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INLAND TRANSPORT COMMITTEE

Ad hoc Multidisciplinary Group of Experts
on Safety in Tunnels

**REPORT OF THE AD HOC MULTIDISCIPLINARY GROUP
OF EXPERTS ON SAFETY IN TUNNELS ON ITS
SEVENTH SESSION**

(19-20 January 2004)

ATTENDANCE

1. The Ad Hoc Multidisciplinary Group of Experts on Safety in Tunnels held its seventh session, exceptionally, in Barcelona, in the premises of the Departament de Política Territorial i Obres Públiques - Generalitat de Catalunya, on 19 and 20 January 2004, with Mr. Michel Egger (Switzerland) as Chairman.
2. Representatives of the following ECE member States participated: Austria; Belgium; Finland; France; Germany; Italy; Netherlands; Norway; Slovakia; Spain; Switzerland. A representative of the European Commission participated. The UNECE Trans-European North South Motorway Project (TEM) was represented. The following international organizations were also represented: World Road Association (PIARC); International Tunnelling Association (ITA). A technical visit was organized on 20 January 2004 to the Cadi Tunnel in the Pyrenees and the Vallvidrera Tunnel in Barcelona.

INTRODUCTORY REMARKS BY THE CHAIRMAN OF THE GROUP OF EXPERTS

3. In introducing the seventh session, Mr. Egger, Chairman of the Group of Experts, thanked the Catalan Government warmly for having allowed the meeting to be held exceptionally in Barcelona and also thanked all those who had worked to organize it. The secretary of the Group of Experts conveyed the excuses of Mr. Capel Ferrer, Director of the Transport Division, who had had to cancel his visit because of last-minute emergencies.

4. Mr. Egger further recalled that the seventh meeting, initially scheduled for 1 and 2 September 2003 in order to define the position of the Group of Experts on the proposed European Commission directive on safety in tunnels, had had to be cancelled on account of progress in discussions on the directive within Community bodies. He also said that its postponement to January 2004 had been decided in close consultation with the secretariat.

ADOPTION OF THE AGENDA

Document: TRANS/AC.7/14*

5. The agenda was adopted without modification.

RESULTS OF THE SIXTY-FIFTH SESSION OF THE INLAND TRANSPORT COMMITTEE

Document: ECE/TRANS/152

6. The secretariat informed the Group of Experts that the Inland Transport Committee at its sixty-fifth session (Geneva, 19-21 February 2003) had welcomed the fact that, in the light of the work of its subsidiary bodies, it would be possible to incorporate a large number of recommendations into existing legal instruments.

7. Concerning the European Commission's proposed directive on safety in tunnels, the Group of Experts was also informed that the Inland Transport Committee, while regretting that the proposal made no reference to the former's work, had noted with satisfaction the initiatives taken by the European Parliament to seek UNECE's opinion on the text.

FOLLOW-UP WORK IN INLAND TRANSPORT COMMITTEE SUBSIDIARY BODIES

Documents: TRANS/WP.1/2003/1/Rev.3; TRANS/WP.1/2003/3/Rev.3; TRANS/SC.1/373; TRANS/SC.1/2002/4/Rev.3; TRANS/SC.1/AC.5/38; informal documents

8. The secretariat informed the Group of Experts about the follow-up given to its recommendations by different subsidiary bodies of the Inland Transport Committee, including the Working Party on Road Traffic Safety (WP.1), the Working Party on Road Transport (SC.1), the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Working Party on

* This document has not been submitted to the official reproduction channels and is an internal document.

the Transport of Dangerous Goods (WP.15). The secretariat had prepared a table for the purpose (an informal session document) recapitulating all the recommendations adopted by the Group of Experts with their state of progress in the various Working Parties. The Group of Experts had then, on the basis of this table, made a detailed review of the follow-up given to the measures which were accompanied by the secretariat's explanations in each case.

9. All the comments made during the session have been grouped in the annex to this report.

10. In concluding this analysis, the Chairman said that he and the Group of Experts were proud that a large number of recommendations had been incorporated into existing legal instruments and he thanked the Working Parties for the promptness with which they had taken them into account in their work.

WORK UNDER WAY IN OTHER FORUMS

11. The representative of the European Commission, Mr. Thamm, reported on the state of progress of the proposed directive on safety in tunnels. He said that the proposal had been the subject of 15 Council meetings in 2003, that the European Parliament had proposed 78 amendments at the first reading and that he hoped that the directive would finally be adopted in April 2004.

12. The Vice Chairman of the Group of Experts, Mr. Didier Lacroix, briefly summed up the main features of the World Road Association (PIARC) (107 Governments and 2,000 other members from 130 countries). He also referred to the Association's ongoing and future work and described in particular the results of the XXIInd World Road Congress held in Durban (South Africa) in October 2003 where road tunnels had been the subject of four sessions, including a special session on safety organized jointly by UNECE, the European Commission and the International Tunnelling Association (ITA). He presented the meeting with an informal document on all of this work. Lastly, he announced that PIARC's centenary Congress would be held in 2007 in Paris where the first Road Congress had been held in 1909.

13. He also provided information on three ongoing European projects: UPTUN (Cost-effective, Sustainable and Innovative Upgrading Methods for Fire Safety in Existing Tunnels), focusing on innovative technologies and the development of a methodology to evaluate tunnel safety levels, FIT (Fire in Tunnels) launched in March 2001, which would complete its work in 2005, and DARTS (Durable and Reliable Tunnel Structures), the aim of which was to develop operational methods and promote practical tools for decision-making. He said that these three projects had come together to present their respective work at a joint symposium on safe and reliable tunnels to be held in Prague from 4 to 6 February 2004.

UPDATING OF THE ROAD TUNNEL INVENTORY

14. The secretariat stated that it intended to send out a questionnaire in 2004 in order to update the inventory of tunnels more than 1,000 m long prepared in 2001.

ANY OTHER BUSINESS

15. The representative of Austria presented the results of a study on accidents between 1999 and 2001 in the 136 tunnels on his country's territory (115 single-tube, 21 twin-tube). The study showed that numbers of victims were higher in bidirectional tunnels than in unidirectional tunnels.

15. The International Touring Alliance/International Automobile Federation (AIT/FIA), represented by the Spanish RACC Association, recalled the aims of the EUROTTEST surveys of safety in tunnels carried out by automobile clubs under the auspices of the ADAC automobile club (the main aim was to inform users about the safety level of these infrastructures). It said that in the last five years 120 tunnels had been inspected in Europe. In 2004, 20 inspections were scheduled, 4 of them in Spain. It recalled the procedure that had been established, beginning with a questionnaire sent via a consultant, followed by an inspection by technicians. It invited the administrations of the various countries to collaborate in this project.

16. The representative of France said that although his country accepted such surveys, it did not automatically support the established methodology which was questionable. He recalled that the aim of the UPTUN project was to propose a methodology to assess the safety level of tunnels in operation. The Chairman of the Group of Experts, Mr. Egger, for his part was unclear as to the specific results to be expected from such surveys, although he considered that it was preferable not to object to them. He stressed the difficulties, and even sometimes the impossibility of answering the questions contained in the questionnaire.

17. The representative of Switzerland, speaking on behalf of the Swiss Federal Roads Authority (FEDRA), described how the recommendations had been implemented in Switzerland. He said that FEDRA (Swiss Federal Roads Authority) had introduced new regulations concerning ventilation, signs for safety installations, radio communications in tunnels, video surveillance and fire detection. He said that the diodes on the sides of the carriageway or on the walls of the tunnels had been very successful with users who felt that they were provided with better guidance. Lastly, he said that Switzerland gave priority to measures giving the best cost-efficiency ratio.

FOLLOW-UP OF WORK

18. While he considered that the Group of Experts had completed the work that had been entrusted to it by the Inland Transport Committee, Mr. Egger was of the opinion, on behalf of the Group of Experts, that it was preferable to put its work aside provisionally rather than dissolve the Group. He would envisage a meeting two or three years from now to take stock of the developments observed.

REPORT OF THE MEETING

19. It was specified that the report would be prepared by the secretariat after the meeting.

Annex

Follow-up to the recommendations

Points commented on during the session

Measure 1.03 (Drive out burning vehicle): In order to illustrate the importance of and the justification for this measure, the representative of France said that, thanks to the cool headed reaction of a bus driver on finding a fire at the rear of his vehicle when he was driving through a tunnel in Savoie (France), it had been possible to bring 43 passengers safely to the tunnel exit.

Measure 1.04 (Roadside checks): Stress was placed here on the issue of driving under the influence of alcohol and its dramatic consequences for road safety. The representative of the European Commission said that a proposed directive on reinforcing checks of heavy vehicles on roads and on business premises was being prepared.

Measure 1.07 (Regulations for dangerous goods transport): The secretariat informed the Group of Experts about the difficulties encountered by WP.15 in introducing the OECD proposals into ADR. Mr. Lacroix, speaking on behalf of PIARC, stressed the need for a consistent and harmonized system and said that he remained open as to how it would be applied. He also said that PIARC was prepared to collaborate in preparing recommendations for road authorities and tunnel managers.

Measure 1.09 (Distance between vehicles): The Chairman stated that a distance of 150 m had been introduced in Switzerland for all vehicles in tunnels; it had created great confusion among users and was not complied with because drivers had not understood its purpose.

The representative of France said that the following standards are recommended in the proposed European directive: the distance to be kept between cars is the equivalent of two seconds, and four seconds between heavy goods vehicles; when vehicles are stopped, a distance of 5 m should be observed between them except in the event of an emergency stop. He also said that a distance of 150 m was required in the Mont Blanc and Fréjus Tunnels and that in order to ensure compliance, blue lighting had been placed every 150 m. He welcomed the fact that SC.1 had rejected the adoption of the provisions of annex 2 of the AGR pending the final adoption of the directive in order to ensure that the two texts were consistent.

The representative of Italy also stressed the difficulties of ensuring compliance with distances unless automatic systems were available. He said that in Italy the distance to be maintained in bidirectional tunnels more than 2,000 m long was 100 m.

Lastly, the representative of Austria said that an experiment had been in progress for several months in a tunnel in Vienna to monitor the distance between vehicles.

Measure 2.01 (Supervisory coordinating body): It was pointed out that the EU directive contained no precise equivalent of this body which was a national body while the administrative authority referred to in the directive (art. 4) was not necessarily a national body. It was stressed, nevertheless, that the attributions of the administrative authority closely resembled those of the supervisory coordinating body.

It was pointed out that although measures 2.02, 2.03 and 2.05 were included in the directive, measures 2.04, 2.06 and 2.07 were not included. The secretariat stressed that when they were reviewed in May 2003 (TRANS/SC.1/AC.5/38), the AGR group had considered that measures 2.01 to 2.07 did not come within the scope of the AGR and therefore had not been incorporated into the proposals submitted to SC.1 for consideration in October 2003.

Measure 2.08 (Closure of lanes): This measure had been made compulsory in the EU directive. The representative of Switzerland said that for long tunnels it did not seem productive to close lanes outside the tunnel and that the operators requested that the closure should take place inside the tunnels particularly for tunnels with little traffic.

Measure 2.09 (Access time in an emergency): The measure was included in part in the EU directive but not in the proposals of annex 2 of the AGR.

Measure 2.10 (Designation of one single control centre): The representative of the European Commission said that this point (included in point 3.5 of the directive) had given rise to lengthy discussions within EU bodies.

Measure 2.13 (Alternative itineraries), Measure 2.14 (Operation of ventilation systems), Measure 2.15 (Guidelines for practical fire trials): The representative of the Commission said that the directive contained only outlines on these points which could be developed at a later date in terms of the best practices observed.

Measure 2.16 (Checking for overheating of heavy goods vehicles): The discussion basically concerned the gantries currently fitted in the Mont Blanc and Fréjus Tunnels. The Chairman of the Group of Experts said that they had given rise to mixed reactions at the World Road Congress in Durban. The representative of Italy said that they were experimental devices and that a report was being prepared on their use. He added that these systems could only be used where there was a toll gate because vehicles were required to travel at 20 km/h.

Measure 3.01 (Number of tubes and lanes): It was pointed out that the provisions adopted by the AGR group (cf. annex 2, III.3, second subparagraph of the report TRANS/SC.1/AC.5/38) went further than the recommendation and the directive. The deletion of the sentence: "*A two-tube tunnel should be constructed if the road concerned has separated carriageways*" was therefore requested and the following addition made to the first sentence of the second paragraph: "*... are traffic forecasts and safety (taking particular account of heavy goods vehicles, the gradient and the length)*".

Measure 3.03 (Use of cross-connections in twin-tube tunnels): A request was made for the inclusion in the proposal adopted by the AGR group in annex 2, V.3, second subparagraph of the report TRANS/SC.1/AC.5/38 of the provision giving a choice between the use of direct connections with the outside or the use of the other tube as an escape and rescue route. It was also requested that the end of the second sentence of that paragraph should be rephrased to read "*... the passage of the emergency services*".

Measure 3.04 (Crossing of the central reserve at the entrance to tunnels): It was requested that the last subparagraph of annex 2, V.3, of the report TRANS/SC.1/AC.5/38 should be amended to read: “*For twin-tube tunnels, it is recommended, where geographically possible, to foresee a crossing of the central reserve outside each tunnel entrance.*”

Measure 3.05 (Guidelines on tunnel equipment): It was requested that the words “*and extraction*” should be deleted in annex 2, V.5.2, first subparagraph of the report TRANS/SC.1/AC.5/38. It was also requested that the wording should be amended to make it consistent with the provisions of the EU directive (point 2.5.1).

Stress was also laid on the equipment of tunnels with loudspeakers. The Chairman of the Group of Experts recalled that in the original discussions reference to this equipment had been removed in view of the majority opposition to it. The representative of Austria said that the use of this equipment in Austria had given good results.

He also pointed out that the provisions adopted by the AGR group concerning lay-bys (cf. annex 2, III.3, third subparagraph of the report TRANS/SC.1/AC.5/38) went further than the recommendation and the directive. The terms of recommendation 3.05 should be respected by amending the proposal to read: “*Emergency stopping places (lay-bys) should be provided at least every 1,000 m in narrow bidirectional tunnels with heavy traffic*” or by adopting the full wording of annex I, point 2.5 of the directive.

Measure 3.09 (Road-signing systems): The secretariat was requested to amend sign G, 24c, referred to in document TRANS/WP.1/2003/3/Rev.3, which in showing a pedestrian running towards the most distant exit could mislead users making for a safety exit. It was therefore requested that the pedestrian should at least be shown running to the nearest exit.

Measure 3.11 (Criteria for human surveillance): Included in annex 1, point 2.13.1 of the directive but not in the amendments made to the AGR.

Measure 4.02 (Quantity of fuel carried): The Group regretted that the proposal contained in the recommendation had not been taken into account by WP.15. It would like to know the reasons for that decision.
