

STAFF TRAINING ADF AUTOCISA

GRUPPO ASTMGIAS - GRUPPO SINA
Formazione nelle gallerie stradali
Decreto Legislativo n. 266/2005
Direttiva europea 2004/54/CE

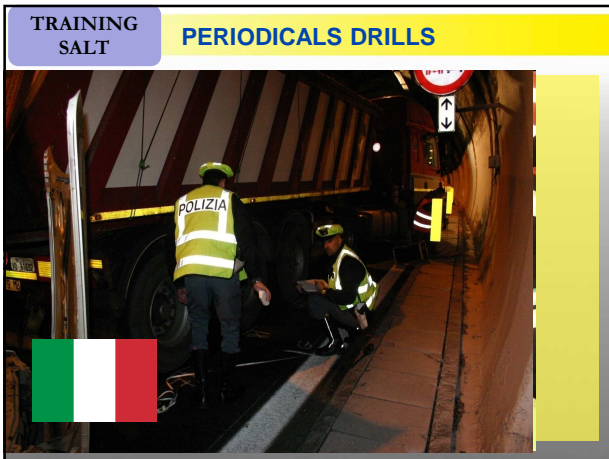
Parma, 27 Maggio 2008

Imperia 25 Settembre 2007

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Roberto ARDITI



Permanent tunnel facility in Aosta Valley

SAV cooperated with Aosta Valley Authorities for setting a service tunnel of the Aosta Ring Road (side facility of "Cote de Sorreley" tunnel) to be used as a permanent test-field for joint exercises. Through this activity there was an intense cooperation resulting in a self-evident preliminary knowledge of phenomena and procedures.

ISECAP
Progetto 2010

Frejus Fire Simulator (developed by SITAF-SFTRF)

T4 - Frejus Motorway Tunnel

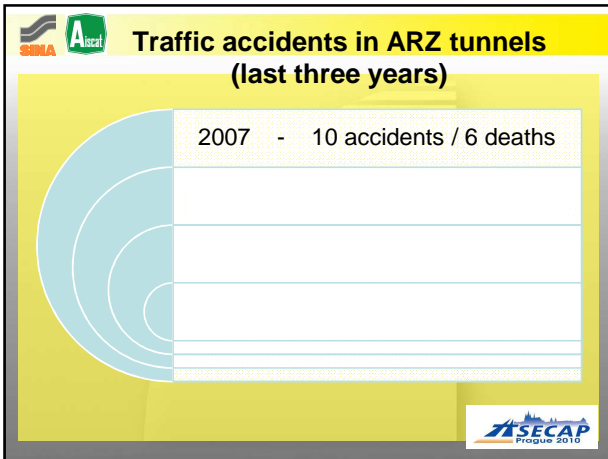
Inside fire simulator Control panel

EU Directive 54/04 Implementation

Article 1 Subject matter and scope
Article 2 Definitions
Article 3 Safety Measures
Article 4 Administrative Authority
Article 5 Tunnel Manager
Article 6 Safety Officer
Article 7 Inspection Entity
Article 8 Notification of the Administrative Authority
Article 9 Tunnels whose design has not yet been approved
Article 10 Tunnels whose design has been approved but which are not yet open
Article 11 Tunnels already in operation
Article 12 Periodic inspections
Article 13 Risk analysis
Article 14 Derogation for innovative techniques
Article 15 Reporting
Article 16 Adaptation to technical progress
Article 17 Committee procedure
Article 18 Transposition
Article 19 Entry into force

• 18 Tunnels
• 13 km

Legenda
Undefined
In process/partly done
Done



ASECAP MEMBERS & TUNNELS

SOME BEST PRACTICE ON TUNNELS FROM ASECAP MEMEBERS (Infrastructure - Operation - Planning)

CURRENT ISSUES

Tunnel safety: 6 years experience of the Directive Situation for the French motorway operators:

- 42 tunnels concerned: a total of 90 km
- Safety audit: made 100%
- Total estimated cost: 900M€
- Percentage of achievement: 80%

REFURBISHMENT ON HIGH TRAFFIC SECTIONS

The experience of ESCOTA shows that it is possible to refurbish tunnels without interrupting traffic flows

Keeping operational one lanes over 2 tubes at nighttime and allowing traffic over 2 tubes x 2 full lanes during daytime appears feasible.

BUT

The organization to be set up is a very complex and expensive one: contracts for works need to be performed being "pessimistic" about the number of nights a year where the work will be authorized by the operator.

Payback of investment for safety

Directive 2004/54/CE is an additional cost to existing contracts. Investments for safety and Financial Equilibrium of Concessions is anyhow needed

In some cases it is possible payback of investment through the toll level. If the investment is higher, in most cases, a new equilibrium can be found through the extension of the concession period.

European Institutions strictly monitor and enforce legitimacy of procedures on concessions

The current approaches in order to allow the investments for safety are either the authorization from EC for the extension of the Concession period allowed as a "State Aid" or as an instrument for the financial equilibrium

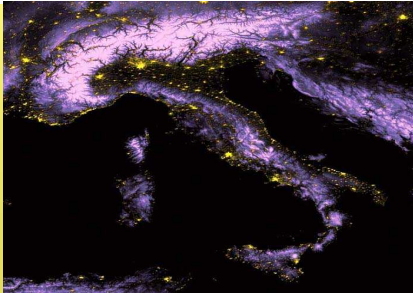
For instance this kind of approach was adopted by EC in February 2006 in order to cover additional costs for new standards of safety both for the Monte Bianco Tunnel and for the Maurice Lemarie Tunnel

Currently, 140 Tunnel facilities are operated with a total length of about 324 km from ASFINAG. Because of this high proportion of tunnel on all routes, ensuring a maximum level of safety and efficiency in tunnel is a key goal for ASFINAG. Directive is applied on all motorways, not only in TERN.

According to the experience of ASFINAG, tunnel safety could be greatly improved thank to technological developments and organizational measures in the event of an incident or accident. ASFINAG annually invests about €200 million in struction and rehabilitation of tunnels. In the Directive timeframe.

ASFiNAG


LAND COMPLEXITY AND TUNNELS



An important portion of the National territory is covered by the mountainous chains (Alps and Apennines). That introduce the obvious complexities and criticalities in the use of the territory and in the construction of the road networks.

TUNNELS IN THE EUROPEAN TERN

It is interesting to observe that a very important share of the European TERN Tunnels is located in Italy and Austria...




Tunnels on TEN road network (source: draft directive)

Country	Approximate Tunnel Length (km)
Other	~5
Portugal	~10
Italy	~280
Creane	~10
UK	~10
France	~20
Spain	~20
Germany	~20
Austria	~50

TUNNELS IN THE TERN NETWORK IN LIGURIA

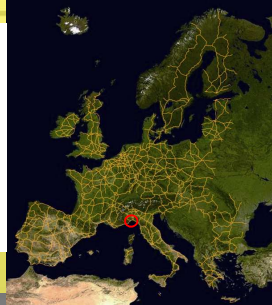
... and that an important share of the tunnels in the National Network are located in specific regions (e.g. Liguria)



Region	Percentage
Liguria	36%
altre regioni	64%

TUNNELS OF LIGURIA IN THE EUROPEAN NETWORK

17% of the tunnels of the European Network is located in Liguria




Category	Percentage
Tunnels in Italy (Liguria region)	17%
Tunnels in Italy (other region)	31%
Tunnels in other countries	52%

HIGH CONCENTRATION AREAS

Liguria is maybe the harder one but not the only case

High concentration in works (traffic and safety)

Higher costs in charge of specific operators





Thanks for your attention

