

## INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

(Seventy-ninth session, agenda item 5,  
Geneva, 7-11 November 2005)

**SAFETY IN ROAD TUNNELS****Comments by the secretariat on TRANS/WP.15/2005/24**

1. At its 77<sup>th</sup> session, the Working Party adopted new provisions concerning carriage of dangerous goods in road tunnels, on the basis of a text prepared by an ad hoc working group on the transport of dangerous goods in road tunnels (TRANS/WP.15/179/Add.1, TRANS/WP.15/181, par. 69-74 and annex).
2. At its 78<sup>th</sup> session, the Government of the Netherlands submitted proposals in TRANS/WP.15/2005/8 and informal document INF.14, aiming at defining categories of tunnels (A, B, C, D and E) in which substances are forbidden, rather than defining groupings of substances (A, B, C, D, E) forbidden in tunnels as described in chapter 4 of the OECD study on the transport of dangerous goods through road tunnels.
3. The approach proposed by the Netherlands was adopted by the Working Party (see TRANS/WP.15/183, para. 49-59, subject to a revision of the proposed text to ensure that the provisions would be legally compatible with the scope of ADR and would not be in conflict with the scope of other international instruments addressing road traffic in general).
4. After careful consideration of the new proposal (TRANS/WP.15/2005/24) submitted by the Government of the Netherlands, the secretariat thinks that the revised proposed text could be further improved by eliminating some possible contradictions and by better respecting the systematic of the restructured ADR.
5. According to the restructured ADR, general provisions of interest to all participants, or specifically addressed to the competent authorities of Contracting Parties, are to be found in Part 1. Those in Part 8 are directed to carriers. Therefore the secretariat proposes that all provisions concerning the categorization of tunnels (under the responsibility of the competent authorities) be placed in Chapter 1.9 (notably paragraphs 8.6.1.1, 8.6.1.2, 8.6.1.3 and 8.6.2.1 proposed in TRANS/WP.15/2005/24). Other provisions which concern mainly carriers should be in Part 8.
6. The categorization of tunnels (A, B, C, D, E) has to be decided by the competent authority on the basis of risk evaluation considerations which take account of the danger presented by dangerous goods to be prohibited, but also e.g. the characteristics of the tunnels, traffic flows, the existence of alternative itineraries, etc. Two tunnels with the same characteristics may be assigned to different categories on the basis of risk evaluation, and therefore there is no automatic relationship between the category of tunnel and the dangerous goods.
7. On the contrary, the tunnel code indicated in column 15 is directly linked to the danger presented by the dangerous goods. Therefore it is necessary, in order to avoid

confusion, to make a clear distinction between the tunnel code (to be used by the carrier for complying with restrictions) and the tunnel category (to be decided by the competent authority), and to explain how the tunnel code can be used by the carrier to determine whether or not a transport unit is allowed to pass through a tunnel of a given category. The secretariat believes that these explanations are mostly relevant for the carrier and therefore should be placed in Chapter 8.6.

8. In order to make this distinction clear to competent authorities and carriers, the secretariat proposes to rearrange the provisions proposed in TRANS/WP.15/2005/24 under Chapter 1.9 and Chapter 8.6 in a more logical manner, with some editorial changes, in accordance with the table of correspondance below (para. 12).

9. For tunnels of category E, the Working Party on Road Traffic Safety (WP.1) considered that the prohibition sign should be accompanied with a panel bearing the letter E, because such tunnels are not prohibited for UN Nos. 3291 and 3373, and a sign without additional panel would mean a prohibition for all dangerous goods for which the transport unit is required to bear orange panels. This has been taken into account in the text proposed by the secretariat.

10. For radioactive material, tunnel code E has been assigned by the Working Party, except for UN 2977 and 2978 (tunnel code C). This is not entirely logical, since some radioactive material other than UN 2977 and 2978 may possess subsidiary risks (e.g. uranyl nitrate, thorium nitrate, pyrophoric uranium metal) and may present the same risks of fire, explosion or toxic release as other dangerous goods, similar at least when carried in industrial packages or type A packages (including tanks). Therefore the Working Party may wish to consider the allocation of a new special provision XXX for certain radioactive material (LSA-I, LSA-II, LSA-III, SCO, Type A and special arrangements) (UN Nos.2912, 3324, 3321, 3325, 3322, 3326, 2913, 3331, 2919, 3327 and 2915). In such cases, it is not obvious that the carrier could easily deduct, from the information given in the transport document, the applicable tunnel code, and therefore the proposed special provision stipulates that the consignor should provide the tunnel code. On the other hand this requirement might not be of easy application for consignors themselves, and the Working Party might prefer to defer consideration of this proposal for proper consultation with Class 7 experts.

11. For radioactive material carried under special arrangement (UN 2919 and 3331), the secretariat believes that paragraph 8.6.2.1 in TRANS/WP.15/2005/24 is not correct since tunnels of category E should also be prohibited to such radioactive material (or restrictions should be decided in accordance with the proposed SP XXX).

12. The systematic use of the word "Restriction" in the new provisions may be misleading. The word "Restriction" may mean "Prohibition" or "authorized access under specific restrictive measures". The sign C, 3<sup>h</sup> of the Vienna Convention is to be used for prohibitions. Therefore the secretariat suggests that the word "Restriction" or "Restricted" be replaced by "Prohibition" or "Prohibited" as appropriate in certain provisions. For example 1.9.5.3.8 addresses operational measures which may be considered as "restrictions" even when the carriage of dangerous goods in tunnels is not prohibited.

13. Table of correspondance

Text proposed by the secretariat	Corresponding paragraph in TRANS/WP.15/2005/24
1.9.5.1.1 and NOTE	8.6.1.1, amended
1.9.5.2.7	8.6.1.3
1.9.5.2.2	8.6.2.1
1.9.5.3.1	1.9.5.1, first sentence, amended
1.9.5.3.2	1.9.5.2, second sentence, amended and 8.6.4.1
1.9.5.3.3	1.9.5.3
1.9.5.3.4	1.9.5.6
1.9.5.3.5	1.9.5.4, supplemented
1.9.5.3.6	1.9.5.7
1.9.5.3.7	1.9.5.2
1.9.5.3.8	1.9.5.5
8.6.1.1	New
8.6.1.2	New (including 8.6.1.4 amended)
8.6.1.3	New
8.6.2	8.6.3.1, revised
8.6.3.1	1.9.5.7 and 8.6.2.3
8.6.3.2	3.2, Explanations for column (15) para. 2
8.6.3.3	8.6.2.2, amended
8.6.4.1	3.2, Explanations for column (15), table, amended
8.6.4.2	New

## **PART 1**

### **Chapter 1.9**

Add the following paragraphs 1.9.5 to 1.9.5.7:

#### **“1.9.5 Tunnel restrictions**

##### ***1.9.5.1 General provisions***

1.9.5.1.1. When applying [restrictions] [prohibitions] in accordance with 1.9.3 (a) to the passage of vehicles carrying dangerous goods through tunnels, the competent authority shall assign the road tunnel to one of the tunnel category defined in 1.9.5.2.2 depending on the tunnel characteristics, risk assessment and traffic management considerations.

NOTE: A same tunnel may be assigned to different tunnel categories, e.g. depending on the hours of the day, or the day of the week, etc.

##### ***1.9.5.2 Categorisation***

1.9.5.2.1 The categorisation shall be 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.

1.9.5.2.2 The five categories of tunnels are the following:

goods; Tunnel A: No [restriction] [prohibition] for the transport of dangerous

Tunnel B: [Restriction] [Prohibition] for dangerous goods which may lead to a very large explosion;

Tunnel C: [Restriction] [Prohibition] for dangerous goods which may lead to a very large explosion, a large explosion or a large toxic release;

Tunnel D: [Restriction] [Prohibition] for dangerous goods which may lead to a very large explosion, to a large explosion or a large toxic release and to a large fire;

Tunnel E: [Restriction] [Prohibition] for all dangerous goods other than UN Nos. 3291 and 3373.

##### ***1.9.5.3 Notification of restrictions***

1.9.5.3.1 Contracting Parties shall indicate tunnel [restrictions] [prohibitions] by means of signs and signals.

- 1.9.5.3.2 For this purpose, they may use signs C, 3h and D, 10a, 10b and 10c 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) as interpreted by the Resolution on Road Signs and Signals (R,E,2) of the UNECE Inland Transport Committee Principal Working Party on Road Transport, as amended.
- 1.9.5.3.3 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.
- 1.9.5.3.4 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.
- 1.9.5.3.5 When access to tunnels is [restricted] [prohibited] or alternative itineraries are prescribed, the signs shall be displayed with or without additional panels as follows:
- No sign: No [restriction] [prohibition];
- Sign with additional panel bearing letter B: applies to vehicles carrying dangerous goods not allowed in tunnels of category B;
- Sign with additional panel bearing letter C: applies to vehicles carrying dangerous goods not allowed in tunnels of category C;
- Sign with additional panel bearing letter D: applies to vehicles carrying dangerous goods not allowed in tunnels of category D;
- Sign with additional panel bearing letter E: applies to vehicles carrying dangerous goods not allowed in tunnels of category E.
- 1.9.5.3.6 Tunnel [restrictions] [prohibitions] shall not apply when dangerous goods are carried in accordance with 1.1.3
- 1.9.5.3.7 Restrictions [Prohibitions] shall be published officially and made publicly available.
- 1.9.5.3.8 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.

## CHAPTER 8.6

Add a new Chapter 8.6 to read as follows:

### ROAD TUNNEL RESTRICTIONS FOR THE PASSAGE OF VEHICLES CARRYING DANGEROUS GOODS

#### 8.6.1 General provisions

8.6.1.1 The provisions of this Chapter apply when the passage of vehicles through road tunnels is restricted in accordance with 1.9.3 (a) and 1.9.5.

8.6.1.2 For each dangerous goods entry of table A of Chapter 3.2, one or two tunnel codes are indicated in the bottom part of the cell of column (15) corresponding to that entry. The assignment of the tunnel code(s) to a dangerous goods entry in column (15) is based on the intrinsic dangerous properties of the goods, the type of containment and the quantity carried, the codes, shall be used for determining whether the passage of a vehicle carrying dangerous goods is permitted through a tunnel which has been assigned by the competent authority to tunnel categories A, B, C, D or E.

[8.6.1.3 For radioactive material, other than UN Nos. 2977 and 2978, the code shall be determined [by the consignor] in accordance with special provision XXX [and the carrier shall be informed accordingly].].

#### 8.6.2 Tunnel code

The tunnel codes assigned to dangerous goods in table A of Chapter 3.2 means:

Tunnel code A: No [restriction] [prohibition]. Dangerous goods are allowed in tunnels of all categories.

This code applies only to UN Nos 3291 and 3373.

Tunnel code B: Dangerous goods prohibited through tunnels of categories B, C, D and E except when carried under the provisions of 1.1.3.

This code applies to dangerous goods of:

- 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).

Tunnel code B1000: Dangerous goods prohibited through tunnels of categories B, C, D and E when the total net explosives mass per transport unit exceeds 1000 kg, except when carried under the provisions of 1.1.3.

This code applies to 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 1,000 kg.

Tunnel code B1 : Dangerous goods prohibited through tunnels of categories B, C, D and E when carried in tanks, except when carried under the provisions of 1.1.3

This code applies to 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.

Tunnel code C : Dangerous goods prohibited in tunnels of categories C, D and E, except when carried under the provisions of 1.1.3

This code applies to 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.

Tunnel code C 5000 : Dangerous goods prohibited in tunnels of categories C, D and E, when the net explosive mass per transport unit exceeds 5000 kg, except when carried under the provisions of 1.1.3.

This code applies to dangerous goods of:

Division 1.3 [ compatibility groups C and G], when the net explosive mass per transport unit is greater than 5,000 kg.

Tunnel code C1: Dangerous goods prohibited in tunnels of categories C, D and E when carried in tanks, except when carried under the provision of 1.1.3.

This code applies to dangerous goods of:

Class 2: Classification codes T, TC, TO, TOC;  
Class 3: Packing Group I of classification code FC, FT1, [ FT2] and FTC;  
Class 6.1: Packing Group I of classification codes TF1 and TFC and the toxic by inhalation entries (UN numbers 3381 to 3390);

Class 8: Packing Group I of classification code CT1.

Tunnel code D: Dangerous goods prohibited in tunnels of categories D and E, except when carried under the provisions of 1.1.3.

This code applies to dangerous goods of:

- [Class 1 : Division 1.3 compatibility groups C and G]
- Class 2: Classification codes F, FC, T, TC, TP, 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, type C, D, E, F;
- Class 6.1: Packing Group I of classification code TF1 and TFC and the toxic by inhalation entries (UN numbers 3381 to 3390);
- Class 8: Packing Group I of Classification code CTI;
- Class 9: Classification code M10 (UN 3258).

Tunnel code D1 : Dangerous goods prohibited in tunnels of categories D and E, except when carried under the provisions of 1.1.3

This code applies to 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.

Tunnel code E : Dangerous goods prohibited in tunnels of category E, except when carried under the provisions of 1.1.3.

This code applies to all dangerous goods other than those to which code A, B, C or D has been assigned.

### **8.6.3 Assignment of a tunnel code to the load**

8.6.3.1 Dangerous goods carried in accordance with 1.1.3 are not subject to the tunnel restrictions and shall not be taken into account when determining the tunnel code to be assigned to the whole load of a transport unit.

8.6.3.2 When two tunnel codes are indicated in column (15) of table A of Chapter 3.2, the applicable one is the one corresponding to the conditions of carriage, e.g. (B1000, C) indicates that the substance or article is forbidden for carriage in a tunnel of category B if the total net explosive mass on board of the transport unit is greater than 1,000 kg, otherwise the substance is forbidden for carriage



in tunnel category C. (C1, D) means that the substance is forbidden for carriage in a tunnel of category C if the substance is carried in tanks, otherwise the substance is forbidden for carriage in tunnel category D.

8.6.3.3 When a transport unit contains dangerous goods to which different tunnel codes have been assigned, the most restrictive tunnel code shall be assigned to the whole load.

#### 8.6.4 Prohibitions of carriage of dangerous goods in tunnels

8.6.4.1 Once the tunnel code to be assigned to the whole load of the transport unit has been determined, the prohibitions of carriage of dangerous goods in tunnels apply as follows:

Tunnel code of the whole transport unit	Prohibition
A	No prohibition (Allowed in all tunnels)
B B100 B1	Not allowed in tunnels of categories B, C, D and E
C C5000 C1	Not allowed in tunnels of categories C, D and E
D D1	Not allowed in tunnels of categories D and E
E	Not allowed in tunnels of category E

8.6.4.2 When road traffic signs and signals are displayed in accordance with 1.9.5.3.5 in relation to prohibitions in tunnels, they apply as follows:

Signs and signal	Tunnel category	Apply to transport units the load of which has been assigned to tunnel codes
No sign	Tunnel category A	(No prohibition)
Sign with additional panel bearing letter B	Tunnel category B	B1, B100, B,
Sign with additional panel C	Tunnel category C	B1, B100, B C, C5000, C1
Sign with additional panel D	Tunnel category D	B1, B100, B, C, C5000, C1, D, D1
Sign with additional panel E	Tunnel category E	B1, B100, B, C, C5000, C1, D, D1, E

## **PART 3**

### **Chapter 3.2**

3.2.1 Explanations for Column (15): Amend to read as follows:

“‘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) indicating that the substance or article is forbidden for carriage in specific tunnel categories (see 1.9.5 and Chapters 8.6).

### **Changes to Table A (see TRANS/WP.15/2005/24)**

### **Chapter 3.3**

[Special provision XXX:

For radioactive material without subsidiary risk, the tunnel code is “E”.

For radioactive material with subsidiary risks, the code shall be the code of the constituent contributing to the most important subsidiary risk (see also special provision 172). This code shall be determined by the consignor in accordance with the provisions of 8.6.2, and communicated to the carrier before the goods are offered for carriage.

For radioactive material under special arrangement (UN Nos 2919 and 3331), the code shall be assigned by the competent authority (ies) approving the special arrangement (see 1.7.4.2). [The consignor shall inform the carrier accordingly prior to carriage].]

[5.4.1.2.5.2 Add a paragraph “(d)” to read as follows:

“(d) when appropriate, the tunnel code assigned to the consignment (see special provision XXX of Chapter 3.3 and 8.6.1.3).]

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