International Civil Aviation Organization

DGP-WG/07-WP/1
6/3/07

WORKING PAPER

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

Memphis, 30 April to 4 May 2007

REPORT OF THE MEETING OF THE WORKING GROUP OF THE WHOLE (WG/06) (Beijing, China, 25 October to 3 November 2006

(Presented by the Secretary)

SUMMARY

This paper presents the report of the DGP Working Group of the Whole (WG/06) Meeting held in Beijing, China from 25 October to 3 November 2006. It also includes a consolidation of proposed amendments arising from the WG/06 meeting in the appendix

The DGP-WG is invited to note the contents of this working paper and to agree to the proposed amendments presented in the appendix.

1. INTRODUCTION

1.1 The meeting of the Dangerous Goods Panel Working Group of the Whole was opened by Capt. Bai Fu Zhi, Deputy Director General, General Administration of Civil Aviation of China (CAAC), on 30 October 2006. Mr. Richard was elected Chairperson of the meeting and Mr. G. Leach was elected Vice Chairperson. Mr. Richard, on behalf of the working group, thanked Capt. Bai for the excellent hospitality provided by the CAAC.

1.2 In his opening comments, Capt. Bai stressed the rapid growth of dangerous goods transport by air in China in recent years and the measures which had been undertaken by CAAC to ensure proper safety oversight of such transport. He welcomed the working group participants and hoped that through collaboration with all involved parties, the further development of the safe transport of dangerous goods by air would be strengthened.

2. **ATTENDANCE**

2.1 The meeting was attended by the following panel members and advisers:

Member	Adviser	State/International Organization
	R.E. Timmins	Australia
K. Vermeersch		Belgium
	G. Branscombe	Canada
	D. Sylvestre	
	D. Evans	
R. Jiang	J. Abouchaar	China
	Jie Chen	
	Hongliang Ding	
	Zhou Feng	
	Yuhong Li	
	Seok Won Park	
	Gang Qi	
	Benfang Sun	
	Jie Wu	
	Shichang Yan	
	Songtao Yu	
	Chunlong Zhang	
	Shuhua Zhang	
	Yun Ping Zhang	
	Xiaochen Zhao	
	Ho Bun Eric Chim	Hong Kong, China
	Aldous Chung	
J. Le Tonqueze		France
H. Brockhaus	P. Blumel	Germany
	K.M. Marx	
	M. Philippi	
	C. Weber	
M. Gelsomino	C. Carboni	Italy
	T. Hamada	Japan
	Y. Watanabe	
D.E. Raadgers	W. Hoogerhout	Netherlands
	T.L. Muller	
	S.H. Oosterhoff	
M.W. Evans	L. Willoughby	New Zealand
	D. Kurdchenko	Russian Federation
	L. Calleja Barcena	Spain
	D. Cantalejo	
G. Leach	J. Hart	United Kingdom
	R. Wells	
R.A. Richard	J. McLaughlin	United States
	D. Pfund	
D. Brennan	R. Jessop	IATA
	P. Oppenheimer	
M. Rogers		IFALPA
	M. Wangler	IAEA
	Y. Tyebjee	OPCW
	H. Spanring	

Member	Adviser	State/International Organization
	E. Sigrist	CEFIC
	N. McCulloch	DGAC
	R. Wichert	Fuel Cell Council

3. DEVELOPMENT OF PROPOSALS, IF NECESSARY, FOR AMENDMENTS TO ANNEX 18 — THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

3.1 Safety Management Systems (DGP-WG/06-WP/23)

3.1.1 See section 7.7 for discussion of this item.

4. 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

Amendments to Part 1 — General

4.1 Recommended Changes to Table 1-4 — Content of Training Courses to add Flight Operations Officer/Flight Dispatcher (DGP-WG/06-WP/41)

4.1.1 A proposal to add "Flight operations officer/flight dispatcher" to key 10 in Table 1-4 was made. This proposal was based on the fact that Annex 1, *Personnel Licensing*, contains a list of personnel for whom training on the "operational procedures for carriage of freight and dangerous goods," is required. With the exception of flight operations officer/flight dispatcher, all the other trades are currently listed in Table 1-4.

4.1.2 Although a number of members were sympathetic to the principle, it was noted Table 1-4 provides a framework for States to use as a basis for training programmes and as such, cannot cater for all possible job descriptions. One member offered "and others engaged in the dispatch of aircraft" as a way to avoid specific titles, recognizing that the specific task description varied, depending on the operator and in which region of the world operations were carried out.

4.1.3 The paper was withdrawn; a revised proposal will be submitted for WG07.

4.2 Recommended Changes to 1;4.2.5 to Establish a Minimum Time Period for the Retention of Training Records(DGP-WG/06-WP/44)

4.2.1 In the 2007/2008 Technical Instructions, the text of 1;4.2.5 establishes the content of a training record but not a minimum retention period. A proposal to add a minimum retention period for such records of training was therefore made. It was agreed to revise the proposal to reflect the fact that many States currently require a retention period of thirty six months. It was noted that the proposed wording allowed for a shorter period to be specified by States, it was agreed to remove this possibility. A

further modification to add the words “must be” before the phrase “made available upon request” was also agreed.

4.2.2 The proposal, as amended, was agreed.

4.3 **Training Requirements for Operators Not Holding a Permanent Approval to Carry Dangerous Goods (DGP-WG/06-WP/48)**

4.4 The working group was informed that, during a meeting of the European Dangerous Goods Liaison Group, a concern had been raised about those operators who, when not possessing a licence to carry dangerous goods, believed they did not have to train their staff. Part 1;4.1 specifies that an operator or an agency, acting on behalf of the operator, must establish and maintain staff training programmes. Part 1;4.2.1 requires that staff must receive training in the requirements commensurate with their responsibilities. A proposal to amend Table 1-4, in order to clearly specify that the training requirements are also applicable to those operators which do not carry dangerous goods as cargo was made.

4.5 The working group was very supportive of the intent of the proposal but noted that the first option, proposing a note, could be considered as being for guidance only and therefore would not address the problem fully. The second option – the proposed development of an additional table – was favoured.

4.6 Some members believed that the present text “commensurate with their responsibilities” was sufficient but agreed that it could be misinterpreted. Others suggested that an alternative method would be to develop a requirement for inclusion in Annex 6. The Secretary agreed to coordinate discussion with the Operations Panel.

4.7 The proposer withdrew the paper and said a revised proposal, based on the second option, would be presented at WG07.

Amendments to Part 2 — Classification

4.8 **Definition of Class 7 (DGP-WG/06-WP/3)**

4.8.1 Part 2;7.1.2 b) excludes the following item from Class 7:

> “radioactive material in consumer products which have received regulatory approval, following their sale to the end user”.

4.8.2 This text reflects that in the Safety Standards of the International Atomic Energy Agency (IAEA TS-R-1). It was suggested it caused confusion for a number of reasons: it was unclear from where the regulatory approval should be obtained; at what stage the item becomes not subject to the Instructions and whether the items should be subject to the Instructions if the end user wishes to transport them.

4.8.3 It was agreed the problem was a multimodal issue and that the Secretary should seek clarification from the IAEA of what exactly is meant by the text.

4.9 **Excepted Packages of Radioactive Material and Training (DGP-WG/06-WP/7)**

4.9.1 Part 2;7.9 states the requirements which apply to the transport of radioactive material in excepted packages. However, no reference is made to any requirement for training, which would appear to be inconsistent with the excepted quantity provisions for dangerous goods (other than Class 7) where training is required. It was suggested that training should similarly be required for shippers of excepted packages of radioactive material.

4.9.2 It was noted that although the IAEA TS-R-1 requires training for those transporting excepted packages of radioactive material, the equivalent text in the UN Model regulations does not. A member offered to raise the issue of this discrepancy at the upcoming December meeting of the UN Sub Committee.

4.9.3 The proposal was agreed.

Amendments to Part 3 — Dangerous Goods List and Limited Quantities Exceptions

4.10 **Arrangement of the Dangerous Goods List (DGP-WG/06-WP/2)**

4.10.1 A proposal to clarify the scope of light type entries in column 1 of Table 3-1 to include those which are forbidden under any circumstance and those which are subject to further consideration under a special provision was agreed.

4.11 **Special Provision A123 (DGP-WG/06-WP/6)**

4.11.1 Special Provision A123 specifies the measures which must be taken with regard to the protection against short circuit of electric storage batteries (included when fitted in equipment) which have the potential of a dangerous evolution of heat. However, a number of incidents have occurred not because of short circuit but rather because of unintentional activation, particularly in the case of power tools. It was therefore suggested that Special Provision A123 should reflect this.

4.11.2 Several members supported the objective but queried whether the proposal would rectify the problem of inadvertent activation for such batteries. The placing of A123 only against **Batteries, electric storage** was noted as both regulated as well as non-regulated batteries in equipment needed to be considered. The proposer withdrew the paper and said an alternative proposal would be brought to WG07.

4.12 **Special Provision A130 (DGP-WG/06-WP/13)**

4.12.1 Proposals to clarify the information required on the dangerous goods transport document for excepted packages of radioactive material when that material also meets the classification criteria for another class or division were presented. Proposal 3 was withdrawn on the basis that the item was already addressed in the 2007/2008 edition of the Instructions.

4.12.2 Special Provision A130 identifies that if the excepted package of radioactive material meets the classification criteria of another class or division, then the other class or division becomes the predominant risk and it must be declared under the applicable proper shipping name for that class or division. It also requires that the name applicable to radioactive material must be added to the proper shipping name.

4.12.3 It was suggested that whilst the wording of A130 may be appropriate for substances that are fully regulated, clarification was required as to what provisions should apply if the quantity of substances being shipped also meet the provisions for dangerous goods in excepted quantities.

4.12.4 There was general agreement determining which requirements should apply was complex. It was further agreed that a consistent application of the requirements was essential. It was suggested in a post emergency response situation, if radioactive material were detected but had not been indicated on the dangerous goods transport document, responders might presume it to be undeclared radioactive material rather than an excepted package containing radioactive material as well as another hazard. The proposer offered to raise the issue at the UN Sub Committee meeting in December which would allow for further consideration of the issue after preliminary discussion at the UN.

4.13 Applicability of the Phrase "Not Subject To These Instructions" (DGP-WG/06-WP/18)

4.14 The scope of the phrase "not subject to these Instructions", present in many special provisions, was discussed. Some members suggested that if an item met certain conditions as specified in the special provision, it should be considered to be non-dangerous (in so far as none of the other provisions need be met). This would then imply passengers were permitted to carry such items in checked or carryon baggage. Others believed that a distinction should be made on a case by case basis whether such "not restricted" items, applied only to cargo. The paper was withdrawn; a revised proposal will be presented at WG07.

4.15 Xenon Lamps and other Types of Lamps (DGP-WG/06-WP/26)

4.15.1 Clarification was sought as to which UN number and packing instruction number should be assigned to lamps containing xenon with a pressure greater than 280 kPa. One member indicated that information from industry suggested that different gases could be present in similar lamps and that a more general entry would be preferable to that proposed in the paper. Another suggested these lamps should be considered for classification as **Receptacles, small, containing gas** if an amendment to the 50 ml exception was made. It was noted that krypton was the only inert gas with A69 against it. It was suggested if A69 were to be against all inert gases , the problem would be simplified.

4.15.2 The proposer withdrew the paper and said he would work with other members to produce a revised proposal for WG07.

4.16 Prohibition of Damaged, Defective or Recalled Lithium Batteries (DGP-WG/06-WP/28)

4.16.1 The subject of transporting defective lithium batteries was discussed. Although it was recognized that manufacturers have attempted to ensure that such batteries, when subjected to a recall, be transported by ground, it was proposed they be forbidden for air transport unless approved by the appropriate authority.

4.16.2 All members supported the intent of the proposal but suggested clarification was needed regarding the meaning of the word "recall". It was further agreed the prohibition should apply to those batteries being returned to the manufacturer for safety reasons. It was agreed that the Universal Postal Union should be informed of the safety issue as mail services in many states routinely use aircraft for transport. An expansion of the discussion to include articles other than lithium batteries which had the potential to cause a fire then ensued. It was noted the text of 1;2.1 should be aligned with the equivalent text in the UN Model Regulations so that articles as well as substances would be forbidden.

4.16.3 A new special provision was developed to address the problem and was agreed. Recognizing the safety reasons behind the amendment, it was agreed that the ANC and Council be requested to issue an addendum. It was further agreed that guidance material on how to handle such batteries would be developed and placed on the public website.

4.17 Maximum Allowable Quantity Of UN 1950 Aerosols (DGP-WG/06-WP/31 Revised)

4.17.1 The current maximum limited quantities permitted on passenger aircraft and cargo aircraft only for UN 1950, **Aerosols** was discussed; a member proposed that the current quantities are too high. No support was expressed for this view. It was noted that aerosols, ten billion of which are manufactured in Europe alone each year, have an excellent safety record and no empirical reason to support a change had been provided. The working paper was withdrawn.

4.18 Special Provision A32 (DGP-WG/06-WP/34)

4.18.1 This working paper was withdrawn.

4.19 Special Provision for Non-Restricted Articles and Substances (DGP-WG/06-WP/35)

4.19.1 A proposal to consider adding a new requirement to identify articles or substances which may be transported as non-restricted under certain conditions authorized by special provisions in the Instructions was discussed. The proposal would require the consignor to indicate the applicable special provision that, when complying with the requirements of that provision, excepts the article or substance from any further provisions of the Instructions. It was explained this would allow the freight forwarder and operator to verify that the consignor was aware of, and complied with the regulatory requirements. Additionally, it was suggested it would reduce the likelihood for any unnecessary delays by the carrier by improving communication.

4.19.2 A number of members supported the principle in so far as the proposed statement would facilitate the movement of these non-regulated dangerous goods but suggested the list was too extensive. Others queried whether regulators could enforce a regulation which governed something which was non-dangerous. They proposed if text were to be added, it should not be of a mandatory nature but rather of guidance so as to facilitate shipment. It was noted that although it was industry practice, there was a significant difference between the shipper adding it to facilitate shipment versus requiring it as mandatory. The Secretary agreed to raise the issue of regulating non-dangerous goods with the Legal Bureau and the Facilitation Section of ICAO.

4.19.3 The proposer withdrew the paper and said a revised proposal, applicable to a much smaller number of items, would be presented at WG07. Consideration would also be given to raising it as a multimodal issue at the UN.

4.20 Prohibition of Certain Primary Lithium Batteries from Transport by Passenger Aircraft (DGP-WG/06-WP/36)

4.20.1 A member proposed to prohibit the transport of certain primary lithium (i.e. lithium metal) batteries on passenger aircraft on the basis of their risk and the inability of standard aircraft fire suppression systems to extinguish a fire involving such batteries. Exceptions were proposed for small primary lithium batteries contained in or packed with equipment.

4.20.2 Two options were suggested — the first to assign a new special provision to lithium battery entries which would prohibit the transport of these batteries on passenger carrying aircraft whereas the second option was a consolidated packing instruction for lithium batteries. It was noted that the intention of the proposal was to prohibit these batteries when offered as cargo and not when carried by passengers. Clarification was provided regarding the distinction between lithium metal and lithium ion batteries. It was explained they reacted differently under fire conditions; since certain lithium metal batteries presented a dual hazard being both an ignition and a fire source, the proposal to prohibit them was being made.

4.20.3 There was general support for the prohibition but it was agreed to await the outcome of the discussion at the UN Sub Committee meeting in December before taking a decision. It was noted no hazard communication existed for these batteries because they were excepted under the conditions contained in A45 and that additional requirements might also be needed for transport on cargo aircraft.

Amendments to Part 4 — Packing Instructions

4.21 **Packing Instruction 904 (DGP-WG/06-WP/10)**

4.21.1 A proposed amendment to Packing Instruction 904 which would align the sequence of written information required on written documentation (as contained in the packing instruction) with the sequence of information normally shown on the dangerous goods transport document was agreed.

4.22 **Packing Instruction 910 (DGP-WG/06-WP/11)**

4.23 Packing Instruction 910 sets out the requirements for the packaging of ID 8000 Consumer commodity. A proposal to amend the packing instruction such that combination packaging containing liquids would be required to a “Package orientation” label as set out in 4;1.1.13 was discussed.

4.23.1 It was noted leakage from inner packagings containing liquids continued to be a recurring issue from dangerous goods incident reports and that this amendment would remove the apparent discrepancy to exclude the requirement for orientation arrows for consumer commodities. The proposal, together with a minor amendment to change “packaged” to “packed”, were agreed.

4.24 **Dangerous Goods in Non-Pressurized Cargo Holds (DGP-WG/06-WP/14)**

4.24.1 An amendment to the pressure variation note in the introductory chapter of Part 4 to help distinguish differences in pressure reduction values in pressurized cargo holds versus non-pressurized cargo holds was proposed.

4.24.2 Although there was some sympathy for the issue, it was suggested the proposal was not practical on the basis that shippers would have no knowledge of the aircraft type and its compartment holds which would be used. It was also suggested it was inappropriate to impose additional requirements on shippers for all packagings for such an uncommon situation and that no evidence had been offered to prove that the damage to packagings was due to transport in a non-pressurised hold.

4.24.3 Some members suggested the addition of explanatory or guidance text for operators in Part 7 would be more beneficial and offered to further discuss proposed text so that a revised paper could be submitted to WG07.

4.25 **UN 3091 (DGP-WG/06-WP/17)**

4.25.1 A proposal to establish quantity limits for **Lithium batteries contained in equipment** was not supported. It was suggested consideration might be given to an aggregate quantity per package based on a maximum number of pieces of equipment per package. The paper was withdrawn; a revised proposal will be submitted for WG07.

4.26 **Open Cryogenic Receptacles for the Transport of Liquid Nitrogen (DGP-WG/06-WP/47)**

4.26.1 A new concept of a container for the transport of liquid nitrogen was presented to the working group together with a proposal to amend Packing Instruction 202. This would allow the use of glass receptacles for the transport of certain cryogenic liquids under certain conditions. These conditions would include a restriction on the quantity of liquid nitrogen that would be permitted in this type of packaging and the capability of withstanding a 1.2 m drop test. As the proposed container is a single-use cryogenic packaging, this would allow an alternative to the traditional cryogenic tanks which forces the user to organize the necessary logistics to return the packaging. It was noted the packaging has been tested to transport other liquid dangerous goods but is not currently authorized for the transport of liquid nitrogen.

4.26.2 There was general support for the principle. It was recognized that for metal containers, the requirements were both short and prescriptive and it was suggested a similar approach could be taken for this packaging. Some members queried whether the packaging would successfully pass all tests, particularly the drop test, if the packaging contained liquid nitrogen which might render it more brittle. The paper was withdrawn and a revised proposal will be presented at WG07.

Amendments to Part 5 — Shipper's Responsibilities

4.27 **Working Paper on Unit Loads to 30th Meeting of the UN Subcommittee (DGP-WG/06-WP/15)**

4.28 The working group considered a paper which will be submitted to the 30th meeting of the UN Subcommittee proposing amendments to the UN Model Regulations. Proposed amendments include the introduction of definitions for 'freight forwarder' and 'unit load' with revised marking requirements for overpacks, a requirement for an overpack to be identified on the dangerous goods transport document and identification of the responsibilities of a freight forwarder when creating a unit load.

4.29 Multimodal implications of the proposal were discussed together with the potential impact on air transport. There was general support for the principles outlined in the paper, especially those related to clarifying the responsibilities of the freight forwarder. It was suggested that the absence of a definition for a shipper contributed to the problem; however, it was noted that if a freight forwarder chooses to take on the functions, and hence, responsibilities of a shipper, then full compliance with those responsibilities must be met. Some concern was expressed, however, at potential confusion between the proposed "unit load" and the commonly used "unit load device"

4.30 The Secretary was asked to inform the UN Sub-Committee of the general support expressed by the working group for the proposals.

4.31 **Overpacks (DGP-WG/06-WP/25)**

4.31.1 Proposed amendments to Part 5;1.1 in order to clarify requirements applicable to marking of overpacks were discussed. In order to reflect the equivalent text of the 14th edition of the UN Model

Regulations, the text of 5;1.1 h) was re-written — "The overpack marking is an indication that packages comply with prescribed specifications." However, paragraph h) was also revised to add a new sentence "specification markings need not be reproduced on the overpack**."** This has resulted in confusion for shippers with some believing that it is acceptable to reproduce the UN specification markings on the outside of an overpack where the package markings are not visible.

4.31.2 There was general agreement that the requirements should be clarified. After some discussion, it was noted reference to the specification marking would be better located in the specific paragraph referring to marking of overpacks (2.4.9) and that the other requirement was essentially duplicated in subparagraph k). Therefore it was agreed to delete sub-paragraphs g and h of 1.1 and to add a requirement "Packaging specification markings must not be reproduced on the overpack" to the end of 2.4.9.

4.32 **Cargo Aircraft Only Label (DGP-WG/06-WP/33)**

4.33 The working group was informed that there have been a number of incidents where packages bearing the CAO label were loaded onto passenger aircraft. Post-incident investigations have identified that despite employees having been trained, they had not recognized the CAO labels on the packages and had loaded the packages onto passenger aircraft. The lack of recognition was attributed to the fact many employees only ever see the CAO label during recurrent training and the lack of keywords on the CAO label that associates the label as being "Cargo Aircraft Only". The group was invited to discuss whether or not the label should be totally redesigned.

4.34 A number of members pointed out that the problem was one of training and that redesigning a label would not necessarily rectify the situation. Others supported the principle in redesigning the label but suggested the use of the word "Danger" would need to be reconsidered due to its use in GHS. It was also pointed out that pictograms with minimal or no words might be best since any difficulty pertaining to language would then be reduced or eliminated. If a new design were to be adopted, a transitional period was considered by some to be essential; others thought permitting two different labels would cause more confusion and suggested a date set far enough in advance to facilitate training would be more appropriate.

4.35 In light of all the comments received, the proposer said a revised proposal would be submitted to the next meeting.

4.36 **Contamination of Packages During Filling (DGP-WG/06-WP/39)**

4.36.1 The working group was informed that airlines have reported incidents where packages filled with dangerous goods were externally contaminated during filling. This applies particularly with single packagings containing liquids and powders. It was suggested positive action by the shipper was necessary and an amendment to Part 5;1.1 to provide a provision for ensuring that there is no external contamination on surfaces of assembled packages was therefore proposed.

4.36.2 Discussion focused on the difficulties, both legal and practical, in determining who was responsible for the contamination. It was suggested that a shipper could claim the contamination had occurred at a stage later than filling and was therefore not culpable whilst the practical problem of distinguishing contamination from dirt was raised. Concern was expressed that unjustified rejections could occur simply due to the package being dirty. It was also suggested that the text, as proposed, did not differ significantly from the present requirements.

4.36.3 Recognizing that contamination of packages was not specific to air transport, the proposer said the issue would be raised at the July 2008 meeting of the UN Sub Committee which would allow further discussion at DGP/21, if necessary.

4.37 Recommended Changes to 5;4.1.5.1 Regarding Unpackaged Dangerous Goods Articles (DGP-WG/06-WP/45)

4.37.1 A proposed amendment to 5;4.1.5.1 to clarify the requirements for quantity of dangerous goods, number and type of packagings to goods which are not within a package (such as vehicles or aircraft engines) on cradles was presented. Although there was some limited support, most members did not agree to the proposed changes. It was pointed out that the first proposal was already covered by sub paragraph e) whilst for the second, the net quantity of dangerous goods in equipment or apparatus was what was essential to know, not the gross quantity. The paper was withdrawn.

4.38 Marking Requirements for Packages Containing Limited Quantities of Dangerous Goods (DGP-WG/06-WP/46) Limited Quantities (DGP-WG/06-WP/20)

4.38.1 A proposal (presented in WP/46) trying to increase harmonization between different modes of transport in the marking requirements for packages containing limited quantities of dangerous goods was discussed. An extract from the report of the UNSCOE which addressed the decision by the DGP to require packages containing limited quantities to be marked in accordance with paragraph 3.4.8 of the Model Regulations was presented for information (WP/20 refers).

4.38.2 It was noted the decision taken at DGP/20 should be seen as a first step by ICAO as part of an overall evaluation of limited quantities. It was also noted that quantity limitations for land transport were significantly higher than for air; the fact that such packages, as prepared for land transport, could easily move into the air mode was identified as being a safety problem. It was stressed the need to differentiate between the requirements for limited quantities for land and air.

4.38.3 It was agreed the UN should be requested to add a note to indicate that for air transport, additional requirements apply for limited quantities. It was hoped this would encourage mutual recognition of the different approaches taken by air and by land.

4.39 Documentation (DGP-WG/06-WP/51)

4.39.1 A proposal to amendment 5;4.1.5 in order to require that certain notations made against individual entries on a shipping document be shown immediately after those entries was made. Some members believed that making incremental changes to documentation could not be justified on a cost/benefit basis but agreed that consideration should be given to multimodal documentation. This would permit the harmonized transmission of data with consequential benefits for cost and safety and would be in the interests of harmonization. The paper was withdrawn.

Amendments to Part 6 — Packaging Nomenclature, Marking, Requirements and Tests

4.40 Recommended Addition of an Attachment for States' Codes (DGP-WG/06-WP/43)

4.40.1 The working group discussed the inclusion in the Technical Instructions of State codes required for package markings, used on radioactive and non-radioactive packagings. Following a general

discussion on some of the inconsistencies which exist between VRI and ISO codes, it was agreed that a consolidated list would be prepared by the Secretary and posted on the public ICAO website.

Amendments to Part 7 — Operator's Responsibilities

4.41 **Acceptance (DGP-WG/06-WP/1)**

4.42 The working group discussed whether the existing requirements of the Technical Instructions as they relate to acceptance were adequate. There was general support for the inclusion of a checklist but it was agreed it should not be too prescriptive but rather provide guidance as to what an operator could reasonably be expected to verify. A revised proposal will be submitted to the next meeting.

4.43 **Training (DGP-WG/06-WP/8)**

4.43.1 A proposal to amend Part 7;4.9 of the Technical Instructions in order to clarify that operators must provide training to all relevant employees regardless of whether or not the operator carries dangerous goods was made. It was agreed that this would confirm that Table 1-4 applied to all operators and was therefore supported by all. A minor amendment to add reference to mail and stores to be consistent with decisions taken at DGP/20 with regard to cargo was also agreed.

4.44 **Magnetized Material (DGP-WG/06-WP/5)**

4.44.1 A proposal to amendment Part 7, Chapter 2 in order to allow magnetized material in aircraft cabins occupied by passengers was made. Some members believed that such transport could continue be handled though the use of approvals from the States concerned; others suggested transporting by ship or, in emergency situations, transporting magnetised material in slings from helicopters. The proposal was not agreed.

4.45 **Reporting of Incidents Involving Batteries (DGP-WG/06-WP/27)**

4.45.1 A proposal was made to require reporting of all incidents involving batteries of any type, irrespective of whether the batteries are considered subject to the Technical Instructions. Discussion focused on the legal basis for such a requirement; it was queried whether ICAO could regulate an item if it was excepted from the Instructions. Many members supported the intent behind the proposal, noting that if these batteries were involved in incidents, amendments to the Instructions might be necessary in order to prevent future accidents. The paper was withdrawn after it was agreed the Secretary would seek guidance from the Legal Bureau and from the Accident and Investigation Section and report back to the next working group meeting.

4.46 **Recommended Changes to 7;5.1.2 Regarding Information to Passengers (DGP-WG/06-WP/42)**

4.46.1 A proposal to include visual representations in notices required to warn of the types of dangerous goods which are forbidden for transport on an aircraft was strongly supported. It was noted the use of pictures with minimal words was more helpful to passengers as it minimized potential linguistic difficulties.

4.46.2 Some regulators informed the working group that airlines had been prohibited by some airport operators from displaying warning notices. The Secretary was requested to raise the issue at the upcoming Aerodromes Panel meeting, 11 to 15 December 2006.

Amendments to Part 8 — Provisions Concerning Passengers and Crew

4.47 **Prohibition on Liquid Oxygen Systems (DGP-WG/06-WP/12)**

4.47.1 A proposal to specify that personal liquid oxygen systems are forbidden for transport by passengers was made. The contrasting needs of aircraft safety versus the medical need of a passenger were discussed. It was noted that refrigerated oxygen was forbidden for transport as cargo on both passenger and cargo aircraft and therefore, the risks associated with it required it be specifically forbidden in Part 8; Chapter 1. It was also noted that one State had permitted the use of other types of devices but it was explained these were simply oxygen concentrators and did not contain other dangerous goods. Following suggestions for an editorial restructuring of paragraph 1.1.1, the proposals, as presented in the paper, were agreed.

4.48 **Allowing Excepted Radioactive Instruments for Passengers (DGP-WG/06-WP/24)**

4.48.1 A proposal by the Organization for the Prohibition of Chemical Weapons (OPCW) to permit their inspectors to transport, for use in their inspections, scientific instruments which contain radioactive substances, was discussed. It was explained these instruments were essential tools used to ensure compliance with the Chemical Weapons Convention, that the radioactive material met the criteria for excepted packages of radioactive material and that any other dangerous goods required in an inspection would be transported as cargo.

4.48.2 Most members were sympathetic to the needs of the OPCW and recognized that facilitating their work was very important. A number of amendments, including a clarification that the exemption was limited to OPCW inspectors and that the radioactive material did not exceed the activity limits for excepted material, were discussed. The proposal, as amended, was agreed.

4.49 **Elimination of Passenger Exception for Certain Lithium Batteries (DGP-WG/06-WP/29)**

4.49.1 The exception in the Instructions for lithium ion batteries containing an aggregate equivalent lithium content of more than 8 grams but not more than 25 grams is based on limits that were agreed to by the UN Sub-Committee for inclusion in the 8th Edition of the UN Recommendations but later removed as of the 11th Edition. Based on problems experienced in transport with smaller batteries containing less than 8 grams of lithium equivalent content, and the fact that the exceptions for these larger batteries were removed from the UN Model Regulations, it was proposed that the passenger exception for these larger batteries be deleted.

4.49.2 There was general support for the proposal. However, it was noted one industry – media camera crews — would be impacted by this and it was suggested advance notice should be given that such a prohibition was being considered for application from 1 January 2009. The proposal, as presented, was agreed. It was further agreed that guidance material advising of the proposed amendment would be developed and placed on the website.

4.50 Exceptions for Fuel Cell Systems and Cartridges Containing Butane Carried by Passengers and Crew (DGP-WG/06-WP/49); Exceptions for fuel cell systems and cartridges containing butane carried by passengers and crew (DGP-WG/06-AH/PAX-WP/4); Update from the fuel cell industry (DGP-WG/06-AH/PAX-WP/5)

4.50.1 It was recalled that at DGP/20, provisions to permit passengers to carry certain small fuel cell systems and spare fuel cell cartridges had been developed (DGP/20-WP/93, paragraph 2.11 refers). Two principles for fuel cell cartridge acceptability had been used – the fuel must be acceptable as cargo on passenger flights and compliance with IEC PAS 62282-6-1 was required. For butane, analogies were made with **Receptacles, small, containing gas** UN 2037; it was presumed, but not explicitly stated, that such fuel cell cartridges must meet the requirements of packing instruction 203 which included a water bath leak test.

4.50.2 According to the IEC standard, an acceptable leakage rate is permitted as a pass/fail criterion for the design qualification tests. However, recent research had suggested a lower explosive limit would be reached after approximately five hours if three fuels cell cartridges were placed in a volume equivalent to that of an aircraft passenger overhead bin. Recognizing that the potential leak of a flammable gas in an aircraft cabin is a serious safety concern and noting that provisions for fuel cell cartridges containing flammable gases will be addressed by the UNSCOE in December, the working group was requested to consider whether any interim measures were necessary to ensure that butane cartridges carried by passengers are sufficiently leak tight.

4.50.3 It was clarified that it was both the intent and understanding of industry that the water bath test provisions of 6;5.4, referred to in packing instruction 203, applied to fuel cells cartridges containing butane. It was noted that until such time as separate proper shipping names were developed, the transport of these cartridges as cargo would be as UN 2037, and hence, production testing would include the water bath leakage test. It was also explained that a corrigendum to the IEC specification correcting inadvertent errors was expected to be issued shortly but that a revision would be more difficult to obtain in the short term.

4.50.4 A number of members said that approval for fuel cell cartridges containing butane at DGP/20 had been agreed on the basis that there was no permissible leakage. It was suggested that the test acceptance criterion contained in the IEC specification should be changed in order to satisfy safety concerns. Others suggested it would be helpful to industry for all requirements to be placed in one document and that IEC should be requested to change the specification to require that the cartridges be subjected to a water bath leak detection test after being subjected to the design tests (e.g. vibration, drop, compression tests) in the specification. This would replace the permissible leak rate criteria currently in the IEC PAS 62282-6-1 and would ensure that no leakage would be permitted even after the cartridges were subjected to the design type tests.

4.50.5 It was noted that the proposals at the December 2006 UN meeting would require a burst test (similar to the pressure differential test in the IEC specification) and a production leak test with acceptance criteria that would not allow any leakage. Some members were reluctant, therefore, to request interim amendments at this time until the UN had taken a decision.

4.50.6 It was agreed that IEC would be requested to change their standard for prototype testing to include the water bath leak test. It was anticipated the response from the IEC would be notified to the DGP by mid-December after which time, members would be able to decide if the changes to the standard in order to address the safety issue raised was being appropriately addressed in a timely manner i.e. by Spring 2007. If it was believed this was not being done, the DGP would have a number of options including an addendum to 8;1.1.2 r) stating no leakage was permitted, or even the removal of butane fuel cell cartridges from the passenger exceptions.

5. DEVELOPMENT OF RECOMMENDATIONS FOR AMENDMENTS TO THE *SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR* (DOC 9284) FOR INCORPORATION IN THE 2009/2010 EDITION

5.1 Identification of Toxic by Inhalation Materials in the Supplement (DGP-WG/06-WP/37)

5.1.1 A proposal that toxic by inhalation materials be identified in the Supplement by assigning a special provision to the applicable entries was made. This would assist States in prescribing appropriate requirements when such substances are transported under approval by the appropriate national authority.

5.1.2 Members agreed it would be useful to identify all such materials but a number disagreed with all of the proposed substances for inclusion in the Supplement on the basis that the volatility levels did not seem to support classification as toxic by inhalation.

5.1.3 Following agreement in principle for the proposal, it was agreed a revised list with supporting data would be provided for the next meeting.

5.2 Packing Instructions Contained in the Supplement (DGP-WG/06-WP/38)

5.2.1 The working group was presented with a number of possible areas for improvement within the Supplement. It was recognized that a consistent approach to amendments to the Supplement had not been maintained and that some issues had arisen as a result of the work of the reformatting of the packing instructions.

5.2.2 It was agreed that as a first step, the working group on the reformatting of packing instructions should consider the issues raised so that a paper could be presented to WG07. It was noted that the majority of substances in the Supplement were explosives and that guidance, based on that in the UN, could be provided to assist both shippers and regulators.

6. AMENDMENTS TO THE EMERGENCY RESPONSE GUIDANCE FOR AIRCRAFT INCIDENTS INVOLVING DANGEROUS GOODS (DOC 9481)

6.1 Emergency Response Guidance (DGP-WG/06-WP/16)

6.1.1 The working group discussed the need to specify provisions of information to both flight and cabin crew and the need to develop more detailed guidance material for dangerous goods carried in the passenger cabin.

6.1.2 General support was expressed for more guidance material for cabin crew to be developed. It was recognized that undeclared dangerous goods is a large problem and the provision of suitable material for cabin crew would be beneficial. It was agreed a working group by correspondence would be set up. Issues to be considered included the development of guidance material and the best location for it, e.g expansion of the “Emergency Response Guidance” document or development of material for operators manuals.

7. RESOLUTION, WHERE POSSIBLE, OF THE NON-RECURRENT WORK ITEMS IDENTIFIED BY THE AIR NAVIGATION COMMISSION OR THE PANEL

***Principles governing the transport of dangerous goods on cargo only aircraft* (WP/55)**

7.1 The report of the ad hoc working group on cargo aircraft only was reviewed and agreed. The Secretary was asked to raise the issue of fire suppression systems in cargo holds with the Airworthiness Panel. It was anticipated a new paper would be prepared for the next meeting.

Reformatting of the packing instructions

7.2 There was no discussion of this item at this time on the basis that the closing date for public comment is 22 March 2007.

Review of provisions for dangerous goods carried by passengers and crew

7.3 Revision of the Dangerous Goods Passenger Exceptions List (DGP-WG/06-WP/50)

7.3.1 The working group reviewed the passenger exceptions list in order to harmonize it with the list of forbidden articles in the ICAO *Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference* (Doc 8973). It was agreed that the Secretary should advise the AVSEC section that the list and amendments made to it had been assessed on a safety basis; any additional changes recommended by security experts would be reviewed by the DGP at a later date.

7.4 Report of the Passenger Provisions Working Group (WP/54)

7.4.1 The report of the ad hoc working group on passenger provisions was reviewed and agreed. It was noted that matters pertaining to security as presented in WP/50 had also been reviewed.

7.4.2 The group were pleased with the interest of dangerous goods matters by the AVSEC Panel and hoped this would result in better coordination and cooperation between the two panels. It was noted that although quantity limits had been reviewed, this was done from a safety view and not that of security. It was agreed should the AVSEC Panel request changes to the list of passenger provisions, this would be supported by the DGP in the interests of facilitation and cooperation.

Intermodal harmonization

7.5 Limited Quantities (DGP-WG/06-WP/20)

7.5.1 See section 4.38 for discussion of this item.

Intermodal Harmonization

7.6 Intermodal Harmonization (DGP-WG/06-WP/21)

7.6.1 The working group welcomed a suggestion which would help harmonize the special provisions in the Technical Instructions with those in the UN Model Regulations and at the same time,

clearly identify those which were air mode specific. It was recognized that this would facilitate shippers and would be in the interests of intermodal harmonization.

Safety management systems

7.7 **Safety management systems (DGP-WG/06-WP/23)**

7.7.1 At DGP/20, the panel agreed to add, as a non-recurrent work item, consideration of the need to establish a safety management system (SMS) for the transport of dangerous goods by air. Following a preliminary analysis by the Secretariat of Annex 18, it was suggested there is no need for such a system to be included. However, a number of members informed the working group of the safety management systems, primarily for operators, which had been developed in their States and of the many benefits which resulted. One of these benefits was a large increase in incident reporting which permitted regulators to ensure corrective action had been taken and to identify if systemic problems existed.

7.7.2 It was suggested that a non-punitive, self-reporting mechanism developed from a risk based approach, promoted a culture of safety and should be considered by the working group. Members were invited to submit copies of the SMS standards in their States to WG07 to enable further discussion of this issue.

Competency based training

7.8 **Competency Framework Proposal For Inspectors Of Dangerous Goods By Air (DGP-WG/06-WP/52)**

7.8.1 A draft competency framework for inspectors of dangerous goods which could be used for further discussion of competency-based training was presented. It was agreed a working group by correspondence would be set up; it was anticipated work would commence before the next working group meeting. Members and advisers with an interest in the issue were asked to communicate with the Secretary so that coordination with the Aviation Training Policy and Standards Unit could begin.

8. DISCUSSION OF MISCELLANEOUS DANGEROUS GOODS ISSUES

8.1 **Excepted Quantity Provisions Adopted by United Nations (DGP-WG/06-WP/4)**

8.1.1 The provisions for the transport of dangerous goods in excepted quantities which were agreed to at the twenty-ninth session of the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods were presented to the working group. The working group discussed the provisions by comparing the text adopted by the United Nations for inclusion in the Model Regulations with that of the Technical Instructions.

8.1.2 It was noted a different philosophy had been adopted by the UN in its incorporation of excepted quantity provisions in that e-numbers were used. It was recognized this was an opportunity to have multimodal harmonization. The meeting agreed the issue will be again discussed when the proposed changes to align with the fifteenth edition of the UN Model Regulations, including those for excepted quantities, are reviewed at WG07.

8.2 **E-Freight (DGP-WG/06-WP/9)**

8.2.1 The working group was informed of an aviation industry supported initiative to simplify the airfreight supply chain with consequential cost efficiencies. It was suggested that e-freight could be considered as a new opportunity for all involved in the chain, especially with regard to electronic dangerous goods transport documentation, but that it would be dependent on States developing the necessary protocols to support it.

8.2.2 Several members welcomed the project but noted considerable work would be required in order for paper-free e-freight of dangerous goods to be implemented. It was recognized that the differing needs of the various interested parties would have to be identified so that all requirements for dangerous goods could be considered for inclusion. It was agreed a working group by correspondence would be set up in order to prepare a paper for discussion at WG07.

8.3 **DGP Meetings in the 2006/2007 Biennium (DGP-WG/06-WP/19)**

8.4 Future meeting dates of the DGP, both as a panel and as a working group of the whole, were discussed. The working group was informed that provisional dates for DGP/21 are 5 to 16 November 2007. The final date would be decided by the ANC in the 175th Session.

8.5 A member offered to host DGP-WG07 in Memphis, Tennessee, U.S.A from 30 April to 4 May 2007; this was accepted by the meeting.

8.6 **Variations Notified By States (DGP-WG/06-WP/22)**

8.6.1 A proposal to consider the development of an electronic notice board for dissemination of State variations was welcomed. It was noted that difficulty in accessing information regarding variations, both from States and operators, was cited by the IAEA as a contributing factor in the denial of shipments of radioactive material; posting such information on the public website should facilitate such transport. The Secretary was asked to seek guidance from the Legal Bureau regarding the legal status of variations which were posted on the website prior to publication either in, or as an addendum to, the Technical Instructions.

8.7 **Internet Auction Websites (DGP-WG/06-30)**

8.7.1 The meeting was advised of the problem of dangerous goods being offered for sale on internet auction sites in which sellers were prepared to mail the item and the consequential potential risks to aviation safety was discussed. Examples of dangerous goods offered in such a manner included gallium, ammonium nitrate and mercury.

8.7.2 Some members informed the group of the measures they had taken in their States. In instances where aviation authorities had advised sellers that offering to mail dangerous goods was illegal, the sellers removed the item for sale. Guidance material together with a warning message had been developed in cooperation with some of the internet auction sites and was being placed on suitable sites.

8.7.3 The Secretary was requested to warn the UPU of the practice; she was also requested to research whether any international agreement or convention on the use of the internet for trade existed.

8.8 **UN Working Papers for December 2006 Meeting (DGP-WG/06-WP/32)**

8.8.1 Guidance from the working group for the Secretary was sought on proposed amendments to the UN Model Regulations contained in working papers for the thirtieth session of the UNSCOE.

8.8.2 It was agreed that the IFALPA proposal (ST/SG/AC.10/C.3/2006/83) for two separate proper shipping names for lithium batteries should be supported and that the UN be advised of the related discussion of the working group.

8.8.3 The Secretary was asked to inform the UN that ICAO did not support the PRBA proposal (ST/SG/AC.10/C.3/2006/89) to amend special provision 188 to change the 100 watt hour exception value to 150 watt hour for surface transportation on the basis it would introduce safety problems for the air mode. It was also noted it was completely impracticable to regulate for air something which was non-regulated for land transport and which could then be inadvertently offered for air transport.

8.8.4 There was general support for the USA proposal (ST/SG/AC.10/C.3/2006/97) to amend special provision 188. The DGP members generally agreed that improvements in packaging and hazard communication for excepted batteries was necessary in light of the recent incidents involving lithium batteries.

8.8.5 Broad support was expressed for the proposal by the UPU (ST/SG/AC.10/C.3/2006/100) to restrict transport of infectious substances in the mail to UN 3373. It was explained that representatives from ICAO, IATA and IFALPA had met with UPU to discuss the issue of such transport; they had explained the background to the discussion at DGP/19 and agreed with the restriction to Category B substances. It was noted this was in complete alignment with the equivalent requirements in the Instructions.

8.9 Training Requirements of Security Personnel (DGP-WG/06-WP/40)

8.9.1 Following the recent terrorist threats in the United Kingdom and the outcome of discussions at the Eighteenth Meeting of the Aviation Security Panel (AVSECP/18), it was suggested that the focus of dangerous goods is not only a safety issue but also one of security. The working group was requested to consider the need to instruct security personnel to a greater depth, to review the current training requirements and to consider the need to differentiate training requirements for different kinds of security personnel.

8.9.2 It was agreed coordination between the AVSECP and the DGP was very important. The Secretary was requested to inform the AVSEC Secretariat of the proposed amendments to the guidance material for security screeners as presented in WP/50, Appendix B as agreed by the ad hoc working group on passenger provisions.

8.10 Response By the Dangerous Goods Panel to Emergency Issues (DGP-WG/06-WP/53)

8.11 The question of whether or not the panel needed to establish a procedure to respond to issues requiring immediate action by ICAO was presented. It was noted issues could be discussed by panel members as a first phase in such a situation, followed by a working group by correspondence if necessary. The Secretary explained that she would seek clarification from the Legal Bureau as to how quickly amendments to the Instructions could be approved should the ANC and Council not be in session if an emergency situation required immediate action; this clarification will be provided at WG07.

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APPENDIX

CONSOLIDATION OF AMENDMENTS PROPOSED AT DGP-WG/06

Part 1

GENERAL

. . .

Chapter 2

LIMITATION OF DANGEROUS GOODS ON AIRCRAFT

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2.1 DANGEROUS GOODS FORBIDDEN FOR TRANSPORT BY AIR UNDER ANY CIRCUMSTANCE

Editorial Note.— The amendments to paragraph 1;2.1 below are included in the proposed addendum to the 2007-2008 edition.

DGP-WG/06-WP/28 and DP/3:

Any article or substance which, as presented for transport, is liable to explode, dangerously react, produce a flame or dangerous evolution of heat or dangerous emission of toxic, corrosive or flammable gases or vapours under conditions normally encountered in transport must not be carried on aircraft under any circumstance.

Note 1.— Certain dangerous goods known to meet the description above have been included in the Dangerous Goods List (Table 3-1) with the word "Forbidden" shown in columns 2 and 3. It must be noted, however, that it would be impossible to list all dangerous goods which are forbidden for transport by air under any circumstance. Therefore, it is essential that appropriate care be exercised to ensure that no goods meeting the above description are offered for transport.

Note 2.— 2.1 is intended to include articles being returned to the manufacturer for safety reasons.

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Chapter 4

TRAINING

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DGP-WG/06-WP/44 and DP/1:

4.2.5 A record of training must be maintained which must include:

a) the individual's name;

b) the most recent training completion date;

c) a description, copy or reference to training materials used to meet the training requirements;

d) the name and address of the organization providing the training; and

e) evidence which shows that a test has been completed satisfactorily.

The records of training must be retained for a minimum period of thirty-six months from the most recent training completion date and must be made available upon request to the appropriate national authority.

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Chapter 7

CLASS 7 — RADIOACTIVE MATERIAL

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7.9 REQUIREMENTS AND CONTROLS FOR TRANSPORT OF EXCEPTED PACKAGES

7.9.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles as specified in 7.7.1.2 and empty packagings as specified in 7.9.6 may be transported under the following conditions:

DGP-WG/06-WP/7:

a) the applicable requirements specified in 2; Introductory Chapter, 4.2, 2;7.9.2, and, as applicable, 2;7.9.3 to 2;7.9.6, 4;9.1.2, 5;1.4, 5;2.4.2, 5;2.4.5 a) and e); 5;3.2.11 e), 5;4.4, 7;3.2.2 and 7;4.4;

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Part 3

DANGEROUS GOODS LIST AND LIMITED QUANTITIES EXCEPTIONS

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Chapter 2

ARRANGEMENT OF THE DANGEROUS GOODS LIST (TABLE 3-1)

Parts of this Chapter are affected by State Variations AU 1, AU 2, AU 3, BE 3, CA 7, CA 8, CA 10, CA 11, CA 13, FR 1, GB 3, IR 3, NL 1, US 3, US 6, US 15, ZA 1; see Table A-1

2.1 ARRANGEMENT OF THE DANGEROUS GOODS LIST (TABLE 3-1)

2.1.1 The Dangerous Goods List (Table 3-1) is divided into 12 columns as follows:

DGP-WG/06-WP/2:

Column 1 "Name" — this column contains the alphabetically arranged list of dangerous goods, identified by their proper shipping names in boldface characters (see 1.2). Also included, in lightface type, are:

a) other names by which certain articles and substances may be known; in such cases a cross reference to the proper shipping name is given.;

b) names of articles and substances which are forbidden for carriage by air under any circumstances; and

c) names of articles and substances which are subject to additional considerations under special provisions.

An explanation of some of the terms used appears in Attachment 2.

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Chapter 2

ARRANGEMENT OF THE DANGEROUS GOODS LIST (TABLE 3-1)

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Editorial Note.— The addition of A154 to UN Nos. 3090 and 3091 below is included in a proposed addendum to the 2007-2008 edition.

DGP-WG/06-WP/28:

Name	*UN No.*	*Class or division*	*Subsidiary risk*	*Labels*	*State variations*	*Special provisions*	*UN packing group*	*Passenger aircraft*		*Cargo aircraft*	
								Packing instruction	*Max. net quantity per package*	*Packing instruction*	*Max. net quantity per package*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
. . .											
Lithium batteries†	3090	9		Miscellaneous	US 2 US 3	A45 A88 A99 A154	II	903	5 kg G	903	35 kg G
Lithium batteries contained in equipment†	3091	9		Miscellaneous	US 2 US 3	A45 A48 A154		see 912		see 912	
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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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Editorial Note.— New special provision 154 below is included in the proposed addendum to the 2007-2008 edition.

DGP-WG/06-WP/28 and DP/3:

A154 Lithium batteries that have the potential of producing a dangerous evolution of heat, fire or short circuit as a result of being damaged or defective are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons).

Part 4

PACKING INSTRUCTIONS

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Chapter 11

CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

DGP-WG/06-WP/10:

904	PACKING INSTRUCTION 904	904

≠ Solid carbon dioxide (dry ice) in packages when offered for transport by air must be packed in accordance with the general packing requirements of Part 4, Chapter 1 and be in packaging designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packaging. Arrangements between shipper and operator(s) must be made for each shipment, to ensure that ventilation safety procedures are followed. The dangerous goods transport document requirements of Part 5, Chapter 1 are not applicable provided alternative written documentation is supplied ~~containing the following~~ describing the contents. The information~~:~~ required is as follows and should be shown in the following order: UN 1845~~, proper shipping name~~ (**Dry ice** or **Carbon dioxide, solid**)~~, class~~ 9(the word "Class" may be included prior to the number "9"))~~, UN number 1845~~, the number of packages and the net quantity of dry ice in each package. The information must be included with the description of the goods. The net mass of the **Carbon dioxide, solid** (**Dry ice**) must be marked on the outside of the package.

+ Dry ice used as a refrigerant for other than dangerous goods may be shipped in a unit load device or other type of pallet prepared by a single shipper provided that the shipper has made prior arrangements with the operator. In such case, the unit load device, or other type of pallet must allow the venting of the carbon dioxide gas to prevent a dangerous build-up of pressure. The shipper must provide the operator with written documentation stating the total quantity of the dry ice contained in the unit load device or other type of pallet.

Note.— For loading restrictions see 7;2.11; for special marking requirement see 5;2.4.7.

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DGP-WG/06-WP/11 and DP/2:

910	PACKING INSTRUCTION 910	910

Consumer commodities are materials that are packaged and distributed in a form intended or suitable for retail sale for purposes of personal care or household use. These include items administered or sold to patients by doctors or medical administrations. Except as otherwise provided below, dangerous goods packed in accordance with this packing instruction do not need to comply with 4;1 or Part 6 of these Instructions; they must, however, comply with all other applicable requirements.

. . .

e) Inner packagings must be tightly packed in strong outer packagings and must be so packed, secured or cushioned as to prevent any breakage, puncture or leakage of contents ~~or significant movement within~~ into the outer packaging(s) during normal conditions of transport. Absorbent material must be provided for glass or earthenware inner packaging(s) containing consumer commodities in Class 2 or 3 or liquids of Division 6.1, in sufficient quantity to absorb the liquid contents of the largest of such inner packagings contained in the outer packaging. Absorbent and cushioning material must not react dangerously with the contents of the inner packagings. Notwithstanding the above, absorbent material may not be required if the inner packagings are so protected that breakage of the inner packagings and leakage of their contents from the outer packaging will not occur during normal conditions of transport.

f) Inner packagings containing liquids, excluding flammable liquids in inner packagings of 120 mL or less, must be packed with their closures upward and the upright position of the package must be indicated by on it by "Package orientation" labels (Figure 5-24). These labels, or pre-printed package orientation labels meeting the same specification as either Figure 5-24 or ISO Standard 780-1985, must be affixed to , or printed on, at least two opposite vertical sides of the package with the arrows pointing in the correct direction.

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Part 5

SHIPPER'S RESPONSIBILITIES

Chapter 1

GENERAL

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1.1 GENERAL REQUIREMENTS

Before a person offers any package or overpack of dangerous goods for transport by air that person must ensure that:

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DGP-WG/06-WP/25:

~~g) proper shipping names, UN numbers, labels, "limited quantities" (when applicable) and special handling instructions appearing on the interior packages are clearly visible or reproduced on the outside of the overpack (for an overpack containing packages of radioactive material, see 3.2.6);~~

~~h) packaging specification markings need not be reproduced on the overpack. The overpack marking is an indication that packages contained within comply with prescribed specifications;~~

~~i~~g) the dangerous goods are not included in any freight container/unit load device except for radioactive material as specified in 7;2.9 (subject to the approval of the operator, this does not apply to a unit load device containing consumer commodities prepared according to Packing Instruction 910 or dry ice used as a refrigerant for other than dangerous goods when prepared according to Packing Instruction 904 or magnetized material when prepared according to Packing Instruction 902);

~~j~~h) before a package or overpack is reused, all inappropriate dangerous goods labels and markings are removed or completely obliterated; and

KR: DO I ADD FOLLOWING AMENDMENT (see WG-06/WP/15)?

~~k~~i) each package contained within an overpack is properly packed, marked, labelled and is free of any indication that its integrity has been compromised and in all respects is properly prepared as required in these Instructions. The "overpack" marking described in 2.4.9 a) is an indication of compliance with this requirement. The intended function of each package must not be impaired by the overpack.

Note.— For cooling purposes, an overpack may contain dry ice, provided that the overpack meets the requirements of Packing Instruction 904.

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Chapter 2

PACKAGE MARKINGS

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2.4.9 Marking of overpacks

DGP-WG/06-WP/25 and DP/3:

An overpack must be marked with the word "Overpack", with the proper shipping name, UN number, and special handling instructions appearing on interior packages for each item of dangerous goods contained in the overpack unless markings and labels representative of all dangerous goods in the overpack are visible. Packaging specification markings must not be reproduced on the overpack.

Part 7

OPERATOR'S RESPONSIBILITIES

Chapter 4

PROVISION OF INFORMATION

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4.9 TRAINING

DGP-WG/06-WP/8 and DP/3:

An operator must ensure training is provided in accordance with the detailed requirements of 1;4 to all relevant employees, including those of agencies employed to act on the operator's behalf, to enable them to carry out their responsibilities with regard to the transport of dangerous goods, passengers and their baggage, cargo, mail and stores.

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DGP-WG/06-WP/42 and DP/3:

5.1.2 An operator or the operator's handling agent and the airport operator must ensure that notices warning passengers of the types of dangerous goods which they are forbidden to transport aboard an aircraft are prominently displayed, in sufficient number, at each of the places at an airport where tickets are issued, passengers are checked in and aircraft boarding areas are maintained, and at any other location where passengers are checked in. These notices must include visual examples of dangerous goods forbidden from transport aboard an aircraft.

Part 8

PROVISIONS CONCERNING PASSENGERS AND CREW

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Chapter 1

PROVISIONS FOR DANGEROUS GOODS CARRIED BY PASSENGERS OR CREW

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1.1 DANGEROUS GOODS CARRIED BY PASSENGERS OR CREW

DGP-WG/06-WP/12:

1.1.1 Except as otherwise provided in 1.1.2, dangerous goods, including excepted packages of radioactive material, must not be carried by passengers or crew members, either as or in carry-on baggage or checked baggage or on their person. Security type equipment such as attaché cases, cash boxes, cash bags, etc., incorporating dangerous goods, for example lithium batteries or pyrotechnic material, are totally forbidden; see entry in Table 3-1. Personal medical oxygen devices that utilize liquid oxygen are prohibited either as or in carry-on baggage or checked baggage or on the person.

DGP-WG/06-WP/54
(the source for the remaining text in 8;1 is from WP/54 and other papers, where indicated):

1.1.2 Notwithstanding any additional restrictions which may be implemented by States in the interests of aviation security, except for the incident reporting provisions of 7;4.4, ~~T~~the provisions of these Instructions do not apply to the following when carried by passengers or crew members or in baggage, transported by the operator, that has been separated from its owner during transit (e.g. lost baggage or improperly routed baggage):

Medical necessities

~~c~~a) with the approval of the operator(s), ~~small~~ gaseous oxygen or air cylinders required for medical use;

DGP-WG/06-WP/12:

Note.— Devices containing liquid oxygen are forbidden as or in carry-on baggage, checked baggage or on the person.

~~d~~b) ~~small~~ cylinders of a gas of Division 2.2 worn for the operation of mechanical limbs, also spare cylinders of a similar size if required to ensure an adequate supply for the duration of the journey;

~~b~~c) non-radioactive medicinal ~~or toilet~~ articles (including aerosols). ~~Also aerosols in Division 2.2, with no subsidiary risk, for sporting or home use is permitted in checked baggage only.~~ The total net quantity of all such articles carried by each person must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents~~. The term "medicinal or toilet articles (including aerosols)" is intended to include such items as hair sprays, perfumes, colognes and medicines containing alcohols~~;

~~h~~d) radioisotopic cardiac pacemakers or other devices, including those powered by lithium batteries, implanted into a person, or radio-pharmaceuticals contained within the body of a person as the result of medical treatment;

~~i~~e) with the approval of the operator(s), wheelchairs or other battery-powered mobility aids with non-spillable batteries (see Packing Instruction 806 and Special Provision A67), as checked baggage provided the battery terminals are protected from short circuits and the battery is securely attached to the wheelchair or mobility aid;

~~j~~f) with the approval of the operator(s), wheelchairs or other battery-powered mobility aids with spillable batteries as checked baggage, provided that the wheelchair or mobility aid can be loaded, stowed, secured and unloaded always in an upright position and that the battery is disconnected, the battery terminals are protected from short circuits and the battery is securely attached to the wheelchair or mobility aid. If the wheelchair or mobility aid cannot be loaded, stowed, secured and unloaded always in an upright position, the battery must be removed and the wheelchair or mobility aid may then be carried as checked baggage without restriction. The removed battery must be carried in strong, rigid packagings as follows:

1) these packagings must be leaktight, impervious to battery fluid and be protected against upset by securing them to pallets or by securing them in cargo compartments using appropriate means of securement (other than by bracing with freight or baggage) such as by use of restraining straps, brackets or holders;

2) batteries must be protected against short circuits, secured upright in these packagings and surrounded by compatible absorbent material sufficient to absorb their total liquid contents; and

3) these packagings must be marked "Battery, wet, with wheelchair" or "Battery, wet, with mobility aid" and be labelled with a "Corrosive" label (Figure 5-21) and with a package orientation label (Figure 5-25).

The pilot-in-command must be informed of the location of a wheelchair or mobility aid with an installed battery or the location of a packed battery.

It is recommended that passengers make advance arrangements with each operator; also unless batteries are non-spillable they should be fitted, where feasible, with spill-resistant vent caps;

~~e~~g) one small medical or clinical thermometer which contains mercury, for personal use, when in its protective case;

Articles used in dressing or grooming

~~b~~h) ~~non-radioactive medicinal or~~ toiletry articles (including aerosols). ~~Also aerosols in Division 2.2, with no subsidiary risk, for sporting or home use is permitted in checked baggage only.~~ The total net quantity of all such articles carried by each person must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents. The term ~~"medicinal or~~ "toiletry articles (including aerosols)" is intended to include such items as hair sprays, perfumes~~,~~ and colognes ~~and medicines containing alcohols~~;

~~k~~i) hair curlers containing hydrocarbon gas, no more than one per person, provided that the safety cover is securely fitted over the heating element. Gas refills for such curlers must not be carried;

Consumer articles

~~a~~j) when in retail packagings, alcoholic beverages containing more than 24 per cent but not more than 70 per cent alcohol by volume, in receptacles not exceeding 5 L, with a total net quantity per person of 5 L for such beverages;

Note.— Alcoholic beverages containing not more than 24 per cent alcohol by volume are not subject to any restrictions.

~~b~~k) ~~non-radioactive medicinal or toilet articles (including aerosols). Also a~~Aerosols in Division 2.2, with no subsidiary risk, for sporting or home use is permitted in checked baggage only. The total net quantity of all such articles carried by each person must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents~~. The term "medicinal or toilet articles (including aerosols)" is intended to include such items as hair sprays, perfumes, colognes and medicines containing alcohols~~;

~~e~~l) with the approval of the operator(s), as checked baggage only, securely packaged cartridges (UN 0012 or UN 0014 only), in Division 1.4S, in quantities not exceeding 5 kg gross mass per person for that person's own use, excluding ammunition with explosive or incendiary projectiles. Allowances for more than one person must not be combined into one or more packages;

≠ ~~g~~m) one small packet of safety matches or a cigarette lighter that does not contain unabsorbed liquid fuel (other than liquefied gas), intended for use by an individual when carried on the person. Matches and lighters are not permitted in checked or carry-on baggage. Lighter fuel and lighter refills are not permitted on one's person, in carry-on or checked baggage;

Note.— "Strike anywhere" matches are forbidden for air transport.

n) with the approval of the operator(s), ~~heat producing articles (i.e. battery operated~~ equipment ~~such as underwater torches and soldering equipment which, if accidentally activated, will generate extreme heat and can cause fire) may be carried in carry-on baggage only. The heat producing component, or the energy source, must be removed so as to prevent unintentional functioning during transport~~ battery-powered equipment capable of generating extreme heat, which could cause a fire if activated (e.g. underwater high intensity lamps) providing that the heat producing component or the battery is packed separately so as to prevent activation during transport. Any battery which has been removed must be protected against short circuit;

≠ ~~p~~o) with the approval of the operator(s), one avalanche rescue backpack per person equipped with a pyrotechnic trigger mechanism containing not more than 200 mg net of Division 1.4S and a cylinder of compressed gas of Division 2.2 not exceeding 250 mL. The backpack must be packed in such a manner that it cannot be accidentally activated. The airbags within the backpack must be fitted with pressure relief valves;

~~m~~p) with the approval of the operator(s), no more than two small cylinders of carbon dioxide or another suitable gas in Division 2.2, per person, fitted into a self-inflating life-jacket for inflation purposes, plus no more than two spare cartridges;

q) consumer electronic devices (watches, calculating machines, cameras, cellular phones, laptop computers, camcorders, etc.) containing lithium or lithium ion cells or batteries when carried by passengers or crew for personal use. Spare batteries must be individually protected so as to prevent short circuits and carried in carry-on baggage only. In addition, each spare battery must not exceed the following quantities:

— for lithium metal or lithium alloy batteries, a lithium content of not more than 2 grams; or

— for lithium ion batteries, an aggregate equivalent lithium content of not more than 8 grams.

+ r) portable electronic devices (for example cameras, cellular phones, laptop computers and camcorders) powered by fuel cell systems, and spare fuel cartridges, under the following conditions:

1) fuel cell cartridges may only contain flammable liquids (including methanol), formic acid and butane;

2) fuel cell cartridges must comply with International Electrotechnical Commission (IEC) PAS 62282-6-1 Ed. 1;

3) fuel cell cartridges must not be refillable by the user. Refuelling of fuel cell systems is not permitted except that the installation of a spare cartridge is allowed. Fuel cell cartridges which are used to refill fuel cell systems but which are not designed or intended to remain installed (fuel cell refills) are not permitted to be carried;

4) the maximum quantity of fuel in any fuel cell cartridge must not exceed:

a) for liquids 200 mL;

b) for liquefied gases, 120 mL for non-metallic fuel cell cartridges or 200 ml for metal fuel cell cartridges;

5) each fuel cell cartridge must be marked with a manufacturer's certification that it conforms to IEC PAS 62282-6-1 Ed. 1, and with the maximum quantity and type of fuel in the cartridge;

6) each fuel cell system must conform to IEC PAS 62282-6-1 Ed. 1, and must be marked with a manufacturer's certification that it conforms to the specification;

7) no more than two spare fuel cell cartridges may be carried by a passenger;

8) fuel cell systems containing fuel and fuel cell cartridges including spare cartridges are permitted in carry-on baggage only;

9) interaction between fuel cells and integrated batteries in a device must conform to IEC PAS 62282-6-1 Ed. 1. Fuel cell systems whose sole function is to charge a battery in the device are not permitted;

10) fuel cell systems must be of a type that will not charge batteries when the portable electronic device is not in use and must be durably marked by the manufacturer: "APPROVED FOR CARRIAGE IN AIRCRAFT CABIN ONLY" to so indicate; and

11) in addition to the languages which may be required by the State of Origin for the markings specified above, English should be used.

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~~Lithium ion batteries with an aggregate equivalent lithium content of more than 8 grams but not more than 25 grams may be carried in carry-on baggage if they are individually protected so as to prevent short circuits and are limited to two spare batteries per person.~~

Other

≠ ~~f~~s) with the approval of the operator, dry ice in quantities not exceeding 2.5 kg per person, when used to pack perishables that are not subject to these Instructions, provided the package permits the release of carbon dioxide gas. ~~The dry ice may be either:~~

~~— in carry-on baggage; or~~

~~— with the approval of the operator(s), in checked baggage.~~

When carried in checked baggage, each package must be marked:

— "DRY ICE" or "CARBON DIOXIDE, SOLID"; and

— with the net weight of dry ice or an indication that the net weight is 2.5 kg or less;

~~l~~t) with the approval of the operator(s), as carry-on baggage only, a mercurial barometer or mercurial thermometer carried by a representative of a government weather bureau or similar official agency. The barometer or thermometer must be packed in a strong outer packaging, having a sealed inner liner or a bag of strong leakproof and puncture-resistant material impervious to mercury, which will prevent the escape of mercury from the package irrespective of its position. The pilot- in-command must be informed of the barometer or thermometer;

Editorial Note.— Paragraph u) below is included in the proposed addendum to the 2007-2008 edition as new sub-paragraph s).

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u) with the approval of the operator(s), as carry-on or checked baggage, instruments containing radioactive material not exceeding the activity limits specified in Table 2-12 (i.e. chemical agent monitor (CAM) and/or rapid alarm and identification device monitor (RAID-M)), securely packed and without lithium batteries, when carried by staff members of the Organization for the Prohibition of Chemical Weapons (OPCW) on official travel.

1.1.3 Any organization or enterprise other than an operator (such as a travel agent), involved in the air transport of passengers, should provide passengers with information about the types of dangerous goods which they are forbidden to transport aboard an aircraft. This information should consist of, as a minimum, notices at those locations where there is an interface with the passengers.