

PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION
CONCERNING THE PROTECTION OF PEDESTRIANS AND OTHER VULNERABLE
ROAD USERS IN COLLISION WITH VEHICLES.

Technical Sponsor: EC

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Objective of the proposal

Each Contracting Party to the 1998 Agreement has regulations with regard to road vehicle construction and safety. The purpose of the vast majority of these regulations are to ensure that the construction of the vehicles will provide the occupants with the required security and safety so as to reduce injury levels and fatalities.

Road accident statistics, however, indicate that a significant proportion of road casualties are pedestrians and cyclists who are injured as a result of contact with a moving vehicle. The majority of these injuries are caused by being struck by the front structure of the vehicle. Most of these accidents take place in urban areas where serious or fatal injuries can be sustained at relatively low speeds, particularly in the case of children.

Nevertheless, it is considered that there is scope to mitigate the severity of injuries to pedestrians by improving the frontal structures of motor vehicles. Above a certain speed the scope to reduce such injuries is limited but, at speeds below approximately 40 km/h, the possibility exists to significantly reduce the levels of injury sustained by pedestrians involved in frontal impacts with passenger cars and light vans.

Clearly the maximum benefit from making vehicles pedestrian friendly would occur if all types of vehicles comply with these technical provisions, but it is recognised that their application to heavier vehicles (larger trucks and buses) would be of limited value and may not be technically appropriate in their present form. For this reason the scope of application will be limited to the passenger cars and light vans. Since these vehicle categories represent the vast majority of vehicles currently in use, the proposed measures will have the widest practicable effect in reducing pedestrian injuries.

Description of the proposed regulation

Through study reviews it has been concluded that child and adult heads and adult legs are the body regions to be most affected by contact with the front end of vehicles. On the vehicles themselves it has been seen that the bonnet top, the windscreen and the A-pillars are the vehicle regions mostly identified with a high potential for contact. The shape of the vehicle is also considered to be important as it can have influence on the injury levels. The speed to be considered is presently agreed as 40km/hr to provide good potential coverage of the injury frequency.

The proposed GTR will concentrate on the above body regions and vehicle contact areas for the development of an appropriate test regime to be used. The testing proposed will be based on separate component tests, i.e. separate head and leg impactors used. The specifications of the impactors and the application of the tests will be detailed.

It is proposed that the scope of the vehicles to be covered by the proposed GTR will be defined by use of a matrix of tests and vehicle category in order to cater for all the variances in vehicle category definition. By use of this approach each Contracting Party may accept the GTR while indicating which test it would apply to which vehicle category. It is to be stressed

that this would be considered as a first approach to defining the scope of application and that the ultimate goal would be to comply with the vehicle categories being proposed by GRSG.

Elements, which cannot be agreed upon by the Working Party on topics of application and scope will be identified and dealt with in accordance with protocol established by AC.3 and WP.29.

Existing regulations

At the present time there are no regulations concerning the provision of improved protection for pedestrians and other vulnerable road users in the Compendium of Candidates.

The following is a summary of work proceeding in this area:

- The Japanese government has proposed a new regulation on pedestrian protection. The regulation will address the issues of providing protection for the child and adult heads. It will apply to passenger cars and small trucks with application from 2005 for new vehicle types and from 2010 for existing vehicle types. (certain other vehicles have a timetable which is later by two years) The regulation will require compliance with test requirements using representative head impactors.
- The EU has proposed a similar Directive but which also covers requirements for leg injuries to be addressed. The proposal and its requirements will be incorporated into Community legislation under the EC whole vehicle type approval system set up by Directive 70/156/EEC, as amended. It will apply to passenger cars and small vans with application dates in two phases starting in 2005 and 2010.
- The Canadian bumper regulation is one of the most stringent in the world and needs to be investigated as to the effect of bumper designs on pedestrian safety.
- The US terminated development of a pedestrian head impact requirement in the early 1990's. Since then, US efforts have mainly focused on research in support of the IHRA pedestrian safety working group.