

Transmitted by the Experts from the European Commission, Japan and the United States of America

PROPOSAL FOR DRAFT AMENDMENTS TO DRAFT GLOBAL TECHNICAL  
REGULATION (GTR) ON PEDESTRIAN PROTECTION

**A. PROPOSAL**

Amendment to Part A., STATEMENT OF TECHNICAL RATIONALE AND JUSTIFICATION, Section V (b)

In Part A, replace Section V (b) “Applicability” with the following text:

(b) Applicability

The application of the requirements of this gtr refers, to the extent possible, to the revised vehicle classification and definitions outlined in the 1998 Global Agreement Special Resolution No. 1 concerning the common definitions of vehicle categories, masses and dimensions (S.R.1).

Difficulties, due to differing existing regulations and divergent vehicle fleets, were encountered in determining which vehicles would be included in the scope. The Japanese regulation applies to passenger cars for up to nine occupants and commercial vehicles up to a Gross Vehicle Mass (GVM) of 2500 kg. The IHRA recommends tests and procedures for passenger vehicles of GVM 2500 kg or less. The European Union (EU) Directive applies to M<sub>1</sub> vehicles up to 2500 kg and N<sub>1</sub> vehicles up to 2500 kg, which are derived from M<sub>1</sub>. The ISO recommendations are for M<sub>1</sub> and N<sub>1</sub> vehicles that have a GVM of 3500 kg or less. In addition, some countries, taking into account their current fleet composition, wanted to ensure that larger vehicles, such as light trucks and sport utility vehicles with a GVM of 4500 kg or less, were not excluded.

The group originally reviewed in detail the IHRA recommendation to take into account the shape of the front of the vehicle, as an important parameter when discussing the types of pedestrian injuries to be mitigated. IHRA specifies three groups of vehicle shape: sedan, SUV, and 1-box. For the adult and head impacts, IHRA foresees different impact test speeds and different impact angles. The Japanese legislation is based on the IHRA recommended method. The EU requirements, on the contrary, do not differentiate between the various test speeds and impact angles.

The group compared these various considerations and, on the basis of simulations

(INF GR/PS/129), concluded that the EU requirements in effect are more severe than the Japanese proposals. For safety reasons, the group therefore uses the EU approach, not taking into account the shape of the vehicle front in defining the requirements. Furthermore, the group also determined that the IHRA recommendations would be difficult to put in place in the context of a regulatory and certification approach.

There was considerable discussion over the mass of the vehicles to which this gtr should apply. Using the categories described in S.R.1, there were several options examined. Some delegates wanted to limit application of the gtr to vehicles in Category 1-1 with a vehicle mass of less than 2500 kg GVM. Other delegates did not agree with a 2500 kg limit on GVM, believing that since the front-end structure of vehicles with a mass up to 4500 kg GVM usually is similar to that of lighter vehicles, the application of the gtr should include the heavier vehicles. In addition, some delegates sought to limit application of the gtr to vehicles of a GVM more than 500 kg, while other delegates expressed concern about having a lower mass limit, believing that a particular jurisdiction might determine there is a need to apply the gtr requirements in that jurisdiction to vehicles with a GVM less than 500 kg. There was a suggestion that the gtr should also apply to vehicles in Category 2 that had the "same" general structure and shape forward of the A-pillars as vehicles in Category 1-1. However, some were concerned that it could be unfeasible to define objectively what was meant by "same".

After considering these issues, it was recommended that the gtr should be drafted to have a wide application to vehicles, to maximize the ability of jurisdictions to address effectively regional differences in pedestrian accident crash characteristics. The gtr would provide that if a jurisdiction determines that its domestic regulatory scheme is such that full applicability is inappropriate, it may limit domestic regulation to certain vehicle categories or mass limits. The jurisdiction could also decide to phase-in the requirements for certain vehicles. A footnote was added to the gtr text to make it clear that jurisdictions can decide to limit the applicability of the regulation. This approach recognizes that niche vehicles that are unique to a jurisdiction would best be addressed by that jurisdiction, without affecting the ability or need of other jurisdictions to regulate the vehicles. When a contracting party proposes to adopt the gtr into its domestic regulations, it is expected that the Contracting Party will provide reasonable justification concerning the application of the standard.

While this approach maximizes the discretion of jurisdictions to decide whether vehicles should be excluded from the gtr for feasibility or practical reasons, or for lack of safety need to regulate the vehicles, the group also decided to recommend excluding one unique vehicle type from the regulation. The test procedures in the gtr are based largely on the classic vehicle shape with a long bonnet. Certain vehicles, generally cargo vehicles, have a very short bonnet and a front shape that is very close to the vertical. The pedestrian kinematics with these vehicles may be very different, and, in addition, there are difficulties in applying the tests to these vehicles, particularly with regard to determination of test zone reference lines. For these reason, the group recommends that those vehicles of Category 1-2 and Category 2, where the distance, measured longitudinally on a horizontal plane, between the transverse centre line of the front axle

and the R-point of the driver's seat is less than 1000 mm, be exempt from the requirements of the regulation. In addition, some of the group members raised a concern that this exemption could create distortion in the market if Category 1-1 vehicles were not treated in a similar manner and thus consideration should be given to the inclusion of this category of vehicles in the recommended exemption.

For these reasons, with the exception of the exemption discussed above, the gtr is recommended to apply to category 1-1 vehicles with a GVM exceeding 500 kg; and to category 1-2 and category 2 vehicles with a GVM exceeding 500 kg but not exceeding 4500 kg. In addition, the group recommends that a Contracting Party may restrict application of the requirements in its domestic legislation if it decides that such restriction is appropriate.

Regarding the applicability of this gtr, it should be noted that the requirements of the draft gtr are substantially more severe than any existing legislation at the time of adoption of the gtr. In addition, many countries do not yet have pedestrian safety requirements. It is therefore recommended that Contracting Parties implementing this gtr allow adequate lead time before full mandatory application, considering the necessary vehicle development time and product lifecycle.

Furthermore, during the development phase of this gtr, the main focus was with vehicles of a GVM of 2,500 kg or less, that are also addressed in all existing legislation. The later extension to other vehicles however needs to recognise that some additional lead-time may be necessary, because many current vehicles, exempted from existing national or regional requirements, are now included. In addition, while the test procedures and requirements of this gtr were based on requirements originally developed for "classical" (sedan type) passenger cars, the gtr now also covers vehicles with specific shapes or features (High Front Vehicles, special purpose vehicles, etc), for which it is recognised that special consideration may be needed.

## Amendment to Part B., TEXT OF REGULATION, Section 2

In Part B, amend paragraph 2 to read as follows:

### 2. APPLICATION

This global technical regulation (gtr) shall apply to the frontal surfaces of power driven vehicles of category 1-1 with a gross vehicle mass exceeding 500 kg; and of category 1-2 with a gross vehicle mass exceeding 500 kg but not exceeding 4,500 kg; and of category 2 with a gross vehicle mass exceeding 500 kg but not exceeding 4,500 kg.<sup>1</sup> However, power driven vehicles of category 1-2 and category 2, where the distance, measured longitudinally on a horizontal plane, between the transverse centre line of the front axle and the R-point of the driver's seat is less than 1000 mm, are exempt from the

---

<sup>1</sup> A contracting party may restrict application of the requirements in its domestic legislation if it decides that such restriction is appropriate.

requirements of this regulation. All definitions of Special Resolution 1 shall apply as necessary.

## **B. JUSTIFICATION**

This proposal resolves discussion about the appropriate applicability for the gtr by specifying the widest range of vehicles considered appropriate by ~~Delegates~~ delegates. It also expressly excludes one type of vehicle for which the test procedures may not be appropriate while at the same time but clearly indicating that Contracting Parties or regional economic integration organizations may restrict the application in domestic legislation on the basis of, such as, clear specifications with respect to vehicle category, mass, conditions of use or vehicle characteristic. ~~It also expressly excludes one type of vehicle for which the test procedures may not be appropriate.~~