not meet all the requirements of Chapter 6 of the Technical Instructions and must not be approved by the appropriate state of origin. For compensation packaging must withstand the 1.2 m drop test to prove its performance.

Global general transport of large lithium-ion batteries shall be carried out by other than air transport means. Our intention is the safe air transport of large lithium batteries coming from series production for necessary specific logistic situations.

This amendment shall allow transport of single batteries and battery assemblies meeting the requirements of each test of the United Nations *Manual of Tests and Criteria*, Part III, sub-section 38.3 under specified conditions, but shall avoid the bypass or abuse of existing regulations for large quantities of regulated small cells and batteries in one package under this entry.

It is the perception of the definition of a battery assembly, that a **single mechanical unit** comprises more than one battery.

Regarding the use of the terms “batteries” or “battery assemblies” reference is made to the following definition of the UN *Manual of Test and Criteria*, sub-section 38.3:

“Battery means one or more cells which are electrically connected together by permanent means, including case, terminals, and markings.”

Note: Units that are commonly referred as “battery packs”, “modules” or “battery assemblies” having the primary function of providing a source of power to another piece of equipment are for the purposes of the Model Regulations and this Manual treated as batteries.”

This definition clarifies that also a battery assembly is classified as a battery.