



**Economic and Social  
Council**

Distr.  
GENERAL

TRANS/WP.15/2003/ INF. 18

Original: ENGLISH

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ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

**Working Party on the Transport  
of Dangerous Goods**

(, Geneva,  
19 -23 May 2003)

**COMMENTS AND PROPOSALS TO THE REPORT OF THE AD-HOC ADR  
EXPERT MEETING ON DANGEROUS GOODS GROUPINGS FOR ROAD TUNNEL  
REGULATIONS, FELDKIRCH 12<sup>TH</sup> – 14<sup>TH</sup> MAY 2003**

**Proposal submitted by the Government of Switzerland**

**Summary**

<b>Executive summary:</b>	Some comments are made on the Report of the ad-hoc working group of Feldkirch. Proposals are made in order to allow the implementation of an harmonized system for tunnels
<b>Action to be taken:</b>	Adopt the proposals of a new table for tunnels, provisions for documentation, marking of vehicles and training of the vehicle crew.
<b>Related documents:</b>	Report of the ad-hoc ADR expert Meeting of Dangerous goods Groupings for Road tunnel Regulations, Feldkirch

**1. Introduction:**

Switzerland supports solutions which take account of the technical and safety needs in the best way. For this reason Switzerland support the actual solution existing in the ADR where the tunnel regulations are of the competence of each state. This competence has to be maintained.

The restrictions for the passage of tunnels has to be decided from the competent authorities based on analysis of the specific characteristics of each tunnel and the density of traffic.

A general and abstract solution, even in the case that this would take account of the more different parameters, cannot take into consideration in a sufficient way the specific characteristics of each tunnel. This would lead for some tunnels to too much severe and not justified provisions, for others instead to too much tolerant rules. In order to avoid this, we should choose a system which settles the minimum requirements and that clearly leaves to each State the competence to go further for reasons of safety in each case.

The possibility to determine the possibility, the circumstances and the modalities of the passages in the tunnels should at least remain of the competence of each State. Particularly, in order to allow the management of the traffic, the possibility for each State should remain to deviate the dangerous goods vehicles where the tunnels are completely forbidden.

The working group is not entitled to exceed these limits.

The text under 1.9.4 in the Annex 2 to the Report shall take account of this facts. Switzerland recommends to replace the word in brackets [shall] by “should” in order to have a text which is not in contradiction with the scope of the text in 1.9.2 and to avoid to limit the freedom given in 1.9.2 to regulate in function of the specific situation at a local basis.

Furthermore, the solution proposed by Austria as well as the results of the Working group doesn't solve a fundamental safety problem regarding the maximum amounts allowed to cross through a tunnel.

Switzerland tried to bring these points to the attention of the Working group in Feldkirch through a working document which resumes the problems. In the presented document Switzerland also brought some consequential amendments which are necessary in order to facilitate the international transport and to harmonise the information through Europe. The following points were pointed out in the Swiss document:

## **2. Proposal**

As some delegations mentioned during the session of November of the WP.15 the model of the OCDE/PIARC is based on the reference to the table 1.1.3.6.3 ADR. Furthermore, strangely, it seems that the model excludes the possibility to forbid the crossing of dangerous goods in tunnels. This is not a result of a risk-analysis and of the application of the model itself. It is a simple political and economical issue which has nothing to do with the application of scientific parameters in a mathematical model. It is not logical to presume the results of an instrument of measure before to use it. It seems that in the conclusions of the work of the OCDE/PIARC this has been the case. This is not to the advantage of the model.

The model OCDE/PIARC (model) which has been proposed in the session of November of the WP.15 by Austria in the document TRANS/WP.15/2002/21 makes two assumptions:

1. The table 1.1.3.6.3 ADR is really based on an accurate analysis of the dangers of each dangerous good.
2. The balance of risks of the table 1.1.3.6.3 also applies for tunnels.

As a consequence, some delegations mentioned that the result of the application of the table proposed by Austria is, in many cases, either to severe or to tolerant.

This would have severe consequences as well for the users of the tunnels as for the safety in tunnels depending on which side of the balance a substance is.

In order to avoid this problems, some delegations have proposed to change the content of the proposed table (Norway class 1).

We also think it is necessary to change the table.

We see four ways of doing that:

1. We need to add a 6<sup>th</sup> column to the table in the Austrian document. This column has to be dedicated to tunnels which are fully forbidden to the transit of dangerous goods. This solutions could solve the problem of the to big tolerance of the model which in some cases appears. It will solve some safety problems in the tunnels arising from the model.
2. Another measure which we need is the use of another reference table as the one in 1.1.3.6 ADR. This new table should be more adapted to the special situation in a tunnel.
3. It is necessary to introduce a clause which describes the proposed model not as an absolute rule from which we cannot deviate but as a recommendation to the Contracting Parties.
4. It is necessary to introduce a close allowing to provide some derogations to the rules.

### ***Concerning 1.***

Switzerland is of the opinion that the actually existing tunnels regulated in the Swiss legislation doesn't fit in the model proposed. This tunnels appear in the Swiss regulation because otherwise it would not be allowed at all to pass through them. In our legislation we have introduced some flexibility and tried to maintain the risks at a level which can be controlled or which at least does not bring much more severe consequences than other carried goods. It would not be acceptable for Switzerland to lower the level of safety actually reached with the existing regulation. The addition of a 6<sup>th</sup> group of tunnels in which the passage of dangerous tunnels is completely forbidden will allow to take in consideration special conditions of traffic and of low safety level which the model cannot consider.

In the case that this solution would be adopted we need also what is mentioned under the point 4 above in order to still have the possibility as it is today to allow some kind of flexibility and the passage in some way of dangerous goods.

### ***Concerning 2***

We need the second proposal because tunnels represent a special situation which has not been considered in the elaboration of the actual version of the table 1.1.3.6.3 ADR. For example it is allowed to transport unlimited quantities of empty uncleaned packagings containing dangerous goods except those classified in transport category 0. In other words, it is allowed to transport uncleaned packagings having contained, for example, flammable substances of class 3 packing group I. Another example is the possibility to transport substances of class 1 Group 1.4S in unlimited quantities through tunnels. This doesn't seem to be the safest way of proceeding.

We also don't believe it is safe to let the passage, for example, of substances as UN 3256 ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., in amounts of 1000 l, even if this product is of packing group III.

We don't think either that the allowed amounts of flammable gases (333 l of liquefied gas for example) represent any real safety level, as well in tunnels as in others road segments.

We can multiply this examples.

For this reasons we don't think it is enough, as it is done in the note 2 under the table of Austrian document TRANS/WP.15/2002/21, that the only elements to determine the grouping are the class and

the classification codes, packing group or UN number. We can find many examples where this elements are not enough. The OCDE/AIPCR is not restricted to these criteria only. However, this has been taken in consideration in the final text proposed by the working group.

On the other hand we don't see the need to completely forbid the passage of substances belonging to transport category 0. The same remark is valid for the other categories of transport. Those substances can pass the tunnels under certain conditions which have to be fixed by the competent authorities of each country and in quantities which depend on the possibilities of choosing other roads.

The purpose of the table in 1.1.3.6 has never been to bring safety in tunnels. This table was made in order to exempt the carrier of the obligation to have an ADR-certificate, the vehicle to be conform with the ADR and the marking of the vehicle with orange plates. Furthermore, the last big revision of the table in marginal 10 011 in 1999 was done exclusively in order to facilitate the use of the table by the users. In doing that the WP.15 accepted to renounce to some safety level which was still present in the table 10 011 before 1999 when the OCDE/AIPCR work started. However, the Report from 2001 still refers to the old marginal 10 011. Since then, the WP.15 changed the marginal 10 011 in such a way that the same assumptions cannot apply any more.

So we cannot say that the existing table in 1.1.3.6.3 ADR is done on the same basis as the OCDE/AIPCR model was. This new table arising from ADR 1999 cannot be a basis for safety in tunnels.

In order to reach an international harmonized solution which brings also enough safety in the tunnels, we propose to create a new table for tunnels based on the same assessments as the OCDE/PIARC systematic.

We need to reach an agreement on the more stringent quantities which can pass a tunnel. This table can then be used as base of the system OCDE/AIPCR.

### **Table to be used instead of the referenced table in 1.1.3.6**

We propose the following table as a base of discussion. This has to be discussed in a working group and after that be introduced in ADR under a new paragraph 1.9.5.1 ADR as a reference instead of the table 1.1.3.6.

#### 1.9.5.1 Table Maximum total quantity per transport unit in tunnels

Quantities Labels	0	20	50	100	150	300	1000	unlimited
1	1.1A to 1.1G, 1.1J, 1.1L, 1.2B to 1.2J, 1.2L, 1.3C, 1.3G to 1.3J, 1.3L,							
1.4	1.4C to 1.4G except UN Nos 0407, 0448, 0479, 0480	1.4C UN Nos 0407, 0448, 0479, 0480, 1.4D	1.4S					
1.4+6.1+8	X							
1.4+8	X							
1.5		1.5D						
1.6	1.6N							
1+6.1	1.1A UN No 0224, 0143 1.1D UN Nos 0143, 0076 1.3C UN No 0077							
1+6.1+8	1.2G UN No 0018, 1.3G UN No 0019							
1+8	1.2G UN No 0015, 1.3G UN No 0016							
2.1			3F		1F, 2F, 4F, 5F, 6F			
2.2	UN 1043				4A UN No 2073	3A, 5A, 6A	1A, 2A	
2.2+5.1			3O		5O		1O, 2O	
2.3					1T, 2T, 5T, 7T			
2.3+2.1					1TF, 2TF, 5TF, 7TF			
2.3+2.1+8					1TFC, 2TFC, 5TFC			
2.3+5.1					1TO, 2TO, 5TO			
2.3+5.1+8					1TOC, 2TOC, 5TOC			
2.3+8					1TC, 2TC, 4TC, 5TC			
3	D UN No 3343,		PG II (F1 and D)		PGIII			

Quantities Labels	0	20	50	100	150	300	1000	unlimited
	PG I (D and F1) D PG II UN Nos 1204, 3064 F2 PG III UN No 3256		except UN Nos 1204 and 3063		Except 3256			
3+6.1	PGI and PG II				PGIII			
3+6.1+8	PGI, PG II							
3+8	PG I, PG II				FC PGIII			
4.1	PG I PG II : D : UN Nos 2555 to 2557, 2907, 3376 SR1 :UN Nos 3223, 3224, 3242 F2 UN No 3176 PG III : F2 UN Nos 2304, 3176 F3 UN No 2448	SR1 UN Nos 3225, 3226	PGII F3 UN Nos 1309, 1323, 1326, 1333, 1339, 1341, 1343, 1352, 1358, 1437, 1871, 2989, 3089, 3178, 3181, 3182	PG II: a) D: UN Nos 3319 and 3344 F1: UN Nos 1325, 3175, 3270, 1345 PG III: F3 SR1 UN Nos 3227 to 3330		PG III: F1 UN Nos 1312, 1324, 1325, 1328, 1332, 1334, 1353, 2000, 2213, 2538, 2717, 1331, 1944, 1945, 2254, 2623 SR1 UN Nos 2856, 3241, 3251		
4.1+6.1	PG I			PG II		PG III		
4.1+8				PG II		PG III		
4.1+1	X							
4.2	PG I			PG II		PG III		
4.2+4.3	PG I				PG III			
4.2+6.1	PG I			PG II:		PG III		
4.2+8	PG I			PG II		PG III		
4.3	PG I PG II: W2 UN No 1390, 2813, 3148 PG III: W2: UN Nos 1403, 2813, 2968, 3148		PG II: W2: UN Nos 1393, 1394, 1396, 1400, 1401, 1402, 1405, 1409, 1417, 2624, 2805, 2830, 2835, 3078, 3170, 3208 W3: UN No 3292		PG III W2: UN Nos 1396, 1398, 1405, 1435, 2844, 2950, 3170, 3208			
4.3+4	PG I + II							
4.3+4.2	PG I, PG II		WS PG III					
4.3+6.1	PG I, II and III				UN 1408			

Quantities Labels	0	20	50	100	150	300	1000	unlimited
	Except UN 1408							
4.3+3	PG I and II							
4.3+3+8	X							
4.3+8	X							
5.1	PG I PG II: O1 UN No 3139				PGII except UN No 3139		PGIII	
5.1+6.1	PG I				PGII		PGIII	
5.1+6.1+8	X							
5.1+8	PG I				PGII		PGIII	
5.2	P1: UN Nos 3103, 3104 P2: UN Nos UN 3113 to 3120	P1 UN Nos 3105, 3106			P1: UN Nos 3107 to 3110			
5.2+1	X							
6.1	PG I: T1 to T8 PG II: T5: UN No 1687 T1: UN Nos 1600, 2312				PG II except UN Nos 1600, 1687, 2312		PG III	
6.1+4.1	X							
6.1+4.2	PG I UN No 3124		PG II UN No 3124					
6.1+4.3	X							
6.1+5.1	X							
6.1+3	PG I		PG II		PG III			
6.1+3+8	PG I		PG II					
6.1+8	PGI PG II : UN No 3250				PGII except UN No 3250			
6.2	UN 2819, 2900 Risks 3 and 4	UN 2819, 2900 Risk 2			UN 3291		UN 3373	
7 without label								UN Nos 2908 to 2911
7X	X							
7X+7E	X							
7X+8						X		
7X+7E+8							X	
8	PG I PG II UN No 2576		PG II C1 UN No 2851 C2 1756, 2439		PG III C1 UN No 1757 C2 UN No 1740 PGII except UN Nos 1756, 2439, 2576, 2851		PGIII except UN Nos 1740, 1757	UN Nos 2794, 2795, 2800, 3029

Quantities Labels	0	20	50	100	150	300	1000	unlimited
8+3	PGI		n.o.s substances PG II CF1: UN Nos 1715, 1724, 1747, 1767, 1816, 2218, 2502, 2789, 2826, 2920, 2986	Not n.o.s substances PG II CF1 UN Nos1604, 2051, 2248, 2258, 2264, 2357, 2619, 2685, 2686, 2734				
8+3+6.1	X							
8+4.1	PGI UN No 2921			PGII UN No 2921				
8+4.2	PGI			PGII				
8+4.3	X							
8+5.1	N.o.s. substances PG I and II		Not n.o.s. substances PG I and II					
8+5.1+6.1	X							
8+6.1	PG I: CT1		PG II : CT1: UN Nos 2030, 1732, 1790, 2817 CT2: UN No 1811	PG II : CT1:UN Nos 1761, 2818, 2922 CT2: UN No 2923 PG III: CT1:I UN Nos 2817, 2030		PG III : CT1 : UN Nos 1761, 2818, 2922		
9	PG II: UN Nos 2212, 2590, 3258, 2315, 3151, 3152, PG III UN No3257		M3 UN Nos 2211, 3314 M5 UN Nos 2990, 3072 PG III M11 UN No 1841	PG II M4 II UN Nos 3090, 3091 PG III M5 UN No 3268		PGII et PG III M 11 UN Nos 2969, 3316, 1931, 1941, 1990, 3316 M 11 UN Nos 3363, 3359		PG III: UN Nos 3082, 3077, 3245 Genetically modified organisms

a) PG III

F3 : UN Nos 1325, 3175, 3270, 1345, 1309, 1313, 1314, 1318, 1330, 1338, 1346, 1350, 1869, 2001, 2687, 2714, 2715, 2858, 2878, 2989, 3089, 3178, 3181, 3182

In the above table, "maximum total quantity per transport unit" means:

- for articles, gross mass in kilograms (for articles of Class 1, net mass in kg of the explosive substance);
- for solids, liquefied gases, refrigerated liquefied gases and dissolved gases, net mass in kilograms;

- for liquids and compressed gases, nominal capacity of receptacles (see definition in 1.2.1) in litres.
- for articles others than class 1 gross mass of the articles

The quantities of different dangerous goods contained in a transport unit must be such that “Q” does not exceed the value of 1, where “Q” is calculated using the formula:

The Contracting Parties can provide derogations to the present restrictions.

$$Q = \frac{n_1}{M_1} + \frac{n_2}{M_2} + \frac{n_3}{M_3} \dots$$

where

n1, n2, etc. are the net quantities per transport unit of the different dangerous goods and

M1, M2, etc. are the maximum total quantity per transport unit for these dangerous goods according to the table.”

If this is adopted then the mention to 1.1.3.6 in the OCDE/PIARC-Model has to be changed through the reference to this new table.

The above table summarizes the maximum total quantities per transport unit of each kind of substances in function of their labels. We took the labels as a more accurate means to define the risks which actually is shown in the transport document. The other criteria are the packing group and the UN Numbers. Finally the classification code is a good help in order to define the risks. However, the disadvantage of the classification code is that it is not present on the transport document. It still remains the simplest way to define the risks. Nevertheless, it has to be admitted that all this criteria are not always adapted to the risks that some substances present when they are involved in accidents in tunnels. Some physical and chemical characteristics which are important for the special confined volume represented by a tunnel are not taken into account by the general model of classification in ADR. That is one of the reasons why the table cannot be as simple as the table in 1.1.3.6.3 and as it could have been only taking into account the information given by the classification criteria of the ADR.

### ***Concerning 3***

In the document TRANS/WP.15/2002/21 under 1.9.4 we must read:

“1.9.4 Where, in accordance with 1.9.3 (a), additional provisions concerning carriage of dangerous goods through road tunnels are applied, the Contracting Parties are invited to refer to the groupings of dangerous goods loadings as contained in the following table.”

The text in 1.9.4 cannot go beyond the scope of the scope fixed in 1.9.2.

### ***Concerning 4***

After the table add the following text:

“The Contracting Parties can provide derogations to the criteria of grouping of tunnels.”

It is in fact necessary to take account of the needs of the economy. As already mentioned, the model cannot apply to each particular kind of tunnel configuration as well as to each particular local situation or type of product. Some tunnels can be classified as forbidden but benefit of derogations which permit the pass of some amounts of some products in some defined conditions. Not all products are concerned only those of more necessity for some local areas which cannot be reached by other means as by the road.

## **Report of the Working group in Feldkirch**

### **Annex 1 (Table)**

#### Class 1

We observe that the proposed restrictions for class 1 don't correspond with the groupings of the OCDE/PIARC model and the table in the Austrian document. Why should we only for class 1 diverge from the model?

An accurate exam of the figures brings the following observations:

The supposed "restrictions" for grouping B for division 1.1 are in fact the maximum permissible net mass allowed to be carried in a transport unit of type conforming to 7.5.5.2.1 ADR. That is not a restriction at all.

Taking an example, it would be allowed to transport articles containing both an explosive substance and a flammable liquid or gel and which have a mass explosion hazard (1.1 J) or a projection hazard but not a mass explosion hazard in amounts not exceeding 1000 kg in tunnels of groupings B.

The same occurs for grouping C and division 1.3. The amount of 5000 kg proposed is the maximum permissible net mass allowed to be carried in a transport unit conforming to 7.5.5.2.1.

We don't believe that this is the result of a risk analysis study. The figures in class 1 should be introduced as parameters in the Risk Assessment Model (QRAM) of the OCDE/PIARC-Report in order to classify a given tunnel. They cannot be introduced a priori in the table which is the result of the QRA procedure. This figures mean a by-pass to the procedure of the QRAM. They don't fit to the model.

We propose to eliminate the figures in class 1. If, for some local configurations, such amounts are needed in tunnels, its up to the local authorities to define the classification of tunnel after using the QRAM of the OCDE/PIARC-Report to do so. Exactly for this reasons we believe it is necessary to let the possibility to allow some derogations as we have proposed before.

#### All classes

The proposed table needs a clarification. We don't understand the meaning of the wordings "loadings in grouping B, C or D" which appear in each column. For grouping C for example it appears "Restricted for loadings in grouping B and". What kind of restrictions are envisaged. It seems that there is the addition of the restrictions in B plus the new restrictions in C. The same is valid for Grouping D and E. As a conclusion, the same maximum amounts as in column B are also valid for the more restrictive tunnel E. It is allowed to carry 1000 kg of Divisions 1.1, 1.2 and 1.5. in a tunnel E. Instead of that for class 3 for example the limitations of ADR subsection 1.1.3.6 shall apply. Why should the restrictions in tunnels for groupings E be more severe for flammable liquids as for explosives. Why do the limits of subsection 1.1.3.6 not apply for divisions 1.1, 1.2, 1.3 and 1.5? We should replace the terms "Restricted for" by "Forbidden for".

In the Annex to this proposal we propose a revised table which resumes the results of the working group but where the references to classification codes have been translated into UN Numbers or labels because these two elements can be found in the transport document, which is not the case of the classification codes. The WP.15 should decide what to do with this information: maintain the classification codes only, change them into UN Numbers and labels or have both systems together.

## **Annex 2**

### ***Section 1.9.4***

As mentioned earlier, Switzerland is of the opinion that this new provision cannot be mandatory. For this reason the word “shall” should be replaced by “should” in this sentence.

### ***Sub-section 1.9.4.2***

As already mentioned, we should not refer to the sub-section 1.1.3.6. We must define an appropriate table which is in accordance with the principles of the OCDE/AIPCR model which fulfils the needs in safety of the tunnels. Until then the reference to 1.1.3.6 should remain in brackets.

Furthermore the second sentence doesn't solve the question of mixed loading by using the table of groupings of annex 1 to report.

For tunnels corresponding to the grouping D for example: How should toxic and flammable gases in packages be loaded together with flammable liquids of PG I and II, pesticides of PGI I in tank-containers?

The proposed text in 1.9.4.2 and the table in annex 1 don't help much to solve the problem.

Here too, there is a need for more reflection before adopting the proposal of the working group. The operators of tunnels and the users need a clear answer.

We believe that the only way out is a clear establishment of threshold limits for tunnels which take account of the chemical and physical characteristics of the substances only. This would be the safest and easiest way of proceeding. In fact, if 1000 l of flammable liquids are involved in an accident in a tunnel, which very often is a fire, it doesn't help much to know if this 1000 l are in tanks or packages.

This is the reason of our proposal in 1.9.5.1.

Another point in the proposed text in 1.9.4.2 is the last sentence. Why are the restriction to treat as if full of part full only applying to tanks / tank containers. What about packages? Is the intention to allow the transport of more products in empty packages as in full packages? The carriage of empty packages according to 1.1.3.6 is allowed in unlimited quantities. In other words, it is possible to exceed the amounts mentioned for the transport categories 2 to 3 when carrying empty uncleaned packages. We don't see a logic to this rules. They were put in ADR in this manner exclusively for the purpose to exempt drivers and vehicles of some prescriptions. They cannot be referred for the case of tunnels.

## **Other prescriptions needed in ADR to harmonise the passage of tunnels in Europe**

It has to be admitted that tunnels represent another mode of transport (normal roads, trains, air, ship) and tunnels have to be treated as such. The ADR takes account of this in the chapter 1.9. The same philosophy exists also in the Model regulations in the clause 5 of the introduction where it is said "For air transport more stringent requirements may occasionally apply".

For these reasons it is necessary to consider other restrictions which have to apply by crossing a tunnel.

Furthermore we believe that taking into account the limits given in the above table in 1.9.5.1, the following measures have to be introduced in ADR:

1. Supplementary provisions for tunnels
2. Documentation
3. Placarding and marking of vehicles
4. Requirements concerning the training of the vehicle crew

### ***1. Supplementary provisions for tunnels***

We propose to add the following supplementary provisions for tunnels in a new chapter 1.9.5:

#### **"1.9.5.2 Transport of dangerous goods following the exemptions in 1.1.3 and of chapters 3.3 et 3.4 ADR**

**1.9.5.2.1** Dangerous goods carried in the conditions of exemption provided in 1.1.3.2 b) until g), 1.1.3.3 b), 1.1.3.4, 1.1.3.5, 1.1.3.6, ADR, chapter 3.4, as well as the special provisions 119, 145, 188, 190, 191, 216, 238 b), 242, 283, 286, 287, 289, 291, 584, 592, 593, 594, 598, 599, 600, 601, 641, 647 of chapter 3.3 ADR, are submitted to the same restrictions of passage in the tunnels per transport unit as those which are not exempted. The information in the transport document shall conform to the dispositions in 5.4.1.1 and the transport document shall bear the following inscription: "Carriage in accordance to chapter 1.9 ADR".

**1.9.5.2.3** Gases carried under the conditions of exemption provided in au 1.1.3.2 b), e) and f) ADR in fuel tanks or pressure tanks, in quantities of more than 450 litres, are subject to the same restrictions of passage through the tunnels as the transportable tanks.

#### **1.9.5.3 Carriage of dangerous goods following the exemptions of 1.1.3.1 ADR**

Dangerous goods carried following the conditions of exemption provided in 1.1.3.1, a), b), c) et d), are subject to the same restrictions of passage per transport unit in tunnels as the non exempted dangerous goods."

In considering only the intrinsic risks of the substances and their consequences in an incident in tunnel, the way how the packagings are packed, small packagings for example, or the use of the products, in the food or drug industry for example, does not change the consequences of an accident. The derogations in chapters 3.3 and 3.4 may be supportable for normal roads. This is not more the case in tunnels. Furthermore, the derogations have been based sometimes only taking into account the use of the products, alcoholic beverages for example, and are not scientifically justified. They were introduced for other reasons than safety. This should also be the object of the use in the OCDE/PIARC model. The existing derogations of the ADR are a by-pass of the model which is contrary to the safety for tunnels. For this reason, dangerous goods carried through tunnels cannot take benefit of the same derogations on normal roads.

## 2. *Transport document*

### Carriages according to chapter 3.4

For carriages according to chapter 3.4 in tunnels, modify the paragraph 5.4.1.1.4 as follows:

**“5.4.1.1.4      *Special provisions for dangerous goods packed in limited quantities***

5.4.1.1.4.1      No information is required in the transport document, if any, for carriage of dangerous goods packed in limited quantities according to Chapter 3.4.

5.4.1.1.4.2      For carriage through the tunnels in accordance with 1.1.3.4.2 a statement to this effect shall be included in the transport document, as follows: **“Carriage in accordance with 1.1.3.4.2 and chapter 1.9”.**”

### Carriages according to chapter 3.3

For carriages according to chapter 3.3 in tunnels, add a new paragraph 5.4.1.1.5 as follows:

**5.4.1.1.5      *Special provisions for crossing tunnels with dangerous goods carried according to chapter 3.3***

For carriage through the tunnels in accordance with 1.1.3.4.1 a statement to this effect shall be included in the transport document, as follows: **“Carriage in accordance with 1.1.3.4.1 and chapter 1.9”.**”

Renumber the following paragraphs of ADR.

For all other dangerous goods, we shall also provide the same information in chapter 5.4.1. and add the following paragraph:

**“5.4.1.1.17      *Information required in accordance with Chapter 1.9***

For carriages in accordance with 1.9.2 others than those in accordance with 1.1.3.4.1 and 1.1.3.4.2, a statement to this effect shall be included in the transport document, as follows: **“Carriage in accordance with chapter 1.9”.**”

Adding the information as mentioned before, will permit the easy understanding of the documentation by the tunnel operators and control organs and accelerate the necessary controls. We are also in accordance with the way of doing that rules in ADR, for example for the exemptions in 5.4.1.1.7 to 5.4.1.1.10. It is in fact essential for safety reasons to dispose of this information in order to allow the management of the traffic and of the tunnels in a safe way. The owner or operator of the tunnel needs to have the control at any instant of the dangerous goods present in his tunnel in order to be in the position to have the right reaction in case of an incident or accident or in case of dense traffic. This cannot be achieved without a transport document and a clear information on it.

### **3. *Placarding and marking of vehicles***

We propose to introduce this in chapter 5.3

#### *“5.3.1.7 Placarding for tunnels*

Transport units carrying dangerous goods through tunnels according to 1.9.4 and 1.9.5 shall display two rectangular white plates conforming to 5.3.2.1.2, set in a vertical plane. They shall be affixed one at the front and the other at the rear of the transport unit, both perpendicular to the longitudinal axis of the transport unit. They shall be clearly visible.”

In order to identify the vehicles carrying dangerous goods, we believe that the easiest way of solving the question of identification of these carriages in the case of passages through tunnels is to mark all the vehicles independently of the carried quantity and of the type of derogation applying on it (chapter 3.3, 3.4, 1.1.3.6 or normal transports). This would enormously simplify the work of the carrier as well as that of the operator of the tunnel and control organs. Adding the information in the transport document as proposed before will clarify the situation in case of a control and accelerate the controls.

If the above propositions are adopted, there is no need of supplementary marking of vehicles. All dangerous goods independently of the art of transport (following chapter 3.3, 3.4 or normal dangerous goods) will be treated in the same manner in tunnels. A simple orange placarding will be enough. In case of a control, the information in the transport document will explain the reasons of the presence or absence of some equipment or documentation. For example, carriage of goods according with chapters 3.3 and 3.4 will not be accompanied for example with instructions in writing, an ADR-certificate for the driver or fire-fighting appliance in the vehicle. The lack of this elements will be explained by the correspondent sentence as required in 5.4.1.1.4.2, 5.4.1.1.5 and 5.4.1.1.17.

For the same reasons mentioned before the orange placarding will permit a right and safe management of the tunnel.

This solution will avoid the need of specific placardings for carriages under exemptions of chapter 3.3, 3.4 or sub-section 1.1.3.6 which will be necessary to consider in case of not adoption of these rules.

### **3. *Requirements concerning the training of the vehicle crew***

We believe that all drivers of dangerous of all the dangerous goods as mentioned under 1.9.5.1 to 1.9.5.3 shall be subject to the training in accordance to chapter 8.2. Furthermore, this training has to apply independently of the permissible maximum mass of the vehicle.

We propose to add the following text under 8.2.1.10

#### *“8.2.1.10 Training for drivers crossing tunnels*

Irrespective of the permissible maximum mass of the vehicle, drivers of vehicles carrying dangerous goods through tunnels in accordance with 1.9.5.1 to 1.9.5.3 shall attend a training course conforming to 8.2.2.”

This measure is needed in order to guarantee a minimum safe behaviour of the driver in the tunnel in accordance with the carried goods. The statistics also show that drivers trained conforming ADR are less subject to accident than other drivers. This is of course of much importance for tunnels.

### **3. Justification**

The safety in tunnels shall prevail upon other considerations. By choosing a common base for all tunnels in a table based only on a scientific evaluation of the inherent risks of the substances and away of any economical or political considerations and by using the tool brought to us in the QRAM of the OCDE/PIARC Report, we will allow the implementation of this model in all the countries. Being this approach the most severe one, each national authority shall be in the position to foresee national derogations if necessary. This will simplify the difficulties of the users and at the end increase the safety in the tunnels. It will also avoid to introduce a new column for forbidden tunnels.

The supplementary provisions we propose will help the harmonised use of this rules through Europe and again facilitate the work of the users as well as of the tunnel operators and control organs. This new provisions in tunnels will also enhance the safety level not only in tunnels but also on normal roads.

### **5. Safety implications**

At the same time that the safety in tunnels will be increased, the safety in other road segments will also be increased. The identification of many transports done under exemption provisions will become possible. The instruction of drivers and specially of drivers of cars under 3,5 tonnes will naturally increase the safety level of this transports. An harmonized system of grouping for tunnels will facilitate the understanding of the rules for tunnels and this is also an element of safety.

### **4. Feasibility**

The use of a new table in order to determine if one is allowed to go through a given tunnel and what information he shall introduce in the transport document will be the supplementary difficulty with the proposed system. On the other hand one has to forget all the previous derogations existing in ADR (Section 1.1.3.6, chapters 3.3, 3.4) and simply apply what is in the proposed table. The new provisions proposed concerning supplementary provisions, documentation, marking of vehicles and training of vehicle crew are not more difficult to be introduced as the existing ones in ADR. We have chosen the same philosophy to transmit the information in the transport document as in other cases. The use of orange plates in every case simplifies the use of the rules avoiding difficulties arising by the misuse of the plates. The necessary distinction between users and derogations is based only on the information in the transport document. This doesn't seem to be too much difficult to fulfill. The instruction of the drivers is also not difficult to reach.

### **6. Enforceability**

On the proposed basis we don't see problems of enforceability.