International Civil Aviation Organization

DGP/25-WP/6
24/8/15

WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

Agenda Item 3: Development of recommendations for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2017-2018 Edition

PACKING INSTRUCTION 212

(Presented by D. Brennan)

SUMMARY

This working paper proposes revisions to the Supplement to align the provisions for aerosols, tear gas devices with the changes to the Technical Instructions that were adopted at DGP-WG/14.

Action by the DGP: The DGP is invited to revise the provisions of the Supplement as shown in the appendices to this working paper.

1. INTRODUCTION

1.1 At DGP-WG/14 the DGP-WG agreed to proposals to absorb the packing provisions for aerosols that existed in Packing Instructions 204, Y204 and 212 into Packing Instructions 203 and Y203.

1.2 What was overlooked in developing the proposals to merge these packing instructions was that both Packing Instruction 203 and Packing Instruction 212 are also included in the Supplement to the Technical Instructions.

1.3 This working paper proposes to delete Packing Instruction 212 from the Supplement and to revise Packing Instruction 203 to align to the changes adopted into the Technical Instructions.

1.4 In reviewing the Supplement in the development of this working paper an anomaly was identified in the Supplementary Dangerous Goods List for Class 2. The entry for UN 1950, **Aerosols**, non-flammable (tear gas devices) has a net quantity shown in parentheses for passenger aircraft of 75 kg. This being the "standard" net quantity for aerosols on a passenger aircraft. However, given that the

permitted net quantity per package for cargo aircraft is only 50 kg, it is believed that indicating 75 kg for passenger aircraft under an approval is inappropriate.

1.5 In the Appendix B to this working paper it is proposed to change 75 kg to be 10 kg, although this number is shown in square brackets. The DGP is invited to consider what an appropriate net quantity should be.

2. ACTION BY THE DGP

2.1 The DGP is invited to revise the provisions of the Supplement as shown in the appendices to this working paper.

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APPENDIX A

PROPOSED AMENDMENT TO PART S-4 OF THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS

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Part S-4

PACKING INSTRUCTIONS

(ADDITIONAL INFORMATION FOR PART 4 OF THE TECHNICAL INSTRUCTIONS)

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Chapter 4

CLASS 2 — GASES

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Packing Instruction 203

Passenger and cargo aircraft for UN 1950 and 2037 only

The general packing requirements of 4;1 must be met.

For the purposes of this packing instruction, a receptacle is considered to be an inner packaging.

Note.— "Receptacle" has the same meaning as set out in 1;3. Any reference in this packing instruction to receptacle will include "aerosols" of UN 1950 and "receptacles, small, containing gas" and "gas cartridges" of UN 2037.

Metal aerosols (IP.7, IP.7A, IP.7B) and non-refillable receptacles containing gas (gas cartridges)

Non-refillable metal aerosols and non-refillable receptacles containing gas (gas cartridges) must not exceed 1 000 mL capacity.

The following conditions must be met:

a) the pressure in the receptacle must not exceed 1 500 kPa at 55°C and each receptacle must be capable of withstanding without bursting a pressure of at least 1.5 times the equilibrium pressure of the contents at 55°C;

b) if the pressure in the receptacle exceeds 970 kPa at 55°C but does not exceed 1 105 kPa at 55°C, an IP.7, IP.7A or IP.7B metal receptacle must be used;

c) if the pressure in the receptacle exceeds 1 105 kPa at 55°C but does not exceed 1 245 kPa at 55°C, an IP.7A or IP.7B metal receptacle must be used;

d) if the pressure in the receptacle exceeds 1 245 kPa at 55°C, an IP.7B metal receptacle must be used;

e) IP.7B metal receptacles having a minimum burst pressure of 1 800 kPa may be equipped with an inner capsule charged with a non-flammable, non-toxic compressed gas to provide the propellant function. In this case, the pressures indicated in a), b), c) or d) do not apply to the pressure within the capsule for an aerosol. The quantity of gas contained in the capsule must be so limited such that the minimum burst pressure of the receptacle would not be exceeded if the entire gas content of the capsule were released into the outer metal receptacle;

f) the liquid content must not completely fill the closed receptacle at 55°C;

g) each receptacle exceeding 120 mL capacity must have been heated until the pressure in the receptacle is equivalent to the equilibrium pressure of the contents at 55°C, without evidence of leakage, distortion or other defect.

Plastic aerosols (IP.7C)

Non-refillable plastic aerosols must not exceed 120 mL capacity, except when the propellant is a non-flammable, non-toxic gas and the contents are not dangerous goods in accordance with the provisions of the Technical Instructions, in which case the quantity must not exceed 500 mL.

The following conditions must be met:

a) the contents must not completely fill the closed receptacle at 55°C;

b) the pressure in the receptacle may not exceed 970 kPa at 55°C; and

c) each receptacle must be leak tested in accordance with the provisions of 6;3.2.8.1.6 of the Technical Instructions.

Non-flammable aerosols containing medical preparations or biological products

Aerosols, non-flammable, containing only a non-toxic substance or substances and biological products or a medical preparation which will be deteriorated by a heat test, are acceptable in inner non-refillable receptacles not exceeding 575 mL capacity each, providing all the following conditions are met:

a) the pressure in the aerosol must not exceed 970 kPa at 55°C;

b) the liquid contents must not completely fill the closed receptacle at 55°C;

c) one aerosol out of each lot of 500 or less must be heated until the pressure in the aerosol is equivalent to the equilibrium pressure of the contents at 55°C, without evidence of leakage, distortion or other defect;

d) the valves must be protected by a cap or other suitable means during transport.

UN number and name	*Net quantity per package*	
	Passenger	*Cargo*
UN 1950 **Aerosols**, flammable	75 kg	150 kg
UN 1950 **Aerosols**, flammable (engine starting fluid)	(75 kg)	150 kg
UN 1950 **Aerosols**, non-flammable	75 kg	150 kg
UN 1950 **Aerosols**, non-flammable (tear gas devices)	([10] kg)	50 kg
UN 2037 **Gas cartridges** or **Receptacles, small, containing gas**	1 kg	15 kg

ADDITIONAL PACKING REQUIREMENTS

— Packagings must meet Packing Group II performance requirements.
— Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents during normal conditions of air transport.
— Receptacles must be tightly packed, so as to prevent movement.

UN 1950 Aerosols, non-flammable (tear gas devices) [– Cargo Aircraft Only]

— Only metal receptacles, IP.7, IP.7A, IP.7B are permitted. The aerosols must be individually placed into spiral wound tubes fitted with metal ends or a double-faced fibreboard box with suitable padding before being packed into the outer packaging.

OUTER PACKAGINGS (see 6;3.1)

Boxes	*Drums*
Aluminium (4B)	Aluminium (1B2)
Fibreboard (4G)	Fibre (1G)
Natural wood (4C1, 4C2)	Other metal (1N2)
Other metal (4N)	Plastics (1H2)
Plastics (4H1, 4H2)	Plywood (1D)
Plywood (4D)	Steel (1A2)
Reconstituted wood (4F)	
Steel (4A)	

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~~Packing Instruction 212~~

~~The general packing requirements of 4;1 must be met.~~

~~Aerosols, non-flammable, which are tear gas devices are permitted in inner non-refillable metal receptacles not exceeding 1 000 mL capacity each providing all the following conditions are met:~~

~~a) the pressure in the aerosol must not exceed 1 500 kPa at 55°C and each receptacle must be capable of withstanding without bursting a pressure of at least 1.5 times the equilibrium pressure of the contents at 55°C;~~

~~b) if the pressure in the aerosol does not exceed 1 105 kPa at 55°C, an IP.7, IP.7A or IP.7B metal receptacle must be used;~~

~~c) if the pressure in the aerosol exceeds 1 105 kPa at 55°C but does not exceed 1 245 kPa at 55°C, an IP.7A or IP.7B metal receptacle must be used;~~

~~d) if the pressure in the aerosol exceeds 1 245 kPa at 55°C, an IP.7B metal receptacle must be used;~~

~~e) IP.7B metal receptacles having a minimum burst pressure of 1 800 kPa may be equipped with an inner capsule charged with a non-flammable, non-toxic compressed gas to provide the propellant function. In this case, the pressures indicated in a), b), c) or d) do not apply to the pressure within the capsule. The quantity of gas contained in the capsule must be so limited such that the minimum burst pressure of the receptacle would not be exceeded if the entire gas content of the capsule were released into an aerosol;~~

~~f) the liquid content must not completely fill the closed receptacle at 55°C;~~

~~g) each aerosol must have been heated until the pressure in the aerosol is equivalent to the equilibrium pressure of the contents at 55°C, without evidence of leakage, distortion or other defect;~~

~~h) the valves must be protected by a cap or other suitable means during transport;~~

~~i) aerosols must be individually placed into spiral wound tubes fitted with metal ends or a double faced fibreboard box with suitable padding, which must be tightly packed in wooden boxes (4C1, 4C2), plywood boxes (4D), reconstituted wood boxes (4F), fibreboard boxes (4G) or plastic boxes (4H1, 4H2) of Packing Group II. Maximum net quantity per package is 50 kg.~~

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APPENDIX B

PROPOSED AMENDMENT TO PART S-3 OF THE SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS

Part S-3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND QUANTITY LIMITATIONS

(ADDITIONAL INFORMATION FOR PART 3 OF THE TECHNICAL INSTRUCTIONS)

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Chapter 2

SUPPLEMENTARY DANGEROUS GOODS LIST

Class 1

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Table S-3-1. Supplementary Dangerous Goods List (Class 2)

									Passenger aircraft		Cargo aircraft	
Name	*UN No.*	*Class or division*	*Subsidiary risk*	*Labels*	*State variations*	*Special provisions*	*UN packing group*	*Excepted quantity*	*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*	*13*
Aerosols, non-flammable (tear gas devices)	1950	2.2	6.1	Gas non-flammable & Toxic	AU 1 CA 7 IR 3 NL 1 US 3	A1 A145 A167		E0	~~212~~203	(~~75~~ [10] kg)	~~212~~203	50 kg
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