European Commission

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INTRODUCTION

This status report, presented on behalf of the European Commission, presents the main legislative activities of the Commission concerning the field of automotive construction relative to safety. The European Commission has always expressed high interest in the improvement of safety in transport and, since the last ESV conference in Nagoya two years ago, a number of important developments have occurred in the European Union.

Road Safety Policy

The European Union has witnessed a considerable improvement in safety. During the last 30 years, the overall volume of road traffic has tripled, while the number of road deaths has fallen by half. Improved motor vehicle construction and passive safety measures have contributed much to this positive development.

However, the fatality rate for the recently increased European Union of 25 members is currently about 46,000 per year, which is still unacceptably high and difficult to justify. In addition road traffic causes about 2 million injuries, a number that has not decreased over recent years.

The European Commission's current road safety priorities stress the role that motor vehicle safety can play in reducing the risk of fatality and injury from accidents. A target has been set to reduce the fatalities by 50 % by the year 2010. To achieve this target the Commission has set out a Road Safety Action Plan which includes a series of actions to improve road safety. This Plan aims to make vehicles safer through technical harmonisation, support for technical progress and the use of new '*e*Safety' technologies; by encouraging road users to better behaviour by adhering to regulations and the use of increased training; and by encouraging action to improve the infrastructure.

Regulation

In recognition of the importance of the global market and the need to globalise the regulations to be enforced on the industry the EC has proposed a certain approach to the use of UNECE Regulations. Subsequent to the accession of the EC to the two UNECE agreements on automotive regulation (1958 and 1998 agreements) and by reference to the EC type-approval Directive, either a UNECE Regulation or a corresponding EU Directive could be applied for many vehicle components or systems.

However, it was sometimes the case that one or the other advanced faster with regard to its adaptation to technical progress and thus provided a better basis for safety benefits. Equally, the EU automotive acquis turned out to be difficult to manage due to sheer size (more than 4.000 pages in 90 directives) and the automotive industry expressed a desire for a more global technical approach.

These considerations together led the Commission to propose, in 2004, a legal basis for the future simplification of the automotive acquis by the introduction of a procedure to replace the existing separate EC directives on vehicle type-approval by their corresponding UNECE regulations. This proposal is contained in the work presently taking place with Council and Parliament to recast the type-approval Directive 70/156/EEC. On acceptance of the recast Directive approximately 30 separate directives on the type-approval of motor vehicles may be replaced by mandatory UNECE regulations. A similar, but much smaller exercise might follow for motor cycles and agricultural and forestry tractors.

In addition to this use of the UNECE regulations under the 1958 agreement, the EC is actively involved in the development of Global Technical Regulations under the 1998 agreement. These concern the recently signed gtr on door locks and the development of individual gtrs on pedestrian protection, light signalling and tyres.

A strategic objective of the Commission in the coming years is to work, in partnership with the European Parliament and the Council, towards creating long-term prosperity in Europe, and in particular to restore sustainable dynamic growth and jobs. This overall objective has been translated, with regard to the automotive sector, into the setting up, in January 2005, of a high level group of key stakeholders, including representatives from industry, society and regulators. The group is called CARS 21 ("Competitive Automotive Regulatory System for the 21st Century") and its objective is to make recommendations for increasing the worldwide competitiveness of the EU automotive industry, while sustaining further progress in road safety and environmental performance. The group is expected to propose a roadmap identifying the public policy and regulatory measures that should be taken in the next ten years, covering all policies having an impact on the competitiveness of the sector, including road safety.

Indirect vision

The European Directive on rear-view mirrors is currently being amended with the aim to improve road user safety by upgrading the performance of rear view mirrors and accelerating the introduction of new technologies with the potential to increase the field of indirect vision for drivers of passenger cars, buses and trucks. Many severe road accidents at crossings, junctions and roundabouts are caused by vehicle drivers being unaware that other road users - usually bikers, motorcyclists and pedestrians – are very close to or already beside their vehicles when they turn.

When larger vehicles such as trucks or buses are involved, these "blind spot" accidents frequently lead to serious injuries or even fatalities. The legislation would add specific blind spot reduction requirements to the existing rules. Concerning rear-view mirrors the key changes would entail:

- Mounting additional mirrors on certain vehicles (front mirrors on trucks, exterior rear view mirrors on the passenger's side of cars, aspherical mirrors on passenger cars and small commercial vehicles);
- Upgrading technical characteristics of mirrors in line with technical progress;
- Replacing certain mirrors with other indirect vision systems, e.g. camera and monitor systems.

This legislation introduced for the first time mandatory harmonised requirements for the type-approval of mirrors and systems for indirect vision for larger motor vehicles within the EU. The latest amendment requires the compulsory use of wide-angle mirrors and close-proximity mirrors for trucks above 3.5 tonnes weight.

Seat belts in light duty and heavy duty vehicles, including buses

In line with the stated aim of halving the number of road fatalities by 2010, the European Institutions have adopted Community legislation which requires the use of safety belts where fitted. Presently in Europe, the requirement to fit safety belts is mandatory only for passenger cars and the European Commission has proposed to make the fitting of safety belts obligatory for all categories of vehicles, in particular in tourist coaches.

This obligation will apply from 2006 following agreement by the European Parliament and Council on the issue of a ban on side-facing seats. The technical provisions related to the installation of safety belts and their anchorages are already included in Community legislation.

Child restraint systems

The safety belt is the fundamental restraint device providing appropriate coupling between vehicle occupants and vehicle structure. In addition, most vehicles today are fitted with air-bags which help to minimise the severity of residual impact with the vehicle interior.

Specific child restraint devices, including special seats and carry-cots, perform a function for children which is similar to that of the safety belt for adults and, provided that the child restraint is correctly installed, the airbags can provide additional protectio

However, there has been a lot of concern expressed about the incorrect installation and use of child restraint systems in vehicles, which has been shown to be responsible for malfunctioning of the systems and a potential lack of protection. There have also been complaints from users concerned by the fact that current child restraint systems, even very sophisticated versions, cannot easily be removed from one vehicle and properly installed in another.

To remedy these justified concerns, an interface has been defined between the child seat and the vehicle. On the vehicle side, this interface takes the form of two anchor points of standardised dimensions and on the child seat, the form of two fastening mechanisms which are designed to allow easy connection with the anchor points. Complete systems can also include an anti-rotation device. This connection method has been included in a standard of the International Standardization organization (ISO) and is known as Isofix.

In order to take advantage of this improvement in the safety of children, the Community intends to amend legislation to include the obligation to install at least two Isofix positions in all new passenger cars put into service from July 2006.

Pedestrian protection

During 2001 the Commission successfully concluded negotiations with the European, Japanese and Korean Automotive manufacturers organisations on a voluntary agreement concerning pedestrian safety The European Parliament and Council were consulted on the contents of the agreement and, as a result, the Commission proposed legislation on the subject in order to provide a legal framework for the relevant parts of the commitment.

A Directive was published by the Council in December 2003 (2003/102/EC) which lays down the basic requirements to be fulfilled in the design of the frontal structures of motor vehicles with regard to pedestrian protection. Thus, the proposed legislation will also mean that the requirements will be part of the EC type-approval system, hence involving Member States authorities in the application of the legal provisions.

M_1 passenger cars and N_1 light vans, derived from cars, will have to pass a number of tests and comply with the proposed limit values. The requirements will be applied to vehicles of these categories up to 2.5tonnes weight in two phases, the first starting in 2005, under which new types of vehicles must comply with two tests concerning protection against head injuries and leg injuries. In the second phase, starting in 2010, four tests of increased severity will be required for new types of vehicles, two tests concerning head injuries and two concerning leg injuries. Within five years from that date all new vehicles will have to comply with these test requirements.

The Directive recognised concerns with the difficulties associated with the demands in applying the requirements of the second phase, starting in 2010, and thus allowed for a study to be completed on the feasibility of these demands and possible alternative solutions using new technologies. The study required has recently reported and has indicated that there are feasibility problems with the test requirements. It has made some recommendations to improve the situation and consideration is now being given to measures suggested and any consequent change in the levels of risk for the pedestrian. The terms of the study allowed an examination of the use of new technology active safety systems. Thus, it addressed issues of the use of two new technologies, brake assist and pop-up bonnets, to be used in combination with passive safety requirements.

The European and Japanese manufacturers associations also completed studies on the feasibility issues and were of the opinion that there were definite problems in achieving the required results of the tests. The European Association brought forward an approach utilising the technology of brake assist to maintain the benefits to the pedestrian. In fact, figures provided indicated an improvement above and beyond the foreseen benefits of the second phase of the Directive. As a result, the Commission undertook an extended study period to address the issue of brake assist and assess the value of utilising a combined passive (using a modified version of the requirements of phase two of the directive) and active (utilising the brake assist technology) safety approach. This report has recently been made available and a review of the recommendations will be carried out to conclude on the best way forward.

In addition to the introduction of measures to improve the design of car fronts, the motor vehicle manufacturer associations also undertook to introduce certain additional active and passive safety measures conducive to improved protection of pedestrian and other road users:

- to equip all new car and light vans derived from car platforms with anti-lock braking systems (ABS) from 1st July 2004;
  This has been completed, as agreed, for the fifteen member states prior to May 2004 and will be completed for the newer member states by July 2006.
- to gradually introduce information and communication technology (ICT) elements to improve active safety;
- to equip all new motor vehicles with Daytime Running Lights (DRL);
  This has been held in abeyance until agreement can be reached on the approach for the use of such systems.
- not to install rigid bull-bars as original equipment on new motor vehicles, nor to sell them as spare parts.

With respect to the use of rigid bull bars and following the views expressed by the Council and the European Parliament, the Commission has proposed legislation containing a test procedure for all bull-bars and similar devices placed on the market and which are intended for use on vehicles up to 3.5 tonnes weight. It is expected that this will be issued as a Directive this year.

eSafety

In the recent years an *e*Safety Forum has been established with the specific purpose of bringing together all the relevant stakeholders to promote the development and deployment of information and communication technologies to improve road safety. A number of working groups have been established to examine certain technology areas of interest. Some of those are:

- Automotive Short-Range Radar
  To date, the development and deployment of these systems has been limited by the cost or limited functionality of the available sensors and processors and the *e*Safety Forum has strongly supported efforts to enable the use of new technologies in this field. In line with the concerns of the group a Commission Decision of July 2004 (2004/545/EC) designated the 79 GHz ultra-wide frequency band as the most suitable band for the long-term development and deployment of automotive radar-based systems. However, the technology necessary for such radar is still under development and is unlikely to be available for a number of years and thus a second decision (2005/50/EC of 14 January 2005) provides for the opening of the 24 GHz range radio spectrum band for automotive application as a short-term solution.

- *e*Call
  The Forum established an *e*Call driving group to look into the issues around a pan-European automated emergency call system, as this is seen

as a priority both for the industry and the public sector.
The principle being established by the *e*Call Driving Group is that in cases where a vehicle is involved in an accident, an *e*Call can be initiated automatically. This call will provide data that can accurately locate the vehicle and possibly include additional safety-related information. The data can be passed directly to the most appropriate Public Service Answering Point enabling emergency response times to be cut dramatically, saving lives and reducing the consequences of serious injuries. Recent studies suggest that fully deployed, *e*Call could save up to 2000 lives in Europe per year.
It is expected that agreement on *e*Call standardisation and specifications can be achieved by the end of 2005, that full scale field tests could take place in 2006 and that by 2009 *e*Call could be introduced as a new technology in all new vehicles.

- Human-Machine Interface (HMI)
The purpose is to identify HMI-related problems likely to have a negative impact on safety and to identify markets for In-vehicle driver information and assistance systems, and consequently develop a work-plan to resolve issues and solve problems. Recommendations from the work referenced issues relating to the use of nomadic devices and the functionality provided. There was recognition of the requirement for further research to be carried out on the phenomenon of, and assessment methods for, driver distraction.

SUMMARY

On the legislative side the Commission has during the last two years brought forward proposals to strengthen certain passive safety requirements like indirect vision via mirrors and the installation of seat belts in busses. In addition, a Directive on Pedestrian Protection has been introduced and work continues, not only to develop the next phase for this Directive but also on other aspects providing protection for vulnerable road users.

Furthermore, the Commission is actively encouraging the introduction and wide spread deployment of new technologies, including information and communication technologies, to improve vehicle safety and in particular to support the driver. It is expected that the introduction of such devices in many areas may be facilitated without the need to be accompanied by legal requirements.

One way of achieving this is to authorise individual vehicle manufacturers to proceed with innovative solutions despite the fact that the legislation in question is not yet adapted to the new technology. Thus, the European Commission authorised the introduction of intermittent brake lights in order to provide a warning to other drivers of a high deceleration of the vehicle in question. This approach also may have potential for vehicles equipped with short range radar which may lead to automatically triggered braking.