



Secretariat

Distr.  
GENERAL

ST/SG/AC.10/C.3/48  
16 December 2003

ORIGINAL: ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT  
OF DANGEROUS GOODS AND ON THE GLOBALLY  
HARMONIZED SYSTEM OF CLASSIFICATION  
AND LABELLING OF CHEMICALS

Sub-Committee of Experts on the  
Transport of Dangerous Goods

REPORT OF THE SUB-COMMITTEE OF EXPERTS  
ON ITS TWENTY-FOURTH SESSION

(Geneva, 3-10 December 2003)

CONTENTS

	<u>Paragraphs</u>
ATTENDANCE .....	1-6
ADOPTION OF THE AGENDA .....	7
TRANSPORT OF GASES .....	8-21
EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES .....	22-31
PACKAGINGS (INCLUDING IBCS AND LARGE PACKAGINGS) .....	32-50
Evaluation of the United Nations packaging requirements .....	32-36
Performance testing (Vibration and puncture tests) .....	37-41
Miscellaneous proposals .....	42-50
DANGEROUS GOODS PACKED IN LIMITED QUANTITIES .....	51-55
LISTING, CLASSIFICATION AND PACKING .....	56-60

## CONTENTS

Paragraphs

<b>HARMONIZATION WITH THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) .....</b>	<b>61-74</b>
<b>HARMONIZATION WITH THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA) REGULATIONS FOR THE TRANSPORT OF RADIOACTIVE MATERIAL .....</b>	<b>75</b>
<b>MISCELLANEOUS PROPOSALS OF AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS .....</b>	<b>76-97</b>
<b>PROCEDURE FOR INCIDENT REPORTING .....</b>	<b>98-103</b>
<b>STANDARDIZATION OF EMERGENCY PROCEDURES .....</b>	<b>104-106</b>
<b>OTHER BUSINESS .....</b>	<b>107-114</b>
<b>ADOPTION OF REPORT .....</b>	<b>115</b>

Annexes

<b><u>Annex 1:</u></b> Draft amendments to the UN Recommendations on the Transport of Dangerous Goods, Model Regulations (13th revised edition) .....	Page 19 of this report
<b><u>Annex 2:</u></b> Report of the Working Group on Explosives.....	ST/SG/AC.10/C.3/48/Add.1

## REPORT

### ATTENDANCE

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its twenty-fourth session from 3 to 10 December 2003 with Mr. S. Benassai (Italy) as Chairman and Mr. F. Wybenga (United States of America) as Vice-Chairman.
2. Experts from the following countries took part in the session: Australia, Austria; Belgium; Brazil; Canada; China; Czech Republic; Finland; France; Germany; Italy; Japan; Netherlands; Norway; Poland; Portugal; Russian Federation; South Africa; Spain; Sweden; United Kingdom; United States of America.
3. Under article 72 of the rules of procedure of the Economic and Social Council, observers from the following countries took part: Algeria, Bulgaria; Greece; Romania; Switzerland.
4. Representatives from the following specialized agencies were present: International Atomic Energy Agency (IAEA); International Civil Aviation Organization (ICAO); International Maritime Organization (IMO); World Health Organization (WHO).
5. The following intergovernmental organizations were also represented: European Commission and Intergovernmental Organization for International Carriage by Rail (OTIF).
6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: American Biological Safety Association (ABSA); International Association of the Soap, Detergent and Maintenance Products Industry (AISE); Dangerous Goods Advisory Council (DGAC); European Battery Recycling Association (EBRA); Federation of European Aerosol Associations (FEA); International Federation of Freight Forwarders Associations (FIATA); International Air Transport Association (IATA); International Council of Chemical Associations (ICCA); International Federation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Express Carriers Conference (IECC); International Confederation of Plastics Packaging Manufacturers (ICPP); International Fibre Drum Institute (IFDI); International Organization for Standardization (ISO); International Vessel Operators Hazardous Materials Association (VOHMA); International Technical Committee for the Prevention and Extinction of Fire (CTIF); European Secretariat of Manufacturers of Light Metal Packages (SEFEL); International Union of Railways (UIC).

### ADOPTION OF THE AGENDA

Documents: ST/SG/AC.10/C.3/47 (Provisional agenda)  
ST/SG/AC.10/C.3/2003/30 (List of documents)  
ST/SG/AC.10/C.3/2003/46 (Provisional timetable)

Informal documents: INF.1 and INF.2 (Lists of documents)

7. The Sub-Committee adopted the provisional agenda prepared by the secretariat, after amending it to include late submissions of informal documents (INF.1 to INF.65).

## **TRANSPORT OF GASES**

### **Special provisions 190 and 191**

Document: ST/SG/AC.10/C.3/2003/42 (United States of America)

Informal document: INF.12 (Austria)

8. Since the expert from the United States of America had withdrawn his proposal, this question was not discussed.

### **Requirements for MEGCs**

Document: ST/SG/AC.10/C.3/2003/43 (United States of America)

9. At the request of its author, consideration of this document was postponed until the next session.

### **Technical Committee ISO/TC 220 (cryogenic receptacles)**

Informal document: INF.7 (ISO)

10. The Sub-Committee took note of the state of progress of the work of Technical Committee ISO/TC 220 on the various draft standards concerning cryogenic receptacles.

11. The representative of ISO said that he could transmit these drafts to the secretariat to be put on the web site of the Transport Division to facilitate cooperation with the Sub-Committee.

12. It was noted that the work of ISO on portable tank standards for refrigerated liquefied gases covered subjects already in the UN Model Regulations.

### **Alternatives to the water bath test for aerosol dispensers**

Document: ST/SG/AC.10/C.3/2003/51 (FEA)

Informal documents: INF.19 (Austria)  
INF.49 (FEA)

13. Some experts were of the opinion that the alternative methods to the water bath test proposed by FEA were not acceptable since they applied to aerosol receptacles before filling and did not take account of the problems of deterioration of these receptacles which could arise on the filling lines nor of the problems of the valve crimp or the leakproofness of the valve. They considered that the water bath test was a secure test for inspecting each filled aerosol dispenser and was, in addition, inexpensive. They also considered that the alternative methods proposed did not include adequate guidelines for application, and that they could therefore be freely interpreted differently or inadequately depending on the countries or producers; this was not desirable in international transport.

14. Other delegations considered that there were effective alternatives to the water bath method that could be applied in the context of a quality assurance system, but that such systems should remain under the control of the competent authority.

15. The representative of FEA said that he would submit a new proposal at the next session.

**Packaging of waste aerosols**

Document: ST/SG/AC.10/C.3/2003/35 (United Kingdom)

Informal document: INF.31 (FEA)

16. The Sub-Committee agreed that it was necessary to find a pragmatic solution to the problem of the carriage of used, damaged or out-of-date aerosols for disposal since the existing conditions for new aerosols did not meet the practical conditions for the recycling and disposal of waste.

17. Several delegations supported the United Kingdom's proposal as amended by FEA, considering in particular that it was important to prevent any leakage of liquid but also to make provision for venting in order to evacuate gases.

18. Other delegations were not in favour of the proposal, and considered, for example, that these problems should be settled locally by the competent authority, or that the solution proposed was not suitable for maritime transport, or that provision should be made for packing methods other than large packagings.

19. Following a vote, the proposal as amended by FEA was not adopted.

**Aerosols used for medical purposes**

Document: ST/SG/AC.10/C.3/2003/36 (United-Kingdom)

Informal documents: INF.62 and INF.62/Rev.1

20. The Sub-Committee adopted a new paragraph 6.2.4.3 exempting aerosols and receptacles containing pharmaceutical products and non flammable gases which are required to be sterile and which may be adversely affected by water bath testing from the provisions of 6.2.4.1 under certain conditions (see annex 1).

**Gases which may be transported in MEGCs**

Informal document: INF.17 (UIC)

21. The Sub-Committee recalled that the gases which may be carried in MEGCs are indicated in P 200. The problem raised by UIC was linked to the fact that the MEGC column had not been included in the RID/ADR P 200, and therefore should be solved at the level of the RID/ADR/ADN Joint Meeting. If UIC wished to change this system, it should make a comprehensive proposal with all consequential amendments to P 200 and Chapter 4.2.

**EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES****Classification criteria for fireworks**

Document: ST/SG/AC.10/C.3/46/Add.1 (Report of the Working Group on its last session)

Informal documents: INF.32 (United Kingdom)  
INF.50 (Spain)

22. Consideration of these documents was entrusted to a working group which met concurrently from 3 to 5 December 2003 with the expert from Norway, Mr. A. Johansen, as Chairman.

### **Ammonium nitrate emulsions**

Document: ST/SG/AC.10/C.3/2003/31 (Spain)

Informal documents: INF.18 and INF.52 (Spain)  
INF.28 (Norway)  
INF.37 (Canada)  
INF.44, INF.45 and INF.59 (Australia)  
INF.54 (United Kingdom)

23. The Chairman said that in view of the large number of informal documents submitted, this item could not be discussed in plenary. Since the Working Group on Explosives had been scheduled to discuss fireworks only, consideration of these documents would have to be postponed until the next session, although this did not prevent the experts in the Working Group from conducting a preliminary discussion on them if they had time.

### **Report of the Working Group on Explosives**

24. The Sub-Committee took note of the report of the Working Group (see annex 2) and decided that it should meet again at the next session to discuss classification of fireworks. For ammonium nitrate emulsions, the discussion should now take place in plenary session, although the Sub-Committee did not exclude the possibility of further discussion at working group level.

### **Miscellaneous proposals**

#### ***New label for Division 5.2***

Document: ST/SG/AC.10/C.3/2003/33 (Norway)

Informal document: INF.40 (CTIF)

25. Some delegations supported in principle proposals by Norway and by CTIF for a new label to distinguish Division 5.2 more clearly from Division 5.1 in order to permit improved emergency response. They preferred the solution proposed by Norway, however (upper half red and lower half yellow), to that of CTIF (upper half white and lower half yellow with the indication "ORGANIC PEROXIDE") since the association of yellow and red was a more accurate reflection of the dangers of oxidation and flammability. The CTIF proposal was furthermore not in keeping with the original principle of the United Nations Recommendations whereby the hazard should be identified by an illustration without any need to refer to a written text.

26. Other delegations considered that this matter should be submitted to the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS Sub-Committee). It was recalled, however, that the Sub-Committee of Experts on the Transport of Dangerous Goods was the focal point of the GHS Sub-Committee where physical hazards were concerned. The proposal by Norway moreover only concerned the transport label and would have no influence on the GHS label. However, it was pointed out that it would have been preferable to submit such a proposal when the GHS was still under development and that it was now rather late for raising such kind of issues.

27. Other delegations said that it would always be possible to improve labelling, but that, according to the emergency response services in their countries, the present labelling system for organic peroxides did not pose any problem that would justify a revision. It should also be recalled that the matter of substances potentially presenting simultaneous explosive, self-reactive, oxidizing and flammable

properties was a delicate one and was still the subject of study and research by industry; it would perhaps be premature to introduce a new label before this work had been concluded.

28. It was also noted that it was not particularly desirable to multiply the number of labels from the safety point of view insofar as this complicated the training of participants in transport operations and in the emergency response services and the updating of their knowledge. Provision would also have to be made for a transitional period for the introduction of a new label and the use of the old labels.

29. The expert from Norway said that he would submit a new proposal for the next session, bearing in mind the comments made.

#### ***Exclusion of self-reactive substances from Class 4.1***

Documents: ST/SG/AC.10/C.3/19 and -/Add.1 (France)

Informal document: INF.35 (France)

30. Several delegations supported France's proposal and suggested a number of changes; as other delegations had not had time to examine document INF.35 in depth, however, the expert from France said that he would submit a new proposal at the next session.

#### ***Test method for vent sizing***

Informal document: INF.29 (ICCA)

31. The Sub-Committee noted that ICCA would submit a proposal for the revision of Appendix 5 of the Manual of Tests and Criteria for the next session.

### **PACKAGINGS (INCLUDING IBCs AND LARGE PACKAGINGS)**

#### **Evaluation of the United Nations packaging requirements**

Documents: ST/SG/AC.10/C.3/2003/57 (Netherlands)  
ST/SG/AC.10/C.3/2003/37 (United Kingdom)

Informal documents: INF.16 (Canada)  
INF.21 (Netherlands)  
INF.36 (ISO)  
INF.42 (United Kingdom)  
INF.43 (Germany)  
INF.55 (ISO)

32. As regards the question of whether a working group should be established to consider the technical and drafting questions set out in annex 1 to informal document INF.21, the Sub-Committee agreed that they should be discussed by a correspondence group open to all of its delegations and led by the expert from Netherlands, but that all proposals for amendments resulting from the work of this group should be the subject of an official proposal to be submitted to the Sub-Committee. It could then decide whether these proposals should be considered in plenary or whether they should be entrusted to a working group.

33. As regards the proposal by the United Kingdom to simplify section 6.1.5 concerning tests for packagings and to introduce references to standard ISO 16104, several delegations considered that this standard was not completely in conformity with the existing requirements of Chapter 6.1 and that it was

not therefore acceptable to refer to it. Certain of the proposed amendments would involve substantive modifications of the existing system of tests which had not been discussed by the Sub-Committee.

34. Other delegations said that they did not wish to have to comply with two similar but separate systems of tests for packagings, and regretted that the work of ISO duplicated that of the Sub-Committee. A better liaison between the Sub-Committee and the ISO TC 122 Technical Committee was desirable to ensure that ISO standards were completely compatible with the Model Regulations and to ensure that they complement the requirements of the Regulations without either duplicating or contradicting them.

35. As regards the proposal by the United Kingdom and Germany in informal documents INF.42 and INF.43 to include the test requirements of Chapters 6.1, 6.3, 6.4, 6.5 and 6.6 in the Manual of Tests and Criteria, the representatives of UIC and ICCR said that it was preferable for users that all packaging requirements should be grouped, since it was not convenient to have to refer to different works. Other delegations considered that this would be an editing exercise which would require a great deal of work from the Sub-Committee, the secretariat and the modal organizations and wondered whether it was justified since the existing presentation of the requirements did not pose any fundamental problems.

36. The Sub-Committee took note of ISO's work on the draft standard ISO/DIS 16106 concerning guidelines for the application of standard EN ISO 9001 in the context of the manufacture and inspection of type-approved packagings.

#### **Performance testing (Vibration and puncture tests)**

Document: ST/SG/AC.10/C.3/2003/44 (Spain)

Informal documents: INF.24 (SEFEL)  
INF.26 (ICDM, AISE, CEPE, ICCA, ICPP, IFDI)  
INF.41 (Spain)  
INF.46 and -/Add.1 (France)

37. The experts from Spain and France presented the results of tests carried out respectively for punctures and vibration in packagings corresponding to approved United Nations design types, that showed that some packagings with UN markings did not pass the tests.

38. Opinions differed on these questions. For the puncture test, some delegations considered that the reduction of the minimum thickness of the walls of metal drums, in which materials or techniques were used enabling the packagings to resist the drop test, increased puncture risks. Others were of the opinion that puncture accidents were the result of incorrect handling.

39. It was pointed out that accidents due to packaging defects were extremely rare and that when they occurred they were more generally linked to a defect in the systems of closure. In view of this, several delegations did not see any reason to make provision for additional tests.

40. For the vibration test, some delegations considered that the results produced showed that the tests to which the packagings had been subjected were not representative of normal conditions of carriage, since if they had been, far more problems of leakage or packaging deformation during carriage would be observed. Others were of the opinion that even if packagings were not subjected to vibration stresses or major repeated impacts when they were carried by rail or on motorways, they should nevertheless be resistant to vibrations and various repeated impacts under the conditions that might be encountered in maritime transport or on rough or badly maintained roads.



41. The Chairman said that he hoped that these questions would only be discussed in plenary on the basis of specific proposals for amendments to the Model Regulations. At the request of the expert from France, he invited all the experts and representatives of industry in possession of data concerning the vibration or puncture tests to communicate them in order to enable the experts concerned to establish test parameters and criteria and to prepare specific proposals.

#### **Miscellaneous proposals**

##### ***Transport of substances other than Class 2 in cylinders***

Document: ST/SG/AC.10/C.3/2003/9 (United Kingdom)

Informal document: INF.48 (United States of America)

42. Several experts supported these proposals in principle but mentioned a number of problems, for example, the question of the marking of such cylinders or the periodic inspection. The expert from the United Kingdom withdrew his proposal and said that he would prepare a new proposal in cooperation with the expert from the United States of America. He requested all interested delegations to give him their comments in writing.

##### ***Packagings for mercury***

Document: ST/SG/AC.10/C.3/2003/32 (Spain)

43. The proposal to increase the maximum capacity of steel flasks for mercury to 3 litres instead of 2.5 litres in packing instruction P 800 was adopted (see annex 1).

##### ***Pressure relief devices***

Document: ST/SG/AC.10/C.3/2003/38 (United Kingdom)

Informal document: INF.33 (United Kingdom)

44. The proposed amendment to 4.1.1.8 was adopted (see annex 1).

##### ***Wooden barrels***

Documents: ST/SG/AC.10/C.3/2003/39 (United Kingdom)  
ST/SG/AC.10/29/Add.1/Corr.1

Informal documents: INF.9 and 15 (Norway)  
INF.56 (Secretariat)

45. The proposal by the United Kingdom to delete wooden barrels from Chapter 6.1 and to authorize wooden barrels which did not meet the requirements of Chapter 6.1, but only for UN No. 3065 (and no longer for UN No. 1170), was adopted with some amendments (see annex 1).

46. The representative of Norway expressed his opposition to the application of the provisions of section 4.1.1 to barrels as provided by special provision 247; the proposal by the United Kingdom in this regard, however, was also adopted.

47. The proposal to delete (e) from special provision 247 (INF.9) was adopted (see annex 1).

***Resistance to stacking of composite IBCs***

Document: ST/SG/AC.10/C.3/2003/56 (Australia)

Informal document: INF.38 (United Kingdom)

48. Following a discussion of proposed solutions to the problem of damage to packagings or IBCs in transport equipment, the expert from Australia withdrew his proposal in favour of the United Kingdom's proposal to introduce in section 7.1.1 general requirements for loading and stowage in transport equipment.

49. The expert from the United Kingdom said that he would submit an official proposal at the next session.

***Carriage of clinical waste in bulk***

Document: ST/SG/AC.10/C.3/46, paragraphs 50 and 51 and annex 1

50. The Sub-Committee agreed to remove the square brackets in paragraph 4.3.2.4.2 (c) provisionally adopted at the previous session (see annex 1).

**DANGEROUS GOODS PACKED IN LIMITED QUANTITIES**

Informal documents: INF.18 (Canada)  
INF.11 (IMO)  
INF.58 (Germany)

51. The Sub-Committee took note of the report of the informal working group which had met in Ottawa from 22 to 24 October 2003 at the invitation of the expert from Canada (INF.8).

52. The discussion had shown that there were still deep divergences of views between experts on how to ensure the harmonization of the different requirements currently applicable depending on the different transport modes, particularly with reference to the question of whether, in addition to dangerous goods which were totally exempted, three different categories of partially exempted goods should be taken into account, namely, limited quantities, excepted quantities and consumer commodities.

53. Some delegations considered that each of these categories corresponded to specific practical situations which could not be regulated in the same way. Others were opposed to this categorization which would complicate the regulations unnecessarily. It would be all the more difficult to apply the regulations in that the definition of each of the categories remained subject to interpretation.

54. After a lengthy discussion, the expert from the United Kingdom proposed that the working group should meet again early in 2004. The experts from France and Canada offered for their part to draft an official proposal on the basis of the results obtained by the working group up to that point.

55. The Sub-Committee preferred the option proposed by the experts from France and Canada. It suggested that they should prepare a text rapidly for distribution to all delegations for any comments, and, also as rapidly as possible, and well before the deadline for submission, prepare a proposal which would take account of these comments insofar as they were compatible with the conclusions of the working group. Each delegation would then be able, if it so wished, to submit further written comments or alternative proposals sufficiently in time for such proposals to become the subject of official documents.

## **LISTING, CLASSIFICATION AND PACKING**

### **Hydrated calcium hypochlorite mixtures**

Document: ST/SG/AC.10/C.3/2003/34 (United-States of America)

56. The proposal of amendment to UN No 2880 was adopted (see annex 1).

### **Expression of percentage in the Dangerous Goods List**

Document: ST/SG/AC.10/C.3/2003/18 (South Africa)

57. It was recalled that the meaning of the sign "%" was clearly explained in 1.2.2.4, and therefore, rather than adding "by mass" after the expression of percentage in the Dangerous Goods List as proposed by the expert from South Africa, it would be preferable to delete these words where they still appear, except in the expression "by dry mass".

58. The expert from South Africa was invited to prepare a list of entries or paragraphs where these words "by mass" should be deleted.

### **Classification of trichloroisocyanuric acid**

Document: ST/SG/AC.10/C.3/2003/28 (South Africa)

59. The expert from South Africa was invited to discuss the question raised in her document with representatives of DGAC.

### **Corrosiveness of solids, packing group III, for steel and aluminium**

Document: ST/SG/AC.10/C.3/2003/47 (Austria)

60. The proposal of amendment to 2.8.2.2 of the Model Regulations for the purpose of consistency with 37.4.1.1 of the Manual of Tests and Criteria was adopted (see annex 1).

## **HARMONIZATION WITH THE GLOBALY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)**

### **Physical hazards**

#### ***Flammable liquids***

Document: ST/SG/AC.10/C.3/2003/54 (United States of America)

61. There was general support in principle for harmonizing the 60.5 °C flash point upper cut-off value for packing group III with the 60 °C GHS value, which was adopted.

62. Several delegations considered that extending the scope of the Model Regulations on the Transport of Dangerous Goods to all GHS Category 4 substances, i.e. those with a flash point above 60 °C and not more than 93 °C, was not justified. This would imply checking the classification of a multitude of chemical products and reclassification with additional costs for the industry, when for example in Europe, the previous upper limit of 100 °C had been lowered to 60 °C in 1995 for reason of harmonization with the UN Recommendations, and this had entailed no safety problem.

63. The 450 litres minimum quantity limitation for application of the Model Regulations to such products was also questioned and it was also noted that the GHS did not require any symbol for identifying category 4 products.

64. The principle of covering all substances with a flash point more than 60 °C and not more than 93 °C, put to the vote, was not adopted.

#### ***Establishment of an OECD Ad Hoc Group on Physical Hazard Characterization***

Informal document: INF.27 (Secretariat)

65. The Sub-Committee noted with concern that the OECD Working Group of National Coordinators of the Test Guidelines Programme had agreed to establish an OECD Ad Hoc Expert Group on Physical Hazard Characterization under the umbrella of the International Group of Experts on the Explosion Risks of Unstable Substances (IGUS). This implied that IGUS, instead of working as an independent group able to contribute to the work of the Sub-Committee as it did fruitfully in the past, would now have to work within the OECD intergovernmental structure in accordance with OECD rules of proceedings and reporting.

66. Recalling that it had been agreed by the GHS Sub-Committee that any new issue concerning physical hazards should now be brought first to the attention of the GHS Sub-Committee who would refer it to the TDG Sub-Committee for resolution (ST/SG/AC.10/C.4/8, para. 22), the Sub-Committee felt that the creation of such an Ad Hoc OECD group might result in unnecessary duplication of work and competences and in complications in the relationship between IGUS and the GHS and TDG Sub-Committees and the decision making process.

67. The Sub-Committee expressed the wish that the GHS Sub-Committee reaffirm that all matters concerning physical hazards would be referred to the TDG Sub-Committee for resolution.

#### **Hazards to the aquatic environment**

Document: ST/SG/AC.10/C.3/2003/58 (Netherlands)

Informal document: INF.22 (Netherlands)

68. Some delegations felt that since self-classification criteria had been introduced in the Model Regulations for hazards to the aquatic environment allowing the industry to classify pollutants of the aquatic environment in Class 9, under UN Nos. 3077 or 3082, it was not necessary to include additional provisions as proposed by the Netherlands. Some of them recognized that identification of the hazard to the aquatic environment was relevant for maritime transport but believed that this was superfluous for other modes since according to 2.0.1.2, many of the substances assigned to Classes 1 to 9 are deemed, without additional labelling, as being environmentally hazardous. They noted that the application of the GHS criteria as reflected in Chapter 2.9 of the Model Regulations and the revision of labelling provisions accordingly was being discussed by IMO, and felt that the Sub-Committee should await the outcome of these discussions.

69. The Sub-Committee noted however that, according to paragraph 5 of informal document INF.11 by IMO, the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers was awaiting the adoption by the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals of a GHS marking for marine pollutants before making a recommendation to the IMO Maritime Safety Committee to consider adopting the same marking and deleting the present IMO marine pollutant mark.

70. Several delegations mentioned the practical difficulties encountered when trying to implement a self-classification system for environmentally hazardous substances. Contrary to substances likely to present other types of hazards, the release of any kind of chemical, industrial product or even foodstuff in the aquatic environment could be deemed as causing some potential damage to the environment, which implied that such products would all have to undergo costly tests before being transported. From the experience with the IMDG Code and RID/ADR they considered that it would be more practicable to work step-by-step with closed or indicative lists of substances identified as meeting the GHS criteria, which could be enlarged with testing experience.

71. It was also recalled that a number of substances in Classes 1 to 9 had already been identified as hazardous to the aquatic environment by IMO and the European Community, and that since many countries were committed to implement the GHS criteria for storage and supply regulatory purposes new data would soon be available and it would also be possible to identify such substances under transport regulations.

72. Finally, the Sub-Committee decided by a majority vote that all substances hazardous to the aquatic environment, either falling under Classes 1 to 8 or under Class 9 only, should be identified as such by a GHS label or mark under transport regulations. The expert from the Netherlands was invited to revise her proposal in the light of certain comments made, and to provide the Sub-Committee with a list of substances already identified as meeting the GHS criteria for hazard to the aquatic environment.

#### **Work of the GHS Sub-Committee**

Documents: ST/SG/AC.10/C.4/2003/7 (EIGA)  
ST/SG/AC.10/C.4/2003/9 (OECD)  
UN/SCEGHS/6/INF.6 (France)

73. The Sub-Committee exchanged views on the proposal of EIGA concerning the classification of gas mixtures for toxic effects and that of OECD concerning substances which emit toxic gases in contact with water which were on the agenda of the sixth session GHS Sub-Committee to be held from 10 to 12 December 2003.

74. As there was no unanimous view on these subjects, no recommendation was made to the GHS Sub-Committee in this respect.

#### **HARMONIZATION WITH THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA) REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL**

Informal documents: INF.23 (Secretariat)  
INF.61 (IAEA)

75. The Sub-Committee noted the list of changes to the IAEA Regulations for the Safe Transport of Radioactive Material adopted by the IAEA Review Panel in Bonn (10-14 November 2003) (INF.61) as well as the corresponding changes which should be made to the UN Model Regulations (INF.23) once these changes have been endorsed and approved in accordance with the IAEA rules of procedures. These changes will be presented in an official document for the July 2004 session.

## **MISCELLANEOUS PROPOSALS OF AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS**

### **Sequence of information on the transport document**

Document: ST/SG/AC.10/C.3/2003/52 (United States of America)

76. The proposal to require in 5.4.1.4.1 one single sequence of information on the transport document (UN number, proper shipping name, class or division, subsidiary risk, packing group) as from 1 January 2007 was adopted (see annex 1).

### **Orientation arrows on packages**

Document: ST/SG/AC.10/C.3/2003/55 (United States of America)

77. Some delegations considered that such orientation arrows should also be required for all packages containing vented receptacles or vented receptacles without packagings.

78. One delegation felt that packagings for Class 1 substances should not be excluded from the scope of the provision.

79. It was also mentioned that, according to ISO 780:1985, the arrows should appear in black on a contrasting background, but not in red.

Informal document: INF.65 (United States of America)

80. The text proposed by the expert from the United States of America in ST/SG/AC.10/C.3/2003/55 was entrusted to a drafting group and the text proposed by the group in INF.65 was adopted (see annex 1).

### **Toxic by inhalation substances**

Document: ST/SG/AC.10/C.3/2003/58 (United States of America)

Informal document: INF.4 (CTIF)

81. Some experts considered that if the words "TOXIC BY INHALATION" had to be entered in the transport document for substances presenting a packing group I inhalation toxicity hazard, this should be expressed by the inclusion of these words, or "TIH", as part of the proper shipping name in the Dangerous Goods List rather than by a mention in a special provision.

82. It was also noted that many substances listed in the proposal were not assigned to Class 6.1, packing group I, or were even listed in other classes without a Class 6.1 subsidiary risk.

83. The principle of the proposal, put to the vote, was rejected by a majority of the Sub-Committee.

### **Infectious substances**

Informal document: INF.53 (WHO)

84. The Sub-Committee noted that the World Organization for Animal Health (OIE) wished to amend the list of infectious substances which are prohibited from being shipped as UN 3373 (para. 6.3.2.2.1 (a)) and that an official proposal would be submitted to that effect at the next session.

Informal document: INF.51 (ICAO)

85. Although there were mixed views on this issue, several delegations expressed concern at the fact that ICAO had introduced, without first consulting the Sub-Committee, substantial modifications to packing instruction P650 as laid down in the 13th revised edition of the Model Regulations and that this would imply discrepancies between modal regulations as from 1 January 2005. ICAO was invited to submit an official proposal of amendment with justifications for the next session.

Informal document: INF.34 (Canada)

86. The expert from Canada proposed new amendments to section 2.6.3, to paragraph 5.4.1.5.2 and to special provision 319 of the Model Regulations in order to clarify the interpretation of the provisions concerning infectious substances.

87. Several experts recalled that the provisions concerning Division 6.2 had been revised several times in the past six years and they expressed the wish that they be finalized in the current biennium and not subject to further amendments in the next one.

88. All delegations were invited to provide the expert from Canada with written comments so that all concerns with the existing texts could be addressed at the next session.

Informal document: INF.60 (Switzerland)

89. The expert from Canada was invited to take account of the question raised by Switzerland in the proposal she would prepare for the next session.

#### **Technical name requirement (SP 274)**

Document: ST/SG/AC.10/C.3/2003/49 (United States of America)

Informal documents: INF.5 (CTIF)  
INF.39 (CEPE)  
INF.64 (Secretariat)

90. The expert from the United States of America said that, from discussion with other experts, it appeared that the indication of the ISO pesticide name could be useful for the purposes of emergency response and in the context of identification of marine pollutants. Pending further consideration of the issue in his country, he withdrew his proposal.

91. For the proposal of CEPE to allow the indication of a generic name (such as "Paint", "Adhesives") rather than the technical name as a supplement to the proper shipping name in the case of the entries UN 3077 and UN 3082 (Environmentally hazardous substances) and a few others, it was noted that this could be in contradiction with Annex III of the MARPOL Convention which requires the indication of the technical name of marine pollutants in the documentation and on packages.

92. The proposal by the secretariat in INF.65 to apply special provision 61 to all entries for pesticide entries, liquid, flammable, toxic, for the purpose of consistency with other pesticide entries was adopted (see annex 1).

### **Liquid and solid variant for UN Nos. 1733, 1740 and 2823**

Informal document: INF 57. (United Kingdom)

93. The expert from the United Kingdom was invited to prepare an official proposal of amendments with appropriate justification and to consider, when preparing such a proposal, the secretariat's comments that the possibility for a division 6.1 subsidiary risk for hydrogendifluoride solutions might also have to be considered in some cases and that the proper shipping name "ISOCROTONIC ACID" rather than "CROTONIC ACID, LIQUID" could also be considered if the Class 8 criteria for that acid were met.

### **Listing and classification of GMOs**

Informal document: INF.10 (Austria)

94. The proposal to include "GENETICALLY MODIFIED ORGANISMS" as a possible proper shipping name under UN No. 3245 was adopted (see annex 1).

### **Portable tank assignment for hydrazine solutions (UN 2030)**

Informal document: INF.20 (United States of America)

95. This proposal was carried forward for discussion as an official document at the next session.

### **New entries for fuel cell cartridges and fuel cell powered devices**

Informal document: INF.25 (United States of America)

96. Several comments on this draft proposal were made. The expert from the United States of America invited all interested experts to provide him with comments in writing so that he could prepare an official proposal for the next session.

### **Labels and placards affixed on a non-contrasting background**

97. After some discussion on this draft proposal, the expert from the United Kingdom said that he would submit an official proposal for the next session.

### **PROCEDURE FOR INCIDENT REPORTING**

Document: ST/SG/AC.10/C.3/2003/50 (Secretariat)

Informal document: INF.30 (DGAC)

98. The Sub-Committee took note of the incident/accident reporting procedures laid down in RID and ADR according to which certain incidents and accidents are to be reported by the carriers to the competent authorities of the country where such incidents/accidents occur. If necessary, the competent authority of the country concerned has to make a report to the secretariat conforming to a standardized format with a view to informing other Contracting Parties.

99. The Sub-Committee noted also that IMO had also developed reporting procedures for the implementation of accident/incident notifications required by the MARPOL and SOLAS Conventions (MSC/Circ. 559 and -/Corr.1) and that reporting requirements were also included in the ICAO Technical Instructions.



100. Several experts recognized the usefulness of collecting accident statistics and reports at national level in order to determine safety gaps in the regulations. However some doubts were expressed about the need for forwarding all reports to the United Nations secretariat, since this would constitute an administrative burden for competent authorities and for the secretariat itself, and since such reports were sometimes available on national web sites. On the other hand, certain delegations felt that it would be difficult to draw conclusions from such reports and statistics if no mechanism was developed to bring them systematically to the attention of the Sub-Committee.

101. Various other views on the DGAC proposal were expressed, e.g. that carriers but also, when relevant, shippers should report incidents to the competent authorities; harmonized criteria for the reporting obligations should be developed; reports should be standardized; no dangerous goods should be exempted from the reporting obligation.

102. Other delegations felt that, with the number of existing reporting systems, it would be very difficult to develop a multi-modal system in the Model Regulations. A simple note in Chapter 7.1.1 recommending that modal and national bodies should establish systems for receiving reports on major incidents would be sufficient.

103. The representative of DGAC was invited to reconsider the issue and to submit a new proposal as deemed appropriate.

## **STANDARDIZATION OF EMERGENCY PROCEDURES**

Informal document: INF.14 (CTIF)

104. The representative of CTIF indicated that he needed support from CTIF members, organizations such as UIC and CEFIC, and governments involved in the development and updating of the North American Emergency Response Guidebook (NAERG) for harmonizing information systems for first responders on a world wide basis.

105. It was recalled that the Sub-Committee had accepted to include the standardization of emergency procedures in its work programme in this biennium on the conditions that it should be based on the NAERG, and that this work was relevant for the Sub-Committee to the extent it would imply modifications to the Model Regulations.

106. The representative of CTIF was invited to pursue its work in this respect together with interested experts and organizations and to submit concrete proposals for consideration by the Sub-Committee.

## **OTHER BUSINESS**

### **Differences between the UN Model Regulations and modal regulations**

Document: ST/SG/AC.10/C.3/2003/40 (FIATA)

Informal documents: INF.13 (FIATA)  
INF.64 (Secretariat)

107. The Sub-Committee expressed its gratitude to the representative of FIATA for the detailed comparison of the Dangerous Goods List of the Model Regulations and the various modal regulations (RID, ADR, IMDG Code, ICAO Technical Instructions and IATA Regulations).

108. It was noted however that the multitude of discrepancies underlined by FIATA did not imply necessarily problems of harmonization. Some of them resulted simply from a different presentation of entries of the dangerous goods lists in the various modal regulations for the purpose of user-friendliness or for taking account of specific modal transport conditions which are not relevant in multimodal transport (e.g. splitting N.O.S. entries in RID/ADR for reflecting all possible cases of classification and RID/ADR tank conditions). Others had already been considered in the past biennium and should not exist any longer in the 2005 versions of modal regulations (e.g. those related to the physical state). Finally others had been introduced deliberately by the intergovernmental bodies responsible for modal regulations because of specific aspects to be addressed at modal or regional level.

109. The secretariat presented a paper explaining the reasons for all listed deviations and indicating where action could – or could not be taken – to solve the problems raised.

110. The representative of FIATA was invited to prepare a new document taking account of the explanations provided and listing the remaining problems after comparison of the 2005 versions of the modal regulations with the 13th revised edition of the Model Regulations and careful analysis of the actual significance of such discrepancies as regards harmonization.

### **Application for consultative status by the European Battery Recycling Association (EBRA)**

Document: ST/SG/AC.10/C.3/2003/41 (Secretariat)

Informal document: INF.3 (EBRA)

111. The Sub-Committee agreed to grant consultative status to EBRA for participation in its work.

112. The expert from the United States of America asked what the criteria for granting consultative status were. A member of the secretariat explained that for non-governmental organizations which are not in consultative status with the Economic and Social Council, it was up to the Sub-Committee to decide whether an NGO could participate in its work, but the decision should take account of the principles laid down in Parts I and II of the Council's resolution 1996/31 of 25 July 1996. Information in this respect may be found in document ST/SG/AC.10/C.4/2001/2.

113. The secretariat explained also that in accordance with paragraph 9 of resolution 1996/31, where there exist a number of organizations with similar objectives, interests and basic views in a given field, they may form a joint committee or other body authorized to carry on consultation for the group as a whole, and this practice had always been encouraged by the Sub-Committee.

### **Economic and Social Council's resolution 2003/64**

Document: ST/SG/AC.10/C.3/2003/45 (Secretariat)

114. The Sub-Committee took note of the resolution adopted by the Council on 25 July 2003, in particular of the modifications to the draft prepared by the Committee in December 2002 notably the insertion of a new paragraph 2 in section C stressing the importance of participation of experts from developing countries and countries with economies in transition and calling for voluntary contributions to facilitate their participation.

### **ADOPTION OF THE REPORT**

115. The Sub-Committee adopted the report on its twenty-fourth session and the annexes thereto on the basis of a draft prepared by the secretariat.

\* \* \* \* \*

## Annex 1

### Draft amendments to the UN Recommendations on the Transport of Dangerous Goods, Model Regulations (13th revised edition)

#### PART 2

##### **Chapter 2.3**

2.3.1.2 Replace "60.5 °C" with "60 °C".

*Consequential amendments: The same change applies to the definition of "Elevated temperature substance" (second indent) in Chapter 1.2; paragraph 2.3.2.5 (first indent); flashpoint values in the table of paragraph 2.3.2.6; figure 2.4.2 in paragraph 2.4.5; special provisions 162, 282 and 298 in Chapter 3.3 and paragraph 4.1.2.1).*

##### **Chapter 2.8**

2.8.2.2 Amend the beginning of the last sentence to read as follows: "Liquids, and solids that may become liquid during transport, which are judged not to cause..." *(remainder of the sentence unchanged).*

#### PART 3

##### **Dangerous Goods List**

For UN Nos. 2758, 2760, 2762, 2764, 2772, 2776, 2778, 2780, 2782, 2784, 2787, 3021, 3024 and 3346, add "61" in column (6).

UN 1170 Delete "PP2" from column (9).

UN 2880 For packing group II: insert "322" in column (6);  
For packing group III: replace "316" with "223", "313" and "314";

UN 3245 Amend the proper shipping name in column (2) to read as follows:  
"GENETICALLY MODIFIED MICROORGANISMS or GENETICALLY MODIFIED ORGANISMS".

##### **Chapter 3.3**

**SP247** Amend the end of the first paragraph to read:

"...may be transported in wooden barrels with a capacity of more than 250 litres and not more than 500 litres meeting the general requirements of 4.1.1, as appropriate, on the following conditions:..."

Replace the word "casks" wherever it appears with "wooden barrels".

Delete paragraph (e).

Add a new special provision 322 to read as follows:

**"322** When transported in non-friable tablet form, these goods are assigned to packing group III."

Consequential amendment: In special provision **316**, delete "or hydrated".

### **Alphabetical index**

Amend in accordance with the amendments adopted for Chapter 3.2.

## **PART 4**

### **Chapter 4.1**

4.1.1.5 Insert the following new second sentence:

"Inner packagings containing liquids shall be packaged with their closures upward and placed within outer packagings consistent with the orientation markings prescribed in 5.2.1.6 of these Regulations."

4.1.1.8 Amend to read as follows:

"4.1.1.8 Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging, including IBCs, may be fitted with a vent provided that the gas emitted will not cause danger on account of its toxicity, its flammability, the quantity released, etc.

A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that when the packaging is in the attitude in which it is intended to be transported, leakages of liquid and the penetration of foreign substances are prevented under normal conditions of transport.

4.1.1.8.1 Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of transport.

4.1.1.8.2 Venting of the package is not permitted for air transport."

4.1.4.1 **P001** Amend special packing provision PP2, to read as follows:

**"PP2** For UN 3065, wooden barrels with a maximum capacity of 250 litres and which do not meet the provisions of Chapter 6.1 may be used."

**P800** In paragraph (2), replace "2.5 l" with "3 l".

### **Chapter 4.3**

4.3.2.4.2 (c) Delete the square brackets around the last but one sentence (*Refer to ST/SG/AC.10/C.3/46, Annex I*).

## **PART 5**

### **Chapter 5.1**

5.1.2.3 Add a new paragraph to read as follows:

"5.1.2.3 Each package bearing package orientation markings as prescribed in 5.2.1.6 of these Regulations and which is overpacked or placed in a large packaging shall be oriented in accordance with such markings."

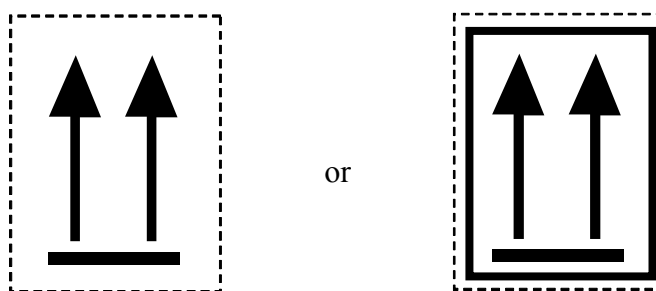
### **Chapter 5.2**

5.2.1.6 Add the following new paragraphs:

"5.2.1.6 Except as provided in 5.2.1.6.1:

- combination packagings having inner packagings containing liquid dangerous goods;
- single packagings fitted with vents; and
- open cryogenic receptacles intended for the transport of refrigerated liquefied gases,

shall be legibly marked with package orientation arrows that are similar to the illustration shown below or with those meeting the specifications of ISO 780:1985. The orientation arrows shall appear on two opposite vertical sides of the package with the arrows pointing in the correct upright direction. They shall be rectangular and of a size that is clearly visible commensurate with the size of the packaging. Depicting a rectangular border around the arrows is optional.



Two black or red arrows on white or suitable contrasting background.  
The rectangular border is optional

5.2.1.6.1 Orientation arrows are not required on packages containing:

- (a) pressure receptacles;
- (b) dangerous goods in inner packagings of not more than 120 ml which are prepared with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents;

- (c) Division 6.2 infectious substances in primary receptacles of not more than 50 ml;
- [(d) Class 7 radioactive material in Type B or C packages; or]
- (e) articles which are leak-tight in all orientations (e.g. alcohol or mercury in thermometers, aerosols, etc.).

5.2.1.6.2 Arrows for purposes other than indicating proper package orientation shall not be displayed on a package marked in accordance with this sub-section."

5.2.2.1.13 Delete.

## **Chapter 5.4**

5.4.1.4.1 Amend (b), (c) and (d) to read as follows:

- "(b) The proper shipping name, as determined according to 3.1.2, including the technical name enclosed in parenthesis, as applicable (see 3.1.2.8);
- (c) The primary hazard class or, when assigned, the division of the goods, including for Class 1, the compatibility group letter. The words "Class" or "Division" may be included preceding the primary hazard class or division numbers;
- (d) Subsidiary hazard class or division number(s), when assigned, shall be entered following the primary hazard class or division and shall be enclosed in parenthesis. The words "Class" or "Division" may be included preceding the subsidiary hazard class or division numbers;"

5.4.1.4.2 Amend the first paragraph and the examples to read as follows:

"The five elements of the dangerous goods description specified in 5.4.1.4.1 shall be shown in the order listed above (i.e. (a), (b), (c), (d), (e)) with no information interspersed, except as provided in these Regulations. Examples of a dangerous goods description are:

UN1098 ALLYL ALCOHOL 6.1 (3) I

UN1098, ALLYL ALCOHOL, Division 6.1, (Class 3), PG I"

*(The existing NOTE remains unchanged).*

## **PART 6**

### **Chapter 6.1**

6.1.2.5 Under 2., replace "wooden barrel" with "reserved".

6.1.4.6 Amend to read: "6.1.4.6 (Deleted)".

6.1.5.2.4 Delete. Renumber next paragraph accordingly.

6.1.5.3.1 In the table, delete "wooden barrels" under "Packaging".

## **Chapter 6.2**

6.2.4.3 Add a new paragraph to read as follows:

"6.2.4.3 With the approval of the competent authority, aerosols and receptacles, small, containing pharmaceutical products and non flammable gases which are required to be sterile, but may be adversely affected by water bath testing, are not subject to 6.2.4.1 if:

- (a) They are manufactured under the authority of a national health administration and, if required by the competent authority, follow the principles of Good Manufacturing Practice (GMP) established by the World Health Organization (WHO)<sup>1</sup>; and
- (b) An equivalent level of safety is achieved by the manufacturer's use of alternative methods for leak detection and pressure resistance, such as helium detection and water bathing a statistical sample of at least 1 in 2000 from each production batch."

## **PART 7**

### **Chapter 7.1**

7.1.1.4 Add the following sentence at the end of the paragraph:

"[Each package containing dangerous goods bearing package orientation markings as prescribed in 5.2.1.6 of these Regulations shall be loaded on a vehicle, aircraft, vessel, in an overpack or within a transport unit in accordance with such markings.]".

---

---

<sup>1</sup> WHO Publication: *"Quality assurance of pharmaceuticals. A compendium of guidelines and related materials. Volume 2: Good manufacturing practices and inspection"*.