



POLICY POSITION ON ROAD INFRASTRUCTURE AND TUNNEL SAFETY



SAFETY

Executive Summary

FIA Region I welcomes the European Commission's plan to revise and merge the road infrastructure safety management (RISM) Directive ([2008/96/EC](#)) and the Directive on minimum safety requirements for tunnels ([2004/54/EC](#)). Many of the problems that road users face today are linked with poor maintenance of road infrastructure. FIA Region I believes that road management authorities should be obliged by the EU and Member States to ensure a minimum level of road maintenance. A well-developed and maintained road network enables safe, efficient mobility and sustains the European economy and society.

FIA Region I calls on the EU to:

- Extend the instruments of the RISM Directive to non-TEN-T roads, at least, to all motorways
- Enable the use of the RISM for all EU funding of infrastructure projects, including regional funds and European Investment Bank loans
- Define a quality benchmark for the infrastructure (for instance, an aspiration to a EuroRAP 3-star rating or equivalent throughout the EU28)
- Harmonise the quality of the training provided to road safety auditors across Europe
- Ensure that Member States undertake rapid remedial measures to treat black spots and endeavour to ensure a uniform, efficient delivery of information to road users
- Increase the focus on protection of vulnerable road users in the RISM and make sure these safeguards are also applied to tunnels
- Match the deployment of intelligent active safety systems in vehicles by adopting high quality standards for road markings and traffic signs
- Reinforce provisions to ensure the safety of road work sites, whilst only reverting to road closures when absolutely necessary
- Ensure that the non-TEN-T tunnels longer than 500m are also included in a revision of the Directive on minimum safety requirements for tunnels

Introduction

European motorists make a significant contribution to public budgets, far beyond the revenue needed to cover the costs of operating, maintaining, renewing and enhancing Europe's road infrastructures. FIA Region I warns that this, as well as the value of safety benefits, should be put in relation to arguments referring to the prohibitively high costs needed to improve road transport infrastructure. European policies should sustain a first-class road infrastructure and rid Europe of high-risk roads. Uniformly safe roads in Europe should guide policies, regardless of borders.

The road infrastructure safety management (RISM) Directive has been successful in establishing common RISM instruments¹ in all Member States, and a minimum set of rules for TEN-T roads. The RISM's main weakness is the limited scope of its application. The legislation applies to TEN-T roads but, paradoxically, non-TEN-T roads provide the highest potential for improving road safety.

The instruments of the RISM Directive are to be considered minimum safety requirements. As some already do, Member States are encouraged to go beyond the scope of the regulation and apply additional safety management principles and retrofit their network with latest safety equipment. Member States and road authorities are also encouraged to set targets for the quality of their road infrastructure.



The Directive on minimum safety requirements for tunnels has had a more limited impact, principally because of the slow pace in refurbishing tunnels to meet the requirements in several Member States. Its impact is also uncertain due to the lack of sufficient tunnel accident data pre/post refurbishment, as highlighted in the European Commission evaluation study². As for the RISM Directive, its impact is also limited to TEN-T tunnels. The FIA's European Mobility Clubs are supportive of the guiding principle for the Directive: tunnels should be treated as potentially very high-risk sites and authorities should prepare to prevent and

mitigate the effects of accidents and fires in tunnels. Nevertheless, the current approach, which separates the road infrastructure safety into two legal instruments, risks preventing tunnels from the benefits of also applying the instruments of the RISM Directive to tunnels.

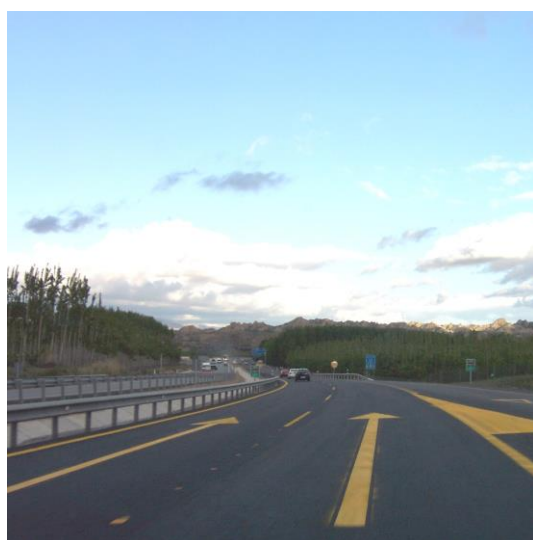
¹ RISM instruments: road safety assessments, audits, ranking and management, and inspections

² ICF International, 2015, Study on the implementation and effects of Directive 2004/54/EC on minimum safety requirements for road tunnels in the trans-European road network, [Final report](#)

Recommendations for the safety of road infrastructure

Scope

The European Commission's evaluation study on the effectiveness of the RISM Directive³ acknowledges that a potentially large number of lives could be saved if the Directive was to be extended beyond the TEN-T network. The FIA's European Mobility Clubs therefore recommend revision of the Directive to mandate the instruments on non-TEN-T roads. At the very least, and since a significant number of Member States have already done so, the RISM instruments could be made mandatory on all motorways. This would also create consistency for road users who do not know whether they are traveling on TEN-T road stretches or not. The European Union should nevertheless acknowledge that higher risks remain on urban and rural roads as opposed to TEN-T roads, and provide guidelines for safer urban and rural road infrastructure design.



Benchmarking

Setting road safety targets has consistently proven to be an enabler for the implementation of policies and investment programmes. Setting a mandatory benchmark for safety is an important instrument to improve infrastructure safety. For instance, the Netherlands have committed to earn three EuroRAP stars for all national roads by 2020. Highways England has also committed to getting 90% of its network to achieve a safety rating equivalent to three EuroRAP stars by 2020⁴. Sweden aims to implement 100% of travel on three-star EuroRAP standards by 2025⁵.

Funding

FIA Region I believes that the RISM instruments provide good guidance to condition the funding of infrastructure projects. The Connecting Europe Facility (CEF) instrument requires strict safety audit rules. This should also be the case for all other EU financial instruments such as regional funds or European loans (EIB loans) used for infrastructure projects.

³ Transport & Mobility Leuven, 2014, Study on the effectiveness and on the improvement of the EU legislative framework on road infrastructure safety management [Ex-Post Evaluation](#)

⁴ Highways England, 2015, Strategic Business Plan
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/396487/141209_Strategic_Business_Plan_Final.pdf

⁵ EuroRAP: <http://www.eurorap.org/partner-countries/sweden/>

Training of auditors

The Commission's evaluation also recognises that the Directive has not favoured the mobility of road safety professionals across Europe. Member States are today able, but not required, to accept road safety auditor certificates from other Member States. The Directive therefore lacks the ambition to establish a harmonised quality for training centres and curriculums for the training of road safety professionals. This can both result in a restriction of the free movement of professionals, and hamper the uniformity of the quality of the service provided.

Monitoring and communications with road users

The Network Safety Management (NSM) instrument of the RISM Directive entails that Member States are aware of the location of high-risk stretches and locations (black spots) along their networks. They are then tasked to adopt remedial measures. However, the information about the location of black spots should also clearly be communicated to road users prior to their removal. There is great variance in how such information is delivered today. Specific messaging and signage along these roads and variable message signs are the most effective way to indicate dangerous stretches to motorists ahead of dangers, and in real-time. This, however, should never replace the implementation of remedial measures, as quickly as possible.

User groups

A more explicit focus on vulnerable road users (VRUs), through dedicated infrastructure design measures and equipment (e.g. guardrails friendlier to powered two-wheeler) would also be welcome in a context where accident statistics indicate that improved safety of VRUs should be made a priority. The instruments of the RISM Directive are management principles, but they could be more prescriptive in terms of technical equipment that needs to be retrofitted to the roads.

Markings and signs

Regulators are also encouraged to recognise that simple measures like appropriate basic standards for road markings and signs can be implemented at a low cost. They are also becoming necessary to enhance the efficacy of intelligent active safety systems in vehicles. Recommendations from the "Roads that cars can read" report⁶, supported by a joint statement issued by the EuroRAP, Euro NCAP, FIA, ERF, IRU and ACEA in 2014 should be used as a reference for the quality standard for road markings and traffic signs. These include:

- Removing unnecessary inconsistencies across borders in implementing basic safety signs
- The "150 x 150" rule: lane and edge marking should be white, 150mm wide and (under dry conditions) markings should reflect light at 150 mcd/lux/m²

⁶EuroRAP & Euro NCAP, [Roads that cars can read](#), 2014

Work sites

Special attention should also be dedicated to the safety of road work sites. Maintenance works are widespread and pose a particular threat to road users and road workers, particularly on high-speed roads where users are suddenly faced with unknown restrictions and circumstances. The European Commission should propose guidelines, at least for TEN-T roads and motorways, to ensure roadwork sites are made safer and standardised so that motorists are not faced with unfamiliar circumstances in each country. National stakeholder initiatives, such as the “[RoWSaF](#)” strategy for road workers’ safety in the UK, can be taken as reference.

However, efforts to ensure the safety of work sites should not hamper mobility needs: shutting down parts of the road network should happen if absolutely necessary. Finally, the costs involved to improve the safety of work sites should not prevent the decisions to undertake road network updates.

Recommendations for the safety of tunnels



As a matter of priority, the EU should make every effort to ensure that Member States promptly meet the requirements of the EU Directive on minimum safety requirements for tunnels. As for the RISIM Directive, the legislation for tunnels also limits the safety benefits to the TEN-T network. FIA Region I strongly encourages the inclusion of tunnels over 500m but outside of the TEN-T network in a revision of the Directive, as deemed feasible in the 2015 European Commission evaluation study.

Instruments in the RISIM Directive should also be applied to tunnels, and as such FIA Region I welcomes the idea to merge the two Directives into a single legislative instrument.

The FIA’s European Mobility Clubs have produced concrete best practice recommendations as part of the EuroTAP EU project, a tunnels assessment programme. They have distinguished between short and medium term recommendations. These recommendations are further intended for all tunnels of 500m or longer.

Short term improvements

In the short term, the EU should provide guidance on how to provide motorists with instructions on the appropriate behaviour in tunnels, e.g. safe distance from other vehicles, as well as specific information in case of emergencies regarding safety equipment and facilities provided, such as lay-bys, emergency phones, fire extinguishers, emergency exits and similar equipment. In addition, the orientation in tunnels should be improved with bright tunnel walls and distinctive delimitation lighting on the edge of carriageways.

Escape routes and emergency exits should be clearly marked. When tunnels are closed, motorists should be informed well ahead through traffic signs or variable message signs to enable re-routing and fluid traffic. Hazardous goods should only be transported following a registration process and be escorted at a sufficiently safe distance or during low-peak times. The safety of tunnels should be checked periodically by independent experts, via a standardised procedure, and results reported to the EU.

Medium term improvements

In the medium term and particularly in tunnels with heavy traffic, traffic standstills due to congestion or road works should be avoided by suitable traffic management solutions. Further, traffic radio must be available throughout tunnels. The feeding of messages into traffic radio should be a standard feature with standardised messages in several languages used for different situations (accident, closure, fire). Loudspeakers should be installed at clearly visible points, e.g. in emergency lanes and cross-connections between neighbouring tubes.

For emergency situations, emergency phones should be provided at sufficiently short intervals. Tunnel radio must be accessible to rescue services throughout the tunnels. Norms for video surveillance should be set, such as setting a minimum distance between cameras. Surveillance footage should be automatically displayed on alarm monitors, recorded automatically and the data saved.

Ventilation systems must be periodically inspected and always up to standard. Lay-bys / emergency bays must be provided at short intervals in all tunnels where no emergency lane is provided. Escape routes must be lit, for example with LEDs, so that they remain visible even when there is smoke in tunnels. Existing escape chambers must be connected to external escape routes. Escape and rescue routes must be created: where possible additional galleries must be built, openings must be made to existing second tubes at short distance intervals, existing supply-air ducts when possible converted for use as additional escape routes. Fire brigades must be trained periodically under realistic conditions.

Tunnel control centres should be set up and manned by trained staff. Safety officers must be put in charge of the following:

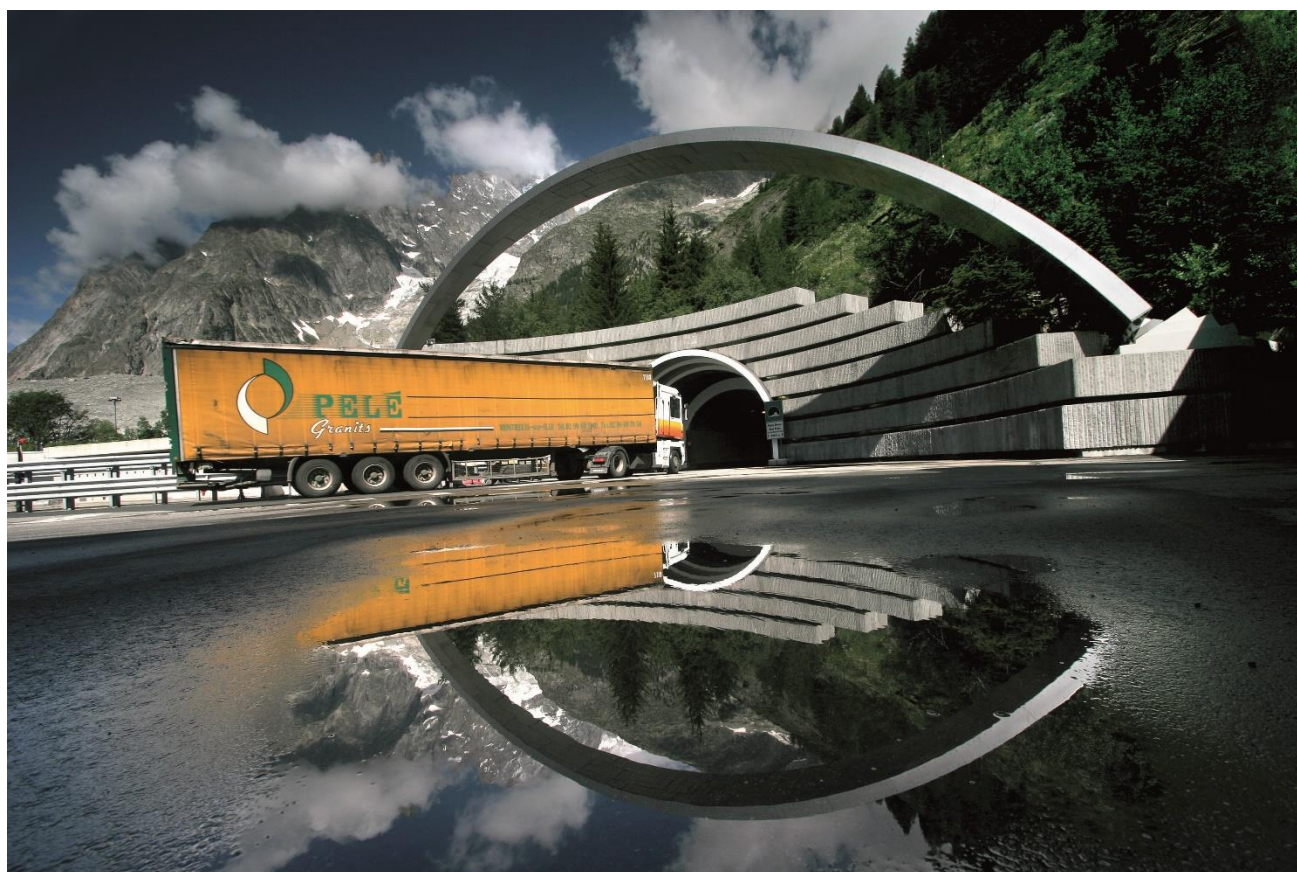
- Regular training for personnel and emergency forces regarding the specific security installations of the tunnel
- Continuously update synchronised emergency response plans
- Regular emergency drills with all the rescue services
- Perform evaluations after every incident, accident and fire. These should serve as a basis for future risk analysis and documented conscientiously
- Plan regular check-ups and tunnel inspections, especially regarding safety systems in the tunnel, check if there is a need for retrofitting new safety installations

Fire brigades should be provided with respiratory equipment. When possible, tunnels with one tube should be fitted with a second tube.

All tunnels of 500m or longer should be equipped with automatic fire alarm systems. Fire detection should be improved, for example, by using combined systems of thermal line detectors and visibility impairment equipment installed at regular intervals or digital video image evaluation.

Conclusion

While the RISM Directive and the Directive on minimum safety requirements for tunnels are very useful instruments, a matter of priority should be to ensure that their impact extends beyond the TEN-T road network. FIA Region I believes that infrastructure safety standards are progressing at a much slower pace compared to improvements that have been made in terms of vehicle safety standards.





Fédération Internationale de l'Automobile (FIA) Region I office

FIA Region I is a consumer body representing 111 Motoring and Touring Clubs and their 37 million members from across Europe, the Middle East and Africa. The FIA represents the interests of our members as motorists, riders, pedestrians and passengers. FIA Region I is working to ensure safe, affordable, clean and efficient mobility for all.

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