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INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

**REPORT OF THE WORKING PARTY ON ITS SEVENTY-SIXTH SESSION
(3-7 May 2004)**

Addendum 1

Annex 3

**Report of the ad hoc working group on the safety of the transport
of dangerous goods in road tunnels**

General

1. An ad hoc working group on the safety of the transport of dangerous goods in tunnels was convened during the seventy-sixth session of the Working Party on the Transport of Dangerous Goods, from 5-7 May 2004 under the chairmanship of Mr. A. Johansen (Norway).
2. The working group session was attended by representatives of Austria, Bulgaria, Denmark, France, Germany, Greece, Italy, Latvia, Poland, Portugal, Russian Federation, Serbia and Montenegro, Slovakia, Spain, Sweden, Switzerland, United Kingdom, European Commission, European Chemical Industry Council (CEFIC) and International Express Couriers Conference (IECC).
3. The mandate of the working group had been decided by the Working Party (TRANS/WP.15/179, paras. 55 to 63).
4. The following documents were to be discussed by the ad hoc working group: TRANS/WP.15/2004/12 (Switzerland), -/2004/32 (Switzerland), -/2004/17 (Secretariat), -/2004/34 (Switzerland), -/2004/24 (Germany), -/2004/27 (Spain), -/2004/31 (Switzerland), informal documents INF.13 (Austria), INF.19 (Secretariat) and INF.34 (Germany) submitted at the seventy-fifth session of the Working Party on the Transport of Dangerous Goods, and informal document INF.9 (France) and INF.22 (United Kingdom) submitted at the seventy-sixth session of the Working Party.
5. The working group decided to work on the basis of document TRANS/WP.15/2004/17 prepared by the secretariat.

6. A member of the secretariat explained that this document had been prepared at the request of the Working Party on the Transport of Dangerous Goods and was intended to reflect the conclusions of the Feldkirch Working Group (TRANS/WP.15/2004/24) in the form of proposals of amendments to ADR.

7. The texts adopted by the ad hoc working group are reproduced in the Appendix to this Annex, for consideration by the Working Party .

Chapter 1.9

8. The representative of Switzerland did not agree that provisions had to be included in Chapter 1.9. He considered that they should be indeed in chapter 8.6.

9. It was recalled that the decision of the Working Party was that, in accordance with article 2 of ADR, it was relevant to include in the annexes of ADR safety requirements concerning operation of vehicles through road tunnels, and since chapter 1.9 dealt with restrictions, this was the appropriate place to include general requirements for harmonized conditions of transport through road tunnels that would be more stringent than those applicable for traffic on open roads.

Paragraphs 1.9.5 and 1.9.6

10. In accordance with the decision of the Working Party that traffic restrictions must be indicated by road signs and signals, the working group agreed to include paragraphs 1.9.5 and 1.9.6 on the basis of the proposal by the secretariat. The group agreed with the proposal by France in INF.9 that since not all Contracting Parties to ADR were Contracting Parties to the 1968 Vienna Convention on Road Signs and Signals and the 1971 European Agreement supplementing that Convention, more flexibility should be provided in the text in accordance with Annex 3 to the draft European Directive on minimum safety requirements for tunnels in the trans-European road network.

Paragraph 1.9.7

11. The representative of Switzerland did not agree that the tunnel restrictions should not apply to vehicles carrying dangerous goods in quantity below the limits of 1.1.3.6, because 1.1.3.6 had not been drafted on the basis of tunnel safety considerations.

12. It was recalled however that according to the OECD/PIARC proposed grouping system, it was not intended to apply tunnel restrictions for vehicles which are not required to bear the orange-plate marking, and the Working Party had decided by a majority vote that the restrictions would not apply below the 1.1.3.6 limits.

13. The representative of Switzerland considered that the limits of 1.1.3.6 should be reviewed for this application to road tunnel traffic.

Deviations from the general rules of 1.9.5 and 1.9.7, next paragraph 1.9.8

14. Apart from Switzerland, there was not much support for the principle proposed by France in INF.9 to authorize deviations from the general rules such as additional operating measures and notably additional specific restrictions e.g. for vehicles for which an orange plate is not required. Several delegations considered that if such deviations were permitted, the situation would remain exactly the same as it is now and no harmonization could be achieved.

15. The majority of the group considered that the proposed paragraph 1.9.8 should not be included, and that if some governments felt that restrictions should apply to quantities below the 1.1.3.6 limits,

proposals should be submitted in writing to the Working Party and the proposed provisions should be such that they could be implemented in an harmonized way.

16. For the possibility of additional specific operating measures proposed by France, some delegations felt that the term “operating measure” was too vague and could open the door to a wide variety of deviations. The representative of France explained that these operating measures were measures such as advance declarations or passage in convoys which would be part in fact of the risk analysis procedure. For example, in certain cases, tunnels which would not normally be allowed to dangerous goods could be allowed to certain groupings when such measures are applied.

17. The ad hoc working group agreed to add a sentence to 1.9.5 permitting these operating measures, on the condition however that such operating measures should be published officially and made publicly available.

Chapter 2.4

18. The working group agreed that groupings A and E should also be defined (see appendix).

19. For the French proposal (INF.9) that additional radioactive material (non-fissile material in type B or C packages and all fissile material) should be placed in grouping C, it was agreed that the additional UN numbers should be placed between square brackets and Class 7 experts should be consulted.

20. The representative of Switzerland considered that the three major groupings proposed by OECD/PIARC (very large explosion, large explosion or large toxic release, large fire) were not elaborated enough to take account of all major risks occurring in tunnels, notably release of liquid corrosive substances. He was invited to submit appropriate proposals to take account of these risks if deemed necessary.

21. The representative of Switzerland considered that the codes B1000 and C5000 were too complicated and that it would be more simple to assign explosives to a single category irrespective of the net explosive mass. He was invited again to submit concrete proposals if he did not agree with the conclusions of the Feldkirch group.

22. The representative of Germany said that the provisions of Chapter 2.4 should, for systematical reasons, be included in Chapter 8.6 and that he would submit a proposal to that effect.

23. The ad hoc working group did not agree that UN Nos 2900 and 2814 should be moved to Category B and the representative from the United Kingdom withdrew his proposal in INF.22.

24. The ad hoc working group noted that UN Nos.3291 and 3373 should not be submitted to any tunnel restrictions and therefore they should not be assigned to any of the categories A to E.

25. On the basis of the discussions, the secretariat prepared a draft text for a new Chapter 2.4 in informal document INF.29.

26. With respect to paragraph 2.4.4, the representative from Switzerland considered that dangerous goods packed in limited quantities and carried in accordance with Chapter 3.4 should not be automatically exempted from the tunnel restrictions, notably when they are carried as full loads.

27. The representative of France recalled that the subject of limited quantities was being discussed by the UN Sub-Committee of Experts on the Transport of Dangerous Goods and that it might be necessary to come back to this problem.

28. It was finally agreed to maintain the text of 2.4.4 as proposed by the secretariat. The question was raised whether 1.1.3.1 should also be referred to (in addition to “1.1.3.2 to 1.1.3.5”) in 2.4.4. A member of the secretariat explained that this was not necessary because the transport operations referred to in 1.1.3.1 are not subject to ADR and therefore there would be no reason to assign loads of dangerous goods the carriage of which is already exempted from ADR to an ADR tunnel grouping. This approach was consistent with that which had been followed for the drafting of 1.1.3.6.5 concerning the assignment of mixed loads to a transport category.

Chapter 3.2

29. It was recalled that empty uncleaned tanks had to be treated as full tanks.

Chapter 8.6

30. Several delegations questioned the need for 8.6.1 which gave explanations on the interpretation of traffic signs and signals.

31. A member of the secretariat explained that this had been included in the proposal because this would be user-friendly for drivers of vehicles carrying dangerous goods, but it would be necessary to ensure at the same time that the explanations be consistent with the Vienna Convention on Road Signs and Signals (Vienna, 1968), the European Agreement supplementing that Convention (Geneva, 1971) and the interpretation given in the Consolidated Resolution on Road Signs and Signals (R.E.2) of the UNECE Inland Transport Committee’s Principal Working Party on Road Transport which is kept up to date by the Working Party on Road Traffic Safety (WP.1).

32. The representative of Switzerland considered that the interpretation proposed by the secretariat was not consistent with the existing interpretation of resolution R.E.2.

33. It was recalled that the existing interpretation of resolution R.E.2 had been drafted on the basis of advice provided by WP.15, and if WP.15 considered that it should be amended to reflect the new provisions of ADR for tunnel restrictions, the Working Party on Road Traffic Safety would take WP.15’s new advice into account and would modify the interpretation accordingly.

34. The question remained however whether this interpretation should appear in resolution R.E.2 only or both in ADR and resolution R.E.2. In this respect, attention was drawn to the advice from the Chairman of the WP.1 Legal Group, which had been reproduced in informal document INF.19 at the seventy-fifth session. According to this advice the text proposed by the secretariat for the description of sign C, 3^h of the Vienna Convention was correct, but the reference to the interpretation according to R.E.2 should be deleted. Instead, the text of the interpretation proposed by the secretariat should remain in ADR and the recommendation related to that sign in R.E.2 should (must) be deleted.

35. Most delegations agreed that the interpretation proposed by the secretariat was correct in the light of the new provisions for tunnel restrictions, that it should apply to sign C, 3^h (8.6.1.2) and D, 10^{a, b, c} (8.6.1.5). The text should be placed in square brackets pending the advice of WP.1 as to whether it should be in ADR, in R.E.2, or both.

36. It was agreed that signals C, 3^m (8.6.1.3) and C, 3ⁿ (8.6.1.4) had not to be mentioned in ADR in the specific context of tunnel restrictions. Several delegations considered that sign C, 3^m was obsolete and should no longer be used.

37. A member of the secretariat said that since there was no interpretation for sign C, 3ⁿ in R.E.2, it would be useful that the Working Party provide an interpretation to WP.1 for inclusion in R.E.2.

Conclusion

38. The working group invited the secretariat to prepare a revised version of proposed amendments to ADR for tunnel restrictions on the basis of the discussions, for consideration by WP.15 at its next session.

39. The revised proposed amendments are reproduced in the appendix to this annex.

Appendix

Proposed amendments to Annexes A and B of ADR

CHAPTER 1.9

Add the following paragraphs 1.9.5 to 1.9.5.7:

1.9.5 Tunnel restrictions

1.9.5.1 When applying traffic restrictions to road tunnels in accordance with 1.9.3 (a), Contracting Parties shall indicate such restrictions by means of signs and signals. Road signs and signals are described in the Convention on Road Signs and Signals (Vienna, 1968) and the European Agreement supplementing the Convention on Road Signs and Signals (Geneva, 1971) [as interpreted by the Resolution on Road Signs and Signals (R.E.2) of the UNECE Inland Transport Committee's Principal Working Party on Road Transport, as amended *. (See also Chapter 8.6).]

1.9.5.2 Such restrictions shall also be published officially and made publicly available.

1.9.5.3 In order to facilitate international understanding of signs, the system of signs and signals prescribed in the Vienna Convention is based on the use of shapes, and colours characteristic of each class of signs and wherever possible, on the use of graphic symbols rather than inscriptions. Where Contracting Parties consider it necessary to modify the signs and symbols prescribed, the modifications made shall not alter their essential characteristics. Where Contracting Parties do not apply the Vienna Convention, the prescribed signs and symbols may be modified, provided that the modifications made shall not alter their essential intent.

1.9.5.4 When access to tunnels is restricted to specific groupings as defined in Chapter 2.4, signs shall be displayed without or with additional panels bearing letters B, C or D as appropriate for application in accordance with 8.6.2.

1.9.5.5 When Contracting Parties apply specific operating measures designed to reduce the risks and related to some or all vehicles using tunnels, such as declaration before entering or passage in convoys escorted by accompanying vehicles, such operating measures shall be published officially and made publicly available.

1.9.5.6 Traffic signs and signals intended to prohibit access of vehicles carrying dangerous goods to road tunnels shall be accompanied with, or preceded by, signs and signals indicating or prescribing alternative itineraries.

1.9.5.7 Tunnel restrictions shall not apply to vehicles carrying dangerous goods in accordance with 1.1.3.6.”

Add the following new chapter:

CHAPTER 2.4

ROAD TUNNEL CLASSIFICATION OF DANGEROUS GOODS

General provisions

- 2.4.1. For the purpose of passage of vehicles carrying dangerous goods through road tunnels, dangerous goods have been classified into groups which may be restricted in tunnels depending on the possible consequences of accidents to be taken into account on the basis of the tunnel characteristics.
- 2.4.2 The grouping system is based on the assumption that in tunnels, there are three major dangers which may cause numerous victims and possibly serious damage to the tunnel structure:
- (a) Explosions;
 - (b) Release of toxic gas or volatile toxic liquid;
 - (c) Fires.

The groupings are defined as follows, in decreasing order of danger:

Grouping A : Dangerous goods which are prohibited for carriage by ADR;

Grouping B: Dangerous goods which may lead to a very large explosion;

Grouping C: Dangerous goods which may lead to a large explosion or a large toxic release, [or a large irradiation and contamination,] but not to a very large explosion;

Grouping D: Dangerous goods which may lead to a large fire, but not to a very large or large explosion nor to a large toxic release.

Grouping E: Dangerous goods other than those of groupings A, B, C and D and other than UN Nos 3373 and 3291.

NOTE: As a consequence of this danger hierarchy, tunnel restrictions which apply to a given grouping apply also to those groupings which are more dangerous, in accordance with the following table:

Restriction to grouping	Applies also to grouping(s)
A	-
B	A
C	A, B
D	A, B, C
E	A, B, C, D

- 2.4.3 When dangerous goods of different groupings are carried in the same transport unit, the load shall be assigned to the most dangerous grouping.

- 2.4.4 Dangerous goods exempted in accordance with 1.1.3.2 to 1.1.3.5 shall not be taken into account in the grouping assignment.
- 2.4.5 When the quantity carried on board a transport unit is such that the provisions of 1.1.3.6.2 apply, no grouping assignment need be made and the load is not subject to the tunnel restrictions.
- 2.4.6 Assignment of dangerous goods to these groupings is based on the intrinsic dangerous properties of the dangerous goods carried, the type of containment and the quantity carried per transport unit.

Grouping A

- 2.4.7 All dangerous goods prohibited from carriage in accordance with sections 2.2.X.2 of Part 2 are assigned to Grouping A.

Groupings B, C and D

- 2.4.8 Dangerous goods to be classified in groupings B, C or D have been assigned to tunnel codes B, B1000, B1, C, C 5000, C1, D or D1 in column (15) of Table A of Chapter 3.2 as follows:

Grouping B

- B Class 1: Compatibility groups A and L;
Class 3 : Classification code D (UN Nos. 1204, 2059, 3064, 3343, 3357, 3379);
Class 4.1: Classification codes D or DT;
Self-reactive substances, type B (UN Nos 3221, 3222, 3231, 3232) ;
Class 5.2: Organic peroxides type B (UN Nos. 3101, 3102, 3111, 3112).
- B 1000 Dangerous goods of Divisions 1.1, 1.2 and 1.5 (except compatibility groups A and L), when the total net explosive mass per transport unit is greater than 1000 kg ;
- B1 When carried in tanks, dangerous goods of:
- Class 2: Classification codes F,TF and TFC;
Class 4.2 Packing Group I;
Class 4.3: Packing Group I;
Class 5.1: Packing Group I.

Grouping C

- C Dangerous goods of:
- Class 1: Division 1.1, 1.2, 1.5 (except compatibility groups A and L);
Class 1: Compatibility groups H and J;
Class 7: UN Nos 2977, 2978, [2916, 2917, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331 and 3333];
- C 5000 Dangerous goods of Division 1.3 (compatibility groups C and G), when the net explosive mass per transport unit is greater than 5000 kg.

C1 When carried in tanks, dangerous goods of:

- Class 2: Classification codes T, TC, TO, TOC;
- Class 3: Packing Group I of classification code FC and FTC;
- Class 6.1: Packing Group I of classification codes TF1 and TFC;
- Class 8: Packing Group I of classification code CTI.

Grouping D

D Dangerous goods of:

- Class 2: Classification codes F, FC, T,TC, TF, TO, TFC, TOC;
- Class 4.1: Self-reactive substances, types C, D, E, F, and UN Nos 2956, 3241, 3242, 3251;
- Class 5.2: Organic peroxides, types C, D, E, F;
- Class 6.1: Packing Group I of classification code TF1 and TFC;
- Class 8: Packing Group I of classification code CTI;
- Class 9: Classification code M10 (UN 3258).

D1 When carried in bulk or in tanks dangerous goods of :

- Class 3: Packing Group I or II or classification code F2;
- Class 4.2: Packing Group II;
- Class 4.3: Packing Group II;
- Class 6.1: Packing Group I of classification codes TF2 and TW1;
Packing Group II of classification codes TF1, TF2, TFC and TW1;
- Class 8: Packing Group I of classification codes CF1, CFT and CW1.
- Class 9: Classification codes M2 and M3.

Grouping E

2.4.10 All dangerous goods other than those of groupings A to D are assigned to Grouping E, except UN Nos.3291 and 3373.

No assignment

2.4.11 UN 3291 CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO)MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S. and UN 3373 DIAGNOSTIC SPECIMENS are not subject to any tunnel restriction and are not assigned to any grouping.

CHAPTER 3.2

3.2.1 Amend the explanations for column (15) to read:

“Transport category/Tunnel code”

Contains at the top of the cell a figure indicating the transport category to which the substance or article is assigned for the purposes of exemption related to quantities carried per transport unit (see 1.1.3.6).

Contains at the bottom of the cell the code(s) (between brackets) to which the substance or article is assigned for the purpose of traffic restrictions in tunnels (see 1.9.5 and Chapters 2.4 and 8.6). When no tunnel group code has been assigned, this is indicated by the mention “(-)”.

When two codes are indicated, the applicable one is the one corresponding to the transport condition, e.g. (B1000, C) indicates that the load is in Grouping B if the total net explosive mass on board the transport unit is greater than 1000 kg, otherwise the load is in grouping C. (C1, D) means that the load is in grouping C if the dangerous goods are carried in tanks, otherwise the load is in grouping D.

Table A

Amend the heading of column (15) to read:

“Transport category
(Tunnel code)

1.1.3.6
(2.4,
8.6)”.

Column (15): Add, between brackets, the tunnel code (s) to which the substance or article is assigned in accordance with the criteria of new chapter 2.4, i.e:

Class 1: Division 1.1 compatibility groups A and L	(B)
Class 1: Division 1.1 compatibility groups B, C, D, E, F, G and J	(B1000,C)
Class 1: Division 1.2 compatibility group L	(B)
Class 1: Division 1.2 compatibility groups B, C, D, E, F, G, H and J	(B1000,C)
Class 1: Division 1.3 compatibility group L	(B)
Class 1: Division 1.3 compatibility groups H and J	(C)
Class 1: Division 1.3 compatibility groups C and G	(C5000)
Class 1, Division 1.4	(E)
Class 1: Division 1.5, compatibility group D	(B1000,C)
Class 1, Division 1.6	(E)
Class 1:UN No. 0190	(E)
Class 2: Classification codes with letters: F,TF, TFC	(B1, D)
FC	(D)
T, TC, TO, TOC	(C1 D)
A, O	(E)
Class 3: Classification code D	(B)
Packing Group I, classification code FC, FTC	(C1)
Packing Groups I and II, classification code F2	(D1)
Others	(E)

Class 4.1: Classification codes D and DT	(B)
UN Nos 3221, 3222, 3231, 3232	(B)
Self-reactive substances, types C, D, E, F	(D)
UN Nos 2956, 3241, 3242, 3251	(D)
Others	(E)
Class 4.2: Packing Group I	(B1)
Packing Group II	(D1)
Others	(E)
Class 4.3: Packing Group I	(B1)
Packing Group II	(D1)
Others	(E)
Class 5.1: Packing Group I	(B1)
Others	(E)
Class 5.2: Type B	(B)
Types C, D, E, F	(D)
Class 6.1: Packing Group I of classification codes TF1, TFC	(C1, D)
Packing Group I of classification codes TF2 and TW1	(D1)
Packing Group II of classification codes TF1, TF2, TFC and TW1	(D1)
Others	(E)
Class 7 UN Nos 2977, 2978, [2916, 2917, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, and 3333]	(C)
Others	(E)
Class 8: Packing Group I of classification code CTI	(C1, D)
Packing Group I of classification codes CF1, CFT, and CW1	(D1)
Others	(E)
Class 9: Classification codes M2, M3	(D1)
M10	(D)
Others	(E)

Add a new Chapter 8.6 as follows :

CHAPTER 8.6

SPECIAL PROVISIONS CONCERNING TRAFFIC RESTRICTIONS IN TUNNELS

- 8.6.1. In accordance with 1.9.3(a), Contracting Parties may decide to restrict the circulation of vehicles carrying dangerous goods in tunnels. For this purpose, they may use signs C, 3^h and D, 10^a, 10^b and 10^c and signals according to the Vienna Convention on Road Signs and Signals (Vienna, 1968) and the European Agreement supplementing the Convention

on Road Signs and Signals (Geneva, 1971) in accordance with 1.9.5.1, or equivalent signs and signals in accordance with 1.9.5.3.

- [8.6.2 The signs prohibiting the access of vehicles to road tunnels or indicating or prescribing alternative itineraries may appear with or without additional panels bearing letters B, C or D. They apply only to vehicles carrying dangerous goods assigned to tunnel codes A, B, C, D or E according to Chapter 2.4 and which are required to bear an orange-plate marking according to 5.3.2, in accordance with the table below:

Sign	applies to vehicles carrying dangerous goods of
With additional panel bearing the letter "B"	Groupings A and B
With additional panel bearing the letter "C"	Groupings A, B and C
With additional panel bearing the letter "D"	Groupings A, B, C and D
Without additional panel	Groupings A, B, C, D and E

] */

*/ This text has been agreed in principle. It has been placed between square brackets because some coordination with the Working Party on Road Traffic Safety (WP.1) is still needed.