



**XXIVth World
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Working Group 3

Influence users' behaviour in tunnels

- Drivers' education -

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1 – Introduction

- **Title of the report:**
 - Recommendations regarding road tunnel driver training and information
- **Subjects addressed:**
 - Building on knowledge of human factors in order to develop tunnel driver education
 - Key information to be disseminated to tunnel users
 - Strategy and means for tunnel driver training and information

1 – Introduction

- **Goals:** to provide recommendations to those responsible for training and information
- **Groups targets:**
 - National organisations and agencies
 - Driving schools
 - Tunnel owners and operators
 - Consultants in the field of communication
 - ...



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2 – Contents of the report

- **Working group 3 “Influence users behaviour”:**
 - Experts in the field of human factors, information and communication actions,
 - Tunnel operators, emergency response teams,
 - Consultants (tunnel design and equipments)



2 – Contents of the report

- Consistent with the 1st conclusion of the previous PIARC report (2008 R17):



“ It is vital that motorists understand how to behave in tunnels, in both normal and critical situations.

*To achieve this they **should be educated as a part of their driving tuition** and via ongoing information campaigns”*

2 – Contents of the report

Summary

Introduction

1. Background
2. Knowledge regarding driver behaviour in tunnels
3. What has to be taught to the drivers?
4. Summary of instructions for information and communication actions
5. General considerations regarding education and information
6. Proposals regarding training actions
7. Proposals regarding information and communication
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Glossary

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Appendices

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- Chapter 3 describes **what instructors need to be familiar with** in order to provide drivers with the specific knowledge and behaviour
- It is based on what **users actually experience** when driving through the tunnel
- It takes into account driving:
 - in normal conditions
 - when minor incidents happens
 - in a crisis situation
- ... see the example “tunnel closure system”

2 – Contents of the report

WHAT THE INSTRUCTOR HAS TO KNOW	WHAT THE INSTRUCTOR HAS TO TEACH DRIVERS
TUNNEL CLOSURE SYSTEM	
<p>A tunnel closure system consists of traffic signals or flashing red lights and sometimes associated with barriers.</p> <p>These tunnel closure systems are usually placed at the entrance. Measures to stop traffic inside long tunnels could also be provided.</p> <p>These barriers may be operated automatically if there is an incident in the tunnel to:</p> <ul style="list-style-type: none">- Avoid double accidents- Limit the number of vehicles inside the tunnel in the event of a serious incident (e.g. fire)- Make access easier for the emergency services. <p>Any event liable to endanger user safety requires the barriers to be brought into use in order to limit the potential consequences. The simple fact of a vehicle being halted in a tunnel may give rise to such a closure.</p>	<p>It is very important that tunnel users understand that the tunnel closure equipment (barriers and signals) is only activated when it is absolutely necessary. Under these circumstances drivers should never ignore these instructions and should not attempt to drive around the barriers. There may be an incident in the tunnel that drivers at the portal cannot see such as a fire or a vehicle breakdown.</p>  <p style="text-align: center;">FIGURE 7. TUNNEL CLOSURE SYSTEM IMPLEMENTED AT THE ENTRANCE OF THE TOULON TUNNEL – FRANCE</p>



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Appendices

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7 Proposals regarding information and communication:

- 7.1 *Communication strategy*
 - the context, the target, the message
- 7.2 *Communication plan*
 - Sustained efforts
 - Crisis situation
 - Means of communication, other examples ...
 - Communication to a specific target audience
 - National actions

Heavy Goods Vehicles

Maximum permissible height.
15'3" (4.66m)

Keep a safe distance from the vehicle in front. 3 chevrons for Heavy Goods Vehicles, 4 chevrons for Dangerous Goods Vehicles

Vehicles with 3 axle or more keep left.

Drivers of vehicles over 2.9m wide must contact the Tunnel Operator in advance of entering the Tunnel.

Check fuel before entering the Tunnel.

Restricted items of class 3 require a flashing amber light, front and back

Switch on dipped headlights.

Tune into FM radio station to hear safety instructions, in case of incident.

Do not turn or reverse.

Do not stop, except in an emergency.

Obey speed limits.

WIDE LOAD 2.9m

FM RADIO

DUBLIN PORT TUNNEL

Safety and User Guide for Heavy Goods Vehicles with Hazardous Loads

General Information about the Tunnel

- Dublin Port Tunnel provides a toll free motorway (M50) for Heavy Goods Vehicles travelling from Dublin Port connecting to the National Roads Network.
- It is 4.5 Km long.
- Maximum speed limit is 80 km/h or as displayed.
- The average journey through the Tunnel takes six minutes.
- Toll Booths are located at Dublin Port end.
- For more information visit www.DublinPortTunnel.ie or Transroute Lo-Call phone 1890 25 24 35

Lane Open
Lane Closed

www.DublinPortTunnel.ie
LoCall 1890 25 24 35

*See 'Dangerous Goods Vehicles Restrictions' section or Lo-Call 1890 25 24 35 for more information.

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3 – Further actions

- Example of the French initiative “Training of professional drivers”
- Based on PIARC report (2011)
- Consistent with chapter 5 of this report: *“the further training given to drivers of commercial vehicles is a good opportunity for creating awareness of risks in tunnels and the associated consequences”*





3 – Further actions



- Why?
 - Goods vehicles are the **source of aggravating factors** in case of fire in tunnel,
 - Evacuation situations: once some users take the initiative to flee towards exits, **the others follow them spontaneously**
 - Enormous stakes are involved in training professional users (**leadership role**)
 - These users, are normally aware of safety issues
 - They follow **initial and further education courses** (on a regular basis) ; very useful for setting a good example in a crisis situation



3 – Further actions

- Aims of the action:
 - to work with the organisations in charge of training actions
 - to define a training approach that is tailored to the context of road tunnels
 - to develop annotated teaching aids and materials for instructors.



3 – Further actions

- Outputs (from 2009 to 2011):
 - Teaching worksheets:
 - what the instructor has to know?
 - what he has to teach drivers?
 - “Reference” presentation:
 - including relevant instructions regarding adequate behaviour in tunnels, links to videos of real events
 - normal situation, minor event, major event
 - sessions: 40 mn / 4 hours
 - Seminar with 100 instructors
 - to present the materials
 - to visit a tunnel and safety facilities



3 – Further actions

French materials can easily be adapted to fit an international context

Possible further actions:

- to translate the material in English and to adapt it to other countries
- to promote the PIARC report “Driver education” in various countries
- to propose this new task during the next PIARC cycle in order to integrate the relevant materials on PIARC Web site





Thank you for your attention

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