



3rd European Tunnel Safety Officers Forum

26 – 28 March 2014 Luxembourg



# The World Road Association and its Road Tunnels Operations Technical Committee



[www.piarc.org](http://www.piarc.org)

*Ignacio del Rey (Chairman)*

*Marc Tesson (French speaking secretary)*

# World Road Association & TC 3.3

## Main products



# World Road Association & TC 3.3

## Main products



# World Road Association (PIARC)

- Non-political, not-for-profit organisation established in 1909.
- Holds Consultative Status within the United Nations Economic and Social Council since 1970.





# Objectives

- Organise international forums
- Disseminate best practices
- Promote efficient tools for decision making
- Special emphasis for Developing Countries and Countries with Economies in Transition



# Members

- National Governments
- Regional Authorities
- Collective Members
- Individual Members



Website: [www.piarc.org](http://www.piarc.org)

## Services available:

- Knowledge Base
- Virtual Library
- Terminology
- Detailed information on the Association and its activities



# Strategic Plan 2012-2015 : Strategic Themes

- Strategic Theme 1: Management and Performance
  - Strategic Theme 2: Access and Mobility
  - Strategic Theme 3 : Safety (TC 3.3 Road tunnels operations)
  - Strategic Theme 4 : Infrastructure
- 
- 18 Technical Committees and 2 Task Forces regrouped in one of these 4 Strategic Themes.
  - Committee on Terminology.



# Origins of the Committee

The technical committee in charge of road tunnels within PIARC was created in 1957 to deal with the aspects:

- ✓ Equipment
- ✓ Geometry
- ✓ Environment
- ✓ Exploitation
- ✓ Safety



# Members of the committee

- President + 3 secretaries
- 55 Members designated by the PIARC First delegate of their countries (coming from 33 countries)
- 16 Corresponding Members designated by the PIARC First delegate of their countries (coming from 15 countries)
- 12 Associate Members designated by PIARC general secretariat and the TC3.3
- 109 WGs Associate Members designated by the C4 committee

**More than 180 experts!!!**

# Working groups for the cycle 2012-2015

- WG1 : Sustainable road tunnel operations
- WG2 : Road tunnel safety
- WG3 : Human behavior
- WG4 : Fire Safety
- WG5 : Complex underground road tunnels
- WG6 : Knowledge management



**WG outputs (typically technical reports)**

# Operating mode of the committee

- The Committee sets up working groups and validates their products





# World Road Association & TC 3.3

## Main products



# Technical reports. Cycle 2008-2011

- **Best practice for road tunnel Emergency exercises**
- **Recommendations on management of maintenance and technical inspection of road tunnels**
- Life cycle aspects of electrical road tunnel equipment
- Risk evaluation : Current practice for risk evaluation for road tunnels
- Assessing and improving safety in existing road tunnels
- Recommendations regarding road tunnel drivers' training and information
- Road tunnels: Vehicle emissions and air demand for ventilation
- Design fire characteristics for road tunnels
- Recommendations for strategic tunnel safety management

# Technical reports. Cycle 2008-2011

- Best practice for road tunnel Emergency exercises

## EU Dir. 2004/54/EC

### TSOs tasks and functions:

- **art.6 - 2.a** “Ensure the coordination with emergency services and take part in the preparation of operational schemes”
- **art.6 - 2.d** “Verify that operational staff and emergency services are trained and he/she shall take part in the organisation of exercises held at regular intervals”



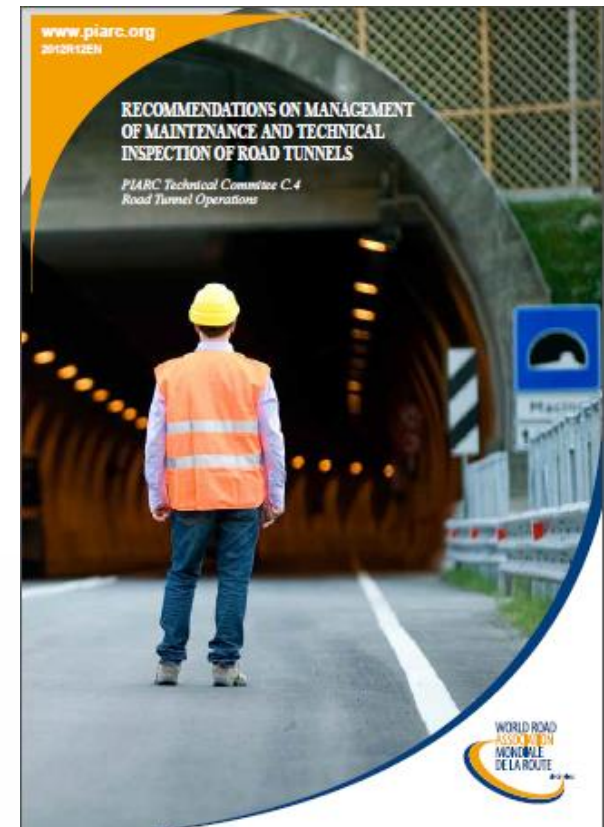
# Technical reports. Cycle 2008-2011

- Recommendations on management of maintenance and technical inspection of road tunnels

**EU Dir. 2004/54/EC**

**TSO tasks and functions:**

- **art.6 - 2.f** “Verify that the tunnel structure and equipment are maintained and repaired”





# Where to find the Road Tunnels Operations Manual ?

The screenshot shows the World Road Association (PIARC) website. The browser address bar displays [www.piarc.org/en/](http://www.piarc.org/en/). The website header includes navigation links: ABOUT US, MEMBERSHIP/APPLICATION, NATIONAL COMMITTEES, TECHNICAL COMMITTEES, and a language selector for ESPAÑOL. A large banner reads "EXCHANGE KNOWLEDGE AND TECHNIQUES ON ROADS AND ROAD TRANSPORTATION". Below the banner is a search bar with the text "SEARCH Keyword" and an "OK" button. A "MY ACCOUNT" button is also visible. The "KNOWLEDGE BASE" section is highlighted with a red circle. It contains a grid of topics, with "Road tunnel operations" also highlighted by a red circle. Other topics include Design of inter-urban roads, Earthworks, Economic studies, Environment, Financing of Road System, Freight transport, Governance of road authorities, Planning, Project management, Risk management, Road assets management, Road bridges, Road network operations, Road pavements, Road policies, Rural roads, Road safety, Terminology, Urban mobility, and Winter service. Below the Knowledge Base, there are three featured articles: "International Winter Road Congress" (4-7 February 2014 // Andorra la Vella (Andorra)), "Road Safety" (Decade of action for Road Safety 2011-2020), and "Importance of Road / All presentations made during conference-discussion of the Lucerne (Switzerland), on 07". The footer of the website includes the URL [www.piarc.org/en/knowledge-base/](http://www.piarc.org/en/knowledge-base/) and the text "étariat général vous présente". The Windows taskbar at the bottom shows the Start button and several open applications, including a reception box, a presentation, and the World Road Association website.



# Choice of the language and main menu

WORLD ROAD ASSOCIATION MONDIALE DE LA ROUTE

Road Tunnels Manual

PIARC Website

Term to search in the Manual ▶ OK

Send us your comments !

Français Español 中国 Český 한국어 日本語 Italiano عربي

Home page : Warning to the readers

Home page

Home page : Warning to the readers

▶ [1. How to use the Manual ?](#)  
▶ [2. Copyright](#)  
▶ [3. Disclaimer](#)  
▶ [4. Last updates of the EN version](#)  
▶ [Printing](#)

■ 1. How to use the Manual ?

This Manual is available in English and in French, that are the only official versions, and also in other languages (today in Chinese, Czech, Japanese, Korean and Spanish). To go to one of these languages, you just need to click on the flag or the name of this language on the right top of the screen.

The Manual is divided in 3 parts :

- Home page (Warning to the readers), Preface and Introduction pages;
- 9 technical chapters;
- Glossary (Excel file with all the terms and definitions of the PIARC Road Tunnel Operations specific dictionary in all the available languages of this dictionary).

Home page : Warning to the readers

Preface

Introduction

1. Strategic issues

2. Safety

3. Human factors

4. Operation and maintenance

5. Environmental issues

6. Geometry

7. Structural facilities

8. Equipment and systems

9. Tunnel response to fire

Glossary



# Hyperlinks to specific outputs of the Committee

[Français](#)
[Español](#)
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PIARC Website

Road Tunnels Manual

Term to search in the Manual  [OK](#)

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Home page : Warning to the readers

Preface

Introduction

1. Strategic issues

**2. Safety**

[2.1. General principles](#)  
[2.2. Integrated approach](#)  
[2.3. Experience from past incidents](#)  
[2.4. Risk assessment](#)  
[2.5. Principles and tools for fire safety](#)  
[2.6. Dangerous goods](#)  
[2.7. Safety procedures](#)  
[2.8. Improving safety in existing tunnels](#)

3. Human factors

4. Operation and maintenance

5. Environmental issues

6. Geometry

7. Structural facilities

8. Equipment and systems

[Home page](#) » [2. Safety](#) » 2.2. Integrated approach

## 2.2. Safety elements and integrated approach

[Printing](#)

Safety is not the simple adoption of all possible safety measures but is the consequence of a balance between the forecast risk factors and the safety measures.

With the establishment and development of international regulations, recommendations and guidelines, there is a need for a framework within which all aspects of tunnel safety are taken into account. Such a framework may contain the following principal elements:

- Safety level criteria (regulations & recommendations)
- Infrastructure and operational measures
- Socio-economic and cost-benefit criteria
- Safety assessment techniques (safety analysis and evaluation)
- Road tunnel usage
- Stage of tunnel life (planning, design, construction, commissioning, operation, refurbishment, upgrade)
- Operating experience
- Tunnel system condition

These safety elements are described in the [Chapter 5 "Elements in an integrated approach" of report 2007R07.](#)

## PIARC recommendation regarding the approach to take into account Directive 2008/96/CE in the context of road tunnels

### EU Dir. 2004/54/EC

#### TSOs tasks and functions:

- **art.6 - 2.c** “Take part in the definition of safety schemes and the specification of the structure, equipment and operation in respect of both new tunnels and modification of existing tunnels”
- **art.6 - 2.e** “Give advice on the commissioning of the structure, equipment and operation of tunnels



# Starting point

- Initiative: secretary of the Italian Association of Road Safety Professionals
- Petition: on behalf of different experts and bodies at the European level
- Request: harmonization of the 2 Directives
  - 2008/96/EC - road safety
  - 2004/54/EC - road tunnels safety
- 2 restricted workshops February & May 2013
- (European Social and Economic Committee)
- PIARC TC 3.3 invited

# Summary of the PIARC position

- Production of a **recommendation** that does not lead to modifying the directives or their annexes (it perfectly fulfils the target objectives)
- Objective: to encourage tunnel managers to **consider more specifically the aspects linked to road safety** in the context of the procedures currently in effect for road tunnels

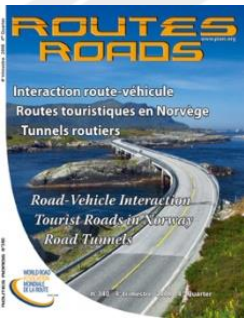
# PIARC recommendation

- Principles set out in Directive 2008/96 should be preserved and carefully adapted to the specific context of road tunnels,
- PIARC invites EU members states to be vigilant concerning the questions linked to road infrastructure safety management in the context of road tunnels,
- EU members states should encourage tunnel managers to specifically consider the aspects linked to road safety in the framework of the procedures applied for road tunnels (Directive 2004/54/EC)

# PIARC recommendation

- **Safety documentation:** EU members states should recommend that the **road tunnel safety expert** mentioned in Directive 2004/54/EC should **ask, at the design and commissioning stage, for the opinion of an auditor** holding a certificate of competence as mentioned in Article 9.3 of Directive 2008/96/EC,
- **Periodic inspections:** EU members states should recommend that the inspection entity who carries out the periodic inspections according to Article 12 of Directive 2004/54/EC **should ask for the opinion of a competent entity** as defined at point 2 of Article 2 of Directive 2008/96/EC.

[www.piarc.org](http://www.piarc.org)







# Thank you for your attention !

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