



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

Memphis, 30 April to 4 May 2007

REPORT OF PACKING INSTRUCTION WORKING GROUP

(Presented by R. Richard)

The working group met on April 28-29, 2007 to organize and discuss the comments received in response to the draft Packing Instructions reformatting initiative that was posted on the ICAO website for public review on April 2006. The PI working group considered the numerous comments submitted to the website as well as the working papers submitted for WG-07. Many positive, as well as constructive negative comments were submitted. The working group recognized that there were numerous comments in support of specific aspects of the initiative as well as overall general support. Based on the amount of general support, the group decided to continue their efforts to address all of the comments to improve upon the proposal. The responses could be categorized into six groupings, being:

- Inner packagings;
- Outer packagings;
- Liners / absorbent material;
- Format of the packing instructions;
- Numbering scheme; and
- Cost to transition to the new format.

The working group reviewed the comments in each category to discuss the merits of the comments and the effect on the proposal. To assist the Panel's consideration of these comments the following response is provided:

1. Inner packaging types. Some commenters expressed concern that a number of the existing inner packaging types would no longer be authorized. This is considered to be a misunderstanding. After one reviewer commented that it appears the proposed packing instructions eliminated some packaging types, the working group identified on the ICAO website that the Panel had some time ago decided to group inner packaging types into broader groups (i.e. aluminium would be considered a metal inner package under IP.3 and IP.8 glass ampoules would be grouped into IP.1). Therefore, the working group did not eliminate these inner packaging authorizations. Combining the inner packaging types is consistent with that used in the UN Model Regulations. To further align with the UN approach the group proposes to remove all reference to "IP" codes from the Technical Instructions. To ensure that the standards applicable to inner packagings are clearly identified it is also proposed that the reference to Part 6;3.2 be included in the "Inner" header in the Packing Instructions.

2. Outer packagings. In the reformatting exercise there was an inadvertent omission of a number of currently permitted outer packagings. After this had been brought to the working group's attention in late 2006 a correction to the packaging types was also posted on the ICAO website. The corrections can be summarised as:
 - a. Class 3 PG III in PG II packagings. This should only apply to Class 3, PG III with a Class 8 subsidiary risk, as currently applies;
 - b. 1A2 single packagings for PG III liquids;
 - c. 1A2 outer packagings;
 - d. UN 3077 – Environmentally hazardous substances, an incorrect value for inner packagings was shown.

In addition the group also identified that the current requirement for substances in Class 8 PG III to be in PG II packagings had been omitted. This has been corrected.

3. Additional packaging materials. The group discussed in detail the proposal to require a liner, and in some cases absorbent material for liquids. Some commenters were supportive of the amendment as a means to enhance safety in transport. There were other comments to the contrary that felt there was no safety justification provided. There were various thoughts within the working group of the need for absorbent material and/or a liner. Taking into account the concerns raised by industry, the group discussed the need or purpose of the additional safeguards. As a result, the Panel is invited to consider additional options developed by the working group:
 - a. Absorbent material. The group agreed that absorbent material should be a requirement for combination packagings containing liquids in PGI. It is felt there are very few PG I liquid materials transported by air and that the majority of these materials currently are assigned a PPR requiring absorbent material. The hazard posed by a PGI liquid warrants retaining the additional safety measure.
 - b. Liners. A number of the members of the working group presented incident data, which showed a significant incidence of leaking inner receptacles. The group discussed the difficulties expressed by some of the commenters in the cost and technical issues in being able to add a liner. It was determined that the issue to be addressed is the capability of the closure. Therefore, the Panel is invited to consider improvements to the requirements of the closure system. The proposal would be to require a secondary means of a securing the closure (for example, heat induction seal, tape, etc.) or a liner. Draft text is shown at the end of Attachment 1.
4. Packaging Instruction format. The working group agreed with the commenters that expressed a desire to simplify the instruction format. The group agreed to consider a modification of the proposed format consistent with WP/48 paragraph 4.1.3. The Panel is invited to consider the working group's suggested reformatting as provided in Attachment 1.
5. Number scheme. While some commenters supported the proposed numbering scheme as a logical means of providing information related to the required packaging, a number of responders commented that the number scheme was difficult to understand and would result in a significant cost to add digits to existing databases. The working group took those comments into consideration and agreed there was some merit in the comments related to the alphanumeric code. The group agreed that a 3-digit numbering system could be maintained, which still provides a means to easily differentiate packing instructions for passenger aircraft and those for CAO and

also generally for packing groups. However, it would be necessary to change the numbers to prevent confusion with the existing numbers. Therefore, the Panel is encouraged to considering maintaining a 3-digit numeric system as suggested in WP/48 paragraph 3.6.

6. Cost to transition to a new system. The working group recognizes that concern is inherent with any change. There will be training and outreach required to respond to any change. The working group considered these comments carefully in relation to the effects of the proposals on the packing instruction numbering, format, and new packaging requirements. However, the working group's opinion is that the overall benefits of the new packing instructions exceed the cost of transition.

Attachment 1

| Chapter 1 Class 3 Passenger | | | | | |
|---|---------------|--------------------------------------|--------------------------|-------------------------|-------------------|
| The general requirements of Part 4 Chapter 1 must be met | | | | | |
| Substances must be compatible with their packagings as required by 4; 1.1.3 | | | | | |
| COMBINATION PACKAGINGS | | | | | SINGLE PACKAGINGS |
| Packing Instruction | Packing group | Inner Packaging (See Part 6: 3.2) | Inner packaging quantity | Outer Quantity | |
| 350 | I | Glass | 0.5 L | 0.5 L | NO |
| | | Plastic | Forbidden | | |
| | | Metal | 0.5 L | | |
| 351 | I | Glass | 0.5 L | 1.0 L | NO |
| | | Plastic | Forbidden | | |
| | | Metal | 0.5 L | | |
| 352 | II | Glass | 1.0 L | 1.0 L | NO |
| | | Plastic | 1.0 L | | |
| | | Metal | 1.0 L | | |
| 353 | II | Glass | 1.0 L | 5.0 L | NO |
| | | Plastic | 5.0 L | | |
| | | Metal | 5.0L | | |
| 354 | III | Glass | 2.5 L | 5.0 L | 5.0 L |
| | | Plastic | 5.0 L | | |
| | | Metal | 5.0 L | | |
| 355 | III | Glass | 2.5 L | 60.0 L | 60.0 L |
| | | Plastic | 10.0 L | | |
| | | Metal | 10.0 L | | |
| OUTER PACKAGINGS OF COMBINATION PACKAGINGS | | | | | |
| Drums | | Jerricans | | Boxes | |
| Steel (1A2) | | Steel (3A2) | | Steel (4A) | |
| Aluminium (1B2) | | Aluminium (3B2) | | Aluminium (4B) | |
| Fibre (1G) | | Plastic (1H2) | | Natural wood (4C1, 4C2) | |
| Plastic (1H2) | | | | Plywood (4D) | |
| Other Metal (1N2) | | | | Reconstituted wood (4F) | |
| | | | | Fibreboard (4G) | |
| | | | | Plastic (4H1, 4H2) | |
| ADDITIONAL PACKING REQUIREMENTS FOR COMBINATION PACKAGINGS | | | | | |
| PG I | | | | | |
| <ul style="list-style-type: none"> • Plastic inner packagings are not permitted • Glass or metal inner packagings must be packed with absorbent material and placed in a rigid leakproof receptacle before packing in outer packagings • Metal packagings must be corrosion resistant or with protection against corrosion for substances with a class 8 subsidiary risk | | | | | |
| PGII | | | | | |
| <ul style="list-style-type: none"> • Glass inner packagings must be packed with absorbent material and placed in a leakproof liner, plastic bag or equally effective means of intermediate leakproof containment • Plastic and metal inner packagings must be placed in a leakproof liner, plastic bag or | | | | | |

| | | | |
|---|------------------|----------------------|----------------------|
| <p>equally effective means of intermediate leakproof containment (IF 1.1.4 IS AMENDED)</p> <ul style="list-style-type: none"> • Metal packagings must be corrosion resistant or with protection against corrosion for substances with a class 8 sub risk | | | |
| <p>PGIII</p> <ul style="list-style-type: none"> • For combination packages all inner packagings must be placed in a plastic bag or equally effective means of protection • Packagings must meet the PG II <u>performance standards if the substance has a class 8 sub risk</u> | | | |
| <p>SINGLE PACKAGINGS FOR PGIII (354 and 355)</p> | | | |
| Composites | Cylinders | Drums | Jerricans |
| ALL | See 4; 2.7 | Steel (1A1, 1A2) | Steel (3A1, 3A2) |
| | | Aluminium (1B1, 1B2) | Aluminium (1B1, 1B2) |
| | | Plastic (1H1, 1H2) | Plastic (3H1, 3H2) |
| | | Steel (1A1, 1A2) | Steel (3A1, 3A2) |
| <p>ADDITIONAL PACKING REQUIREMENTS FOR SINGLE PACKAGINGS</p> | | | |
| <p>PGIII</p> <ul style="list-style-type: none"> • Packagings must meet the PG II <u>performance standards if the substance has a class 8 sub risk</u> | | | |

Chapter 2 Amend Part 4: 1.1.4

Amend 1.1.4 as follows:

Renumber 1.1.4.1

The body and closure of any packaging must be so constructed as to be able adequately to resist the effects of temperature and vibration occurring in normal conditions of transport. ~~Stoppers and corks or other such friction~~ Closures must be held securely, tightly and effectively in place by positive [secondary] means. Examples of such methods include: ~~by the use of an~~ adhesive tape, friction sleeves, welding or soldering, positive locking wires, locking rings, induction heat seals and child resistant closures. The closure device must be so designed that it is unlikely that it can be incorrectly or incompletely closed and must be such that it may be checked easily to determine that it is completely closed.

Add a new 1.1.4.2

When positive means of closure cannot be applied to an inner packaging containing liquids they must be securely closed and placed in a leakproof liner and then placed in an outer packaging.