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SUB-COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS

REPORT OF THE SUB-COMMITTEE OF EXPERTS ON ITS FIRST SESSION
(31 July - 11 August 1989)

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REPORT

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its first session from 31 July to 11 August 1989. The session was attended by experts from the following countries: Canada; China; France; Germany, Federal Republic of; India; Italy; Japan; Netherlands; Norway; Poland; Sweden; Union of Soviet Socialist Republics; United Kingdom; United States of America. Observers from Austria, Belgium, Finland, Spain and Switzerland participated in accordance with Rule 72 of the Rules of Procedure of the Economic and Social Council. Representatives of the United Nations Environment Programme (UNEP) were also present. Representatives of the following specialized agencies and intergovernmental organizations attended the session: International Labour Organisation (ILO); World Health Organization (WHO); International Atomic Energy Agency (IAEA); International Civil Aviation Organization (ICAO); Central Office for International Railway Transport (OCTI). Representatives of the International Air Transport Association (IATA), the European Fertilizer Manufacturers Association (EFMA), the European Council of Chemical Manufacturers' Federations (CEFIC), the International Chamber of Shipping (ICS), the Permanent International Committee on Industrial Gases and Calcium-Carbide (CPI), the Hazardous Materials Advisory Council (HMAC) and the European Secretariat of Manufacturers of Light Metal Packaging (SEFEL) took part in the discussions when items of concern to their organizations were considered.

2. The session was opened by a member of the secretariat who informed the Sub-Committee that India might now become a full member in accordance with the decision of the Economic and Social Council at its second regular session of 1989 (Geneva, July 1989).

ADOPTION OF THE AGENDA

3. The Sub-Committee of Experts adopted the provisional agenda proposed by the secretariat (ST/SG/AC.10/C.3/1).

ELECTION OF OFFICERS

4. Mr. L. Grainger (United Kingdom) was unanimously elected Chairman; Mr. M. Mariat (France) and Mr. J. Monteith (Canada) were unanimously elected Vice-Chairmen.

ADMINISTRATIVE MATTERS

5. Since this was the first session of the new subsidiary body of the Committee of Experts, the Chairman described in some detail his proposals for working methods and times during each sitting and his strategy for the work to be accomplished in the biennium 1989/90.

6. Several experts regretted the fact that the financial crisis in the International Maritime Organization had prevented Mr. H. Wardelmann for the first time in over 15 years from participating in the work of the Committee. The Chairman had hoped to draw upon Mr. Wardelmann's wide and long experience in order to advise the new Sub-Committee on the way it should proceed in order to harmonize the regulations of the different modes. Experts agreed that the

Sub-Committee should be very careful not to propose trivial changes to the United Nations Recommendations which merely made more difficult the task of the regulatory authorities. The secretariat was requested to make every effort to ensure that all six language versions of the Recommendations were published more or less simultaneously. Regulatory authorities, particularly IMO, had to face unnecessary difficulties when one version was available long before another.

7. The expert from Canada mentioned a recent draft convention being elaborated by the International Labour Organisation in which there was the possibility of a system of classifying the hazards of chemicals which might be different from the United Nations system for transport. A representative of the ILO reassured the Sub-Committee that the ILO was well aware of the desirability of harmonization and that a resolution had been adopted requiring careful examination of existing systems of classification as a basis for future work on the draft convention.

8. The Chairman and several experts described the serious difficulties created for themselves and for the regulatory authorities when the ECE secretariat was not producing a consolidated list of all adopted texts for insertion in the Recommendations, in the proper sequence of chapters and paragraphs. The expert from ICAO mentioned that his Secretary-General had recently written to the Executive Secretary of the ECE pointing out that the comparatively small savings accruing for the Geneva United Nations Office were eclipsed by the extra costs created for ICAO and other interested organizations.

9. The Secretary reported that the Director of the ECE Transport Division was sympathetic concerning the prompt production of consolidated lists of adopted text and that a reply in this vein would be sent shortly to ICAO. The speed with which such lists could be produced was wholly dependent on the provision of the necessary computer equipment in his Division. As regards the inclusion of explanatory text in the narrative section of future reports, it was pointed out that it was primarily the responsibility of experts themselves to take such notes as they considered necessary for future reference. The secretariat would use its judgement and include explanations underlying the decisions of the Sub-Committee when these were crucial and not evident from the working documents but the need to shorten the reports for reasons of economy remained.

10. The Secretary announced that eight new papers had been submitted very recently or handed to him that day. Since it was the adopted policy not to introduce "late papers", these would be described as information papers. The report would not make explicit reference to any of these papers though the Chairman stated that the content of such papers could be discussed. The Secretary proposed that after discussion the author of each information paper should, if necessary, be invited to make a formal submission for a future session.

11. The Secretary explained the procedure to be followed for the Government of India to become a full member of the Committee of Experts on the Transport of Dangerous Goods. Following the approval in principle by the Economic and Social Council, the Secretary-General would seek the views of the Committee.

Since there was no session planned before December 1990 the Chairman sought the views of the Sub-Committee of Experts on the proposed participation by India. The Sub-Committee welcomed the proposal. The Chairman therefore requested the Secretary to inform the Secretary-General of this fact and to explain that the members of the Committee were present or were represented in the Sub-Committee of Experts. On this basis it was hoped that it would be possible formally to invite the Government of India to send an expert on the transport of dangerous goods to the next session of the Sub-Committee.

12. Later in the session the Vice-Chairman welcomed a representative of the Government of India who joined the Sub-Committee and who apologized for not having been able to participate from the beginning of the session. He expressed his Government's interest in the very useful work of the Committee of Experts and assured the Sub-Committee that an expert from India would play an active part in its work henceforth.

13. Mr. G. Dente, Director of the ECE Transport Division, addressed the Sub-Committee to inform them of recent events in the Second Regular Session of 1989 of the Economic and Social Council and related matters concerning staff, equipment and his hopes for further improvement in the support given to the work of the Committee of Experts and its Sub-Committee. The general tenor of his address was cautious optimism in view of the undoubted improvements in the past 12 months and the indications for the future.

14. The Chairman and the expert from France drew attention to the importance which they and other experts attached to the request that the various parts of the Test Manual (document ST/SG/AC.10/11) should be physically combined and published as a revised version in a single cover as soon as possible. The Director undertook to give priority to this request and to seek ways and means of publishing it as a single volume early in 1990 as requested. It was stressed that this should be distinguished from the longer term proposal to rationalize the various parts of the Test Manual which involved fundamental technical and editorial revision.

15. In response to suggestions that the ECE should give better publicity to its work and undoubted achievements in the field of the transport of dangerous goods, the Director said some action in that direction was already being taken such as the publication of an Annual Transport Bulletin through which the work on dangerous goods would inter alia be publicized. He further took note of the suggestion that suitable press releases should be issued on the occasion of the publication of the revised United Nations Recommendations and the adoption of the draft Convention on Civil Liability concerning Transport of Dangerous Goods.

16. Concerning recent requests for more explanatory material in the reports of sessions the Director pointed out that a sensible balance had to be struck by the Secretary between the understandable desire of experts for as much information as possible in reports and the restrictions under which the secretariat must work. As regards the prompt production of a consolidated text of adopted amendments to the United Nations Recommendations, he was sympathetic and would endeavour to provide this. The sorting of the numerous items of adopted text would be facilitated when the Transport Division would have at its disposal the appropriate electronic equipment which had been promised to the Division.

17. The Chairman and a number of experts thanked the Director for securing the recent improvements to support the work of the Committee and expressed the hope that further improvements would be achieved.

18. Later in the session Mr. Malloch, Senior Adviser to the Executive Secretary, provided further information about future plans to support more efficiently the work on the transport of dangerous goods by the use of advanced equipment. It was envisaged to establish a local area network in the ECE involving personal computers linked to a main frame computer with laser printers. It was hoped to begin installation of equipment in January 1990. This could be done earlier for the Transport Division if a transfer of funds, from the budget line for publications to that for equipment, was authorized.

19. The Chairman and several experts thanked Mr. Malloch for his expression of interest in the work of the Sub-Committee and stressed the importance attached by States to this area of work. There were signs that other international organizations better funded than the ECE Transport Division were interested in carrying out work in the field of the transport of dangerous goods with the risk of duplication and even conflict which was in nobody's interest. The United Nations work, with a tradition of over 30 years, should not be eclipsed by that of newcomers. Against this background it was clearly imperative that the United Nations should be seen to produce credible recommendations: credible in content, presentation, language and timeliness. It was the last attribute which might be assured by the introduction of the modern office equipment which Mr. Malloch had now pledged.

20. Other statements following that of the Chairman concurred with the views he had expressed and stressed the key mission of the Committee of Experts in pursuing two very important goals: harmonization to facilitate trade and the maintenance of public safety. The possibility was mentioned that when the Committee of Experts was provided with adequate support, it might take on other tasks contingent upon its current work, such as a data bank on shipments, package approvals, serious accidents, etc.

21. In conclusion Mr. Malloch assured the Sub-Committee of his high opinion and that of Mr. Hinteregger concerning the work on the transport of dangerous goods and offered to keep the Sub-Committee informed of progress concerning improved support to its activities.

UNEP CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES

22. A representative of UNEP informed the Sub-Committee about the Conference in Basle where the draft Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989. He answered certain questions from experts concerning the technical annexes to the Convention and the procedure for updating them under article 18. The observer from Austria noted that four categories of hazardous wastes (H10 to H13) had been introduced which could only be equalled to Class 9 in the United Nations system for transport. The Chairman invited experts to make written proposals for criteria for these extra categories so that they might be considered at a future session of the Sub-Committee. Finally, the representative of UNEP distributed copies of the Final Act of the Convention.

HAZARD BY INHALATION DURING TRANSPORT OF CERTAIN CLASS 6.1 SUBSTANCES

23. There were no proposals and no discussion on this subject.

MANUAL OF TESTS AND CRITERIA

(a) Alignment of tests for explosives with those for organic peroxides and other energetic substances

24. Mr. Mariat, Vice-Chairman, led the discussion on items concerning explosives. Documents ST/SG/AC.10/C.3/R.9 and ST/SG/AC.10/C.3/R.11 were considered by a working group (see paras. 73 and 74). There were no other proposals under this item.

(b) Distinction between classification codes 1.4C and 1.4S

25. Although there had been no new documents on this subject for three years, it was agreed that the subject was important in practice and that it should be left on the agenda for future sessions. Several experts expected to be able to submit test results during 1990. It was agreed that the heading should be extended to include classification code 1.4G.

(c) Validation of new scheme of tests for articles containing only extremely insensitive explosive substances

26. The proposal in document ST/SG/AC.10/C.3/R.19 was adopted subject to verification of the designation of the test. The adopted text, which replaces the existing text for Test 7K, is shown in annex 1 to this report. The expert from France informed the Sub-Committee of recent results using Test Series No. 7 which had been carried out in the United States of America and France.

(d) Other matters concerning the Test Manual

27. The proposal in document ST/SG/AC.10/C.3/R.16 led to a lengthy discussion, for and against changing the existing criteria for radiation in paragraph 44.4.4 (c) of the Test Manual. In conclusion the Sub-Committee decided not to make any change for the moment but to await additional information and the forthcoming discussion on the possibility of a new division 4.4.

RECOMMENDATIONS ON PACKAGING

(a) Simplification of packaging methods for explosives

28. The proposals in document ST/SG/AC.10/C.3/R.14, paragraph 8 and in document ST/SG/AC.10/C.3/R.24, paragraph 3 were identical and had been submitted separately by the secretariat and by the representative of ICAO respectively. It was agreed that the proposals were not just a minor editorial change. The Sub-Committee adopted, instead of the written proposal to amend Particular Packing Requirement 54, the text shown in annex 2 to this report which was based on that already in the Russian version of the Recommendations.

29. The proposal in document ST/SG/AC.10/C.3/R.17 was not adopted because the existing word "cushioned" was a more accurate description of the requirement for detonators for ammunition (PPR 36).

(b) Elaboration of provisions on intermediate bulk containers and unit loads, testing of combination packagings, reconditioning of packagings and other pertinent matters

30. The proposal in document ST/SG/AC.10/C.3/R.20 was not acceptable because it did not deal with all aspects of the problem of dynamic instability of liquids in tank-containers in all modes of transport. The expert from France described the results of tests which indicated that, based on tests, the danger range was 20% to 80% degree of filling but admitted that the tests were confined to road vehicles. It was reported that the IMO had discussed the problem but had not yet made a decision. Certain experts drafted an alternative proposal based on the provision in marginal 212 173 of the ADR. Doubts were expressed about the reliability of the value 80% and its application to rail, sea and inland waterways; about the basis of the value 7,500 litres; also about the need to consider the viscosity and density of the liquid being transported. The expert from the Netherlands was requested to elaborate a new proposal for a future session taking account of the points discussed.

31. The Sub-Committee examined documents ST/SG/AC.10/C.2/R.661 and ST/SG/AC.10/C.3/R.14, paragraph 3. The expert from the Netherlands had raised a number of important questions which urgently needed answers before the new scheme for testing packagings (United Nations Recommendations, chapter 9) came into force on 1 May 1990 for the land mode and 1 January 1991 for the other modes. The representative of ICAO recalled his own document ST/SG/AC.10/C.2/R.572 in which he had expressed similar concern over the ramifications of the new testing scheme. The expert from the United States of America added a further four questions to the discussion. The expert from Norway distributed a two-page extract in English from the Nordic countries' test programme which was a project intended to provide answers to many of the questions raised above.

32. Many experts expressed appreciation for the contribution of the Nordic countries. This was the first positive contribution; hitherto the discussion had been confined to a catalogue of questions and problems. After a lengthy discussion three courses of action were agreed. First, experts were requested to liaise with their national participants at the Conference in Hamburg in October 1989 of the International Association of Packaging and Research Institutes (IAPRI) in order to persuade the packaging experts to start discussions amongst themselves so as to prepare the ground for the next stage. Secondly, experts should develop solutions to the problems in the form of a draft text for amending chapter 9 of the Recommendations. Such text might be based on the contribution from Norway mentioned above. The Chairman reminded experts that such submissions should be received in the secretariat by mid-October 1989. Thirdly, the Secretary should include this topic in the agenda for the second session of the Sub-Committee in January 1990.

33. It was proposed that a list of questions to be addressed at the second session should be developed before the end of the current session. Experts were invited to bring to the second session their advisers on the testing of

packagings. A number of experts stressed the importance of well-defined terms of reference for any working group of packaging experts which might be set up to work during the second session; the Sub-Committee urgently needed solutions - not an extension to the list of questions and problems.

34. The proposal in document ST/SG/AC.10/C.3/R.23 (English only) had been published too late to enable experts to study the ramifications. After the representative of SEFEL had introduced the document the expert from the Netherlands sponsored it. Many experts supported the proposal in principle but were unable to adopt it pending further study. Particular questions raised included a definition for the term "light gauge metal packagings" which was used in RID/ADR but not in the United Nations Recommendations, restriction to substances with low viscosity in Packing Group III or possibly II and the need to specify more clearly the quality assurance programme (possibly one which was acceptable to the competent authority). The representative of SEFEL said he would revise his proposal in the light of the discussion.

REVIEW OF CERTAIN CLASSES OF DANGEROUS GOODS

(a) Class 2 (gases)

35. The Chairman explained why the Committee of Experts during its fifteenth session had rejected some of the proposals adopted by the former Group of Rapporteurs and had referred numerous papers to the Sub-Committee for a major study on the classification of gases and mixtures of gases. He referred to document ST/SG/AC.10/C.3/R.12 which was a factual document produced at the request of the Committee to serve as a starting point for the discussion. He then invited authors of other documents to introduce their proposals in general terms. It was envisaged that study of the detail in the documents would be done later in the session. Faced with so many alternative proposals and conflicting proposals, his task as Chairman was primarily that of trying to structure the discussion and to correlate all the documents.

36. Documents ST/SG/AC.10/R.203, -/R.209 and -/R.232, ST/SG/AC.10/C.2/R.671, ST/SG/AC.10/C.3/R.5, -/R.15 and -/R.31 were introduced by their authors together with a paper distributed informally by the expert from the Union of Soviet Socialist Republics.

37. These proposals led to a discussion on whether physical or chemical properties of gases should predominate. In response to a question from the observer from OCTI, it was stated that the existing three divisions of Class 2 served mainly the sea mode and facilitated segregation in ships. The divisions were related to the three primary labels for gases described in chapter 13 in the United Nations Recommendations. The expert from France maintained that the physical properties were the most important ones because the packaging depends on them, such packagings being of crucial importance in this Class. Other experts suggested that the divisions should be based on the chemical properties (flammability, toxicity and corrosivity) and that the physical properties (compressed, dissolved, liquefied and deeply refrigerated forms of gases) could be indicated in the proper shipping names. Several experts and observers spoke in favour of the proposals by the expert from the Union of Soviet Socialist Republics presented in an informal paper.

38. The expert from the Federal Republic of Germany suggested that a compromise might be to correlate the six groupings indicated in paragraph 1.16 of annex 4 of document ST/SG/AC.10/C.3/R.12 against the four divisions proposed by the expert from the Union of Soviet Socialist Republics and the three divisions in the current IMDG Code. He distributed an informal paper containing a table to illustrate that RID/ADR chemical descriptions can, with certain adaptations, be correlated with the current IMO descriptions for Class 2. The Sub-Committee took note of this table which has subsequently been published, as background information, in document ST/SG/AC.10/C.3/R.32.

39. The Chairman then suggested that it was necessary to take decisions to accept or reject specific proposals in order to reduce the number of documents on the table.

40. The expert from the United States of America recalled that it was essential for the Sub-Committee to revert to the terms of reference for this topic as defined by the Committee of Experts in 1986. She reminded the Sub-Committee that the Committee had decreed that there should be no new labels; no wholesale reclassification of substances; that the impact on the modal authorities should be minimized; that the main task was to devise a system to classify mixtures of gases. It was unthinkable that the well-tried system should be discarded and a new theoretical system should be adopted. The Sub-Committee agreed and focused its attention on the proposed divisions in Class 2 and their titles.

41. The proposal in document ST/SG/AC.10/C.3/R.5 (Canada) to establish a new division 2.4 for corrosive gases was not supported by a majority of experts. Although it was useful to distinguish corrosive and toxic gases in terms of toxicology and emergency response, there were other methods of dealing with corrosive properties without creating a new division within Class 2.

42. The proposal in document ST/SG/AC.10/C.3/R.15 to create a fourth division in Class 2 for oxidizing gases was not supported by the majority of experts. It was pointed out that IMO had dealt with this matter for many years without having a separate division.

43. A proposal by the expert from the Union of Soviet Socialist Republics in an informal paper distributed during the session, which would have introduced a new division in Class 2 for gases which were both poisonous and flammable, was not adopted. Experts opposed the proposal for reasons consistent with those advanced against the other proposals mentioned above. It was pointed out that the double hazard could be indicated by suitable labels.

44. The proposal in document ST/SG/AC.10/R.232, annex 1 to change the name of division 2.2 to read "compressed gases" was not adopted. Several experts sympathized with the attempt of HMAC to avoid the current double negative (non-flammable, non-poisonous gases) but none was able to offer a positive alternative in terms of chemical properties. The expert from the Federal Republic of Germany opposed the proposal both because it would have mixed physical and chemical properties in the names of the divisions and because, he alleged, the technical basis was incorrect.

45. The Chairman summed up the position as follows: it was agreed that there should be only three divisions in Class 2 corresponding to the existing labelling provisions in chapter 13 of the United Nations Recommendations namely, division 2.1 (flammable gases), division 2.3 (toxic gases) and division 2.2 (non-flammable, non-toxic gases). It was noted that the proposals for additional divisions had been rejected partly on the grounds that labelling could provide a solution to most of the problems addressed by those proposals.

46. The expert from the Netherlands questioned the course on which the Sub-Committee had embarked. He was not entirely content to accept the decisions taken during the previous sitting because he considered that they ran counter to the terms of reference for the work on gases set by the Committee in 1988. He quoted document ST/SG/AC.10/R.222 which had suggested the guiding principles for future work on classification. The experts from France and the Union of Soviet Socialist Republics agreed with a number of points made by the expert from the Netherlands. Other experts and observers said that they too were not entirely happy with some of the decisions but, once the vote had been taken, they would accept the majority decisions and not raise the same issues again. Finally, the Chairman took a vote on whether or not to proceed along the course that he had indicated, specifically that the Sub-Committee should proceed to examine the names and scope of the three divisions within Class 2. By a decisive vote the Sub-Committee endorsed the Chairman's strategy.

47. The proposal in document ST/SG/AC.10/C.3/R.15 to change the name of division 2.2 to read "Asphyxiant gases" was not adopted. Several alternative names were suggested such as general gases, miscellaneous gases and other gases in an attempt to avoid the double negative in the earlier name "non-flammable, non-poisonous gases". It was noted that this term would not appear on transport documents or labels used in transport and therefore the use of this name in the Recommendations would not in practice pose the problems discussed including the possible conflict with toxicological provisions in other regulations or conventions. The majority of the Sub-Committee preferred to retain that name for division 2.2 as shown in document ST/SG/AC.10/C.3/R.12, annex 1, paragraph 1.17.

48. The proposal in document ST/SG/AC.10/C.3/R.5, annex 1, paragraph 1.7 was noted but in a decisive vote it was decided to maintain the text in document ST/SG/AC.10/C.3/R.12 (annex 1). The proposal led to a discussion of the appropriate values for flammability range and ignitable mixtures. A key factor was the effect on the classification of ammonia; most experts and observers wished that this should remain classified as a non-flammable gas. The experts from the Federal Republic of Germany and the Union of Soviet Socialist Republics stated that they would submit written proposals for the next session giving technical justification for the values they considered to be correct.

49. The Chairman summed up the very lengthy debate on the revision of Class 2 (gases). The majority had accepted that there should be three divisions and that these should be as shown in document ST/SG/AC.10/C.3/R.12, annex 1. All new submissions should be based on that text. In preparing the agenda for the

second session the Secretary should provide three sub-items for gases: (i) definitions of subdivisions in Class 2, (ii) definition of hazards of gases and determination of test methods and criteria for primary and secondary hazards (precedence of hazards) and (iii) development of a generic-entry system for mixtures.

50. The Chairman undertook to identify later in the session any old documents, or any parts of old documents, which deserved to be carried forward to the second session. The authors were invited to consider revision of these in the light of the above discussions, without raising old issues again, and submit them for publication in the new series ST/SG/AC.10/C.3/R.... .

(b) Class 4.1 (in particular, self-reactive substances)

51. The experts from the Federal Republic of Germany and the United States of America introduced documents ST/SG/AC.10/R.223 and ST/SG/AC.10/C.3/R.21 respectively. Several experts agreed in principle that there was room for improvement in the clarity of the recommendations in paragraph 1.10 and chapter 9 of the United Nations Recommendations in regard to the criterion distinguishing solids from liquids. Neither of the proposals was entirely satisfactory so the Chairman invited those two experts and any others who wished to participate in a drafting group to attempt to merge the proposals in the two documents into one joint proposal.

52. When the small drafting group presented its results the Chairman pointed out that, for the moment, adoption of text, based on documents ST/SG/AC.10/R.223 and ST/SG/AC.10/C.3/R.21 was not appropriate. The objective was simply to develop a text which might be adopted during the second session if the Sub-Committee then decided that it did wish to include such tests.

53. The expert from France suggested that the whole text be placed in square brackets pending translation and further study and this was agreed. He particularly requested that the word "considered" should be translated by "consideré". After some discussion of the term "melting points" it was decided not to qualify it for the time being.

54. The experts from the Netherlands and the Union of Soviet Socialist Republics asked for confirmation that the tests proposed by the experts from the Federal Republic of Germany and the United States of America were equivalent and that the respective competent authorities would give reciprocal recognition to results using such tests. The Chairman suggested that the sponsors of the tests should consider how best to give this assurance for the next session.

55. The text was recognized as being suitable for the purposes described above and is reproduced in annex 3 to this report.

(c) Class 5.1 (oxidizing substances)

56. The expert from France introduced his document ST/SG/AC.10/C.2/R.675, which was supplemented by document ST/SG/AC.10/R.252, proposing an alternative test for oxidizing substances. The expert from Norway introduced document ST/SG/AC.10/C.3/R.10 with test results and strongly recommended that the

Sub-Committee should not support round robin testing using the French test. Several experts described the inherent difficulties with this type of test and these substances, notably ammonium nitrate. The Chairman then proposed that the Sub-Committee should take note of the above documents but should not accept for the time being the offer from the Organisation for Economic Co-operation and Development (OECD) in document ST/SG/AC.10/C.3/R.11 to carry out any round robin testing. Several experts recognized that the problem none the less existed and that the current test method should be improved. The expert from France then indicated that he was prepared to present new proposals to this effect.

57. Although the expert from Poland and the representative of IMO were not present at that time, the Sub-Committee considered their joint proposals in document ST/SG/AC.10/R.220. Experts thought that a few of the numerous amendments proposed in the document might be accepted but many of them required proper technical justification and some were probably unacceptable. The Secretary was therefore requested to carry the document forward to the agenda of the next session so that the authors might provide further information.

(d) Class 6.2 (infectious substances)

58. Mr. Monteith, Vice-Chairman, led the discussion on this sub-item of the agenda. Documents ST/SG/AC.10/R.218 and ST/SG/AC.10/C.3/R.22 presented alternative proposals to improve chapter 6 of the United Nations Recommendations. The first document proposed a revision involving wider scope and a system of grouping of infectious substances and articles based on the system of classification in the World Health Organization's Laboratory Biosafety Manual 1983. The second document proposed more moderate changes to improve clarity and to deal with the packaging and marking of diagnostic specimens and biological products.

59. A number of experts considered that changes were needed in chapter 6 concerning the definitions, scope and provisions for wastes and that toxins, being well-defined chemical substances, should be transferred to division 6.1.

60. The proposal to introduce a new system of classification, based on that of WHO, did not receive general support. Some experts saw a need for differentiation of degrees of hazard in the wide range of substances and articles in division 6.2 but not for a new system of classification.

61. The representative of WHO acknowledged that the system in the WHO manual had been devised for laboratories where the conditions could be controlled and the employees could be protected to a degree which was impossible during transport. That system was not applicable to transport though it could provide a useful basis which might be adapted by the Sub-Committee for the purposes of chapter 6 of the United Nations Recommendations. The expert from Canada offered to submit a proposal on how to adapt the WHO system for discussion during the third session (July 1990). He then displayed to the Sub-Committee a series of packagings tested in Canada, that met all the requirements in chapter 6 for the packaging of infectious substances.

62. The expert from the United Kingdom acknowledged the work in document ST/SG/AC.10/R.218, but she could not accept the thesis that a classification should be established based on the WHO work. It was important that the Sub-Committee should be seen to be keeping its recommendations on infectious substances up to date and relevant. If the United Nations did not do so there were a number of other international organizations ready and willing to step in. The Vice-Chairman wondered if the apparent lack of interest and the unwillingness of experts to speak on this subject was an indication that they had not had sufficient time to determine positions on the two documents.

63. The Vice-Chairman sought a firm lead from the Sub-Committee on the way forward. He took a vote on whether a grouping system was necessary or not; two experts voted for the proposal and two against it.

64. The representative of WHO undertook to study the Sub-Committee's problems with his colleagues and to communicate with the ECE secretariat in due course. He emphasized that WHO could not play the role in division 6.2 which IAEA played in Class 7 because WHO did not have transport specialists and had not published any recommendations on transport.

65. The Vice-Chairman summed up as follows. Few experts had revealed their positions; some experts were in favour of limited use of a classification based on the WHO system but others did not want any differentiation of hazards. Toxins should be transferred to division 6.1. The need to expand packaging requirements should be reviewed. The subject of wastes should be discussed otherwise the United Nations Recommendations in this area could not be offered to UNEP as a complete system. The expert from the Federal Republic of Germany was requested to consider revising document ST/SG/AC.10/R.218 in order to align it with the sixth edition of the United Nations Recommendations, taking into account the discussion.

66. The Secretary drew attention to document ST/SG/AC.10/C.3/R.14, paragraph 7 which indicated a change in the United Nations Recommendations paragraph 6.13.3. After discussion between the expert from the United Kingdom and the representative of ICAO it was agreed that there had been an inadvertent typing error in an earlier document from the United Kingdom (ST/SG/AC.10/C.2/R.637) which related to paragraph 6.12.1 (b) of the fifth edition of the United Nations Recommendations. It was agreed that the figure "50°C" should read "55°C". The Secretary was authorized to insert this correction in the sixth edition.

(e) "Energetic" substances of any class

67. The Chairman recalled the earlier decision to devote a substantial amount of time to discussion of this important new topic while the explosives experts were still present. The documents to be considered were ST/SG/AC.10/C.3/R.6, -/R.7, -/R.8, -/R.9, -/R.11 and -/R.28. The expert from the United Kingdom began the discussion by outlining the problems with the current system of classification for such diverse substances as sponge blowing agents, additives for animal feedstuff, products used in the printing industry, raw material for the perfumery trade and certain water-wetted explosives. After a general presentation of his proposed solutions to the problems he described in some detail his document ST/SG/AC.10/C.3/R.8. The essence was the proposal to introduce a new division 4.4 and 20 new generic entries taking account of the similar system of entries for organic peroxides.

68. The expert from France introduced alternative proposals to deal with the problems and outlined the principles set out in his document ST/SG/AC.10/C.3/R.28. He pointed out that there was less scientific detail in his document than in that of the United Kingdom. The purpose of his presentation was to ascertain the views of other experts on his proposed project before developing it further. If encouraged to do so, he would develop his document and provide facilities for a meeting of a working party in France in order to expedite the project.

69. Several experts expressed their views on the alternative proposals in general terms. The consensus was that the project of the United Kingdom was too ambitiouus and that it was premature to consider introducing a new division 4.4 at this stage. Full account should be taken of the ramifications of a new division for the modal authorities and for the States themselves when deciding, at some future time, whether such an innovation was really justified.

70. The Chairman therefore focused attention on the French document ST/SG/AC.10/C.3/R.28 and the possibility of developing the definition of the term "self-reactive substance" (para. 14.2.1.2 of the Recommendations) in order to provide within the current biennium a practical solution to the problems encountered with those substances. It was agreed that an informal working group should be convened under the leadership of Mr. T. Groothuizen (Netherlands) to start work forthwith. One task was to develop precise terms of reference for a working group to meet concurrently with the second session of the Sub-Committee. The other tasks of the existing working group included the amalgamation of the existing documents in order to ascertain common areas, the revision of the definition of "self-reactive substance" and the development of a plan of work including a realistic time-scale for completion of the work.

71. The expert from France sought confirmation that the working group would take document ST/SG/AC.10/C.3/R.28 as the basis for its work and this was agreed. The Chairman reiterated that the working group would take account of all the documents listed in paragraph 67 above.

72. The expert from the United Kingdom introduced document ST/SG/AC.10/C.3/R.9. The four basic proposals were (i) standardization of the test format used in Part III of the Test Manual, (ii) grouping of the test methods in terms of the property being assessed, (iii) expression of the classification schemes in terms of the property being asssessed and (iv) transfer of the test methods from the UN Recommendations to the Test Manual. Several experts supported the proposals but urged caution. The expert from the Federal Republic of Germany in the light of recent experience on a similar project warned that the task would require at least two years. It was agreed that consideration should be given to including all classification tests (i.e. those for all nine classes) in the Test Manual. The Chairman concluded the discussion by requesting the Secretary to carry the document forward to a future agenda.

73. The Chairman of the working group (para. 70 above) later presented to the Sub-Committee a report, reproduced in annex 4 to this report, which had been agreed unanimously by his group. The report was read out in plenary so that the interpreters could inform the Sub-Committee concerning its contents.

74. The Sub-Committee expressed its appreciation to the informal working group for completing the first phase of this work so quickly. It took note of the report. Several experts stated that it was too early to take any firm decisions on the issues raised in paragraph 14 of that report.

75. The Sub-Committee noted that the working group had dealt with documents ST/SG/AC.10/C.3/R.6, -/R.7, -/R.11, -/R.28 and a flow chart distributed by the expert from the United Kingdom during the session.

76. After considering the proposals for a plan of work set out in paragraph 13 of the informal working group's report the Sub-Committee agreed to establish a working group during its second session. The tasks were to consider further the first report (annex 4 to this report) and to consider documents ST/SG/AC.10/C.3/R.8 and -/R.9 together with any new documents submitted in due time, on the basis of the following terms of reference:

(a) To evaluate a system of 20 generic entries for self-reactive substances within division 4.1; to study the suitability of an SADT value set between 65°C and 80°C; to develop criteria for thermal stability and requirements for desensitization of these substances and to propose requirements for labelling them;

(b) To assess the necessity for changing the name of division 4.1;

(c) Then to develop proposals for editing and consolidating the Test Manual, including necessary tests for self-reactive substances but not changing the technical content of existing accepted tests.

ROUTINE LISTING AND CLASSIFICATION OF DANGEROUS GOODS

77. Mr. Mariat, Vice-Chairman, led the discussion on three documents under this item. The proposal in document ST/SG/AC.10/C.3/R.26 was agreed in principle but it was decided to amend the proposal so that the the subsidiary risk label should apply to all types of smoke ammunition which contain corrosive substances. The expert from the Federal Republic of Germany submitted an amended proposal, taking into account the result of the discussion and this new Special Provision 204 was adopted and applied as shown in annex 2 to this report.

78. The proposal in document ST/SG/AC.10/C.3/R.14, paragraph 4 led to a discussion of the best way to achieve consistency in Class 1 and in Division 5.2 in regard to the indication of Packing Group. The expert from the United Kingdom undertook to prepare a written proposal for a future session which would attempt to assign the Packing Group to all substances and most articles in Class 1. It was noted that certain large articles in Class 1 were transported without packaging so that a packing group was inappropriate. Reference was made to paragraphs 9.1.4 and 9.1.5 of the sixth edition of the Recommendations

79. In document ST/SG/AC.10/R.264 the expert from the Netherlands requested changes to existing entries in chapter 2 in order to accommodate a new type of explosive article called a "basebleed". The proposal was not adopted. An informal working group was convened under the leadership of the expert from

the Netherlands who later reported that the results of the working group would be submitted in a document for the next session of the Sub-Committee. Meanwhile document -/R.264 was withdrawn.

80. The Chairman led the discussion on the proposal in document ST/SG/AC.10/C.3/R.24, paragraph 4 which resulted in a decision to clarify the intention of recent amendments concerning UN No. 2037. It was agreed that the numeral 3 in column (b2) in chapter 2 should have been deleted for the sixth revised edition of the Recommendations.

81. The proposal in document ST/SG/AC.10/C.3/R.25 (ICAO) led to a lengthy discussion on the use of the nomenclature recommended by the International Union of Pure and Applied Chemistry (IUPAC) which involved the use of Roman numerals after the chemical name. At the moment the Recommendations applied this system in the French version but not the English version. Several experts acknowledged that the IUPAC system was the more modern method and that it was helpful in certain instances. However there was reluctance to change all the well-established proper shipping names in chapter 2 of the Recommendations. One compromise suggested was to follow the lead of IMO by introducing the IUPAC system in the index only. It was decided to make no change for the time being pending further consultations in France and the submission of documents for a future session which should assess the full impact of such a major change.

82. The proposal in document ST/SG/AC.10/C.3/R.29 (French only) raised doubts as to the validity of some of the data in the annex, notably in section 5.3. The Secretary was requested to carry the document forward to the agenda of the next session to give the expert from France the opportunity to check the data. Meanwhile an English version of the document should be published.

83. The proposal in document ST/SG/AC.10/C.3/R.30 (French only) raised doubts as to the validity of some of the data in annex 1, notably in sections 5.1 and 5.3. The view was expressed that where human experience was available this should take precedence over animal test data. The expert from Sweden recalled a fatal accident and insisted that, if the review of data warranted it, the classification should be changed regardless of consequential trouble for the modal authorities. Consideration should be given to the conditions for transport in tanks. The Secretary was requested to carry forward the document to the agenda of the next session and to publish an English version. Meanwhile the expert from France was invited to check the entries in the data sheet.

USE OF PROPER SHIPPING NAMES AND UNITED NATIONS NUMBERS FOR "NOT OTHERWISE SPECIFIED" ENTRIES IN CHAPTER 2

84. Mr. Monteith, Vice-Chairman, led the discussion on this item. The representative of OCTI introduced document ST/SG/AC.10/C.3/R.1 by reminding the Sub-Committee of the unanimous decision of the Committee of Experts at its fifteenth session to adopt the policy and principles on "not otherwise specified" (n.o.s) entries set out in document ST/SG/AC.10/R.222. He pointed out the difficulty which had arisen during the Joint (OCTI/ECE) Meeting in March 1989 concerning the implementation of these principles in the revision of Class 4.1 of RID and ADR. Document ST/SG/AC.10/C.3/R.1 listed at annex 1 the 12 new n.o.s. entries which were necessary as a short-term solution to

problems which had been identified. Annex 2 of the same document had been reproduced in French only because it was merely an illustration of the format and the context in which new entries would be used.

85. Several experts supported the proposal to introduce generic entries into division 4.1 following the precedent set in division 5.2. However a number of experts were opposed to the introduction of a new United Nations number corresponding to each packing group variant of a generic entry. Some questioned the ramifications for the modal authorities. It was pointed out that some of the descriptions in annex 1 were unduly long. There was a discussion as to whether or not there was a real need for this innovation in terms of improved safety as opposed to mere embellishment of the existing system. It was generally agreed that this new work should not be rushed.

86. The Sub-Committee went on to examine the related document ST/SG/AC.10/C.3/R.27 in which the expert from the Netherlands proposed a long-term solution to certain problems which would involve a radical revision of the system of numbering and naming entries throughout the Classes. Some experts supported the proposal in principle while emphasizing that this should be distinguished from the short-term action described above. Other experts and observers were sceptical of the real need for such radical changes to the United Nations Recommendations. They expressed serious concern that such a major change would undermine the credibility of the Recommendations just when many nations were beginning to understand the provisions of the current scheme and to implement them in their own regulations. The expert from the Netherlands also introduced a proposal to require the packing group of n.o.s. entries to be shown in transport documents.

87. The proposal in document ST/SG/AC.10/C.3/R.27 led to a discussion of the role of the United Nations Recommendations in regard to the specification of emergency response when dangerous goods were involved in accidents during carriage by particular modes. Several experts and observers acknowledged that the United Nations Recommendations were not perfect but pleaded that they should not become too sophisticated and complex by trying to include too much information.

88. Eventually a consensus emerged that the Sub-Committee should not make any global, dogmatic decisions based on a purely theoretical analysis; instead it should proceed pragmatically by examining one class at a time, as it came up for review, and consider whether a system of generic entries had practical benefits for that particular class, taking full account of the costs for users. Well-known names such as "ammonia" should be retained alongside any new generic entries. The review should begin with division 4.1 for which the Joint (OCTI/ECE) Meeting had made a case and should, if necessary, proceed to Class 2 where all the mixtures of gases created difficulties at the moment.

89. The Sub-Committee examined the potential benefits of introducing new n.o.s. entries in division 4.1, to supplement the existing one (UN No. 1325), treating the list in document ST/SG/AC.10/C.3/R.1, annex 1 as merely indicative of what might be agreed. The Vice-Chairman proposed that, in view of the many doubts expressed above, there should be no firm decision to adopt such new entries during this session. The objective should be merely to develop the sort of n.o.s. entries which would probably be adopted during the second session on the basis of a revised submission. The Joint Meeting would thus have some indications to guide its work during its forthcoming session.

90. The expert from the Netherlands was invited to reconsider his long-term proposal in document ST/SG/AC.10/C.3/R.27, adding toxic properties to the list in the annex and devising sensible groupings of properties which would provide real benefit in terms of clarity or improved safety at an acceptable cost for users. The United Nations number should be the prime datum; the packing group would be very useful on transport documents and on tanks but its value to the emergency services should not be overrated.

91. The Sub-Committee then examined the entries indicated in document ST/SG/AC.10/C.3/R.1, annex 1. It was agreed that only one entry (i.e. one United Nations number) should be assigned to each of the pairs shown for items 1°, 11° and 14°. By a vote of seven to three with three abstentions, it was decided not to provide a second entry in each pair to distinguish between packing groups and that this principle should apply universally. Items 5°, 6° and 12° probably warranted one new entry each but the names needed redrafting. Item 4° was not accepted (by a vote of four to one). It was decided by a vote of four to two to distinguish between organic and inorganic substances (items 1° and 11°). It was noted that United Nations No. 3089 covered item 13°.

92. The Vice-Chairman reminded the representatives of OCTI that all the above "decisions" were merely indications to guide future work. No proposal had been formally adopted and, at that stage of the session, no new United Nations numbers in this area would be assigned in the report. A small drafting group was requested to devise proper shipping names to be reviewed by the Sub-Committee later in the session.

93. When the Sub-Committee examined the results of the work of the drafting group on document ST/SG/AC.10/C.3/R.1 a number of changes were made. With the exception of the name for item 12° which was placed in square brackets, the results as modified were agreed as a basis for future work by the Joint (OCTI/ECE) Meeting and for a decision by the Sub-Committee during its second session. The text is shown in annex 3 to this report. It was agreed that UN No. 1325 was far too broad and should be reviewed in the future.

94. The Sub-Committee later agreed that this item should be put on the agenda for its second session. The expert from the Netherlands was invited to make a formal submission concerning packing group entries on transport documents based on the paper he had distributed informally during the current session. Similarly the expert from Canada was invited to formalize his similar suggestion. The representative of ICAO informed the Sub-Committee that he had found three more n.o.s. entries in division 4.1 namely, UN Nos. 2925, 2926 and 3097 (see para. 89 above). The expert from Norway thought too much attention had been given to the needs of the land mode on this matter; the Sub-Committee should not lose sight of its principal role as the originator of intermodal recommendations. The expert from France had opposed that view.

OTHER BUSINESS

95. Mr. Mariat, Vice-Chairman, led the discussion on three documents under this item which were to be considered while explosives experts were present. The proposal in document ST/SG/AC.10/C.3/R.14, paragraph 5 was withdrawn after it was pointed out by the experts that several commonly available dictionaries provided acceptable definitions of the term "hypergolic".

96. The proposal in document ST/SG/AC.10/R.237 found support inasmuch as a tabular presentation of the "mixing rules" might provide a logical and more easily understood set of provisions than the current narrative text in section 4.6 of the Recommendations. On the other hand some experts envisaged that a tabular presentation would become very complicated if it dealt with the possibility of transporting together explosives of three or more divisions. Several experts challenged the working assumptions in paragraph 1.6 of the document. In conclusion the Vice-Chairman invited experts to submit written comments to the expert from the Netherlands before the next session dealing in particular with the method of presentation (tabular or narrative), the working assumptions (para. 1.6) and the effective total mass.

97. The first proposal in document ST/SG/AC.10/C.3/R.18 (i.e. that in para. 1.1) led to a lengthy discussion of the role of competent authorities in the transport of samples of untested or partially tested explosives. Several experts suggested that the UN Recommendations should give a lead to the modal authorities concerning the need for approval solely by the competent authority of the country of origin of the consignment or by all competent authorities throughout the chain of transport. The representative of ICAO mentioned that in the air mode the ICAO Technical Instructions required approval by the competent authorities of every State which was over-flown by the aircraft carrying such goods. In the light of the discussion the expert from the Netherlands revised his written proposal. After further discussion it was finally decided not to adopt either the original proposal or the revised written proposal. Since there was no vital safety issue it was agreed to retain Special Provision 16 in the form in which it would appear in the sixth revised edition of the Recommendations.

98. The proposal in paragraph 1.2 of document ST/SG/AC.10/C.3/R.18 was adopted and it was noted that this brought the provision into line with the corresponding one in the IMDG Code (Amendment No. 25).

99. The proposal in paragraph 1.3 of document ST/SG/AC.10/C.3/R.18 was withdrawn after the expert from the Federal Republic of Germany had given certain background information. For UN Nos. 0132 and 0203 the classification, packing requirements and transport conditions were so well specified that an additional approval by competent authorities was not necessary. Similarly Special Provision 178 was not necessary for UN No. 0486 because it was evident that this number should only be used with the approval of the competent authority of the country of origin.

100. The proposal in paragraph 2.1 of document ST/SG/AC.10/C.3/R.18 was adopted. It was confirmed that the new sentence should not be interpreted to mean that testing was necessary in all cases. The option remained to classify by analogy with other goods for which test results were available. A consequential change was agreed for paragraph 4.4.1 of the Recommendations.

101. The proposal in paragraph 2.2 of document ST/SG/AC.10/C.3/R.18 was not adopted because it was felt that paragraph 4.6.5 of the Recommendations should not be amended to refer to hazard divisions which were already treated elsewhere in section 4.6.

102. The proposal in paragraph 3.1 of document ST/SG/AC.10/C.3/R.18 led to an alternative oral proposal by the expert from the Federal Republic of Germany who also suggested that the problem of compatibility with lead required careful study for a future session. The alternative proposal was adopted instead of the original. The expert from the Netherlands stated that he would review Particular Packing Requirement 2 for the future.

103. The proposal in paragraph 3.2 of document ST/SG/AC.10/C.3/R.18 indicated the need in chapter 9 of the Recommendations for a test of sift-proofness. Several experts felt this was not the time for piecemeal modification of the provisions on sift-proofness of packagings. It was agreed that the Netherlands had highlighted a problem needing solution in the future but the proposal was not adopted. The expert from the United Kingdom recalled that chapter 10 needed comprehensive revision and that this was included in the current work programme. She announced that work would be undertaken in the United Kingdom on such a revision and the results would be made available in due course.

104. All amendments adopted on the basis of document ST/SG/AC.10/C.3/R.18 are listed in annex 2 to this report.

105. The consideration of all documents relating to explosives having been dealt with, the Vice-Chairman relinquished the Chair. The Chairman congratulated Mr. Mariat on his excellent leadership which had enabled the Sub-Committee to accomplish expeditiously the difficult task of dealing with many documents scattered throughout the agenda.

106. The Chairman sought the agreement of the Sub-Committee that the Secretary should be authorized to make certain editorial changes in the sixth edition of the Recommendations of which preprints in English and in French had been distributed informally to the Sub-Committee. In particular the word "shall" should be changed to "should" in paragraphs 4.4.2, 4.4.4 and 4.5.3 (English version). This was agreed. Experts were invited to submit in writing to the secretariat any other purely editorial suggestions to help improve the English or French versions of the sixth edition. They should not hesitate to draw the attention of the secretariat to spelling mistakes; it was better that several experts drew attention to the same mistake than that none of them did so. The deadline for receipt of comments of this nature was 15 September 1989.

107. The Chairman proposed orally that the second sentence in paragraph 4.3.1 of the Recommendations should be deleted because it referred to a list of forbidden substances which was never developed by the Committee of Experts. The Secretary gave his opinion that this deletion went beyond a purely editorial change and sought a decision from the Sub-Committee as to whether or not he should delete this second sentence in the forthcoming sixth revised edition. The Sub-Committee agreed unanimously that in this particular instance the Secretary should make the deletion forthwith.

108. The proposal in document ST/SG/AC.10/R.221, paragraphs 18 and 19 was considered briefly in spite of the absence of the representative of IMO. However, as no conclusion was reached, the Secretary was requested to carry forward the document to the agenda of the next session of the Sub-Committee.

109. The proposal in document ST/SG/AC.10/R.257 from Australia was considered in absentia because it appeared to be straightforward. The expert from Canada had consulted the observer from Australia and pointed out the relevance of the table of pesticides in chapter 6 of the Recommendations. Several alternative methods were proposed to solve the problem described in the document but none was immediately acceptable. A small working group was convened by the expert from Canada to consider the matter further with a view to drafting an alternative proposal. The expert from Canada later presented an alternative written proposal which was adopted with a modification to the proposed new special provision as shown in annex 2 to this report.

110. The Sub-Committee took note of document ST/SG/AC.10/C.3/R.13 which set out procedures for submitting documents to the secretariat. After a short discussion of annex 3 in that document, experts were invited to write individually to the Secretary on an informal basis to give information to be taken into account in devising the print menu for documents.

111. The expert from China informed the Sub-Committee that the authorities in his country already used the United Nations system of classes and was trying to follow the United Nations Recommendations completely. However, for over 30 years the Chinese railways, highways and waterways had used a five digit serial number instead of the four digits in the United Nations system. He asked experts to consider adopting in the Recommendations a five or six digit serial number in which the first two or three digits would provide information on the class, division and group of the goods.

112. Several experts thought the Chinese suggestion had considerable technical merit but were concerned at the very expensive ramifications of such a far-reaching proposal. It was suggested that such a major change might be linked to the equally far-reaching proposal to use generic entries throughout chapter 2 of the Recommendations. The expert from China said he would submit a formal document, on the new method he proposed for expressing the serial numbers for dangerous goods, for the second session of the Sub-Committee.

113. The Chairman informed the Sub-Committee that the Director of the ECE Transport Division had recently received a document from the OECD and suggested that experts should liaise with their national environment departments to avoid duplication of work with that of the Sub-Committee. The document was entitled "Elements of a possible work programme concerning hazardous wastes" reference ENV WMP 89.3 dated 22 July 1989.

114. The Chairman requested the secretariat to carry forward for item 8 of the agenda for the second session the following documents in addition to others for which this action had been specified earlier: ST/SG/AC.10/R.227 and -/R.233; ST/SG/AC.10/C.2/R.672; ST/SG/AC.10/C.3/R.2, -/R.3 and -/R.4.

ADOPTION OF THE REPORT

115. The Sub-Committee adopted the report on its first session and the annexes thereto.

Annex 1

ADOPTED TEXT FOR UNITED NATIONS MANUAL OF TESTS AND CRITERIA

In document ST/SG/AC.10/11, as amended by ST/SG/AC.10/15/Add.1:

1. Amend the Contents of Part I as follows:

for "7 (k) Article Propagation Test UN 56"
read "7 (k) Division 1.6 Article Stack Test UN 56".

2. In paragraph 45.11:

for "e.g. Test 7(k) 1.6 Article Propagation Test"
read "e.g. Test 7(k) Division 1.6 Article Stack Test".

3. Replace the existing Test 7(k) by the following:

"TEST 7 (k)

DIVISION 1.6 ARTICLE STACK TEST

56.1 INTRODUCTION

The stack test is used to determine whether a detonation of a possible Division 1.6 article will initiate a detonation in an adjacent-like article, as offered for transport.

56.2 APPARATUS AND MATERIALS

The experimental set-up is the same as for test 6 (b) (see para. 43.2) however without confinement. The donor article should be provided with its own means of initiation or a stimulus of similar power.

56.3 PROCEDURE

The experimental procedure is the same as for the test 6 (b) (see para. 43.3). The test is to be conducted three times, unless a detonation of an acceptor is observed.

56.4 CRITERIA AND METHOD OF ASSESSING RESULTS

Fragment data (size and number of acceptor article fragments), damage to the witness plate and crater dimensions are used to determine whether or not any acceptor has detonated. Blast data may be used to determine whether or not any acceptor has detonated. Blast data may be used to supplement this decision. For a Division 1.6 article it has to be demonstrated that no propagation (detonation of an acceptor) has occurred during the test.

Acceptor article response identified as no reaction, burning or deflagration are considered as negative results and noted as '-'."

Annex 2

ADOPTED TEXT FOR UNITED NATIONS RECOMMENDATIONS

In document ST/SG/AC.10/1/Rev.6:

1. In chapter 2:

(a) Add "204" in column (b3) for UN Nos. 0015, 0016 and 0303;

(b) Add a new entry as follows:

(a1)	(a2)	(b1)	(b2)	(b3)	(c1)	
3155	PENTACHLOROPHENOL	6.1		43	II	";

(c) Add "205" in column (b3) for UN No. 2020.

2. In chapter 3:

(a) Insert a new entry, after Special Provision 203, as follows:

"204 Articles containing smoke-producing substance(s) corrosive according to the criteria for class 8, should be labelled with a 'CORROSIVE' subsidiary-risk label."

(b) In Special Provision 178,
for ...with the approval of the competent authority.
read ...with the approval of the competent authority of the country of origin.

(c) Insert a new entry, after Special Provision 204, as follows:
"205 This entry should not be used for PENTACHLOROPHENOL, UN No. 3155."

3. In chapter 4:

(a) Delete the second sentence in paragraph 4.3.1;

(b) In paragraph 4.4.1, for Compatibility Group N read Compatibility Groups N and S.

(c) In paragraphs 4.4.2, 4.4.4 and 4.5.3, for shall read should (concerns English version only);

(d) In paragraph 4.4.4 add at the end the following sentence: "Compatibility Groups N and S should be used if justified by the results of tests."

4. In chapter 10:

(a) In table 10.1, in E3, column 3 delete:
"steel, removable head (1A2) with coating other than lead".

(b) In table 10.2, Particular Packaging Requirement 54:
For to generate read to generate and/or accumulate.

5. In the Index, insert a new entry as follows:

"Substance or Article	Class	Number
PENTACHLOROPHENOL	6.1	3155".

Annex 3

(Text to be considered for adoption during the second session of the Sub-Committee)

1. Proposal of the Drafting Group for revision of paragraph 1.10 of the United Nations Recommendations:

"1.10 [Unless there is an explicit or implicit indication to the contrary in the Recommendations, dangerous goods with melting point of 45°C. or lower should be considered to be liquids. A viscous material should be subjected to the ASTM D 4359-84 test or to the following penetrometer test, which is considered to be equivalent, to determine whether it should be considered as a liquid or solid for the purposes of these recommendations:

Penetrometer Test

(a) Test Apparatus

Commercial penetrometer conforming to ISO standard 2137-1972;

(b) Test Procedure

The sample is poured into the penetration vessel not less than half an hour before the measurement. The vessel, which is hermetically closed, is kept immobile until the measurement. The sample is heated in the hermetically closed penetration vessel to 35°C ± 0.5°C and is placed on the penetrometer table only directly before the measurement (not more than two minutes). The centre S of the sieve disc is then brought into contact with the surface of the liquid and the penetration depth measured in relation to time.

(c) Evaluation of Test Results

A substance should not be considered liquid if, after the centre S has been brought into contact with the surface of the sample, the penetration indicated by the dial gauge:

(i) after a loading time of 5 s ± 0.1 s, is less than 15.0 mm ± 0.3 mm, or

(ii) after a loading time of 5 s ± 0.1 s, is greater than 15.0 mm ± 0.3 mm but the additional penetration after another 55 s ± 0.5 s is smaller than 5.0 mm ± 0.5 mm.]"

2. Proposals of the drafting group to revise Class 4.1 in RID/ADR as shown in annex 1 of document ST/SG/AC.10/C.3/R.1.

Division 4.1

1. Existing generic entries other than "self-reacting substances"

UN No. 1325 FLAMMABLE SOLIDS, N.O.S.

UN No. 2925 FLAMMABLE SOLIDS, CORROSIVE, N.O.S.

UN No. 2926 FLAMMABLE SOLIDS, POISONOUS, N.O.S.

UN No. 3089 METAL POWDERS, FLAMMABLE, N.O.S.

UN No. 3097 FLAMMABLE SOLIDS, OXIDIZING, N.O.S.

2. New generic entries suggested for document ST/SG/AC.10/C.3/R.1, annex 1

(Chapter 2)

1°	(xxxa)	FLAMMABLE SOLIDS, ORGANIC, N.O.S.	4.1	109 184	
5°	(xxxb)	SOLID SUBSTANCES CONTAINING FLAMMABLE LIQUIDS, N.O.S.	4.1	109	III
6°	(xxxc)	FLAMMABLE SOLIDS, ORGANIC, MOLTEN, N.O.S.	4.1	109	III M
11°	(xxxd)	FLAMMABLE SOLIDS, INORGANIC, NON-METALLIC, N.O.S.	4.1	109 184	
12°	(xxxe)	FLAMMABLE SALTS OF ORGANIC ACIDS, N.O.S.	4.1	109	III
14°	(xxxf)	METAL HYDRIDES, FLAMMABLE N.O.S.	4.1	109 184	

3. Revised entry required i.e. change of name from "Hydrides, metal, n.o.s" to:

UN No. 1409 METAL HYDRIDES, WATER-REACTIVE, N.O.S. 4.3 109 I

4. Chapter 12: Table 12.1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
xxxc	FLAMMABLE SOLIDS ORGANIC MOLTEN, N.O.S.[7]	4.1/III		2.65	12.5.2	N.A	N	12.22.5

5. Chapter 13

13.8.4

UN No. 1409 METAL HYDRIDES, WATER REACTIVE, N.O.S.

UN xxxa FLAMMABLE SOLIDS, ORGANIC, N.O.S.

UN xxxb SOLID SUBSTANCES CONTAINING FLAMMABLE LIQUIDS, N.O.S.

UN xxxc FLAMMABLE SOLIDS, ORGANIC, MOLTEN, N.O.S.

UN xxxd FLAMMABLE SOLIDS, INORGANIC, NON-METALLIC, N.O.S.

UN xxxe FLAMMABLE SALTS OF ORGANIC ACIDS, N.O.S.

UN xxxf METAL HYDRIDES, FLAMMABLE, N.O.S.

6. Index

Annex 4

REPORT OF THE INFORMAL WORKING GROUP ON ENERGETIC SUBSTANCES

1. The informal working group comprised experts from France; Germany, Federal Republic of; Netherlands; Norway; Sweden; United Kingdom; United States of America. Representatives from CEFIC and HMAC were also present.

2. The tasks given to the group were to consider:

(a) Review of documents ST/SG/AC.10/C.3/R.6, -/R.7 and -/R.8 in order to identify common areas with document -/R.28 which was to be used as the basis for the discussions;

(b) Revision of the definition of "self-reactive substance";

(c) Drafting of a plan of work to be completed in a realistic time scale.

3. The following agenda was used:

(a) Substances to be considered and the interface with other classes;

(b) Screening procedure to select substances to be considered for classification as self-reactive substances;

(c) Principles for classification, test methods and test criteria;

(d) Use of a generic entry system;

(e) All other aspects relating to the safe transport of these substances.

4. There were lengthy discussions on the types of substances which led to the conclusion that there were three types of substances, namely:

Self-reactive substances which require temperature control;

Self-reactive substances not requiring temperature control;

Thermally stable substances with explosive properties.

The first two groups were considered to be comparable, in both explosive properties and thermal stability, to organic peroxides and the third group was thought to correspond more to secondary explosives. This third group contains, for example, organic nitro compounds and wetted explosives. The interface with Class 1 is very important for the classification of these substances. As instructed, these thermally stable substances were not considered although the experts were of the opinion that it would assist in the safe transport of those substances if their classification was reviewed as soon as possible.

5. It was proposed that substances with a self-accelerating decomposition temperature (SADT) of 80°C or less should be considered self-reactive and those with an SADT greater than 80°C considered to be thermally stable. A review of the exact temperature would be required when more information was available.

6. After considering various options given in papers ST/SG/AC.10/C.3/R.7 and ST/SG/AC.10/C.3/R.28 it was proposed to use the most simple option. Hence, substances, not used as explosives or not being of Class 5, which have an SADT of 80°C or lower should be tested using the classification principles for self-reactive substances.

7. The group agreed that, apart from one alteration, the principles for classification, test methods and criteria for organic peroxides, should be used for self-reactive substances. The alteration involved allowing the option of using, for screening purposes, an explosive power test (any of tests F1, F2, F3 or F4 in part III of the Test Manual) instead of a detonation test. A "No" result in power test is equivalent to a "no" result in the detonation test. This would help reduce testing costs.

8. It was agreed that the Sub-Committee be recommended to accept a generic entry system for self-reactive substances consisting of 20 entries of the form

SELF-REACTIVE SUBSTANCES TYPE B TO F, SOLID OR LIQUID, TEMPERATURE CONTROLLED OR NOT

These entries will allow all solid and liquid self-reactive substances to be classified including new products and samples. To avoid confusion, it is suggested that the name of Division 4.1 be changed to "flammable solids and self-reactive substances" and that all references in Division 4.2 to "self-heating substances" be changed to "oxidative self-heating substances".

9. It was found that most of the recommendations for organic peroxides could be used for self-reactive substances. However, the following problems still need to be addressed:

Thermal stability test and criteria (80°C limit, alternatives to SADT test, etc.);

Methods of desensitization (some additives make the product more reactive);

Labelling (segregation, EMS, label descriptions in chapter 13).

The Sub-Committee advised that self-reactive substances should remain in Division 4.1 but consideration will have to be given on whether the emergency procedures can be the same for the different types of substance (flammable, stable energetic, self-reactive and solid/liquid) in Division 4.1.

10. It was agreed that:

The United Kingdom should prepare proposals for revision of chapter 14 and other consequential amendments;

The Federal Republic of Germany should prepare proposals on labelling;

The Netherlands should prepare proposals on desensitization;

France should prepare proposals on thermal stability connected with the definition of self-reactive substances.

11. In view of the decisions taken by the Sub-Committee during this session, the working group concluded that there were no specific tasks which OECD (see ST/SG/AC.10/C.3/R.11) could be asked to undertake at this time.

12. The working group considered that it would be advantageous if the planning could begin for an edited, consolidated version of the Test Manual containing all the detailed test methods and with no duplication of test methods. If there was an agreed detailed layout endorsed by the Committee, the discussions could begin in the 1991-1992 biennium with a draft consolidated manual in the agreed format for eventual publication in 1993.

13. The working group recommended that the following work plan be adopted:

(a) Creation of 20 new generic self-reactive substance entries for thermally unstable substances based on the principles for classification and packaging methods for organic peroxides. This will require development of:

an assignment of currently listed and new self-reactive substances to the new entries;

thermal stability criteria;

labelling requirements;

desensitization requirements.

(b) Development of proposals for the layout of a new consolidated test manual containing all the detailed test methods and with duplicated tests rationalized.

This work can be done in working groups concurrent with the second and third sessions of the Sub-Committee during this biennium without having an intermediate informal working group meeting in Paris (which had been kindly offered by the delegation from France).

14. The Sub-Committee is invited to consider whether:

(a) It wishes to have a system of generic self-reactive substance entries (see para. 8) and to adopt the proposal concerning the limit between self-reactive substances and thermally stable substances based on an SADT value fixed at 80°C for the time being;

(b) It wishes to develop the format for an edited, consolidated Test Manual containing all the detailed test methods (see para. 12);

(c) It agrees with the proposed work programme (see para. 13);

(d) It agrees to change the name of Division 4.1 and the term "self-heating substances" in Division 4.2 (see para. 8).
