



**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 the Transport of
Dangerous Goods on its thirty-seventh session**

Held in Geneva from 21–30 June 2010

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¹ For practical reasons, this annex has been published in an addendum with the symbol ST/SG/AC.10/C.3/74/Add.1.

Report

I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its thirty-seventh session from 21 to 30 June 2010.
2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Kenya, Netherlands, Norway, Poland, Russian Federation, South Africa, Spain, Sweden, Switzerland, United Kingdom and United States of America.
3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from the following countries also took part: Chile, Ireland, Republic of Korea, Romania and Slovakia.
4. The European Union was also represented.
5. Representatives of the International Atomic Energy Agency (IAEA), the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) were also present.
6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: Association of Hazmat Shippers (AHS); Compressed Gas Association (CGA); Council on Safe Transportation of Hazardous Articles (COSTHA); Dangerous Goods Advisory Council (DGAC); European Association of Automobile Suppliers (CLEPA); European Cosmetic, Toiletry and Perfumery Association (COLIPA); European Industrial Gases Association (EIGA); European Metal Packaging (EMPAC); Federation of European Aerosol Associations (FEA); Federation of European Explosives Manufacturers (FEEM); Institute of Makers of Explosives (IME); International Air Transport Association (IATA); International Association for Soaps, Detergents and Maintenance Products (AISE); International Association for the Promotion and Management of Portable Rechargeable Batteries through their Life Cycle (RECHARGE); International Confederation of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Confederation of Plastics Packaging Manufacturers (ICPP); International Council of Chemical Associations (ICCA); International Dangerous Goods and Containers Association (IDGCA); International Electrotechnical Commission (IEC); International Federation of Airline Pilots' Associations (IFALPA); International Organization for Standardization (ISO); International Paint and Printing Ink Council (IPPIC); International Tank Container Organization (ITCO); International Vessel Operators Dangerous Goods Association (IVODGA); KiloFarad International (kFI); The Rechargeable Battery Association (PRBA); Responsible Packaging Management Association of Southern Africa (RPMASA); Sporting Arms and Ammunition Manufacturers' Institute (SAAMI); US Fuel Cell Council (USFCC), World Nuclear Transport Institute (WNTI).
7. The Sub-Committee noted that, following a decision of the Economic and Social Council on 28 April 2010, Switzerland had become a member of the Sub-Committee. The secretariat also received an application for membership from the Republic of Korea, which was subsequently to be considered by the Secretary-General.

II. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/73 (Provisional agenda)
ST/SG/AC.10/C.3/73/Add.1 (List of documents)

Informal documents: INF.1, INF.2/Rev.1 (List of documents)
INF.30 (Provisional timetable)

8. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of informal documents (INF.1-INF.88).

9. The Sub-Committee was informed by the secretariat that in the light of the new absence of its Chairman, Mr. Robert Richard (United States of America) (see also ST/SG/AC.10/C.3/72, paragraphs 2 to 5), article 22 of the rules of procedure of the Economic and Social Council should apply for his replacement during the rest of his mandate. The Sub-Committee therefore agreed to add a new item to the agenda for the election.

10. In accordance with article 20, paragraph 2, of the rules of procedure, the Vice-Chairman elected for the biennium, Mr. Claude Pfauvadel (France), acted as Chairman pending the election.

III. Elections (agenda item 2)

11. The Sub-Committee having reached a consensus on the composition of the new bureau, Mr. C. Pfauvadel (France) and Mr. D. Pfund (United States of America) were elected Chairperson and Vice-Chairperson respectively, for the remainder of the biennium.

IV. Explosives and related matters (agenda item 3)

A. Preliminary consideration in plenary session

12. After a preliminary discussion in plenary, most of the issues relating to this agenda item were referred to the Working Group on Explosives, which met from 22 to 24 June 2010 with Mr. E. de Jong (Netherlands) in the chair.

13. On the proposal by SAAMI contained in document ST/SG/AC.10/C.3/2010/18 and informal document INF.50, several experts indicated that they did not support the principle of transporting explosives, even those in division 1.4S, under the regime for dangerous goods in limited quantities, but that they had no objection to the Working Group looking into the issue raised by SAAMI from a technical standpoint. Other experts supported the proposal from a risk prospective pending detailed consideration by the Working Group.

14. The Sub-Committee also noted that the request for consultative status by the Australian Explosives Industry and Safety Group Incorporated (AEISG) had been submitted only as advance information (informal document INF.52). The request did not need to be dealt with until the next session.

B. Report of the Working Group on Explosives

Informal document: INF.73

15. The Sub-Committee examined the recommendations of the Working Group on Explosives. Its conclusions are detailed below.

1. Dangerous goods of Division 1.4, compatibility group S

Document: ST/SG/AC.10/C.3/2010/18 (SAAMI)

Informal documents: INF.50 (SAAMI)
INF.71 (Italy)
INF.75 (SAAMI)
INF.80 (SAAMI)
INF.83 (SAAMI)

16. The Sub-Committee noted that the Working Group saw no technical obstacle preventing 1.4S goods assigned to UN Nos. 0012, 0014 and 0055 from being carried under the limited quantities regime in the conditions proposed by SAAMI.

17. However, some experts had reservations in principle to the Working Group's recommendation. They believed that a lack of marking and labelling, and in the case of land transport of documentation, would mean that carriers would be unable to implement certain precautionary measures applicable to the carriage of explosives. It would also complicate Chapter 3.4, which would henceforth include specific packaging provisions for only three entries, and implementation of those provisions would be difficult to monitor.

18. The principle of adding provisions to Chapter 3.4 was put to the vote and adopted. The representative of SAAMI prepared a new proposal for the provisions to be added, which was adopted with some amendments, including the addition of a reference to segregation provisions. The provisions should be adapted to the new structure of Chapter 3.4 (see INF.83 and paragraphs 109 and annex I of this report).

2. Criteria for excluding articles from Class 1

Document: ST/SG/AC.10/C.3/2010/29 (United States of America)

Informal documents: INF.28 (United States of America)
INF.35 (United Kingdom)

19. The Sub-Committee adopted the amendment to 2.1.1.1 (b) and new 2.1.3.6 as proposed (see annex I).

3. Results of tests on desensitized explosives

Document: ST/SG/AC.10/C.3/2009/11 (Report of the Working Group on Desensitized Explosives)

Informal document: INF.54 (Germany)

20. The Sub-Committee was in favour of an informal working group meeting in 2011 to continue work on desensitized explosives, provided test data and test results on other substances were available. It also noted the Working Group on Explosives unanimous opinion that it is not appropriate to place this type of substances in the class of explosives.

4. Modifications to Test Series 7

Document: ST/SG/AC.10/C.3/2010/40 (United Kingdom and United States of America)

21. The Sub-Committee adopted the amendments to the Manual of Tests and Criteria proposed by the Working Group (see annex II).

5. New DDT test and criteria for flash compositions

Document: ST/SG/AC.10/C.3/2010/31 (United States of America)

Informal document: INF.34 (United Kingdom)

22. The Sub-Committee recognized the value of an alternative test and noted that further work was necessary.

6. Alternative to test 8 (d) for ammonium nitrate emulsions

Informal documents: INF.41 (Canada)
INF.58 (Spain)

23. The Sub-Committee noted the Working Group's interest in activities to develop a minimum burning pressure (MBP) test, and in continuing the work once the results were available.

7. Use of the ARC (Accelerating Rate Calorimetry) technique as an alternative to tests 3 (c) and 8 (a)

Informal document: INF.42 (Canada)

24. The Sub-Committee noted that the expert from Canada would consider how to follow up on his proposal in light of the Group's comments.

8. Large-scale behaviour of fireworks

Informal document: INF.47 (Netherlands)

25. The Sub-Committee had no objection to the Working Group discussing the results of research on this subject and developing relevant guidelines, provided that the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS Sub-Committee) agreed since the work also concerned storage.

9. Application for consultative status of the Australian Explosives Industry and Safety Group Incorporated (AEISG)

Informal document: INF.52 (AEISG)

26. The Sub-Committee noted that the Working Group supported the application of AEISG, to be considered at the next session, as did the expert from Australia.

10. Additional criteria relating to classification in Division 1.4

Informal document: INF.40 (Canada)

27. The Sub-Committee noted that the Working Group encouraged the expert from Canada to draft a proposal in view of his opinion that some articles currently classified in Division 1.4 and containing significant quantities of explosive substances posed a danger that could not be called "minor".

V. Listing, classification and packing (agenda item 4)

A. Krill meal

Document: ST/SG/AC.10/C.3/2010/4 (Norway)

Informal document: INF.27 (Norway)

28. The proposal to add a new UN number for krill meal in division 4.2 was adopted with some amendments (see annex I).

B. Toxic subsidiary risk for mercury

Document: ST/SG/AC.10/C.3/2010/6 (Germany)

29. It was decided to provisionally adopt the proposal by Germany to add subsidiary risk 6.1 to UN number 2809, mercury, given that, according to the data provided, mercury meets the toxicity criteria for packing group III (acute toxicity, category 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)).

30. It was decided to put the subsidiary risk between square brackets as some delegations had doubts about the validity of the data provided. In addition, ICAO wished to look into the implications for air transport of mercury. It was also noted that European Regulation 1272/2008 (the so-called “CLP regulation”) put mercury in GHS acute toxicity category 2 and therefore in packing group II (see informal document INF.12). Delegations who had doubts about the toxicity of mercury were invited to submit data to support their position.

C. Packing instruction P802

Document: ST/SG/AC.10/C.3/2010/11 (ICCA)

31. The proposal to allow the use of fibreboard as outer packaging as part of a combination packaging under instruction P802, paragraph 1, was adopted (see annex I).

D. Extension of transitional period TP 37

Document: ST/SG/AC.10/C.3/2010/13 (ITCO)

32. The proposal to extend the transitional period provided in TP37 for certain portable tanks to 31 December 2020 was not supported, for lack of sound justification.

E. Portable tank instructions for division 4.3 liquids

Document: ST/SG/AC.10/C.3/2010/28 (United States of America)

Informal document: INF.38 (United States of America)

33. After discussion in plenary, the expert from the United States of America indicated that he would submit a revised proposal.

F. Miscellaneous proposals

Document: ST/SG/AC.10/C.3/2010/42 (Secretariat)

34. The Sub-Committee agreed that UN No. 1792 should now apply to iodine monochloride in the solid state, and that a new UN number should be assigned to the liquid (see annex I).

35. The descriptions of UN Nos. 3381 to 3390 and 3488 to 3491 were amended to include numerical values in ml/m³ for the lethal concentrations (LC₅₀) rather than for toxicity. Similar amendments were made to the Guiding Principles (see annex III).

36. UN Nos. 3492 and 3493 were deleted, as they duplicated UN Nos. 3488 and 3489 (see annex I).

37. The second line of Table 38.3.2.2 of the Manual of Tests and Criteria should be amended to cover cells or batteries with a mass M greater than or equal to 1 gram or less than 5 grams (see annex II).

G. Chemicals under pressure

1. Classification criteria and packaging

Document: ST/SG/AC.10/C.3/2010/38 (ICCA)

Informal documents: INF.14 (ICCA)
INF.69 (ICCA on behalf of the working group)

38. Consideration of these documents was entrusted to a lunchtime working group; the working group's conclusions were reported in informal document INF.69.

39. The proposal developed by the working group was put to the vote and was adopted, with some corrections (see annex I).

2. Portable tanks for chemicals under pressure

Document: ST/SG/AC.10/C.3/2010/37 (ICCA)

40. Some experts supported this proposal, while others were not convinced that there was an urgent need for introducing such provisions in the Model Regulations. Some questions of a technical nature were also raised, notably as regards the prevention of crystallization of the product in the pressure-relief device.

41. The representative of ICCA said that she would provide more information and would submit a revised proposal at the next session

H. Fuels contained in machinery or equipment

Document: ST/SG/AC.10/C.3/2010/14 (United Kingdom)

Informal documents: INF.49 (Sweden)
INF.78 and INF.78/Rev.1 (United Kingdom)

42. The proposal for a new special provision applicable to dangerous goods contained in machinery or equipment was adopted on the basis of the text proposed by a lunchtime working group, with some modifications (see annex I).

43. However, some experts felt that the proposed text did not adequately cover the case of dangerous goods in means of equipment of a capacity of less than 450 litres, and the provisions concerning this labelling were placed between square brackets for decision at the next session.

44. The representative of COSTHA suggested that UN No. 1170 should be added as well. It was agreed that the list of entries concerned could be revised subject to submission of well-justified proposals.

I. Packagings for aerosols

Document: ST/SG/AC.10/C.3/2010/21 (FEA)

Informal documents: INF.86 and INF.86/Rev.1 (FEA)

45. The Sub-Committee adopted proposal 2 for a new packing instruction specific to aerosols with some modifications, and consequential amendments (INF.86/Rev.1) (see annex I). It was noted that the proposal required a test performance level of packing group II because this is required in air transport, but that the performance level when aerosols are carried in large packagings is packing group III.

VI. Electric storage systems (agenda item 5)

A. Lithium cells

1. Transport of used or damaged lithium cells or batteries

Documents: ST/SG/AC.10/C.3/2010/7 (Germany)
ST/SG/AC.10/C.3/2010/36 (PRBA and RECHARGE)

Informal document: INF.88 (PRBA and RECHARGE)

46. The discussions revealed the relative complexity of the issue, as various cases had to be covered, in particular: the transport of used but undamaged cells or batteries for reuse, disposal or recycling; of used cells or batteries in organized waste collection; and of damaged cells or batteries.

47. Some solutions had already been foreseen, but with no coordination, as such transport was subject to specific national or regional regulations. However, the demands of recycling, and specifically the fact that not all countries were equipped with recycling facilities, for instance in the islands of a given country, meant that the carriage of such used or damaged lithium cells or batteries in international and multimodal transport would only increase in the future. A solution must therefore be found for harmonizing conditions of transport using the Model Regulations.

48. It was noted that it would be difficult to find solutions to all those problems during the current biennium. The Chairman therefore proposed that to begin with the Sub-Committee should take stock of the situation. He invited all delegations to submit documents indicating:

(a) A list of practical problems encountered at the national level, or for industry, encountered in disposal and recycling;

(b) Local or regional measures already taken in the context of transport regulations;

(c) Possible interference with other legal frameworks, for example environmental protection regulations governing waste disposal and recycling.

49. A lunchtime working group could meet at the next session to define how to address the question in the programme of work for the next biennium.

50. Several delegations nonetheless said that they would want provisions to be drawn up in the current biennium for the transport of used lithium cells in the context of collection activities for recycling, even if they were provisional, so as to provide States with a basis for special permits or for exemptions in international transport.

51. The representative of RECHARGE said that RECHARGE and PRBA will organize a meeting with collection and recycling professionals on 1 September 2010 in Brussels and he invited experts of the Sub-Committee to participate (see invitation in informal document INF.88).

52. The representatives of RECHARGE and PRBA were invited to submit a new proposal for the next session, taking into account comments made by the delegations. The Sub-Committee would then decide whether it was appropriate to introduce such provisions into the Model Regulations.

2. Large packagings for lithium batteries over 400 kg

Document: ST/SG/AC.10/C.3/2010/34 (PRBA)

53. Some experts did not see the need to introduce a new packing instruction, LP903, for the transport of large lithium batteries, as instruction P903 already allowed for them to be transported without packaging. Others were not opposed, but said that such large packagings should contain just one battery.

54. The representative of PRBA said that he would submit a new proposal.

3. Amendments to special provision 310

Document: ST/SG/AC.10/C.3/2010/35 (PRBA)

55. After a discussion, the representative of PRBA withdrew his proposal and said that he would submit a new one.

B. Batteries containing sodium

Document: ST/SG/AC.10/C.3/2010/30 (United States of America)

56. The proposal to amend special provision 239 was adopted (see annex I).

C. Ultracapacitors

Document: ST/SG/AC.10/C.3/2010/33 (kFI)

Informal documents: INF.36 (kFI)
INF.65 (United States of America)
INF.68 (kFI)
INF.74 (kFI)
INF.79 (kFI)

57. Following discussion in plenary meeting, the representative of kFI summarized in paragraph 3 of informal document INF.74 the main questions on which the Sub-Committee had to reach a decision. The Sub-Committee decided, by a vote, that:

(a) The threshold limit above which capacitors should be regulated as Class 9 dangerous goods would be 10 Wh, not 20 Wh;

(b) The drop test for capacitors containing dangerous goods should be carried out as a design type test on unpackaged capacitors, not on capacitors as packaged for transport;

(c) The energy storage capacitance should be marked on the capacitor in Wh, despite the fact that the usual practice was to indicate voltage in volts and capacitance in farads and that the energy storage capacitance in Wh could be deduced from that data by means of a simple mathematical formula.

58. The Sub-Committee adopted the final proposal contained in informal document INF.79, with some amendments. Paragraph (d) of new special provision 361 was placed in square brackets, since there was a need to add a provision clarifying the required level of safety for the pressure-relief devices, in order, notably, to prevent or contain leaks of dangerous liquids that could occur under the effect of decompression (see annex I).

D. Fuel cells

1. Special provision 338

Informal document: INF.9 (Secretariat)

59. The Sub-Committee adopted the proposed correction (see annex I).

2. Fuel cells containing dangerous goods

Document: ST/SG/AC.10/C.3/2010/5 (IEC)

Informal documents: INF.17 (USFCC)
INF.26 (IEC)
INF.77 (France)

60. The Sub-Committee agreed, to amend packing instruction P004 as proposed in informal document INF.17 and special provision 328 as proposed by the expert from France in informal document INF.77, with some modifications (see annex I).

E. Special provision 240

Document: ST/SG/AC.10/C.3/2010/15 (Germany)
ST/SG/AC.10/C.3/2010/16 (USFCC)

Informal document: INF.72 (Germany)

61. The revised proposal of amendment to special provision 240 in informal document INF.72 was adopted with some modifications (see annex I).

VII. Miscellaneous proposals of amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 6)

A. Packing instructions

1. Use of packagings in metal other than steel or aluminium

Document: ST/SG/AC.10/C.3/2010/8 (Italy)

Informal documents: INF.5 and INF.70 (Italy)
INF.73 (Report of the Working Group on Explosives)

62. The Sub-Committee adopted the proposals made by Italy to revise all packing instructions to permit the use of packagings other than aluminium or steel, except for packing instruction P010, as ICCA considered that chlorosilanes were likely to corrode metals other than steel (see annex I).

63. The Sub-Committee also noted that "Wood" should be added under an entry for "Inner packagings", "Intermediate packagings/receptacles" or "Intermediate packagings/Dividing partitions" to certain explosives packing instructions as indicated by an "X" in the table of paragraph 3 of the report of the Working Group on Explosives, and therefore accordingly amended the packing instructions concerned (see annex I).

2. Revision of various specialist packing instructions of the Model Regulations

Document: ST/SG/AC.10/C.3/2010/26 (United Kingdom, Sweden and IATA)

Informal documents: INF.16 (CEPE)
INF.29 (USFCC)
INF.84 and INF.87 (working group)

64. The proposal was discussed by a lunchtime working group and the Sub-Committee adopted the revised packing instructions shown in INF.84 (see annex I). A track change version, showing the changes compared with the original proposal, was reproduced as informal document INF.87.

B. Packaging issues

1. Stacking load on large packagings

Document: ST/SG/AC.10/C.3/2010/2 (Sweden)

Informal document: INF.76 (Secretariat) (ISO standard 780:1997)

65. The Sub-Committee agreed to require the marking of the stacking load on large packagings by using the same symbol as in 6.5.2.2.2 for IBCs (see annex I).

66. The expert from Japan requested information about the interpretation of the minimum dimensions of 100 mm x 100 mm given in 6.5.2.2.2, since the symbol itself was not in a square form. He underlined that the symbol would have to be applied on IBCs as from 1 January 2011, therefore clarification was urgent.

67. The Sub-Committee noted that the symbols corresponded to models Nos 13 and 15 of ISO 780:1997, and that this standard specified that the overall height of the symbols should be 100 mm, 150 mm or 200 mm.

68. Experts were invited to consult the industry in order to determine, at the next session, which overall height should apply.

2. Marking of UN numbers on packages

Document: ST/SG/AC.10/C.3/2010/43 (EIGA)

Informal document: INF.60 (Sweden)

69. Several experts recalled that marking the UN number on packages was intended to facilitate handling and stowage operations during transport, as well as emergency response. As a consequence, they could not agree with a reduction in size from 12 mm to 3 mm as indicating the UN number in figures 3 mm high was meaningless in this respect. As there was no support for this proposal, the representative of EIGA said that he would envisage submitting a new proposal.

3. Vibration test for large packagings

Document: ST/SG/AC.10/C.3/2010/32 (United States of America)

70. Several experts were opposed to a requirement for a vibration test for large packagings as they considered that such a test was justified in the case of IBCs but not for large packagings which were kind of combination packagings.

71. The expert from the United States withdrew his proposal but said that he would prepare a new one with appropriate justification.

4. Possible use of flexible bulk containers (FBCs) for the transport of dangerous goods

Document: ST/SG/AC.10/C.3/2010/39 (IDGCA)

Informal documents: INF.8 and INF.8/Corr.1 (IDGCA)
INF.82 (Report of the working group)

72. Discussion of the proposal of IDGCA by a lunchtime working group showed that there were divergent views on the question of introducing provisions allowing the use of FBCs in the Model Regulations.

73. Some experts felt that there was no demonstrated need in multimodal transport; that intermodal transfer would be difficult due to the special handling equipment needed; that it would be impossible to ensure stability of such FBCs during land and sea transport; that performing tests would be difficult or impossible.

74. Other experts felt the proposal held merit and should be considered for inclusion because there was a need for an international standard for such packages since they were currently being transported in multiple countries; the test provisions provided were adequate; the materials proposed were permitted in BK2 containers and in bulk in accordance with the provisions of the IMO IMSBC Code; and modal operational requirements could be included to address concerns related to stability in transport.

75. An indicative vote showed that a large majority of experts were in favour of continuing work on the issue, and that some of them would like that provisions for FBCs be included in the next edition of the Model Regulations.

76. Interested experts were invited to provide constructive comments on the proposal itself and to discuss with the representative of IDGCA how to proceed in order to ensure

that a revised proposal could be submitted for the next session. This proposal would be discussed by a working group which would meet from 29 to 30 November in parallel to the next session and would report to the Sub-Committee on 1 December 2010.

C. Gas receptacles

1. Salvage pressure receptacles

Documents: ST/SG/AC.10/C.3/2009/16/Rev.1 (Germany)
ST/SG/AC.10/C.3/2009/9 (Germany and United Kingdom)

Informal documents: INF.21 (United Kingdom) of the thirty-sixth session
INF.42 (CGA) of the thirty-sixth session
INF.81 (Report of the working group)

77. As agreed at the last session (ST/SG/AC.10/C.3/72, para.54) the documents related to this issue were considered by a working group which met in parallel on 24 and 25 June 2010 under the chairmanship of Mr. G. Mair (Germany).

78. The Sub-Committee agreed to adopt the proposals by the working group, on the understanding that experts who had not participated in the working group session could revert back to this subject if they deemed it necessary at the next session on the basis of constructive proposals (see annex I).

2. Pressure relief valve examination and testing in P203

Document: ST/SG/AC.10/C.3/2010/24 (EIGA)

79. The proposal of amendment to P203 was adopted with some modifications and consequential amendments to 4.1.6.1.10 (see annex I).

3. Label for gas cylinders

Document: ST/SG/AC.10/C.3/2010/23 (EIGA)

80. The proposal was withdrawn by EIGA.

4. Updating references to ISO standards

Document: ST/SG/AC.10/C.3/2010/20 (ISO)

81. The Sub-Committee agreed to amend 4.1.6.1.8 (e) to refer to ISO 11117:2008+ Cor 1:2009 and to add a reference to ISO 13340:2001 in 6.2.2.3 (see annex I).

82. Some experts expressed concern at the way the transitional measures were addressed. Although the proposed transitional measures were rather clear as regards construction of pressure receptacles, they were not clear as regards the possibility of transporting pressure receptacles which had been constructed before the introduction of reference to new or amended standards.

D. Portable tanks and MEGCs

1. Amendments to 6.7.2

Document: ST/SG/AC.10/C.3/2010/1 (Spain)

Informal documents: INF.3 and INF.44 (Spain)

83. Proposal 1 to update the reference to ISO standards in 6.7.2.13.2 was adopted. Other paragraphs of Chapter 6.7 referring to ISO standard 4126 should also be updated accordingly (see annex I).

84. Proposal 2 was withdrawn by the expert from Spain. Proposal 3 for amendments to 6.7.2.13 was adopted with some modifications, together with a transitional provision to be included in 4.2.6. Similar amendments were made in other sections of Chapter 6.7 dealing with the transport of gases (see annex I).

85. For proposal 4 of amendment to 6.7.2.15, experts agreed that the pictures in informal document INF.44 showed bad examples of protective devices which prevented adequate escape of vapour. However they felt that the last sentence of 6.7.2.15 was clear enough in this respect, and need not be amended. It was also felt that drilling holes in the protective device, as shown in the pictures of INF.44, would not guarantee a flow capacity equal to that of the pressure relief devices. The expert from Spain said that he would envisage submitting a revised proposal for the June 2011 session.

2. Dynamic longitudinal impact testing of MEGCs, section 41.2.2 of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2010/19 (CGA, EIGA and ITCO)

86. The Sub-Committee adopted the proposed amendments, but new text was placed between square brackets since certain experts wanted to check the figures proposed therein. Any comments should be sent to CGA before the next session (see annex I).

E. Transport of coolant/conditioning units

Documents: ST/SG/AC.10/C.3/2010/12 (Germany, Netherlands and United Kingdom)
ST/SG/AC.10/C.3/2010/22 (IATA)

Informal document: INF.85 (Germany on behalf of the working group)

87. After consideration of the documents in plenary session, and by a lunchtime working group, the expert from Germany prepared a revised text for a new sub-section 5.5.3 concerning special provisions applicable to packages and cargo transport units containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes, such as dry ice (UN No. 1845) or nitrogen, refrigerated liquid (UN No. 1977) or argon, refrigerated liquid (UN No. 1951).

88. For the marking of packages containing a coolant or conditioner, the Sub-Committee decided by vote that the marking should consist of the proper shipping name of the substance used, followed by the words "as coolant" or "as conditioner", as appropriate (instead of the marking proposed by the working group which would have consisted of the word "WARNING" followed by the UN number and the proper shipping name).

89. The rest of the text proposed by the working group in informal document INF.85 was adopted by majority vote with some modifications. The question whether the new section 5.5.3 should also apply to dangerous goods packed in accordance with P650 or P904 was deferred to the next session, and the corresponding text in P650 and P904 was placed between square brackets (see annex I).

VIII. Electronic data interchange (EDI) for documentation purposes (agenda item 7)

90. As no document had been submitted, this item was not discussed.

IX. Cooperation with the International Atomic Energy Agency (IAEA) (agenda item 8)

A. Issues related to security

Documents: ST/SG/AC.10/C.3/2010/3 (IAEA)
ST/SG/AC.10/C.3/2010/25 (IATA)

Informal documents: INF.10 (AISE, CEFIC, CEPE, EIGA, FEA, FECC, FIATA, IRU, ITCO)
INF.66 (IAEA)

91. The Sub-Committee agreed in principle to include in Chapter 1.4 the definition and criteria proposed by IAEA for high consequence radioactive material, it being understood that some editorial changes would be made (see annex I).

92. However, the proposal to apply to all dangerous goods certain security provisions taken from IAEA Nuclear Security Series No. 9, Security in the Transport of Radioactive Material, did not receive support. Various delegations cited the following reasons:

(a) The general provision proposed for 1.4.1.3 calling for carriers to verify the security of conveyances and ensure that it would be maintained during transport was extremely general, and could lead to diverging interpretations, in particular if it was applied to low risk dangerous goods (including some radioactive material such as those carried in excepted packages). In addition, the general aspects of transport security, including the carrier's liability, were sometimes governed by other legal instruments specific to a given transport mode, such as the ISPS Code of IMO;

(b) It would not be realistic to expect the crew to benefit at all from security instructions issued separately by consignors, as a single vessel could carry several hundred containers, each loaded with different dangerous goods;

(c) Similarly, in a complex context of modern logistics with numerous participants involved in an international and multimodal transport chain, the procedures proposed by IAEA for notification between the consignors and the consignees and for conducting an inquiry in the event of non-delivery to the correct consignee were unrealistic. Such procedures were apparently not justified for dangerous goods other than high risk ones, and for those, the existing procedures were apparently already sufficient.

93. It was also noted that while it was acceptable to consider that the Convention on the Physical Protection of Nuclear Material and the IAEA information circular on the same subject contained security provisions at least equivalent to those of Chapter 1.4, it was not clear that observing Series No. 9 provisions regarding security in the transport of radioactive material would ensure observance of all the provisions of Chapter 1.4 of the Model Regulations for high consequence goods.

94. The IATA proposal contained in document ST/SG/AC.10/C.3/2010/25 that would require security plans to be aligned with the provisions of various national laws concerning transport security and be approved by the competent authorities was not supported. Several

experts recalled that such plans concerned various participants and not just carriers, and that in most countries the national authorities did not require that they be approved. On the other hand, certain regulations such as those governing land transport in Europe called for verification that such plans existed.

B. Other questions related to Class 7

1. Special provision 290 and dangerous goods packed in limited quantities

Document: ST/SG/AC.10/C.3/2010/27 (United Kingdom)

95. Some experts opposed the proposal to authorize the transport under the provisions of Chapter 3.4 of radioactive material in excepted packages presenting other risks, as that would imply that the radioactive nature of the contents would be neither identified by a marking on the package nor mentioned in the transport document, at least in the case of land transport. The proposal was not adopted.

2. PATRAM 2010 symposium

Informal document: INF.13 (United Kingdom)

96. The Sub-Committee noted that the PATRAM 2010 symposium generally addressing issues related to the packaging and transport of radioactive material was to be held in 2010 at the invitation of the Government of the United Kingdom, in cooperation with IAEA, IMO and the World Nuclear Transport Institute (WNTI). It would take place from 3 to 8 October 2010 at IMO headquarters in London.

3. Work of IAEA

Informal documents: INF.4 and INF.4/Add.1 (IAEA)

97. The Sub-Committee noted how the work of IAEA had progressed in updating its Regulations for the Safe Transport of Radioactive Material. A first draft of amendments to the provisions corresponding with the Model Regulations would be available for the first session in 2011.

98. Regarding the transport of uranium hexafluoride in quantities of less than 100 grams and in the conditions applicable to excepted packages, a member of the secretariat reminded the meeting that in 2008 a proposal had already been submitted to the Sub-Committee in order to provide a specific UN number, taking into account the discussions held in IAEA at that time (ST/SG/AC.10/C.3/2008/99). The proposal had not been considered, as the representative of IAEA had indicated that work was continuing in the Agency.

99. The IAEA representative welcomed the active cooperation between the Sub-Committee and IAEA since the requirements of the IAEA Regulations had been incorporated into the UN Model Regulations and since the IAEA Regulations themselves had been restructured in line with the UN Model Regulations. He emphasized, however, that a number of problems remained, in particular in relation with radioactive material presenting hazards other than radioactivity. He proposed that such problems be discussed by a group that would include experts in the transport of radioactive material and experts in the transport of other dangerous goods, and that could meet, in the same way as the Working Group on Explosives, on the sidelines of the sessions of the Sub-Committee.

100. While opinions differed, several delegations supported that proposal, on the condition that the group should have well-defined terms of reference. The IAEA representative was therefore asked to draw up an official proposal for terms of reference to be considered at the next session, when the programme of work for the next biennium would be discussed.

101. The IMO representative indicated that his organization, working with IAEA, had developed a freely accessible and free-of-charge on-line training course for the transport of radioactive material (www.class7elearning.com).

X. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 9)

A. Classification of potassium or sodium nitrates and mixtures thereof

Informal documents: INF.37 (EFMA)
INF.43 (Secretariat)
INF.46 (Netherlands)
INF.31 (Secretariat)
INF.64 (Chile)

102. Referring to the discussions that took place at the last session (ST/SG/AC.10/C.3/72, paras. 99-102) several delegations expressed concern at the decision of IMO to allow, through special provision 964 of the IMDG Code, exemption of sodium or potassium nitrates or mixtures thereof when transported in non-fiable prills or granules forms and when they do not meet the criteria of sub-section 34.4.1 of the Manual of Tests and Criteria for oxidizing solid substances. They recalled that special provision 223 was not applicable to UN Nos 1486, 1498 and 1499. The Model Regulations, in paragraph 2.5.2.1.1 made it clear that in the event of divergence between test results and known experience, judgement based on known experience shall take precedence over test results, and that when substances of Division 5.1 are listed in the Dangerous Goods List, their reclassification in accordance with the criteria shall be undertaken only when this is necessary for safety. Some of them considered also that exemption of these substances was detrimental not only to safety, but also to security since they may be considered as precursors for the manufacture of explosives.

103. It was underlined nevertheless that the IMO decision was not unique, since, according to the European land transport regulations (RID/ADR/ADN), any substance of divisions 4.1, 4.2, 4.3 or 5.1 may be considered as non-dangerous if the criteria of the Manual of Tests and Criteria are not met. This led to the question of interpretation of "known experience" in the more general context of the GHS, since this concept is also recognized in the GHS. Although it is known from past experience that these substances may be dangerous, the Manual of Test and Criteria indicates clearly that the hazardous properties depend on the particle size, and the current experience with this special form is not necessarily comparable to experience with other forms.

104. Many experts did not support the introduction of such a provision in the Model Regulations, but the Sub-Committee noted that there was currently no proposal to amend the Model Regulations in this respect.

105. The Sub-Committee noted also that laboratory experts (INF.31) felt that the current test method for oxidizing solids could be improved, first because the reference substance (potassium bromate) presents health hazards (carcinogenicity and acute oral toxicity) and secondly because of the subjective measurement of the burning time, which leads to

different results depending on the operator. They suggested to use calcium peroxide as a reference substance for the test, and to improve the test method itself by a more objective method based on a gravimetric procedure.

106. The Sub-Committee agreed that this issue should be included in the programme of work for the next biennium, subject to the concurrence of the GHS Sub-Committee. The concept of "known experience" should also be clarified since it could lead to different classifications. Other factors influencing classification such as friability and particle size should also be discussed. Modal and sectoral organizations were invited to contribute to this work.

B. Dangerous goods packed in limited quantities

Document: ST/SG/AC.10/C.3/2010/41 (Secretariat)

107. Although some experts did not see a need for amending the lay-out of Chapter 3.4, it was recalled that this document had been prepared by the secretariat at the request of the Sub-Committee.

108. The Sub-Committee agreed that, although placarding requirements had been included in the IMDG Code, RID, ADR and ADN for cargo transport units containing dangerous goods packed in limited quantities, these were not currently included in Chapter 3.4 and therefore paragraph 3.4.12 should be deleted from the proposal.

109. The Sub-Committee agreed to adopt the rest of the text, but in square brackets for a second reading at the next session. The secretariat was invited to prepare a new version of sub-section 3.4.1 that would clarify the application to various modes of transport, and that would take account of the decisions taken for articles of division 1.4, compatibility group S (see also informal document INF.83 and paragraphs 16-18 of this report).

XI. Guiding principles for the Model Regulations (agenda item 10)

110. Amendments to the Guiding Principles were discussed under other agenda items (see para. 35 and annex III).

XII. Issues related to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (agenda item 11)

A. Corrosivity criteria, amendments to Chapter 2.8

Document: ST/SG/AC.10/C.3/2010/10 (Netherlands)

Informal documents: INF.7 (Netherlands)
INF.11 (AISE)
INF.33 (CEFIC)
INF.39 (United Kingdom)

111. With the aim to fully align the Model Regulations classification criteria with the GHS criteria, the expert from the Netherlands proposed to introduce in Chapter 2.8 of the Model Regulations text relating to skin corrosion criteria identical, or referring to, the text contained in Chapter 3.2 of the GHS for GHS skin corrosion category 1, including a

correlation between transport packing groups I, II and III and GHS sub-categories 1A, 1B, 1C and notes on the application of classification methods alternative to those based on *in vitro* or *in vivo* testing, such as the use of extreme pH values, bridging principles and mixtures calculations.

112. Most experts considered that the criteria contained in Chapter 2.8 were already consistent with those of the GHS for sub-categories 1A, 1B and 1C, in the sense that these sub-categories had been introduced in the GHS to take account of the transport packing group criteria for substances of GHS category 1. Nevertheless, some experts considered that the criteria were not exactly the same because the transport criteria for skin corrosion referred to full thickness destruction of skin, while the GHS criteria referred only to destruction of skin tissue, namely visible necrosis through the epidermis and into the dermis.

113. Several experts questioned the relevance of introducing alternative methods and in particular reference to extreme pH values, which they considered as non-representative of the real skin corrosion potential of chemicals and should not serve as a basis for determination of packing groups, bearing in mind the cost implications in terms of transport equipment to be used. The introduction of a correspondence table between packing groups and sub-categories of GHS category 1 would be very confusing e.g. information on pH values included in safety data sheets could be misinterpreted. Furthermore there could be legal problems linked to contradictory classifications required by different instruments of mandatory application such as transport regulations and the European CLP Regulation when assignment to sub-categories were based on such alternative methods in one of these instruments and on *in vivo* or *in vitro* testing methods in another one.

114. Several experts noted that Chapter 3.2 of the GHS on skin corrosion was under review and they felt that it was premature to introduce now in the Model Regulations text that was known to be likely to cause problems.

115. As a compromise solution, the Sub-Committee agreed to invite the expert from the Netherlands to prepare a new proposal that would introduce in the Model Regulations the concepts of bridging principles and mixture calculations, but by referring to packing group rather than to GHS sub-categories 1A, 1B and 1C.

B. Hazard communication for supply and use of aerosols

Document: ST/SG/AC.10/C.3/2010/17 (United Kingdom and FEA)

116. There was general support for the proposal to amend the GHS, but several experts expressed concern at the proposal to indicate the percentage of flammable components on receptacles containing non-flammable aerosol since this could convey a misleading message.

C. Comparison between classification of dangerous goods in the Model Regulations and the European CLP Regulation

Informal document: INF.12 (Secretariat)

117. The Sub-Committee thanked the secretariat for the useful work of comparison which showed numerous discrepancies between different legal instruments based on the GHS and the necessity to agree upon harmonized classification of substances which are most commonly carried in international trade.

118. Should the GHS Sub-Committee decide to develop an harmonized classification list, the Sub-Committee would be willing to cooperate.

XIII. Other business (agenda item 12)

119. The Sub-Committee took note of the change of name of the Vessel Operators of Hazardous Materials Association (VOHMA) to International Vessel Operators Dangerous Goods Association (IVODGA) (informal document INF.6); the information by the secretariat on the impact of the speed in pronouncing speeches on the quality of the interpretation services provided to official UN meetings (informal document INF.22); the call for paper for the International Transport and Environment Conference to be held in Durban, South Africa, 8–11 March 2011 (informal document INF.45 (RPMASA)).

120. The Sub-Committee thanked the expert of Switzerland for the reception organized by his Government for celebrating its accession to the status of full member of the Sub-Committee (informal documents INF.53 and INF.55).

121. The Sub-Committee noted with interest the decision of the Bureau of the United Nations Economic Commission for Europe (UNECE) Inland Transport Committee to select, as a round-table theme for the policy-oriented segment of its next session, the subject of “Transport of Dangerous Goods: regional and global aspects”. The subject would be discussed in the afternoon of 1 March 2011, and the Director of the UNECE Transport Division, Mrs Eva Molnar, invited all delegations of the Sub-Committee, should they be full member or observer countries, from UNECE or non-UNECE countries, from intergovernmental organizations or non-governmental organizations or the private sector, to contact the secretariat if they wished to deliver policy presentations on related issues. She underlined that this was a unique occasion to discuss, at policy level, international transport of dangerous goods by all modes of transport not only between European countries themselves but also between Europe and the rest of the world. Looking forward to a lively and constructive debate, she encouraged participation of high-level officials from all parties interested in developing a vision for the future.

122. As regards the next session of the Sub-Committee, delegations who had submitted late proposals or comments in informal documents which could not be discussed at the present session, were invited to inform the secretariat whether they wanted to submit them as official documents or to submit revised documents (informal documents INF.15, INF.32, INF.21, INF.59, INF.23, INF.24, INF.25, INF.48, INF.61, INF.18 and INF.51).

XIV. Adoption of the report (agenda item 13)

123. The Sub-Committee adopted the report on its thirty-seventh session and the annexes thereto on the basis of a draft prepared by the secretariat.
