International Civil Aviation Organization

DGP-WG/07-WP/16
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WORKING PAPER

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

Memphis, 30 April to 4 May 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
2.4: Part 4 — Packing Instructions

DANGEROUS GOODS IN NON-PRESSURISED CARGO HOLDS

(Presented by U.A.Mikhin)

SUMMARY

This working paper contains an amendment to Introductory Note 3 contained in Part 4 of the Technical Instructions regarding pressure variations.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 In the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) conditions are set for transport in aircraft. One of the conditions concerns pressure variations as shown in Part 4, Introductory Notes, Note 3. This note sets a value drop to 68 kPa and covers transportation in pressurised cargo holds only, which equals to 3 000 meters flight altitude non-pressurised cargo hold. Modern cargo aircraft with non-pressurised cargo hold climb up to 10 000 meters and pressure drops in the cargo holds to 24 kPa. This pressure reduction will tend to cause discharge of liquid contents or bursting of the receptacles or packaging during flight, for receptacles or packaging tested for transport in pressurized cargo holds only. To prevent this risk we propose to add this information to Part 4, Introductory Notes, Note 3.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to amend Note 3 in the Introductory Notes of Part 4 of follows:

PART 4
PACKING INSTRUCTIONS

. . .

Note 3 – Pressure variations

Due to altitude, pressure reductions will be encountered under flight conditions which may in extreme conditions be of the order of 68 kPa. Since receptacles or packagings will generally be filled at normal atmospheric pressure of approximately 100 kPa, these pressure reductions will tend to cause discharge of liquid contents or bursting of the receptacles or packagings during flight, unless each receptacle or packaging and its closures meet the packaging test requirements.

During high altitude transport, pressure differentials will be encountered which in extreme situations may be of the order of 26 kPa for aircraft with pressurized cargo holds and 71 kPa for aircraft with non-pressurized cargo holds.

These pressure differential values simulate the conditions at 8 000 and 30 000 feet, respectively. Since receptacles or packagings will generally be filled at normal atmospheric pressure of approximately 100 kPa, these pressure reductions may tend to cause package failures during flight, unless each packaging, each receptacle and all closures meet the packaging test requirements for either transport in pressurized or non-pressurized cargo holds.

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