



**NOTE DE TRAVAIL**

**GROUPE D'EXPERTS SUR LES MARCHANDISES DANGEREUSES (DGP)**

**VINGT-SEPTIÈME RÉUNION**

**Montréal, 16 – 20 septembre 2019**

- Point 2 : Gestion des risques de sécurité propres au transport aérien et détection des anomalies**  
**2.2 : Élaboration, s'il y a lieu, de propositions d'amendement des *Instructions techniques pour la sécurité du transport aérien des marchandises dangereuses* (Doc 9284) à introduire dans l'édition de 2021-2022**

**ÉQUIPEMENTS DE PROTECTION INDIVIDUELS AUTOGONFLABLES PORTÉS  
PAR LES PASSAGERS OU PAR L'ÉQUIPAGE**

(Note présentée par S. Bitossi)

**RÉSUMÉ**

La présente note de travail propose une modification du Tableau 8-1 des Instructions techniques afin d'accroître le nombre d'équipements de protection individuels autorisés actuellement par personne, d'autoriser le port de deux équipements par personne à travers le mécanisme d'approbation pour l'exploitant. Elle propose aussi d'autoriser le port de deux cartouches de rechange par équipement.

Du texte supplémentaire a aussi été ajouté afin de préciser que les équipements de protection individuels sont des dispositifs destinés à être portés par la personne.

Le Groupe DGP est invité à examiner les modifications proposées dans l'Appendice A à la présente note de travail et, s'il en convient, modifier le Tableau 8-1 des Instructions techniques de manière à :

- porter le nombre autorisé d'équipements de protection individuels à deux ;
- augmenter le nombre autorisé de cartouches de recharge à deux par équipement (c.-à-d. à quatre, tout au plus) ;
- envisager d'ajouter du texte pour préciser qu'un équipement de protection individuel est un dispositif destiné à être porté par une personne.

\* Seuls le résumé et l'appendice sont traduits.

## 1. INTRODUCTION

1.1 This is a revised proposal following on from the original proposal submitted to the eighteenth working group meeting of the Dangerous Goods Panel (DGP-WG/18, Montréal, 1 to 5 October 2018) (see paragraph 3.2.2.5 of the DGP-WG/18 Report).

1.2 It is common within Australia for passengers to request the carriage of more than one self-inflating personal safety device, leading to an increase in passengers seeking approval to travel with multiple devices for their own personal use.

1.3 In addition to life-jackets, there are now other self-inflating personal safety devices on the market, such as self-inflating motorcycle jackets, horse riding vests, seniors' hip airbags and bicycle vests.

1.4 This working paper proposes to increase the number of self-inflating personal safety devices (permitted under Table 8-1 with operator approval) from the current allowance of one personal safety device per person, to set a new limit of two personal safety devices per person.

1.5 The existing restriction of two cartridges fitted into each device will remain unchanged.

1.6 For the two devices, proposed wording will be added to allow for up to two spare cartridges per device, with an intended total of no more than four spare cartridges per person.

1.7 The words “no more than two spare cartridges per device” is intentional to clarify that in instances when only one device is being carried, that the carriage of four spare cartridges is not permitted.

1.8 The proposed changes will allow passengers to take two self-inflating personal safety devices within the provisions, reducing the likelihood of the passenger hiding extra devices within checked baggage.

1.9 During the discussion at DGP-WG/18, some panel members expressed the view that further wording is required to clarify that the provision is only intended for self-inflating personal safety devices that are designed to be worn by the person and does not include other safety devices, such as single person life rafts. Subsequently, the wording “intended to be worn by a person” has been added to the descriptor in Table 8-1 for dangerous goods item 12).

1.10 Research has been conducted regarding the capacities of cartridges commonly found within self-inflating personal safety devices. Appendix B to this working paper collates information regarding the various types of self-inflating personal safety devices, their respective CO<sub>2</sub> cartridge information and the methods of activation required for inflation.

1.11 In the report of DGP-WG/18 regarding the discussion of working paper DGP-WG/18-WP/18 (see paragraph 3.2.2.5 of the DGP-WG/18 Report), the panel queried the absence of a limit on the cartridge size of the existing provision. This paper does not recommend that the DGP set a limit on the cartridge size for the following reasons:

- a) the current technology for self-inflating personal safety devices does not demand the use of larger cartridges at this time, with the cartridge sizes detailed in Appendix B remaining minimal in fluid capacity (100 ml or less)\*;

- b) the size of the cartridge required for the device to function to their design varies; and, taking into consideration the current fluid capacity data within Appendix B, there isn't a safety need identified at this stage to support setting a capacity limit;
- c) approval of the operator is required, which allows the device (including any cartridges) to be risk assessed by the operator at that point in time.

*\*Note.— The information in Appendix B also demonstrates that the fluid capacity of cartridges is not necessarily directly related to the cartridges' size or weight.*

1.12 Self-inflating personal safety devices are designed with multiple actions required for inflation to be achieved. These features act as a failsafe when carried as baggage and the likelihood of a device unintentionally self-inflating or activating during flight would be very unlikely.

1.13 There have been no known record of safety concerns or reports of unintentional activation of self-inflating personal safety devices inflight, when carried by passengers or crew under the provisions of Table 8-1.

1.14 However, if activation did occur, the consequence would be insignificant, with any release of energy likely contained within a passenger's bag, having little to no effect on the aircraft and its occupants.

1.15 The entry in Table 8-1 for self-inflating personal safety devices should continue to exclude devices that contain explosives (such as avalanche backpacks) to ensure a thorough review of such items is conducted on a case-by-case basis.

## 2. ACTION BY THE DGP

2.1 The DGP is invited to consider increasing the current limit of one self-inflating personal safety device to allow for a maximum of two self-inflating personal safety devices and if agreed, amend Table 8-1 of the Technical Instructions as shown in Appendix A.

2.2 The DGP is invited to consider the additional wording to clarify that no more than two spare cartridges per device may be carried and if agreed, amend Table 8-1 of the Technical Instructions as shown in Appendix A.

2.3 The DGP is invited to consider the proposed wording to clarify that the self-inflating personal safety device is one that is intended to be worn by the person and if agreed, amend Table 8-1 of the Technical Instructions as shown in Appendix A.

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APPENDICE A

PROPOSITION D'AMENDEMENT DES INSTRUCTIONS TECHNIQUES, PARTIE 8

Partie 8

DISPOSITIONS RELATIVES AUX PASSAGERS  
ET AUX MEMBRES D'ÉQUIPAGE

Chapitre 1

DISPOSITIONS RELATIVES AU TRANSPORT DE  
MARCHANDISES DANGEREUSES PAR LES PASSAGERS  
OU LES MEMBRES D'ÉQUIPAGE

(...)

1.1 TRANSPORT DE MARCHANDISES DANGEREUSES PAR  
LES PASSAGERS OU LES MEMBRES D'ÉQUIPAGE

(...)

Tableau 8-1. Dispositions relatives au transport de marchandises dangereuses  
par les passagers ou les membres d'équipage

	Emplacement		Approbation de l'exploitant ou des exploitants requise	Restrictions
	Bagages enregistrés	Bagages de cabine		
<i>Marchandises dangereuses</i>				
Gaz contenus dans des bouteilles et des cartouches				
(...)				
12) Cartouches de la division 2.2 sans danger subsidiaire intégrées à un équipement de protection individuel autogonflant destiné à être porté par une personne, tel qu'un gilet de sauvetage	Oui	Oui	Oui	<ul style="list-style-type: none"> <li>a) <del>un</del> deux équipements de protection individuels au maximum par personne ;</li> <li>b) <del>L'équipement de protection individuel doit être emballé</del> les équipements de protection individuels doivent être emballés de façon telle <del>qu'il ne puisse être activé</del> qu'ils ne puissent être activés accidentellement ;</li> <li>c) uniquement aux fins de gonflage ;</li> <li>d) l'équipement doit comporter au maximum deux cartouches de recharge ;</li> <li>e) deux cartouches de recharge au maximum <del>par équipement</del>.</li> </ul>
(...)				

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**APPENDIX B**

**SELF-INFLATING PERSONAL SAFETY DEVICE AND GAS CARTRIDGE INFORMATION**

The following are examples of self-inflating personal safety devices with their respective CO<sub>2</sub> cartridge information and the methods of activation for each device required for inflation:

<b>Self-inflating personal safety devices</b>	<b>Method(s) of Activation</b>	<b>Weight of cartridge (g)</b>	<b>Number of cartridges fitted into device</b>	<b>Fluid capacity (ml)</b>
Life-jacket (Infant 89N)	— Water activated or — Activation via manually pulling toggle	9 g*	2	12 ml
Life-jacket (Child 80N)		17 g*	1	23 ml
Life-jacket (Adult 150N)		16 g*	2	21 ml
Life-jacket (Adult 156N) – General Aviation		16 g*	2	21 ml
Life-jacket (Adult/Child 169N)		16 g*	2	21 ml
Life-jacket (Adult 100-110N)		24 g*	1	33 ml
Life-jacket (Adult 150N)		33 g*	1	45 ml
Life-jacket (Adult 200N)		38 g*	1	53 ml
Life-jacket (Adult 275-280N)		60 g*	1	82 ml
Equestrian vest (Child S/M)	— Lanyard connecting rider to saddle via stirrup strap, activation via pulling lanyard in process of rider separating from horse (lanyard requires min. 30kg pull to activate)	155 g	1	50 ml
Equestrian vest (Child L, Adult S/M/L/XL)		185 g	1	60 ml
Equestrian vest (Adult LL/XLL)		305 g	1	100 ml
Motorcycle vest (Child S/M)	— Lanyard connecting rider to bike, activation via pulling lanyard in process of rider separating from bike (lanyard requires min. 30kg pull to activate)	155 g	1	50 ml
Motorcycle vest (Child L, Adult S/M/L/XL)		185 g	1	60 ml
Motorcycle vest (Adult LL/XLL)		305 g	1	100 ml
Bicycle vest	— Sensor attached to underside of saddle (small lithium-thionyl chloride battery 2.7Wh) remains dormant until activation	185 g	1	60 ml

Self-inflating personal safety devices	Method(s) of Activation	Weight of cartridge (g)	Number of cartridges fitted into device	Fluid capacity (ml)
	during an accident, main board in vest turns on when zipped up (lithium ion battery 8.51Wh) and activates inflation only when sensors on saddle detect motion and separation from the sensors in rider's vest			
Seniors Hip Airbag (T1/XS)	— Hip air bag switched on by fastening the clip, activation uses algorithm (contains lithium ion battery 8.51Wh) which analyses motion and fall in context together	155 g	1	50 ml
Seniors Hip Airbag (T2-T5/S-XL)		185 g	1	60 ml

\* Fill coefficient between 0.73g-0.78g per ml. An average of 0.75g per ml applied.