



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/17)**

Montreal, 24 to 28 April 2017

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 2019-2020 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

**BATTERY-POWERED EQUIPMENT CAPABLE OF GENERATING EXTREME HEAT
CARRIED BY PASSENGERS AND CREW**

(Presented by E. Gillett)

SUMMARY

This working paper proposes amendment to Part 8;1 to ensure that dangerous goods meeting the description of more than one entry of the table comply with the relevant requirements of each applicable entry.

Action by the DGP-WG: The DGP is invited to consider the proposals for amendment of Part 8;1 as shown in the appendix to working paper.

1. INTRODUCTION

1.1 Table 8-1 provides a list of those dangerous goods permitted for carriage by passengers and crew and details the conditions which apply. Battery-powered equipment capable of generating extreme heat may contain batteries of chemistries upon which the provisions for passengers and crew place separate requirements and restrictions, however, as these conditions are not stated or cross-referenced there is concern that a passenger may consider they do not apply.

1.2 Battery-powered equipment capable of generating extreme heat might contain lithium metal or lithium ion cells or batteries but Item 16 of Table 8-1 does not reflect the requirements of Item 20 concerning the need for batteries to be of a type that has passed UN38.3 tests or establish a maximum lithium content/Watt-hour rating.

1.3 Battery-powered equipment capable of generating extreme heat might contain a non-spillable battery meeting the requirements of Special Provision A67 but Item 16 of Table 8-1 does not reflect the battery voltage and Watt-hour restrictions of Item 27.

1.4 The entries for battery powered equipment under Items 20 and 27 do not address the need to isolate the heat-producing component from the battery if the equipment is capable of generating extreme heat.

1.5 It is also noted that the entries for battery powered equipment under Items 16 and 27 do not restrict to items carried by passengers or crew for personal use.

1.6 The introduction of generic groupings by danger, hazard or function rather than listing each type of item that contains dangerous goods was proposed at the sixteenth working group meeting of the Dangerous Goods Panel (DGP-WG/16, Montreal, 17 to 21 October 2016) (see paragraph 3.2.8.3 of the DGP-WG/16 Report), however, there was concern that this may have the unintended consequence of broadening the provisions beyond what passengers typically needed to carry.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider the amendments to Table 8-1 as shown in the appendix to this working paper.

APPENDIX

PROPOSED AMENDMENT TO PART 8 OF THE TECHNICAL INSTRUCTIONS

Part 8

PROVISIONS CONCERNING
PASSENGERS AND CREW

Chapter 1

PROVISIONS FOR DANGEROUS GOODS
CARRIED BY PASSENGERS OR CREW

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Table 8-1. Provisions for dangerous goods carried by passengers or crew

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
...						
Consumer articles						
...						
16) Battery-powered equipment capable of generating extreme heat, which could cause a fire if activated (e.g. underwater high intensity lamps)	Yes	Yes	No	Yes	No	<p>a) <u>carried by passengers or crew for personal use;</u></p> <p>b) <u>the heat-producing component and the battery are isolated from each other by the removal of the heat-producing component, the battery or another component (e.g. fuse); and</u></p> <p>c) <u>where equipment is powered by a non-spillable battery meeting the requirements of Special Provision A67, the battery must not have a voltage greater than 12 volts and a Watt-hour rating of not greater than 100 Wh;</u></p> <p>d) <u>equipment powered by lithium metal or lithium ion cells or batteries:</u></p> <p><u>i) should be carried as carry-on baggage;</u></p> <p><u>ii) each battery must not exceed the following:</u></p> <p><u>— for lithium metal batteries, a lithium content of 2 grams; or</u></p> <p><u>— for lithium ion batteries, a Watt-hour rating of 160 Wh; and</u></p>

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
						<p>iii) <u>batteries and cells must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3;</u></p> <p>iv) <u>lithium metal or lithium ion cells or batteries removed to meet condition a) must be in carry-on baggage only;</u></p> <p>b) any battery which has been removed must be protected against short circuit (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).</p>
...						
20) Portable electronic devices (such as watches, calculating machines, cameras, cellular phones, laptop computers, camcorders)						
≠ Portable electronic devices containing lithium metal or lithium ion cells or batteries (articles containing lithium metal or lithium ion cells or batteries the primary purpose of which is to provide power to another device must be carried as spare batteries in accordance with the item below. <u>Battery-powered equipment capable of generating extreme heat must be carried in accordance with Item 16)</u>	Yes	Yes	Yes	No	No	<p>a) carried by passengers or crew for personal use;</p> <p>b) should be carried as carry-on baggage;</p> <p>c) each battery must not exceed the following:</p> <ul style="list-style-type: none"> — for lithium metal batteries, a lithium content of 2 grams; or — for lithium ion batteries, a Watt-hour rating of 100 Wh; <p>d) if devices are carried in checked baggage, measures must be taken to prevent unintentional activation; and</p> <p>e) batteries and cells must be of a type which meets the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, subsection 38.3.</p>
...						
Portable electronic devices containing lithium ion batteries exceeding a Watt-hour rating of 100 Wh but not exceeding 160 Wh (<u>Battery-powered equipment capable of generating extreme heat must be carried in accordance with Item 16)</u>	Yes	Yes	Yes	Yes	No	<p>a) carried by passengers or crew for personal use;</p> <p>b) should be carried as carry-on baggage; and</p> <p>c) batteries and cells must be of a type which meets the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, subsection 38.3.</p>
...						

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
27) Portable electronic equipment containing a non-spillable battery meeting the requirements of Special Provision A67 <u>(Battery-powered equipment capable of generating extreme heat must be carried in accordance with the item above).</u>	Yes	Yes	No	No	No	<p>a) <u>carried by passengers or crew for personal use;</u></p> <p>b) the battery must not have a voltage greater than 12 volts and a Watt-hour rating of not greater than 100 Wh; and</p> <p>c) the equipment must be either protected from inadvertent activation, or the battery disconnected and exposed terminals insulated.</p>
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