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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

Meeting of the Multidisciplinary Group  
of Experts on Safety in Tunnels (rail)  
(Second session, 25-26 November 2002,  
agenda item 2)

**QUESTIONNAIRE ON SAFETY IN RAIL TUNNELS**

Transmitted by the Government of Finland

**REGULATIONS AND GENERAL DATA ON RAIL TUNNEL SAFETY**

**Question 1.** Are there any legislation, regulations, recommendations on safety in rail tunnels in your country (dealing with geometry, infrastructure, equipment, signalling, operation, traffic, train operator education and training, etc.)? If yes, please give details and provide all documents.

The Finnish Rail Administration Board maintains the statutory orders "Technical Regulations and Guidelines for Railways". The Finnish designation is RAMO. It has been divided into 19 separate technical sections. The section "RAMO 18 Rail Tunnels" has been published in 1998 and sets out the basic principles for the planning and design, construction and maintenance of railway tunnels. Notified in accordance with Council Directive 83/189/EEC as amended by Directives 88/182/EEC and 94/10/EU. The document with its annexes is attached to Informal document No. 17.

**Question 2.** Do you consider the above texts sufficient? If not, please give details.

We consider our regulations and guidelines sufficient for new rail tunnels. Old tunnels may require further guidelines.

**Question 3.** Is your authority considering any changes in the above texts? If yes, please give details and provide the current drafts.

Our intention is to update the present version of the regulations depending on the national and international technical and structural research and development. No drafts have been made for the present.

**Question 4.** Is there any specific methodology for risk assessment and risk management for tunnels in your country? If yes, please provide details.

The risk assessment has been made case by case based on the accident statistics. We do not have a theoretical numerical method for risk analysis for rail tunnels.

**Question 5.** Does your country classify rail tunnels, or envisage doing so in future, by the risk of accident associated with them? If yes, please provide details and documents.

We have classified rail tunnels based on the length and dimensioning speed of a tunnel. The categories by length are:

- 1) Short tunnels: length less than 500 metres
- 2) Medium length tunnels: length 500 – 2,000 metres
- 3) Long tunnels: length over 2,000 metres.

The categories by speed are:

- 1) Speed<sub>dim</sub> max 160 km/h
- 2) Speed<sub>dim</sub> between 160 km/h and 220 km/h (Rail Track for Fast Traffic)
- 3) Speed<sub>dim</sub> between 220 km/h and 300 km/h (Rail Track for High Speed Traffic)

The details are presented in Informal document No. 17.

**Question 6.** Please provide any existing data and statistics on fires, accidents, breakdowns in rail tunnels in your country.

No fires, accidents or breakdowns have happened in Finnish rail tunnels up to the present.

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