



WORKING PAPER

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

Memphis, 30 April to 4 May 2007

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel

Agenda Item 5.2: Reformatting of the packing instructions

COMMENTS ON PROPOSED PACKING INSTRUCTIONS

(Presented by DGAC)

SUMMARY

This WP comments on proposed Packing Instructions.

The DGP-WG is invited to consider the recommendation in paragraph 4.1.

1. INTRODUCTION

1.1 DGAC has reviewed the draft Packing Instructions and has a number of comments. Since not all DGAC comments fit the questions raised on the website, we are submitting this paper to supplement DGAC's comments to the website questions. In addition, DGAC comments to the website comments are attached for Information.

2. GENERAL COMMENTS

2.1 After a thorough review of the proposals, DGAC believes that the Packing Instructions as proposed in document DGP/20 IP/13 should not be adopted for incorporation in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2009-2010 Edition* (Doc 9284). While acknowledging some inconsistencies in the present Packing Instructions, DGAC notes that the existing system has served its purpose well for many years. In contrast, we believe the new proposals, while eliminating some inconsistencies, will prove expensive to implement, particularly in transitioning from the current system to the new system, with no measurable increase in safety. In fact, the proposed system

introduces new possibilities for confusion so that there is a legitimate concern the new Packing Instruction requirements could in some ways be detrimental to safety.

2.2 Transitioning to the new system will be costly with no significant benefit being provided. The costs of reprogramming computer systems may be substantial. The change from the current three digit packing instruction numbers to longer alphanumeric codes could be particularly problematic, possibly requiring significant changes to existing data bases. In addition, there will be significant costs associated with retraining personnel. The new numbering system will require additional training time. The fact that not all classes and divisions have been revised, will add to training difficulties. There is potential for significant problems in transitioning from one system to the next. Certainly the changes can not be introduced immediately on the effective date of the next edition of the Technical Instructions so that for a time DG personnel will require training on both systems. Lack of training on the new system will add an element of confusion during the transition period and may lead to frustration of air cargo shipments.

2.3 The added costs of the packaging changes are also substantial. Some inner packagings have been removed from certain packing instructions with no evidence that such packagings are unsafe. Some outer packagings have similarly been removed. In addition, there are new requirements for absorbent material. This change increases packaging costs and will require costly retesting and recertification of packaging design types without a demonstrated safety justification. These changes are introduced without due consideration of the merits.

2.4 While DGAC supports further improvement of packaging requirements, we believe that this can be achieved through incremental improvements of the existing Packing Instructions. The costs of changing to the new system are not justified considering there is no measurable improvement in safety.

3. **SPECIFIC COMMENTS**

3.1 **Technical Accuracy and Completeness**

3.1.1 A global change of this magnitude introduces the possibility of new errors in the TI. We note that a number have already been identified in comments provided by CEFIC. Significant errors/omissions identified include the combination of IP.1 and IP.8, IP.3 and IP.3A and the removal of 1A2 drums. These suggest an exhaustive technical review of the packing instructions would be required prior to their adoption. There are likely to be other errors that have not yet been identified and that have the potential of adversely affecting safety or frustrating dangerous goods transport should these errors go unnoticed until after the new requirements are implemented.

3.2 **Implementation**

3.2.1 It is particularly important to consider how the changes would be implemented. Changes of this magnitude can not be implemented immediately as is the normal custom with most ICAO changes. A transition period where both systems of packing instructions are authorized over at least a two year period should be contemplated. Even an orderly transition will result in substantial costs and frustration of shipments in the transition period.

3.3 **Expanded use of absorbent material**

3.3.1 Of considerable concern to DGAC members is the use of absorbent material in the new packing instructions. If adopted, this would have the following effects:

- a) Package designs that have proven successful over many years will have to be altered to accommodate absorbent material. The re-design will impose unnecessary costs. Each altered package design will have to be subjected to performance testing requirements, and new test reports and design certifications generated - all resulting in considerable expense.
- b) Costs of packaging will be increased not only due to the cost of the required absorbent material, but due to the increased overall size and mass of the packagings necessary to accommodate a given quantity of dangerous goods plus absorbent material. Disposal costs will also increase with the increased amount of waste generated.
- c) All employees performing packing functions will have to be retrained in the new packing requirements.
- d) Since different "grades" of absorbent material (such as vermiculite) are, according to a recent interpretation by the US Appropriate National Authority, not interchangeable in packaging design types, the packing process will be complicated further due to the need for obtaining and supplying the correct "grade" of absorbent material. Package design certifications could be invalidated if the correct grade of absorbent material cannot be obtained/supplied - resulting in the need (and associated cost) to retest the design with different absorbent material.

3.4 Use of IP.2 (Plastic Inner Receptacles) for Packing Group I Flammable Liquids

3.4.1 We recommend reconsideration of the prohibition on the use of IP/2 receptacles for packing group I flammable liquids. Plastic packaging technology has undergone significant change since the current packing instructions were developed. Plastic receptacles offer an advantage over some inner packagings such as glass in that they are less fragile.

3.5 Single packagings for Environmentally Hazardous Materials.

3.5.1 Under the packing instructions proposals, it appears that fiber drums (1G), certain bags and open head drums would no longer be permitted. We do not see the rationale for this change from current practice, particularly considering environmentally hazardous substances are not regulated out of concern for air safety. If implemented, the change would effectively eliminate the use of single packagings for Environmentally Hazardous Materials.

3.6 Packing instruction numbering system

3.6.1 The proposed numbering system causes a number of concerns:

- a) The current field size is a maximum of 3 or 4 characters. Moving to 6 characters will require considerable computer program conversion costs.
- b) Feedback from the training community on the proposed numbering system indicates that the system is un-necessarily complicated.
- c) It is a principle of the UN numbering system that the packing instruction numbers have no meaning. We would ask, "What is the utility of having a packing instruction

code which reflects the classification of the material?” The codes are very similar and hence prone to simple transcription errors.

- d) Arabic numbers are used almost universally in transport regulations, whereas the Roman alphabet is not. International regulations normally strive to convey information without words or letters having a particular significance. The letter codes will have no meaning to those speaking languages other than English.
- e) The layout of the packing instruction tables requires 3 pieces of information – the packing instruction number to select the packing instruction, last letter of the packing instruction code and the packing group. This increased complexity increases the likelihood for error.
- f) Since not all existing packing instructions are affected by the current proposal, industry would be faced with implementing two numbering schemes.

3.7 Training

3.7.1 In our user survey, we included a large number of commercial training organizations as well as in-company training professionals. The conclusion of our survey was that the new scheme will be harder to train to. The process of identifying the correct table within a packing instruction and locating the applicable data is considerably more complex, increasing the likelihood for error. There is considerable redundant text in the packing instructions.

4. RECOMMENDATION

4.1 DGAC believes that the work on the packing instructions should continue on the basis of the existing packing instruction system and is prepared to provide constructive comments to such an effort. The currently proposed system will be costly to implement without providing meaningful improvements in safety or in facilitating compliance. We therefore recommend that the current proposed packing instructions not be adopted.

APPENDIX A

ICAO WEBSITE QUESTIONNAIRE

1. Overall, what is your impression of the new P.I. format?

There is a lot of redundancy. Large sections of text are repeated in many places. While the intent is probably to simplify, the effect is just the opposite, the user is uncertain as to whether the requirements are the same or different.
2. Do you find the new layout easier to follow and understand?

No. Three pieces of information are necessary to identify the necessary information.
3. Do you find the PI numbering system easy to understand?

No, a 6 character alphanumeric string is more difficult to comprehend than a simple three digit number. In addition, there is considerable significance in the single last character which could lead to unnecessary errors. The system itself is comprehensible, but like the UN number itself, the packing instruction number is not supposed to have any special significance. In addition, since classes 1, 2, 6.2 and 7 have not been reformatted. We are faced with two different numbering systems within the ICAO TI's. This will cause unnecessary confusion among shippers! Additionally the ICAO-system deviates from all other regulations (UN-Model-Regulations, RID, ADR, IMDG, ADN). This is no harmonization!
4. Do you find the PI numbering system helpful in understanding the scope of each individual packing instruction?

No, the scope is determined by the classification and packing group. The PI Numbering system simply reiterates this.
5. Do you find the new system user friendly?

No.
6. Do you believe the new design of the PIs will facilitate training and application?

Because the new system is more complex, we believe the new system will be more difficult to train on.
7. Should the additional PIs continue to be shown in each PI where applicable?

For the sake of user-friendliness YES.

8. Should the packing instruction alpha-numeric designator for special substances and articles include the letter "P" and/or "C" to indicate transport by passenger or cargo aircraft?

Yes, but under a different scheme and for reasons which will be described in the accompanying narrative. There might be value in standardizing the PI numbering scheme along the lines of the current Y packing instructions as follows: P305 = Passenger 305, C305 = CAO 305 and of course Y305, the ltd qty 305. But some packing instructions are used for both passenger and cargo and this may cause additional problems in following this approach.
 9. Is the separation of PIs by packing group within each class/division appropriate?

No, we would suggest having separate packing instructions for different packing groups.
 10. Do you find that any changes to the packing method, limited quantities, and/or special packing provisions simplify shipping for you?

No. The proposed system does not simplify DG procedures for shippers or acceptance staff.
 11. General Comments

In general we do not see any safety "win" in the proposed format. In fact, we would anticipate a negative impact on safety, at least in the short term. On the other side of equation, we envision considerable cost implications both in systems conversion and training.

In addition, we are concerned that included with the proposed format are a number of substantial operational requirements whose impact on current DG shipping operations and safety have not been subjected as yet to rigorous review.
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APPENDIX B

RATIONALE FOR THE REFORMATTED PACKING INSTRUCTIONS

The rationale for the PI Proposals is as follows:

Enhance safety.	We do not feel that this has been achieved.
Reduce the likelihood for human errors;	The proposed numbering system is likely to introduce errors and the table look-up is more complicated. The redundant text is likely to increased errors both in use and in subsequent text revisions.
Facilitate employee training;	There is no overall increase in simplicity, so training is not improved.
Improve the presentation of packaging requirements to enhance user friendliness;	Whereas before we had some tables with a long list of UN numbers, this has been replaced with a more complicated table requiring three data elements to look up. This is less user-friendly.
Separate the passenger aircraft instructions from the cargo aircraft instructions;	We do not see a need for this. There is a need to identify on document that a package has been prepared according to cargo aircraft only requirements, but this does not require a separate packing instruction. We have confirmed this with airline experts.
Rationalize the determination of quantities and types of packagings;	This has been achieved – though we believe the entries for IP.3A and IP.8 should have been retained.
Remove unnecessary or unjustifiable packaging restrictions;	This has been achieved.
Improve the grouping of substances assigned to specific packing instructions;	This has been achieved.
Minimize the number of particular packing requirements (PPR); and	We believe that the increased amount of text that has been added to the packing instructions essentially eliminates any advantage this might have achieved.
Improve harmonization with the UN packing instructions	This has not been achieved.

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