



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-SEVENTH MEETING**

**Montréal, 16 to 20 September 2019**

**Agenda Item 2: Managing air-specific safety risks and identifying anomalies**

**2.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)* for incorporation in the 2021-2022 Edition**

**REVISION TO EXCEPTIONS FROM APPLICATION OF THE “Q” VALUE**

(Presented by D. Brennan)

**SUMMARY**

This working paper proposes a slight revision to the current exceptions from the requirement for provision of a “Q” value for different dangerous goods packed in the same outer packaging as provided for in Part 4;1.1.9.

**Action by the DGP:** The DGP is invited to consider the revision to part 4;1.1.9 e) 3) as shown in the appendix to this working paper.

**1. INTRODUCTION**

1.1 Part 4;1.1.8 sets out the requirements where a shipper packs more than one item of dangerous goods into the same outer packaging.

1.2 Included in these provisions is subparagraph e) that describes the method by which the quantities of dangerous goods are limited through the calculation of the “Q” value which determines the ratio of the net quantity of each dangerous goods against the permitted maximum net quantity such that “Q” must not exceed 1. Subparagraph e) then lists dangerous goods that do not need to be considered in the calculation of the “Q” value.

1.3 One of the exclusions from being included in the “Q” value calculation are those dangerous goods with the same UN number, packing group and physical state if they are the only dangerous goods in the package and the total net quantity does not exceed the maximum net quantity shown in Table 3-1.

1.4 While this works for most dangerous goods, it has been identified that for UN 1950, **Aerosols** that not all aerosol entries have the same maximum net quantity. The standard limit for UN 1950 on a cargo aircraft only is 150 kg. However, for Aerosols, non-flammable (tear gas devices) the maximum net quantity per package is just 50 kg. This would mean that a shipper applying the exception in Part 4;1.1.9 e) 3) which remove the “Q” value calculation could potentially exceed the permitted maximum net mass per package if these aerosols were packed in the same outer packaging with other aerosols.

1.5 To address this gap, it is proposed to add an additional condition that the same maximum net quantity as shown in column 11 or 13 applies.

2. **ACTION BY THE DGP**

2.1 The DGP is invited to consider the revision to Part 4;1.1.9 as shown in the appendix to this working paper.

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## APPENDIX

### PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS

#### Part 4

### PACKING INSTRUCTIONS

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#### Chapter 1

### GENERAL PACKING REQUIREMENTS

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1.1.9 Subject to 1.1.8 an outer packaging may contain more than one item of dangerous goods provided that:

- a) the inner packaging used for each item of dangerous goods and the quantity contained therein complies with the relevant part of the packing instruction applicable to that item;
- b) the outer packagings used are permitted by all the packing instructions applicable to each item of dangerous goods;
- c) the package as prepared for shipment meets the specification performance tests for the most restrictive packing group of a substance or article contained in the package;
- d) the dangerous goods do not require segregation according to Table 7-1, unless otherwise provided for in these Instructions; and
- e) the quantities of different dangerous goods contained in one outer packaging must be such that "Q" does not exceed the value of 1, where "Q" is calculated using the formula:

$$Q = \frac{n_1}{M_1} + \frac{n_2}{M_2} + \frac{n_3}{M_3} + \dots$$

where  $n_1$ ,  $n_2$ , etc. are the net quantities of the different dangerous goods and  $M_1$ ,  $M_2$ , etc. are the maximum net quantities for these different dangerous goods according to Table 3-1 for passenger or cargo aircraft, as applicable. However, the following dangerous goods do not need to be taken into account in the calculation of the "Q" value:

- 1) carbon dioxide, solid (dry ice), UN 1845;
- 2) those where columns 11 and 13 of Table 3-1 indicate "No limit";
- 3) those with the same UN number, packing group, and physical state (i.e. solid or liquid) and the same maximum net quantity according to column 11 or 13 of Table 3-1, providing they are the only dangerous goods in the package and the total net quantity does not exceed the maximum net quantity according to Table 3-1.

An outer packaging containing Division 6.2 (Infectious Substances) may contain material for refrigeration, or freezing or packaging material such as absorbent material.

*Note.— For packages containing radioactive material, see 9.1.3.*

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