



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

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 2013-2014 Edition

SPECIAL PROVISION FOR LITHIUM ION AIRCRAFT BATTERIES

(Presented by D. Brennan)

SUMMARY

This working paper proposes the addition of a special provision to permit the carriage on passenger aircraft of lithium ion aircraft batteries with a mass in excess of 5 kg.

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

- adopt a new special provision assigned against UN 3480 as shown in Appendix A to this working paper; or
- revise Special Provision A51 to incorporate the allowance for lithium ion aircraft batteries into the existing special provision for wet cell aircraft batteries as shown in Appendix B to this working paper.

1. INTRODUCTION

1.1 The Technical Instructions have a long-standing Special Provision A51 that allows for aircraft batteries up to a mass of 100 kg to be shipped on a passenger aircraft irrespective of the 30 kg limit that normally applies to UN 2794, batteries, wet filled with acid and UN 2795, batteries, wet, filled with alkali, when carried on a passenger aircraft.

1.2 This special provision provides operators with significant operational flexibility in being able to move aircraft batteries on a passenger aircraft where cargo aircraft may not be available over the route, or within the time required if a battery is required at short notice.

1.3 While wet cell batteries will remain in use on commercial aircraft for some time, there are now in production lithium ion aircraft batteries, which will be fitted to new aircraft types such as the Airbus A350 and Boeing B787. In addition, aircraft manufacturers are also looking to retrofit lithium ion batteries in place of the wet cell batteries to be able to reduce the operating weight of the aircraft, which results in reduced fuel burn and therefore reduced costs and reduced carbon dioxide emissions.

1.4 These lithium ion aircraft batteries though typically have a mass of approximately 30 kg and therefore aircraft operators will be faced with the same operational challenges as applied to wet cell aircraft batteries, where the lithium ion batteries would be restricted to transport on cargo aircraft.

1.5 As these lithium ion batteries must meet defined airworthiness standards to be able to be installed on aircraft it is believed that exceeding the 5 kg limit for passenger aircraft will not compromise safety. It is therefore proposed that an additional special provision be assigned against UN 3480, lithium ion batteries to permit a single aircraft battery with a net mass of up to 35 kg to be in a package and transported on a passenger aircraft.

APPENDIX A

PROPOSED NEW SPECIAL PROVISION

Part 3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
LIMITED AND EXCEPTED QUANTITIES

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Table 3-1. Dangerous Goods List

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8		9	10	11	12
Lithium ion batteries (including lithium ion polymer batteries)	3480	9		Miscellaneous		A88 A99 A154 A164 A183 <u>A1xx</u>	II	E0	965	5 kg	965	35 kg

Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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<u>A1xx</u>	<u>Irrespective of the limit specified in column 11 of Table 3-1, packages containing a single aircraft battery with a net mass not exceeding 35 kg may be transported on a passenger aircraft. Transport in accordance with this special provision must be noted on the dangerous goods transport document.</u>
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APPENDIX B

AMENDMENT TO SPECIAL PROVISION A51

Part 3

**DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
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Chapter 3

SPECIAL PROVISIONS

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- A51 Irrespective of the limit specified in column 11 of Table 3-1, aircraft batteries may be transported on passenger aircraft as follows:
- a) wet cell batteries, UN 2794 or UN 2795, up to a limit of 100 kg gross net mass per package may be transported;
 - b) lithium ion batteries, un 3480, packages containing a single aircraft battery with a net mass not exceeding 35 kg; and
 - c) Transport in accordance with this special provision must be noted on the dangerous goods transport document.

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