UNITED NATIONS **E**

Economic and Social Council

Distr.
GENERAL

TRANS/AC.7/6
20 April 2001

ENGLISH
Original: FRENCH

ECONOMIC COMMISSION FOR EUROPE

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 THIRD SESSION

(20-21 March 2001)

ATTENDANCE

1. The Ad hoc Multidisciplinary Group of Experts on Safety in Tunnels held its third session in Geneva on 20 and 21 March 2001 with Mr. Michel Egger (Switzerland) as Chairman. Representatives of the following ECE member States took part in the session: Austria; France; Germany; Italy; Netherlands; Norway; Russian Federation; Slovakia; Spain; Switzerland; Turkey; Ukraine. The following international organizations were represented: Permanent International Association of Road Congresses/International Road Association (PIARC); International Road Federation (IRF); International Road Transport Union (IRU); International Touring Alliance/International Automobile Federation (AIT/FIA); Trans-European North-South Motorway Project (TEM). A representative of the Swiss Touring Club (TCS) also participated as an observer.

ADOPTION OF THE AGENDA

Document: TRANS/AC.7/5

2. The agenda was adopted without change.

REPORT OF THE SECOND SESSION

Document: TRANS/AC.7/4

3. The Ad hoc Multidisciplinary Group of Experts adopted the report of its second session (10-11 October 2000).

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

4. Before the presentation of the work of the Inland Transport Committee by the secretariat, the Director of the Transport Division, Mr. J. Capel Ferrer, congratulated the Group of Experts on Safety in Tunnels on the work it had done to date; he mentioned the expectations of the member countries of ECE in this regard and the importance of seeking as broad-based harmonization as possible.

5. The secretariat then reported to the Group of Experts on the results of the sixty-third session of the Inland Transport Committee concerning safety in tunnels, as summarized below:

- The Inland Transport Committee congratulated the Group of Experts on the progress made and the active participation of countries and non-governmental organizations in its work;

- It took note of the success of the questionnaire sent to the member States of UN/ECE and invited those which had not yet replied to do so rapidly;

- In order to be able to endorse the work of the Group of Experts, the Inland Transport Committee asked the secretariat to draft a resolution for the February 2002 session containing all the recommendations which would be adopted. In view of this it would like to have a first opinion from the working groups concerned on the feasibility of these recommendations and a possible timetable for taking account of them;

- Lastly, it confirmed that in principle the work of the Group of Experts on railway tunnels would continue, but before this second phase was initiated, the Inland Transport Committee considered that it was necessary to look first of all at what had been learned from road tunnels.

ROAD TUNNEL SURVEY BY THE GERMAN AUTOMOBILE CLUB

6. The Group of Experts considered the results of the recent survey by the German Automobile Club (ADAC) on 47 road tunnels over 1,500 m long in Europe, for the most part located on transit routes (16 in Austria, 9 in Switzerland, 6 in France, 5 in Germany, 3 each in Italy, Spain and the United Kingdom, respectively and 2 in Belgium). In presenting its results, ADAC set out the methodology used in the survey, based on an assessment of potential risk (six parameters) and the potential for safety (nine criteria defined, and subdivided into several parameters). ADAC also announced that it would publish the results of a further survey of another 16 tunnels at the end of May 2001.

7. The discussion which followed this presentation stressed the need to seek harmonization in the principles underlying methods of assessing safety in tunnels in the future in order to avoid divergences of approach. The Chairman of the Group of Experts, Mr. M. Egger, hoped that private bodies would collaborate more with the national authorities involved.

TRAGEDY OF THE FUNICULAR RAILWAY AT KAPRUN, AUSTRIA

8. The representative of Austria furnished the Group of Experts with details of the circumstances of the dramatic underground funicular railway accident in Kaprun on 11 November 2000, which killed 155 persons. He described the characteristics of the railway tunnel: a length of 4 km, a 46 per cent gradient, a diameter of 3.6 m, an emergency exit in the middle of the tunnel, no internal lighting and the telephone as the sole means of communication.

REVIEW OF REPLIES TO THE QUESTIONNAIRE

Documents: TRANS/AC.7/2000/8 and Add.1

Informal documents: No. 3 (general information on tunnels) and No. 3 bis (information concerning bores)

9. The secretariat reported to the Group of Experts, in various informally circulated tables, on the replies that had come in to Part B of the questionnaire (technical characteristics of tunnels). It recalled its invitation to member States which had not already done so to reply rapidly. At the time of the meeting, 28 countries had replied to the questionnaire. In order to make the best possible use of the data, the secretariat invited the members of the Group of Experts to take a decision on the follow-up to be given to the questionnaire.

10. The representative of the International Road Association (PIARC) informed participants that, following the forwarding of the questionnaire to the members of the PIARC Committee on Road Tunnels (27 members) which were not ECE members, two countries - Japan and Thailand - had replied; he distributed a document containing these countries' replies.

CONSIDERATION OF PROPOSALS FOR IMPROVING SAFETY IN TUNNELS

Document: TRANS/AC.7/2001/1

Informal documents: No. 1 (recommendations prepared by the Chairman)
No. 2 (recommendations by FIA)
No. 4 (proposals by France)
No. 6 (recommendations by IRF)

11. On the basis of the informal document prepared by the Chairman, the Group of Experts considered the draft proposals for recommendations concerning road users in tunnels, the infrastructure, tunnel operation and requirements for vehicles which would constitute the main lines of the final report. Mr. Egger, the Chairman of the Group of Experts, said that the recommendations would be expanded and clarified in the final report.

12. All the proposals considered are reproduced in the annex (document TRANS/AC.7/6/Add.1); the amendments made during the meeting are in bold with relevant comments opposite. Proposals which gave rise to substantive discussion, however, are mentioned below.

13. **Road users**

- Measure 1.6 (periodic test for professional drivers). This measure was adopted but the proposal to extend the obligation to all drivers was rejected as being too difficult to implement.

- Measure 1.7 (rationalization of regulations governing the transport of dangerous goods through tunnels). Adopted, but at the request of several delegations this point would be expanded using proposals by OECD/PIARC; reference should also be made in it to the problem of the transport of non-dangerous goods which might give rise to danger in tunnels. The representative of France told the Group of Experts about a report which had been prepared in France by the Institut National de l'Environnement Industriel et des Risques on the danger of certain substances not currently classified as dangerous goods as regards fire safety in tunnels (November 2000).

- Measure 1.11 (limitation of the speed of lorries to 60 km/h). This measure was rejected at the request of several delegations which pointed out that a compulsory fixed speed was unsuited to the various situations encountered.

- Measure 1.12 (introduction of a compulsory distance of 100 m between vehicles). This measure was rejected at the request of the delegations (except for Italy) on the grounds that it was impossible to monitor.

14. **Operation**

- Measure 2.1 (establishment of a supervisory body). Adopted, but since the purpose of this measure was to encourage supervision by a single body responsible nationally for incidents requiring the intervention of the bodies concerned and not to coordinate the handling of the incidents by these bodies, a request was put forward to amend the proposed wording in this sense. This point gave delegations the opportunity to describe practices in force in their countries.

- Measure 2.4 (construction of a test tunnel). Adopted in principle. Switzerland said that a test tunnel to enable the emergency services to train was at the planning stage and that it would be open to other countries. Norway said that it already had a tunnel to enable firemen to train.

- Measure 2.8 (partial or complete closure to traffic of tunnels in the event of an incident). Since this measure was debatable, the Group of Experts considered that it should be restricted to cases of scheduled closure.

– Measure 2.9 (presence of emergency response teams). Adopted in principle but in view of the diversity of practices which themselves varied depending on the technical criteria of the tunnels, the Group of Experts was in favour of a general formula restricted to major tunnels only.

– Measure 2.10 (inspection of the state of installations). Adopted in principle but it was decided to include this point in measure 2.1. The question also arose of whether it was appropriate to specify the periodicity of inspections. After a discussion, the Group of Experts was of the opinion that it was preferable to use a general formula in view of the diversity of practices, which themselves varied depending on the technical criteria of the tunnels.

  The Chairman of the Group of Experts said that in Switzerland these inspections were conducted by the road authorities and that he would like to know what practices were in force in the member States represented. In Austria, an expert mandated by the State conducted an inspection every six years. In France, inspections had to be made by a service independent of the operator, which could nevertheless be part of the administration. In Norway, the fire services were responsible for carrying out the inspections. In Germany, the tendency was to entrust the task to private companies. Greece for its part had established an independent inspection group of academics, which, however, answered to the central administration.

15. **Infrastructure**

– Measure 3.1 (guidelines for single bore tunnels). Adopted in principle, but, in view of the differing approaches of the Alpine countries to tackling the problem of ventilation, the question would be discussed again at the July session. The Chairman's proposal to establish an informal group within the Group of Experts was accepted.

– Measure 3.5 (criteria for the number of bores to be constructed). Adopted, but the initial formula was expanded in order to place emphasis on the criterion of the safety level and ensure that the number of traffic lanes before the tunnel was reached (apart from emergency lanes) would be kept in the tunnel as far as possible.

– Measure 3.8 (specifications for equipment in tunnels). Adopted in principle, but the discussion stressed the need to dissociate the problem of safety equipment for general use from that of equipment available to users. This point should refer to PIARC's work and the work done by Germany (informal document No. 5).

– Measure 3.9 (harmonization of signs and signals). Adopted in principle. The Group of Experts, with the help of IRF, would submit specific proposals to WP.1 and hoped that harmonization would be as wide-ranging as possible.

– Measure 3.13 (risk potential in tunnels). Adopted in principle, but this point should be addressed in greater detail with regard to the document submitted by Germany. France pointed out that OECD/PIARC were already working on this point which should lead to standards for tunnel design.

16. **Vehicles**

– Measure 4.1 (obligation for utility vehicles to be equipped with a fire extinguisher). The Group of Experts accepted this measure but rejected the principle of equipping all vehicles. WP.29's attention should be drawn to the possibility of equipping heavy vehicles with heat-detection equipment which was already compulsory for buses carrying more than 22 passengers.

– Measure 4.2 (limitation of the amount of fuel carried on board vehicles). As things stood, the permitted maximum amount was 1,500 litres. France proposed that this amount should be limited to 700 litres, as was currently usual practice for vehicles and that additional fuel tanks should be prohibited. The Group of Experts supported this proposal, but WP.29 should nevertheless consider its relevance.

– Measure 4.3 (fire resistance of the fuel tanks of heavy vehicles). This proposal emerged from the technical investigation following the Mont Blanc tragedy. The Group of Experts supported the proposal by France and the need for a study of this point.

– Measure 4.4 (end to the increase in the weight and dimensions of heavy vehicles). The Group of Experts supported this measure objectively, but considered that aspects of some delicacy were involved.

– Measure 4.5 (avoiding the use of highly inflammable materials in vehicle construction). The Group of Experts supported the notion of a study on the subject but considered that WP.29 should first decide on its relevance.

– Measure 4.6 (inspections of vehicles at regular intervals, in particular as regards fire risk). The main purpose of this measure was to increase country awareness, since the implementation of the 1997 agreement on technical inspections was optional. It was accepted in principle but a request was made to review the proposed wording to make it more explicit.

CONSIDERATION OF OTHER DOCUMENTATION

Documents: TRANS/AC.7/2001/2
TRANS/AC.7/2001/3
TRANS/AC.7/2001/4
TRANS/AC.7/2001/5
TRANS/AC.7/2001/6
TRANS/AC.7/2001/7

17. This item did not give rise to any discussion.

OTHER ISSUES

18. The next meeting of the Group of Experts will be held on 9, 10 and 11 July. (N.B. This meeting was initially scheduled for two days, but was extended to three days at the joint request of the Chairman and Vice-Chairman).

19. The Chairman announced that he intended to submit a proposal for recommendations at least 15 days before the meeting.

20. The Chairman said that he intended to raise the question of the continuation of work on railway tunnels at the next session of the Group of Experts.

REPORT OF THE MEETING

21. The report of the meeting was prepared by the secretariat in coordination with the Chairman.

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