



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

**AVALANCHE RESCUE BACKPACKS AND OTHER PERSONAL SAFETY DEVICES
CARRIED BY PASSENGERS AND CREW**

(Presented by E. Gillett)

SUMMARY

This working paper proposes amendment to Part 8;1 concerning the provisions for the carriage of self-inflating personal safety devices, avalanche rescue backpacks and small gas cartridges for other devices.

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 this working paper.

1. INTRODUCTION

1.1 Table 8-1 lists separate entries for ‘Avalanche rescue backpack containing a cylinder of compressed gas of Division 2.2 without subsidiary risk’ and ‘Small cartridges fitted into a self-inflating personal safety device such as a life-jacket or vest’. The entry for an avalanche rescue backpack permits a single cylinder of compressed gas of Division 2.2 without sub-risk and the item may contain a pyrotechnic trigger mechanism. The entry for self-inflating personal safety devices allows two small cartridges but does not allow any pyrotechnics.

1.2 Some avalanche rescue backpacks do not contain a pyrotechnic trigger mechanism but contain two cartridges. Accordingly, carriage is permitted under the entry for self-inflating personal safety devices, however, this means the requirement for the equipment to be fitted with pressure relief valves does not apply. Avalanche backpacks are capable of inflating an airbag of circa 150 L air capacity in just a few seconds (a volume of air much greater than typically associated with life jackets). It is suggested this could pose an unacceptable hazard if inadvertently activated and the equipment design does not include pressure relief valves. Furthermore, the Technical Instructions do not prescribe a performance

standard for the pressure relief valves so they may not be designed to mitigate the hazard of accidental inflation during air transport. A review of such products indicates that non-return valves requiring manual activation are typically used. This would seemingly not mitigate the risk of a baggage locker within the cabin being compromised resulting in injury to passengers.

1.3 The carriage of an avalanche rescue backpack or self-inflating personal safety device is subject to the approval of the aircraft operator. United Kingdom experience is that personnel consider the conditions applicable to what appears to be the most relevant passenger provision, i.e. a passenger seeking to carry an avalanche rescue backpack with two cartridges is likely to have approval denied as the entry for avalanche rescue backpack permits just a single cylinder. Similarly, as the entry for 'small cartridges for other devices' is included under the entry for personal safety devices (with a dotted line) this has caused misunderstanding that all small cartridges under Item 18 of Table 8-1 are subject to the 50 mL water capacity limit.

1.4 It is understood that the entry for 'small cartridges for other devices' was intended to be applied to cartridges which are not required to be connected to the device concerned when carried (e.g. tyre inflation cartridges) but the text does not prohibit carriage when connected to equipment.

1.5 It is suggested that reference to 'cartridges' be changed to 'gas cartridges' to prevent any misinterpretation that activating cartridges (cartridges, power device) are permitted.

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			

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Consumer articles

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17) <u>Avalanche rescue backpack containing a cylinder of compressed gas of Division 2.2 without subsidiary risk. Self-inflating personal safety devices such as life-jackets and avalanche rescue backpacks</u>	Yes	Yes	No <u>Yes</u>	Yes	No	<ul style="list-style-type: none"> a) no more than one <u>personal safety device</u> per person; b) <u>devices</u> may contain a pyrotechnic trigger mechanism which must not contain more than 200 mg net of Division 1.4S; c) the backpack <u>personal safety device</u> must be packed in such a manner that it cannot be accidentally activated; and d) the airbags within the backpack <u>of personal safety devices other than life-jackets</u> must be fitted with pressure relief valves <u>capable of preventing inflation within a confined space</u>; e) <u>each device must be fitted with no more than two small cylinders or gas cartridges containing gases of Division 2.2 without subsidiary risk; and</u> f) <u>no more than two spare gas cartridges may be carried.</u>
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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			
18) Small cartridges fitted into a self-inflating personal safety device such as a life jacket or vest	Yes	Yes	Yes	Yes	No	a) no more than one personal safety device per person; b) the personal safety device must be packed in such a manner that it cannot be accidentally activated; c) limited to carbon dioxide or another suitable gas in Division 2.2 without subsidiary risk; d) must be for inflation purposes; e) the device must be fitted with no more than two small cartridges; and f) no more than two spare cartridges.
Small <u>gas</u> cartridges for other devices <u>other than self-inflating personal safety devices</u>	Yes	Yes	Yes	Yes	No	a) no more than four small <u>gas</u> cartridges of carbon dioxide or other suitable gas in Division 2.2, without subsidiary risk, per person; and <u>b) the gas cartridges must not be connected to equipment; and</u> b)c) the water capacity of each cartridge must not exceed 50 mL. Note.— For carbon dioxide, a gas cartridge with a water capacity of 50 mL is equivalent to a 28 g cartridge.
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