



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Abu Dhabi, United Arab Emirates, 7 to 11 November 2010

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 9284) for incorporation in the 2013/2014 Edition

SEPARATION OF EXPLOSIVES

(Presented by T.L. Muller)

SUMMARY

This paper proposes the addition of chapter 2.3 to Part S-7 of the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for the separation of explosives, which are transported under an approval or exemption.

Action by the DGP-WG is in paragraph 22.

1. INTRODUCTION

1.1 A proposal to change the separation requirements of explosives was adopted by DGP/22 (DGP/22-WP/78). The presenter of the proposal offered to provide a working paper for DGP-WG/10 with a new proposal to include the separation requirements for explosives that are normally forbidden from transport for in the Supplement to the Technical Instructions.

1.2 Explosives of Class 1 are assigned to one of six divisions, depending on the type of hazard they present, and to one of thirteen compatibility groups which identify the kinds of explosive substances and articles that are deemed to be compatible.

1.3 The separation of explosives with different compatibility groups may be necessary due to the fact that accidental function during transport may lead to initiation of other explosives and therefore may magnify the effects of such an accident. This is especially the case when articles containing primary explosives such as detonators, or articles having their own means of initiation such as certain military explosives, are loaded together with substances or articles containing secondary explosives.

1.4 This working paper proposes to include a separation table for explosives in the Supplement to the Technical Instructions, so that this information is available to the competent authority when granting an approval or exemption for the transport of explosives that are normally forbidden by air.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to include a new paragraph S-7;2.3 of the Supplement and a note under S-1;1.1 as follows:

Part S-7

STATE'S RESPONSIBILITIES

(ADDITIONAL INFORMATION RELATED TO PART 7 OF THE TECHNICAL INSTRUCTIONS)

Chapter 2

STORAGE AND LOADING

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2.3 Separation of explosive substances and articles

Note.—: The safety of explosive substances and articles would be enhanced by transporting each kind separately, but considerations of practicability and economics preclude such an ideal. In practice, a proper balance of the interest of safety against the other relevant factors necessitates a degree of mixing in the transport of explosive substances and articles of several kinds.

2.3.1 The extent to which explosives of Class 1 may be loaded together in transport is determined by the "compatibility" of the explosives. Explosives of Class 1 are considered to be "compatible" if they can be transported together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.

2.3.2 Explosives in compatibility Groups A to K and N may be transported in accordance with the following provisions:

a) Packages bearing the same compatibility group letter and the same division number may be loaded together;

b) Explosives of the same compatibility group but different divisions may be loaded together;

c) Packages bearing different compatibility group letters shall not in general be loaded together (regardless of the division number) except in the case of compatibility group letters C, D, E and S; and

d) For packages with different compatibility groups the segregation scheme shown in Table S-7-X must be followed in order to maintain acceptable distance between such packages.

Table S-7-X. Separation of explosive substances and articles

<u>Compatibility group</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>N</u>	<u>S</u>
<u>A</u>		X	X	X	X	X	X	X	X	X	X	X	X
<u>B</u>	X		X	X	X	X	X	X	X	X	X	X	X
<u>C</u>	X	X				X	X	X	X	X	X	X ²⁾	
<u>D</u>	X	X				X	X	X	X	X	X	X ²⁾	
<u>E</u>	X	X				X	X	X	X	X	X	X ²⁾	
<u>F</u>	X	X	X	X	X		X	X	X	X	X	X	
<u>G</u>	X	X	X	X	X	X		X	X	X	X	X	
<u>H</u>	X	X	X	X	X	X	X		X	X	X	X	
<u>J</u>	X	X	X	X	X	X	X	X		X	X	X	
<u>K</u>	X	X	X	X	X	X	X	X	X		X	X	
<u>L</u>	X	X	X	X	X	X	X	X	X	X	X ¹⁾	X	X
<u>N</u>	X	X	X ²⁾	X ²⁾	X ²⁾	X	X	X	X	X	X		X ³⁾
<u>S</u>	X										X ³⁾		

An “x” at the intersection of a row and column indicates that explosives of these compatibility groups must be loaded into separate unit load devices and, when stowed aboard the aircraft, the unit load devices must be separated by other cargo with a minimum separation distance of 2 m. When not loaded in a unit load device, these explosives must be loaded into different, non-adjacent loading positions and separated by other cargo with a minimum separation distance of 2 m.

Explanation of the footnotes in table S-7-X:

1. Packages containing substances or articles of compatibility group L may be loaded together with packages containing the same type of substances or articles within compatibility group L.
2. If explosives of compatibility group N are transported together with explosives of compatibility groups C, D and E the explosives of compatibility group N shall be considered as explosives having compatibility group D.
3. When articles of compatibility group N are transported together with articles of compatibility group S, the entire load shall be treated as compatibility group N.

Part S-1

GENERAL

(ADDITIONAL INFORMATION FOR PART 1 OF THE TECHNICAL INSTRUCTIONS)

Chapter 1

SCOPE AND APPLICABILITY

1.1 DESIGNATION OF NATIONAL AUTHORITY

1.1.1 Each State must designate the appropriate authority within its administration to be responsible for ensuring compliance with Annex 18 — *The Safe Transport of Dangerous Goods by Air* and these Instructions. Details specifying the primary point of contact must be notified to ICAO for publication in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) and for dissemination on the public website. As a minimum, these details must include:

- a) name;
- b) title (of person or position);

- c) address;
- d) phone number;
- e) facsimile number;
- f) e-mail address; and
- g) website address (if applicable).

1.1.2 In addition, contact information for other agencies responsible for specific classes (e.g. radioactive material, infectious substances) or for specific actions (e.g. issuance of approvals or exemptions) should be included.

Note: For the separation of explosives, see Part 7:2.3.

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