



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-FIRST MEETING**

**Montréal, 5 to 16 November 2007**

**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 2009-2010 Edition**

**PROPOSED AMENDMENT TO GENERAL PACKING REQUIREMENTS**

(Presented by D. Brennan)

**SUMMARY**

This working paper proposes that a new provision be added to 4;1.1.8 so that dangerous goods where the quantity limit shown in column 10 or 12 of Table 3-1 is defined by the gross mass per package are not packed in the same outer packaging with other dangerous goods.

Action by the DGP is in paragraph 2.

**1. INTRODUCTION**

1.1 The Technical Instructions permit a shipper to pack different dangerous goods in one outer packaging as set out in Part 4;1.1.7 and 4;1.1.8.

1.2 The provisions of 4;1.1.7 e) then describe how the shipper can determine the exact quantity of each different dangerous goods that may then be packed in each outer packaging. The provision of e) sums the actual net quantity of each dangerous goods as a ratio of the maximum permitted net quantity such that an equivalent to the allowable maximum net quantity is not exceeded in each package.

1.3 Recently there have been some questions regarding packing in the same outer packagings with other dangerous goods articles such as lithium batteries where the limit shown in column 10 or 12 of Table 3-1 is a gross weight.

1.4 After some consideration it is believed that it is inappropriate to permit substances that are limited by a net quantity to be packed in the same outer packaging as those where the limit is defined by the gross mass per package.

## 2. ACTION BY THE DGP

2.1 The DGP is invited to *amend* Part 4;1.1.8 as follows:

1.1.8 Subject to 1.1.7 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 dangerous goods are not restricted by a gross mass per package as indicated by a “G” in column 10 or 12 of Table 3-1. Dangerous goods shown with a “G” must not be packed in the same outer packaging with other dangerous goods;

- 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 10 and 12 of Table 3-1 indicate “No limit”;
- 3) those with the same UN number, packing group, and physical state (i.e. solid or liquid), 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.*