Implementation of the Tunnel Directive in EU Member States (MS)

by
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former END EU DG Energy and Transport
at the
4th Portuguese Road Congress- Estrada 2006
April 5-7, 2006
Estoril, Portugal
Directive 2004/54/EC

➤ **Scope**
- tunnels longer than 500 m in the trans-European Road Network (TERN)

➤ **Organisational requirements**
- Administrative authority
- Tunnel manager
- Safety officer
- Inspection entity

➤ **Technical requirements**
- Infrastructure
- Operation
- Vehicles
- Road users
TERN tunnel inventory

- Existing TEN tunnels >500 m in 2002
- Total TEN tunnels > 500 m in 2010

Countries and number of tunnels:
- Italy: 27
- Austria: 32
- Germany: 37
- France: 31
- Spain: 20
- UK: 10
- The Netherlands: 8
- Greece: 7
- Denmark: 3
- Belgium: 2
- Portugal: 1
- Finland: 0
- Sweden: 0
- Luxembourg: 0
- Ireland: 0

22.03.06
Directive: Status of Adoption and Publication


26 February 2004: Adoption of common position in Council

20 April 2004: Adoption of common position second reading in EP

29 April 2004: Publication in Official Journal –L 201

07 June 2004: Publication of Corrigendum in OJ –L 167
Directive Preparation

Work done by:

- PIARC C5
- OECD
- WERD (Alpine countries)
- Austria, France, Germany, Norway, Switzerland
- UN-ECE (Recommendations from December 2001)
- EU Commission and Council
  (15 working group meetings between February and September 2003)
- European Parliament (RETT Committee meetings)

Follow up work:

- EU Technical Committee on Road Tunnel safety
- PIARC C3.3 (e.g. WG 2)
- EU research projects (e.g. DARTS, UPTUN, FIT, Safe-T)
- UN-ECE (e.g. WP1 and WP15)
Directive Implementation

Article 18:
Member States have to bring into force the laws, regulations and administrative provisions necessary to comply with the Directive by the 30th of April 2006. They have immediately to forward to the Commission the text of those provisions, together with a table correlating those provisions with the Directive.

*If MS do not provide those documents infringement measures can be taken by the Commission*
## Implementation schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Entry into force</td>
<td>29.04.2004</td>
</tr>
<tr>
<td>E+ 2 years</td>
<td>transposition by Member states and notification of safety organisations; all tunnel at design stage shall comply from hereon or those built but not in operation shall be evaluated;</td>
<td>30.4.2006</td>
</tr>
<tr>
<td>E + 3 years</td>
<td>assessment of existing tunnels shall be completed; information of EU every 2 years thereafter about the implementation plan</td>
<td>30.4.2007</td>
</tr>
<tr>
<td>E+ 5 years</td>
<td>EU prepares a report about the risk analysis methodology used in Member states</td>
<td>30.4.2009</td>
</tr>
<tr>
<td>E+ 6 years</td>
<td>first round of technical inspections should be completed ; EU establishes report</td>
<td>30.4.2010</td>
</tr>
<tr>
<td>E+ 10 years</td>
<td>end of the implementation periode of the directive to existing tunnels</td>
<td>30.4.2014</td>
</tr>
<tr>
<td>E+ 15 years</td>
<td>end of the extented implementation periode of the directive to existing tunnels</td>
<td>30.4.2019</td>
</tr>
</tbody>
</table>
Questionnaire:

State of transposition of the Directive in the MS

handed out to MS in November 2005

1. General
2. Existing situation of tunnel safety provisions
3. Transposition of the administrative requirements
5. Tunnels already in operation
6. Refurbishment
7. Periodic Inspections
8. Risk analysis
9. Reporting of accidents and fires
10. Transposition time
11. Application to Non-TERN
## Implementation status in MS 2005

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>?</td>
<td>2</td>
<td>?</td>
<td>?</td>
<td>work will start in 2005</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>TS98 (1997)</td>
<td>10</td>
<td>Yes</td>
<td>No</td>
<td>organisational requirements have still to be implemented</td>
</tr>
<tr>
<td>Denmark</td>
<td>?</td>
<td>4</td>
<td>Yes*</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>French circular (2000)</td>
<td>33</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>RABT 2003</td>
<td>37</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>?</td>
<td>38</td>
<td>No</td>
<td>No</td>
<td>mostly new tunnels</td>
</tr>
<tr>
<td>Hungary</td>
<td>?</td>
<td>0</td>
<td>?</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
<td>3</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>only for lighting and ventilation</td>
<td>227</td>
<td>Yes*</td>
<td>No</td>
<td>number of existing tunnels very high</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>?</td>
<td>3</td>
<td>Yes</td>
<td>No</td>
<td>working group will be set up in 2005</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>prescriptive guidelines</td>
<td>8</td>
<td>No</td>
<td>No</td>
<td>prescriptive Guidelines will be finished end 2004</td>
</tr>
<tr>
<td>Slovenia</td>
<td>national guidelines based on Austrian RVS</td>
<td>7</td>
<td>?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>?</td>
<td>36</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>?</td>
<td>1</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>BS 78/99</td>
<td>?</td>
<td>No</td>
<td>No</td>
<td>QRA + cost benefit analyses</td>
</tr>
</tbody>
</table>

22.03.06
Summary of Implementation Status

1. Existing national guidelines in 8 MS
2. No problems with transposition of minimum technical requirements in almost all MS
3. Problems with transposition of administrational requirements in 7 MS (mostly federal states)
4. Problems with refurbishments in MS with numerous tunnels which are already in operation
5. Most MS have still to develop their own risk analysis methodology
6. Application also to Non–TERN tunnels announced by 9 MS
RISKS in ROAD TUNNELS
Future Main Risks

- 40% to 60% increase of HGV traffic in the next 10-15 years
- Emergency preparedness of services
Main risk: Increase of HGV Transport

Transport of Goods on Roads

- Belgium
- Denmark
- Germany
- Spain
- France
- Italy
- The Netherlands
- Austria
- Sweden
- UK

Goods in billion t\(\times\)km

Integrated tunnel safety organization?

Operation

Firebrigade

Police

Rescue services
Tunnel Safety Organization TOS
Organisational structure example

- Member State (MS)
- Administrative authority (ies) (AA)
- Tunnel manager (TM) public or private
- Safety officer (SO)
- Inspection entity
- Tunnel 1
- Tunnel i
- Tunnel n
Administrative Authority (AA)

- Appointed by Member States (MS) at national, regional or local level
- Possible to use existing administrative services in MS
- Responsible for all tunnel safety related aspects

Tasks:
- testing and inspecting tunnels on a regular basis;
- drawing up safety requirements;
- organising the training of emergency services;
- defining the procedure for immediate closure of a tunnel in an emergency case;
- implementing the necessary risk reduction measures

Tunnel Safety Organization TSO- AA
Tunnel Manager (TM)

- Appointed by AA’s
- Responsible for safety in each tunnel
- Member of AA may perform this function

Tasks:
- appointing a safety officer;
- reporting of any incidents in tunnels;
- analyzing the circumstances of incidents;
- defining the procedure for immediate closure of a tunnel in an emergency case in accordance with AA;
- implementing the necessary risk reduction measures in accordance with AA

Tunnel safety Organization TSO-TM
Safety Officer (SO)

- Appointed by TM’s

- Coordination of all preventive and safeguard measures

- Member of tunnel staff or emergency services may perform this function

Tunnel safety Organization TSO- SO
# Tasks of a Safety Officer

<table>
<thead>
<tr>
<th>Function or Task</th>
<th>Type of mission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coordination</td>
</tr>
<tr>
<td>general role</td>
<td>X</td>
</tr>
<tr>
<td>special role:</td>
<td></td>
</tr>
<tr>
<td>Emergency services</td>
<td>X</td>
</tr>
<tr>
<td>Operational schemes</td>
<td></td>
</tr>
<tr>
<td>Planning, implementation and evaluation of emergency operations</td>
<td></td>
</tr>
<tr>
<td>Safety programmes</td>
<td></td>
</tr>
<tr>
<td>Specifications of structure, equipment and operation</td>
<td></td>
</tr>
<tr>
<td>Training of operational staff and emergency services</td>
<td></td>
</tr>
<tr>
<td>Organisation of exercises</td>
<td></td>
</tr>
<tr>
<td>Commissioning of the structure</td>
<td></td>
</tr>
<tr>
<td>Commissioning of equipment and operation</td>
<td></td>
</tr>
<tr>
<td>Maintenance and repair</td>
<td></td>
</tr>
<tr>
<td>Evaluation of incidents/accidents</td>
<td></td>
</tr>
</tbody>
</table>
## Safety documentation
### Role of a Safety Officer

<table>
<thead>
<tr>
<th>Function or Task</th>
<th>Typ of mission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advice</td>
</tr>
<tr>
<td>special tasks:</td>
<td></td>
</tr>
<tr>
<td>Safety documentation</td>
<td></td>
</tr>
<tr>
<td>Copy of safety documentation</td>
<td></td>
</tr>
<tr>
<td>Opening of a tunnel</td>
<td></td>
</tr>
<tr>
<td>Structural and operational modifications</td>
<td></td>
</tr>
<tr>
<td>Consequences of modifications</td>
<td></td>
</tr>
<tr>
<td>Periodic exercises</td>
<td></td>
</tr>
<tr>
<td>Report on exercises and evaluation of results</td>
<td></td>
</tr>
</tbody>
</table>
Inspection Entity (IE)
- Appointed by Member States (MS)
- Member of AA may perform this function

Tasks:
- has to carry out inspections, evaluations and tests
- must have a high level of competence and high quality procedures;
- must be functionally independent from the TM

Tunnel safety Organization TSO- IE
Operational Requirements

Traffic Management System (TMS) e.g.:
- Operational means
- Emergency planning
- Management of incidents
- Traffic control centre
- Tunnel closure
- Transport of dangerous goods
- Works in tunnels
Traffic management

Tunnel closure facilities

Mechanical barrier

Signals

Panel for announcements
Information of Road Users

Information campaigns
- Behaviour in cases of incidents
- Overtaking in tunnels
- Speed
- Distance between vehicles

Tunnel Signing
- Conventional, special
- Variable Message Signs (VMS)
- Pictograms
EU road user leaflet for professional drivers
Variable Message Signs (VMS)

Installationsystems for VMS

VMS Lane signing
Signing for tunnels

- Tunnel sign
- Escape sign
- Lay-by sign
- SOS station signs

Too many signs at tunnel portal
Periodic exercises

- as realistic as possible every 4 years
- yield clear results
- prevent damage to the tunnel
- may be partly table top or computer simulations every year in between realistic exercises
The Firebrigades

Is this emergency bus of any use?
After the adoption of the Directive in April 2004 the Commission has set up a Technical Committee on Road Tunnel Safety according to Article 17, which has created a working group of national experts from Member States.

Meetings in Brussels:
- 18 November 2004
- 24 June 2005
- next: 06 April 2006

Tasks:
- Comitology procedure (e.g. derogations for innovations)
- Future work to improve the directive
Derogations for innovations

Member state submits a derogation application

Commission notifies

All other Member states

without objections after three months

Derogation granted

with objections

Comitology procedure: either granted or not granted
Future work to improve the Directive

- future improvements to the minimum safety provisions e.g.:
  - CEN Standard for tunnel lighting
  - Best practice guidelines for ventilation of tunnels

- collection of information of safety provisions, evaluation and recommendations:
  - Results of EU research projects (2001-2006) output of Safe-T network

- harmonised procedures for risk analysis
  - Collection of existing methods OECD/PIARC, NL, CH, NO, EU projects
  - Evaluation
  - Recommendations

- Harmonised signing for tunnels
  - Development of pictograms

- Regulations for the Transport of Goods through tunnels
Integrated tunnel safety organization

Tunneloperator

Police

Firebrigade

Rescue services
Thank you for your attention