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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

Working Party on Passive Safety

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Item 11 of the provisional agenda

REGULATION No. 17  
(Strength of seats)

Alignment with gtr No. 7 (Head restraints)

Submitted by the expert from the European Association of Automotive Suppliers \*/

The text reproduced below was prepared by the expert from the European Association of Automotive Suppliers (CLEPA) in order to amend ECE/TRANS/WP.29/GRSP/2009/7. It is based on a document without symbol (informal document No. GRSP-45-19) distributed during the forty-fifth session of GRSP. The modifications to the current text of Regulation No. 17 are marked in bold or strikethrough characters.

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\*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles with respect to passive safety. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Insert new paragraph 2.12.,

"2.12. **"Designated seating position" means any front-facing seating position with the exception of folding seats as defined in 2.16."**

Paragraphs 2.12. to 2.16., amend to read:

"2.13. **"Detachable head restraint" means a head restraint consisting of a component separable from the seat, designed for insertion and positive retention in the seat-back structure.**

2.14. **"Displacement system" means a device by which the seat or one of its parts can be displaced and/or rotated, without a fixed intermediate position, to permit easy access of occupants to the space behind the seat concerned.**

2.15. **"Fiducial marks" are physical points (holes, surfaces, marks or indentations) on the vehicle body as defined by the manufacturer.**

2.16. **"Folding seat" means an auxiliary seat intended for occasional use and normally folded."**

~~2.16. **"Front contact surface" of a head restraint means the front surface area of the head restraint which is intended to catch the head of the seated occupant in order to limit rearward displacement of the head relative to the torso during a rear impact to the vehicle."**~~

Paragraph 5.2.2., amend to read :

"5.2.2. ....a device as referred to in paragraph 2.14. shall be placed on the outside of ....."

Paragraphs 5.5.1 to 5.5.6., amend to read :

~~"5.5.1. The presence of the head restraint must not be an additional cause of danger to occupants of the vehicle. In particular, it shall not in any position of use exhibit any dangerous roughness or sharp edge liable to increase the risk or seriousness of injury to the occupants.~~

5.5.1. Parts of the front and rear faces of the head restraints situated in area 1, as defined in paragraph 6.8.1.1.3. below shall pass the energy absorption test.

5.5.2. This requirement is deemed to be met if in the tests carried out by the procedure specified in ~~Annex 6~~ **Annex 14** the deceleration of the headform does not exceed

80 g continuously for more than 3 ms. Moreover, no dangerous edge shall occur during or remain after the test.

- 5.5.3. Parts of the ~~front and~~ rear faces of head restraints situated in area 2, as defined in paragraph 6.8.1.2.2. below, shall be so padded as to prevent any direct contact of the head with the components of the structure and shall meet the requirements of paragraph 5.1.4. above applicable to the rear parts of seats situated in area 2.
- 5.5.4. The requirements of paragraphs **5.5.1.** and **5.5.2.** above, shall not apply to parts of rear faces of head restraints designed to be fitted to seats behind which no seat is provided.
- ~~5.5.5. The head restraint shall be secured to the seat or to the vehicle structure in such a way that no rigid and dangerous parts project from the padding of the head restraint or from its attachment to the seat back as a result of the pressure exerted by the headform during the test.~~
- ~~5.5.6. In the case of a seat fitted with a head restraint, the provisions of paragraph 5.1.3. may, after agreement of the technical service, be considered to be met if the seat fitted with its head restraint complies with the provisions of paragraph 5.4.2. above."~~

Paragraph 5.6., amend to read:

**"5.6. Head restraint performance requirements"**

Paragraph 5.6.7., shall be deleted.

Paragraph 5.7.1., amend to read :

**"5.7.1. Energy absorption**

**When the front surface of the head restraint is impacted in accordance with Annex 7, the deceleration of the headform shall not exceed  $785 \text{ m/s}^2$  (80g) continuously for more than 3 milliseconds. ~~Moreover, no dangerous edge shall occur during or remain after the test.~~"**

Paragraph 5.7.2.1., amend to read:

**"5.7.2.1. Displacement**

**When the head restraint is tested in accordance with Annex 6, the headform shall not be displaced more than 102 mm perpendicularly and rearward of the displaced extended torso reference line, 'r1', during the application of a  $373 \pm 7.5$  Nm moment about the R-point.**

Paragraph 5.7.2.2., amend to read:

**"5.7.2.2. Displacement and Backset Retention**

**When the head restraint is tested in any position of backset adjustment in accordance with Annex 6, the headform shall:**

- (a) Not be displaced more than 25 mm during the application of the initial reference moment of  $37 \pm 0.7$  Nm;**
- (b) Not be displaced more than 102 mm perpendicularly and rearward of the displaced extended torso reference line, 'r1', during the application of a  $373 \pm 7.5$  Nm moment about the R-point; and**
- (c) Return to within 13 mm of its initial reference position after the following sequence occurs: application of a  $373 \pm 7.5$  Nm moment about the R-point; reduction of the moment to 0 Nm; and by re-application of the initial reference load  $37 \pm 0.7$  Nm."**

Paragraph 5.7.3., amend to read :

**"5.7.3. Head restraint and its anchorage strength**

**When....to the head restraint shall reach  $890 \text{ N} \pm 5 \text{ N}$  and remain at ....."**

Paragraph 5.10., amend to read :

**"5.10. Removability of head restraints**

**The head restraints shall not be removable without a deliberate action distinct from any action necessary for upward head restraint adjustment. If ~~the head restraint is adjustable, it shall not be possible to raise it beyond the maximum operational height, or remove it, except by deliberate action on the part of the user distinct from any act necessary for its adjustment.~~**

Paragraph 6.8.1.2.2., amend to read:

**"6.8.1.2.2. In the case of seats or bench seats with integrated head restraints, area 2 shall extend above a plane perpendicular to the reference line **540 mm** ~~440 mm~~ distant from the R point of the seat or of the seating position concerned, other than parts of area 1."**

Paragraph 6.8.1.3.1., amend to read

"6.8.1.3.1. Area 3 is defined as the part of the back of the seat or the bench seats situated above [the horizontal planes defined in paragraph 5.1.4.1.3. above], but excluding parts situated in area 1 and area 2."

Annex 6, paragraph 3.8., amend to read

"3.8. .... Wait **not more than** 10 minutes...."

Annex 7, paragraphs 3.3.2.2. to 3.3.3., shall be deleted

Annex 14, paragraph 1.4.2., amend to read :

"1.4.2. **The headform shall strike the test point at a speed of 24.1 ± 0.5 km/h: this speed shall be achieved either by the mere energy of propulsion or by using an additional impelling device.**"

B. JUSTIFICATION :

It is proposed to remove from Regulation No. 17 any requirement on head restraint which applies on the frontal surface of the head restraint and replace it by the requirements of gtr No. 7. All head restraint requirements on the frontal surface of Regulation No. 17 have been discussed during the establishment of the gtr No. 7 and it was decided which requirement should be introduced in gtr No. 7 or not. As a result, Regulation No. 17 include strictly the requirements of the gtr and be cleared of those which have been taken over in gtr No. 7. It is proposed therefore, regarding the provisions on the height of 100 mm of the head restraints, to delete the radius requirements before and after energy dissipation tests in the frontal area of head restraints.

On the contrary, all requirements regarding the rear surface of the head restraints which are described in Regulation No. 17 shall be maintained.

Concerning the energy dissipation test, it is carried out to the frontal surface of head restraints according to the gtr as described in Annex 7. Energy dissipation from the rear as defined in the present Regulation No. 17 is described in Annex 14.

The text of the proposal for the 09 series of amendments to Regulation No. 17 differs in some paragraphs from the present text of gtr No. 7 with little or no change in the meaning. The main reason for this is that a former proposed version of the gtr was used instead of the final gtr to set up initially the proposal for the 09 series of amendments to Regulation No. 17.

Paragraph 2.12.:

It was agreed during the discussion for the development of gtr No. 7 that every country had its own definition of designated seating position. This definition is used in the Federal Motor Vehicle Safety Standard (FMVSS), but not yet in Regulation No. 17. It is therefore necessary to define this term for the purpose of the proposal for the 09 series of amendments to Regulation No. 17.

Paragraph 6.8.1.2.2.:

The 440 mm requirement is a long-lasting error of Regulation No. 17 and shall be changed to 540 mm. All other requirements linked to integral head restraints have been defined in comparison to the 540 mm line (as in paragraph 5.9).

Annex 6:

Test laboratories reported that a 10 minutes waiting time is not practicable. It is therefore proposed to change the text to read "not more than 10 minutes".

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