



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTIETH MEETING

Montréal, 24 October to 04 November 2005

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 2007-2008 Edition

USE OF CYLINDERS AS SINGLE PACKAGINGS

(Presented by J. Abouchaar)

1. INTRODUCTION

During the exercise on reformatting the packing instructions it was identified that the UN Model Regulations make specific allowance for the transport of dangerous goods, other than gases, in cylinders (UN Model Regulations 4.1.3.6).

The Technical Instructions permits the use of cylinders as single packagings for some packing instructions in Classes 3 and 8 and Division 6.1. In such cases, the packing instruction indicates that the cylinders must meet the requirements of Packing Instruction 200. However, the reference to Packing Instruction 200 is inappropriate as all of the content of Packing Instruction 200 relates to gases only.

In addition to 4.1.3.6, the UN text identifies that cylinders must meet the requirements applicable to the construction and testing of cylinders (as reflected in Part 6, Chapter 5 of the Technical Instructions) or, must comply with the national standards of the State of manufacture.

2. PROPOSAL 1

Adopt the following new text (which reflects UN Model Regulations 4.1.3.6) into Part 4, Chapter 2 as shown:

2.5 CYLINDERS FOR LIQUIDS AND SOLIDS

2.5.1 Cylinders may be used for liquids and solids when indicated in a packing instruction. These cylinders must conform to:

- a) the applicable requirements of Part 6, Chapter 5; or
- b) the National or International standards on the design, construction, testing, manufacturing and inspection, as applied by the State in which the cylinders are manufactured, provided that the provisions of 2.5.2 to 2.5.9 and 6;5.3.3 are met,

2.5.2 Cylinder design types must be approved by the appropriate national authority of the State of manufacture or as indicated in Part 6, Chapter 5.

2.5.3 Unless otherwise indicated, cylinders having a minimum test pressure of 0.6 MPa must be used.

2.5.4 Unless otherwise indicated, cylinders may be provided with an emergency pressure relief device designed to avoid bursting in case of overflow or fire accidents. Cylinder valves must be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or must be protected from damage which could cause inadvertent release of the contents of the pressure receptacle, by one of the methods as given in 4; 4.1.1.8 (a) to (e)

2.5.5 The level of filling must not exceed 95% of the capacity of the cylinder at 50 °C. Sufficient ullage (outage) must be left to ensure that the cylinder will not be liquid full at a temperature of 55 °C.

2.5.6 Unless otherwise indicated cylinders must be subjected to a periodic inspection and test every 5 years. The periodic inspection must include an external examination, an internal examination or alternative method as approved by the competent authority, a pressure test or equivalent effective non-destructive testing with the agreement of the competent authority including an inspection of all accessories (e.g. tightness of valves, emergency relief valves of fusible elements). Cylinders must not be filled after they become due for periodic inspection and test but may be transported after the expiry of the time limit. Cylinder repairs must meet the requirements of 4; 4.1.1.11.

2.5.7 Prior to filling, the filler must perform an inspection of the cylinder and ensure that the cylinder is authorized for the substances to be transported and that the provisions of these Instructions have been met. Shut-off valves must be closed after filling and remain closed during transport. The shipper must verify that the closures and equipment are not leaking.

2.5.8 Refillable cylinders must not be filled with a substance different from that previously contained unless the necessary operations for change of service have been performed.

2.5.9. Marking of cylinders for liquids and solids, other than those cylinders conforming to the requirements of Part 6, Chapter 5, must be in accordance with the requirements of the appropriate national authority of the State of manufacturing.

Renumber subsequent paragraphs 2.5 and 2.6 to become 2.6 and 2.7 respectively.

3. **PROPOSAL 2**

If the Panel accepts Proposal 1, the following modifications need to be made to the packing instructions:

Delete Reference to Packing Instruction 200 as single packagings from Packing Instructions 303, 304, 307, 308, 309, 310, 432, 604, 605, 611, 612, 618, 620, 812, 813, 820 and 821 to be replaced by the following text: "[Cylinders as specified in Part 4;2.5](#)"

Amend the wording of PPR 8 to read:

"8 Only metal cylinders that meet the requirements of ~~PI-200~~ [Part 4;2.5](#) are permitted.

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