

**PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION CONCERNING
HEAD RESTRAINTS**

Technical Sponsor: United States of America

A. Objective of the proposal

In the United States, between 1988 and 1996, 805,581 whiplash injuries (non-contact Abbreviated Injury Scale (AIS 1) neck) occurred annually in all crashes of passenger cars and LTVs (light trucks, multipurpose passenger vehicles and vans). 272,464 of these whiplash injuries occurred as a result of rear impacts. For rear impact crashes, the average cost of whiplash injuries in 2002 dollars is \$9,994 (which includes \$6,843 in economic costs and \$3,151 in quality of life impacts, but not property damage), resulting in a total annual cost of approximately \$2.7 billion. Although the front outboard seat occupants sustain most of these injuries, whiplash is an issue for rear seat passengers as well. During the same time frame, an estimated 5,440 whiplash injuries were reported annually for occupants of rear outboard seating positions.

The objective of this proposal is to develop an improved and harmonized head restraint global technical regulation (gtr) under the 1998 Global Agreement. The work on the gtr will provide an opportunity to consider, most, if not all, international safety concerns as well as available technological developments.

The United States is currently in the process of upgrading its head restraint standard to provide more stringent requirements. In 1982, the U.S. assessed the performance of head restraints installed pursuant to the current standard and reported that integral head restraints are 17 percent effective at reducing neck injuries in rear impacts and adjustable head restraints are only 10 percent effective. The ECE regulations on head restraints are considerably more stringent than the current U.S. regulation, and were used as a baseline in developing the new U.S. standard.

In light of the U.S. regulatory upgrade effort, we believe that this would be an excellent opportunity for the international community to develop and establish a gtr in this area. Everyone could benefit from harmonization and new technology based improvements of the head restraint regulation. The benefits to the governments would be the improved safety of the head restraints, leveraging of resources, and the harmonization of requirements. Manufacturers would benefit from reduction of the cost of development, testing, and fabrication process of new models. Finally, the consumer would benefit by having a choice of vehicles built to higher, globally recognized standards, providing a better level of safety at a lower price.

B. Description of the proposed regulation

The scope of the gtr will specify requirements for head restraints to reduce the frequency and severity of neck injury in rear-end and other collisions. The proposed gtr will combine elements from ECE 17, ECE 25, and newly upgraded U.S. Federal Motor Vehicle Safety Standard (FMVSS) 202. Two of the newly proposed FMVSS 202 requirements are significant and not included in any other

published regulation. The first proposes to require that the space between the head restraint and the occupant's head (backset) be limited. The second proposes a new dynamic test, as an optional means of compliance. The U.S. will prepare a table to facilitate comparison of the present standards and submit it as a formal document to the GRSP. The results of additional research and testing conducted by any contracting parties since the existing regulations were promulgated will also be factored into the requirements of the draft gtr and may result in the proposal of new requirements.

Elements of the gtr that cannot be resolved by the Working Party will be identified and dealt with in accordance with protocol established by AC.3 and WP.29. The proposed gtr will be drafted in the format adopted by WP.29 (TRANS/WP.29/882).

C. Existing regulations and directives

The following regulations and standards will be taken into account during development of the new gtr regarding head restraints.

- UN/ECE Regulation 17 - Uniform Provisions concerning the Approval of Vehicles with regard to the Seats, their Anchorages, and any Head Restraints
 - UN/ECE Regulation 25 - Uniform Provisions Concerning the Approval of Head Restraints (Head Rests), whether or not Incorporated in Vehicle Seats
 - EU Directive 74/408, concerning interior fittings of motor vehicles
 - EU Directive 96/037, adapting to technical progress Council Directive 74/408/EEC relating to the interior fittings of motor vehicles (strength of seats and of their anchorages)
 - EU Directive 78/932/EEC, concerning head restraints of seats of motor vehicles
 - U.S. Code of Federal Regulations (CFR) Title 49: Transportation; Part 571.202: Head Restraints
 - Australian Design Rule 3/00, Seats and Seat Anchorages
 - Australian Design Rule 22/00, Head Restraints
 - Japan Safety Regulation for Road Vehicles Article 22 – Seat
 - Japan Safety Regulation for Road Vehicles Article 22-4 – Head Restraints, etc.
 - Canada Motor Vehicle Safety Regulation No. 202 – Head Restraints
 - International Voluntary Standards --SAE J211/1 revised March 1995 – Instrumentation for Impact Test – Part 1 – Electronic
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