AUTOFORE

Study on the Future Options for Roadworthiness Enforcement in the European Union

(Executive Summary)

Note
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EXECUTIVE SUMMARY

The purpose of the AUTOFORE project is to recommend improvements in roadworthiness enforcement in the European Union to ensure that the benefits accruing from the original design and manufacture of vehicles are retained, where justified, throughout the life of those vehicles.

All vehicles degrade in service. Regrettably, many vehicle owners do not adequately maintain their vehicles so significant numbers of defective vehicles are in use, a matter of concern as poor vehicle condition has an adverse affect on safety and the environment. The level of defects in vehicles in use in Europe remains high and shows no signs of improving with the introduction of new technologies and manufacturing systems.

The need for roadworthiness enforcement is greater than ever because road safety and environmental protection are now more reliant on the correct functioning of technologies that are increasingly taking over aspects of the driver's tasks as a means of eliminating or mitigating the effects of human error. Failure of these technologies in service results in the loss of the benefits they provide. With this increased reliance on advanced technology, the role of vehicle roadworthiness is changing. While preventing the catastrophic consequences of failures of mechanical systems is still important, the role of vehicle roadworthiness enforcement needs to encompass the preservation of the benefits of the new technologies and systems.

Research undertaken by CITA and partly funded by the European Commission (Rompe 2002) has shown that electronically controlled systems on vehicles have failure rates comparable to mechanical systems that are considered important enough to be included in periodic inspections. The failure rates of electronic systems increase both with vehicle age and distance travelled.

The AUTOFORE study reviewed the purpose of roadworthiness enforcement and the potential for improvement of current roadworthiness enforcement measures. A strategy for change is proposed, which is to introduce, where justified:

1. Higher roadworthiness standards.
2. Broadening of the scope of the standards to include items that currently are not included and vehicle types currently not controlled.
3. Improving the level of compliance.

The most promising options for improving roadworthiness enforcement were identified and analysed. Four of them were subjected to a detailed economic analysis, which was undertaken by the Institute for Transport Economics at the University of Cologne.

The options can be grouped under the following seven headings:

1 Improve roadworthiness Directives.
2 Improve type approval requirements and legislative process.
3 Develop the infrastructure required to inspect electronically controlled systems.

4 Promote improved compliance.
5 Develop supporting roadworthiness inspection databases and related items.
6 Improve linkages between forms of roadworthiness enforcement.
7 Support research and development.

Implementation of some of the options can be started immediately, with a view to introduction by 2010 (the 2010 Package). Others require further work before implementation can be initiated. The objective would be to implement them by 2020 (the 2020 Package), at the latest.

The study makes the following **recommendations** -

2010 Package

Recommendation 1 - Amend Directive 96/96/EC to increase the frequency of inspection for older vehicles of categories 5 and 6, as defined in the Directive.

The economic benefit of increased frequency of inspection of older light vehicles would be over 2 billion euros if vehicles of 8 years and over are inspected annually with a benefit-to-cost ratio of over 2. This is the **minimum** change that should be introduced. Although the benefit-to-cost ratio would be slightly reduced, introduction of annual inspection for vehicles 7 year and over would give higher benefits. As such, it should be considered seriously.

Recommendation 2 – Amend Directive 96/96/EC to include the examination of safety relevant electronic systems that are already widely fitted (airbags, ABS and ESC).

The benefit-to-cost ratio of inspecting ESC systems alone is 2.6. Additional benefits will arise from testing other systems, such as ABS and airbag systems. Initially the inspection should include, at a minimum, observational checks on the system's completeness and functionality and for obvious signs of deterioration or deleterious alteration. Additional systems should be added when they become widely fitted. More comprehensive checks should be added when further work described in Recommendation 4 has been completed.

Recommendation 3 - Amend the scope of Directive 96/96/EC to include two-wheeled motor vehicles (international categories L1 and L3).

Although an economic analysis could not be undertaken to quantify the magnitude of the benefits, good accident evidence supports the extension of the Directive to two-wheeled motor vehicles. There may be, however, problems with the inclusion of mopeds, but this objective should be pursued.

Work should start in the near future on the preparation of a regulatory impact statement on these three recommendations.

2020 Package

Recommendation 4 - To be able to develop the options for introduction by 2020, the following 3 projects should be initiated.

1 Undertake a new study ("AUTOFORE 2") to research the magnitude of the contribution of vehicle defects to accidents and to trial new inspection systems suitable for inspecting the functionality of electronically based technologies.

2 Undertake further work to develop methods of improving compliance and the effectiveness and efficiency of vehicle inspection.

3 Undertake further work to develop proposals for further harmonisation of European roadworthiness standards.