



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**MEETING OF THE WORKING GROUP OF THE WHOLE**

**Beijing, China, 25 October to 3 November 2006**

**Agenda Item 3: Development of recommendations for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2009/2010 Edition**

**PACKING INSTRUCTIONS CONTAINED IN THE SUPPLEMENT**

(Presented by R. Richard)

**SUMMARY**

This working paper discusses a number of possible areas for improvement within the Supplement. The DGP-WG is invited to consider these issues and provide comments. An inter-sessional working group may be necessary to provide a comprehensive review and develop a detailed proposal for the next working group meeting.

**1. INTRODUCTION**

1.1 The packing instructions reformatting initiative resulted in the development of a rationalized system for the design, development, and presentation of the packing instructions which ensures more consistency. In conjunction with this effort, a review of the packing instructions contained in the Supplement is also viewed as beneficial. This paper contains a number of observations with respect to the provisions of the current Supplement. Questions to facilitate discussion are provided with each issue identified. The goal of this paper is to foster dialogue on possible ways of improving the Supplement thus facilitating its use by the DGP and by States when exemptions and approvals are issued.

1.2 The following observations are made with respect to the criteria for information which should be included in the supplement:

- a) **Forbidden substances:** Substances forbidden on both passenger and cargo aircraft without special provisions.

**Discussion Question:** Should a packing instruction and maximum quantity be provided in Table S-3-1 for forbidden substances?

**Considerations:**

- The substances may never be transported by air;
- Many do not have packing instructions in any mode;
- Circumstances may be very specific and necessitate unique requirements; and
- Due to multilateral approval requirements, States could each have different input.

- b) **Molten or elevated temperature substances:** Substances in a liquid state at temperatures equal to or  $> 100^{\circ}\text{C}$  or in a solid state at temperatures equal to or exceeding  $240^{\circ}\text{C}$

**Discussion Question:** Should it be noted in the Supplement that the UN Model Regulations do not contain non-bulk packaging information for these substances?

**Considerations:**

- It is unlikely that these substances will be offered for transport;
- The UN appears to use the criteria that non-bulk packaging will not be assigned;
- Is a new special provision necessary?

- c) **Table S-3-1:** This table contains information not included in the TIs which is used by States when issuing approvals and exemptions.

**Discussion Question:** Where should the information from Table S-3-1 be located?

- d) **Packing Instructions:** The Supplement refers to some packing instructions which are in the TIs and others which are in the Supplement.

**Discussion Question:** Should all of the packing instructions be numbered with the new numbering system?

1.3 The following observations are made concerning the assignment of special provisions to substances in certain categories. It is possible that improvements could be made to ensure that all substances which present a high level of risk in air transport are assigned special provisions consistently to enhance safety.

- a) **UN PI P099:** The reformatting of the packing instructions initiative and this review have shown that the TIs do not always indicate “Competent Authority approval only” when the UN designates P099.

**Discussion Question:** Should the TIs indicate “Competent Authority Approval only” when P099 is assigned to a substance by the UN?

**Considerations:**

- A review of the substances assigned P099 and the requirements of other modes for the transport of such substances may be helpful.

- b) **Toxic by Inhalation Substances:** Substances which meet the vapour inhalation toxicity criteria of 6.1 PG I or 2.3 “TIH” are forbidden on passenger aircraft. All have A2 assigned except for twelve substances which have A1 assigned to them. See the appendix for a listing.

**Discussion Question:** Should all substances meeting the criteria of a TIH substance be assigned A2 for consistency and safety?

**Considerations:**

- These substances are high risk in air transport;
- States would be warned prior to transport on passenger aircraft enabling them to apply any special measures required by their national regulations.

- c) **Class 1:** Only three Class 1 explosives are assigned A1. These are UN 0440, UN 0289, and UN 0066. Three Class 1 explosives are assigned A109 and proposed to be reassigned to A2. These are UN 0059, UN 0065, and UN 0099.

**Discussion Question:** Should any Class 1 substances prohibited on passenger aircraft be assigned a special provision?

**Considerations:**

- Approximately 70 substances permitted on cargo aircraft and forbidden on passenger aircraft are not assigned any special provisions.
- Six are assigned special provisions.

1.4 Listed below are observations concerning provisions for substances in certain classes or with certain properties. It is possible that consistency in the application of provisions for certain substances could be enhanced.

- a) **Class 1 use of UN P101:** P101 in the UN Model Regulations requires that only packagings which are approved by the Competent Authority may be used. The TIs assign Packing Instruction 101 consistent with the same assignments in the UN. However, the only information that the assignment of Packing Instruction 101 to a substance and its permissible quantity provides is that the packaging requires competent authority approval.
- b) **Discussion Question:** Should the TIs continue to assign P101 consistent with the UN Model Regulations assignment, or should the TIs require Competent Authority Approval by using the term “Forbidden” and not providing a special provision? In the latter case, PI 101 would be replaced with the term “Forbidden” in the TIs and a packing instruction number would be referenced in the Supplement.

**Considerations:**

- If a substance has an allowable quantity and Packing Instruction 101 assigned to it in the TIs, the competent authority still has to designate the packaging.
- The Supplement could contain a reference to Packing Instruction 101 in parenthesis next to a substance in order to reinforce that without competent authority approval, the substance is forbidden for transport by air.
- It might be helpful to apply the requirements for Competent Authority Approval consistently throughout the TIs.

- c) **Class 1 UN PI Numbers:** The Supplement to the TIs references the UN packing instructions for Class 1 in a different manner than the UN Model Regulations. For example, in the UN Model Regulations, PI112 is divided into three separate instructions numbered P112(a), P112(b) and P112(C). The Supplement merges a) b) and c) into one packing instruction, Packing Instruction 112.

**Discussion Question:** Should the TIs refer to UN packing instructions the same way the UN does?

**Considerations:**

- Most users are familiar with UN packing instructions assigned to explosives since all modes use the same packing instructions;
- Harmonized references would provide consistency.

- d) **Class 1 particular packing requirements:** The particular packing requirements or exceptions in Class 1 packing instructions are not identical to the UN Model Regulations' special packing requirements and additional requirements.

**Discussion Question:** If the TIs refer to a UN packing instruction, should the particular packing requirements be identical or could the TIs use the same number with different requirements?

**Considerations:**

- Should air transport impose additional requirements for packaging explosives?
- If there are no additional requirements should they be identical or should the TIs change the reference number?

- e) **Division 2.1:** Division 2.1 substances are allowed on CAO and assigned A1 consistently except refrigerated gases.

**Discussion Question:** Should A1 be assigned to all 2.1 substances except refrigerated gases?

**Considerations:**

— This approach would provide consistency.

- f) **Class 3 with 6.1 subsidiary:** One class 3, subsidiary risk 6.1, packing group I substance is assigned special provision A2 (UN 1194). Twenty-seven class 3, subsidiary risk 6.1 substances have no special provisions assigned to them.

**Discussion Question:** Should all class 3 with subsidiary 6.1 substances in packing group I be the same and not assigned a special provision?

**Considerations:**

— Deleting A2 for UN 1194 would treat all of these substances the same.

**2. ACTION BY THE DGP-WG**

2.1 The DGP-WG is invited to review the inconsistencies presented in this paper and discuss the general principles that would be appropriate for application in the TIs. It is proposed that an inter-sessional working group be established to provide a comprehensive review and develop a detailed proposal for the next working group meeting.

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APPENDIX A

ASSIGNMENT OF A1 AND A2 SPECIAL PROVISIONS

Class	Subrisk	PG I		PG II		PG III		Total		Total	Comments
		A1	A2	A1	A2	A1	A2	A1	A2	TIH	
1.4D								2			These Class 1 substances have six State variations assigned to them mandating prior approval if on PAX.
1.4 G								1			
2.1								63	1		Possibly the A2 should be A1 and all Division 2.1 substances with no subsidiary risk would be assigned the same.
2.2								2			Division 2.2 substances all are assigned A1.
2.2	5.1							1	3		
2.2	6.1							1			
2.3								2	9	7	Toxic gases are primarily assigned A2. If placing on a PAX aircraft would all States want notification? Currently at least six States file variations for notification for most substances. Should TIH substances be treated differently than other toxic gases?
2.3	2.1							9	15	13	
2.3	5.1							5			
2.3	8							5	20	18	
2.3	2.1, 8								6	4	
2.3	5.1, 8								15	13	
3		4		2				6			There are only two Class 3 substances with A2 assigned to them. Would most Class 3 substances be assigned A1 if applying a variation?
3	6.1	2	2					2	2	2	
3	8	2						2			
3	6.1, 8	1						1			
4.1		2					3	2	3		Division 4.1 substances do not appear to have many substances with special provision applied. Should these three have one applied?
4.1	6.1			1				1			

Class	Subrisk	PG I		PG II		PG III		Total		Total	Comments
		A1	A2	A1	A2	A1	A2	A1	A2	TIH	
4.2					1		18		19		Division 4.2 substances primarily have A2 assigned.
4.2	5.1				1		1		2		
4.2	6.1			1				1			
4.3		5		1				6			Division 4.3 substances primarily have A2 assigned.
4.3	3		1					1			
4.3	5.1				1		1		2		
5.1		4		1	1			5	1		Division 5.1 substances are assigned both A1 and A2 for the same PG.
5.1	8				1				1		
5.1	6.1, 8		3						3		
5.2									5		Division 5.2 all have A2 assigned
6.1		4	2	6	2		1	10	5	2	Division 6.1 substances are primarily assigned A1 but do have some TIH substances.
6.1	3	1	1	1	1			2	4	4	
6.1	4.1			1				1			
6.1	8		3			1		1	3	2	
6.1	3, 8		1						1		
8		5	3	27	4			32	7	6	Class 8 substances are primarily assigned A1 unless they also have Division 6.1 subsidiary risk assigned, which may be TIH.
8	3			4				4			
8	5.1			1				1			
8	6.1	2	4	2		1		5	4	4	

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