



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

SPARE LITHIUM BATTERIES

(Presented by A. Tusek)

SUMMARY

Confusion has arisen due to the wording of Part 8;1.1.2 s) of the Technical Instructions which includes restrictions applied to the carriage of spare lithium batteries for portable electronic devices. It is possible to interpret the restrictions on spare lithium batteries in two ways: as either no limit on the number of spare batteries below 100 Wh or only two spare lithium batteries irrespective of the rating.

Action by the DGP: The DGP is invited to reconsider the wording of 8;1.1.2 s) with a view to ensuring the provision is clear. Existing and proposed wording is contained in the appendices to this working paper.

1. INTRODUCTION

1.1 An issue of interpretation has arisen due to the wording of 8;1.1.2 s) which includes restrictions applied to the carriage of spare lithium batteries for portable electronic devices.

1.2 It is currently possible to interpret the provision in the following ways:

- a) an unlimited number of spare lithium batteries as long as those that are lithium metal have a lithium content of not more than 2 grams and those that are lithium ion have a watt-hour rating of not more than 100 Wh, and no more than two if they are lithium ion batteries being $100 \leq 160$ Wh; or
- b) no more than two individually protected spare batteries per person may be carried.

1.3 The intent is clear in relation to UN 3481 and UN 3091 for lithium batteries packed with equipment in Packing Instructions 966 and 969, respectively, which states the following:

The maximum number of batteries in each package must be the minimum number required to power the equipment, plus two spares.

1.4 The current layout of the provision contained in 8;1.1.2 s) has the text “*No more than two individually protected spare batteries per person may be carried*” as a single sentence at the end of the provision which suggests it applies in all cases (see Appendix A for the current layout).

1.5 Historically these changes were discussed and introduced at DGP/21 and can be traced to the report at DGP/21-WP/86 in Agenda Item 5.4: Review of provisions relating to lithium batteries (<http://www.icao.int/anb/FLS/DangerousGoods/DGP/DGP21/Report/DGP.21.WP.86.Full.en.pdf>) and DGP/21-WP/47 and DGP/21-WP/77 (<http://www.icao.int/anb/FLS/DangerousGoods/DGP/DGP21/WPs/index.html>)

1.6 Taking into account the safety issues raised in the Report of DGP/21 and the restrictions imposed on spare lithium batteries in Packing Instructions 966 and 969 it seems that it was intended for this to also apply in 8;1.1.2 s)

1.7 The reason for raising this working paper is because of a recent inquiry in Australia where an airline was approached by a film crew unsure of the interpretation. The camera crew had spare lithium ion batteries all rated at less than 100 Wh and wished to carry more than 50 of these in checked or carry-on baggage.

1.8 If it is accepted that there is no limit to the number of spare lithium batteries with a rating of less than 100 Wh to be permitted in carry-on baggage then the safety of air navigation may be at risk.

1.9 The risk to safety is due to the fire hazard. If a single lithium battery ignites for any reason and causes a sympathetic fire with other lithium batteries in the same checked bag, the resulting fire may be difficult to suppress due to the quantity of lithium batteries involved and the resulting metal fire. However, there are more fire fighting options if this occurs with a carry-on bag.

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APPENDIX A

EXISTING LAYOUT OF PART 8;1.1.2 S)

Part 8

PROVISIONS CONCERNING

PASSENGERS AND CREW

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1.1.2 Notwithstanding any additional restrictions which may be implemented by States in the interests of aviation security, except for the incident reporting provisions of 7;4.4 or 7;4.5, as applicable, the provisions of these Instructions do not apply to the following when carried by passengers or crew members or in baggage that has been separated from its owner during transit (e.g. lost baggage or improperly routed baggage) or in excess baggage carried as cargo as permitted by 1;1.1.4.1 g):

...

- s) portable electronic devices (watches, calculating machines, cameras, cellular phones, laptop computers, camcorders, etc.) containing lithium or lithium ion cells or batteries when carried by passengers or crew for personal use, which should be carried as carry-on baggage. Spare batteries must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch) and carried in carry-on baggage only. In addition, each installed or spare battery must not exceed the following:
 - for lithium metal batteries, a lithium content of not more than 2 grams; or
 - for lithium ion batteries, a watt-hour rating of not more than 100 Wh.

With the approval of the operator, lithium ion batteries exceeding a watt-hour rating of 100 Wh but not exceeding 160 Wh may be carried as spare batteries in carry-on baggage or in equipment in either checked or carry-on baggage. No more than two individually protected spare batteries per person may be carried.

APPENDIX B

PROPOSED AMENDMENT TO PART 8;1.1.2 S)

Part 8

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- s) portable electronic devices (watches, calculating machines, cameras, cellular phones, laptop computers, camcorders, etc.) containing lithium or lithium ion cells or batteries when carried by passengers or crew for personal use, which should be carried as carry-on baggage.

_____ Spare batteries must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch) and carried in carry-on baggage only.

_____ In addition, each installed or spare battery must not exceed the following:

- for lithium metal batteries, a lithium content of not more than 2 grams; or
- for lithium ion batteries, a watt-hour rating of not more than 100 Wh.

With the approval of the operator, lithium ion batteries exceeding a watt-hour rating of 100 Wh but not exceeding 160 Wh may be carried as spare batteries in carry-on baggage or in equipment in either checked or carry-on baggage.

_____ No more than two individually protected spare lithium or lithium ion cells or batteries per portable electronic device ~~person~~ may be carried irrespective of the watt-hour rating or lithium content shown above.

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