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Item 7 of the provisional agenda
Regulation No. 16 (Safety-belts)

Proposal for Supplement 6 to the 06 series of amendments to Regulation No. 16 (Safety-belts)

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) aimed at clarifying the provisions for dynamic testing of rear seat system, advanced restraint system approval and transitional provisions. It supersedes ECE/TRANS/WP.29/GRSP/2015/4. The modifications to the current text of UN Regulation No. 16 are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Content, insert new Annex 19, to read:

"…

Paragraph 2.8., amend to read:

"2.8. *"Airbag assembly"* means a device … of the passenger compartment. **Any as such described deployed structure shall not be considered as rigid part.**"

Paragraph 6.4.1.3.3., amend to read:

"6.4.1.3.3. In the case of a safety-belt intended to be used in ~~an outboard front~~ **a** seating position protected by an airbag ..."

Paragraph 6.4.1.4.1., amend to read:

"6.4.1.4.1. The movement of the chest reference … in the dynamic test would have come into contact with any forward rigid part of the vehicle other than: ~~the chest with the steering assembly, if the latter meets the requirements of Regulation No. 12 and provided contact does not occur at a speed higher than 24 km/h. For this assessment the seat shall be considered to be in the position specified in paragraph 7.7.1.5. below.~~"

Insert new paragraphs 6.4.1.4.1.1. and 6.4.1.4.1.2., to read:

"**6.4.1.4.1.1. In the case of the driver, contact of the chest with the steering assembly would be allowed, if the latter meets the requirements of Regulation No. 12 and provided contact does not occur at a speed higher than 24 km/h. For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.1., the seat shall be considered to be in the positions specified in paragraph 7.7.1.5. below.**

6.4.1.4.1.2. In case of any other occupant a contact of the head or of the chest with any rigid part of the vehicle in front of the dummy would be allowed, provided contact with vehicle interior does not occur at a speed higher than 24 km/h and no contact of the manikins head with its knees takes place.

For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.2. the seat of the tested manikin and, if applicable, the seat in front of the manikin shall be considered to be in the positions specified in paragraph 7.7.1.6. below."

Paragraph 7.7.1.5., amend to read:

"7.7.1.5. For the assessment of the requirements in paragraph**s** 6.4.1.4.1. **and 6.4.1.4.1.1.** the seat shall be regarded in its most forward driving or travelling position appropriate to the dimensions of the manikin."

Insert a new paragraph 7.7.1.6., to read:

"**7.7.1.6. For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.2. the seat of an occupant in the front shall be in its most**

forward driving or travelling position according to the dimensions of the manikin. The positions of the seats shall be stated in the report.

In case of the alternative, ISO conventional frontal impact test or body-in-white (BIW) test on the sled, mentioned in paragraph 7.7.1.1. above, the seat back angle of the tested seat shall be adjusted at 10°, measured with the 3-D H point machine following the "Procedure for Determining the "H" point and the actual torso angle for seating positions in motor vehicles" under Annex 15.

For any testing position of rear seated occupants, the position of the tested seat, shall be considered as positioned to the seats R-Point position and its seat back angle positioned to 10° if adjustable, derived from the 3-D H point machine.

The seat in front of a tested seat shall be adjusted to the most rearward and lowest position appropriate for any contact with the manikin installed on the rear seat, then shifted forward for minimal pelvis displacement according to paragraph 6.4.1.3.2. and with a seat back angle at 10°, as derived from the 3-D H Point machine (Annex 19, Figure 1).

This can be proven with a contour on CAD or drawing."

Paragraphs 7.7.1.6. and 7.7.1.7.(former), renumber as paragraphs 7.7.1.7. and 7.7.1.8.

Paragraph 7.10. amend to read:

"7.10. Test report

7.10.1. The test report shall record the results of all the tests in paragraph 7. above and in particular:

(a) …

…

(i) The data of the speed as a function of the displacement of the most forward point of the head and the chest reference point necessary for the judgment that no interior part will be in the zone where the speed is higher than 24 km/h. *

If by virtue …"

Insert new paragraph 8.1.6.1., to read :

"**8.1.6.1. For the rear seat positions, if the restraint system has been tested according to the requirements of paragraph 6.4.1.4.1.2. without the vehicle environment as defined in paragraph 7.7.1., the installation conditions in the vehicle shall be verified for the compatibility with those defined in the Communication form for the approval of the restraint system.**

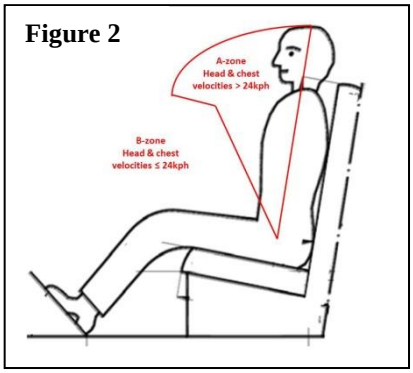
Moreover, in that case, the contact of the upper part of the manikin with the interior of the passenger compartment is allowed if the energy absorption requirements defined in Regulation No. 21 or Regulation No. 17 are fulfilled."

* *Note by the secretariat*: the text need further clarification.

Annex 1B, insert new item 12.1., to read :

"**12.1.** **In case a restraint system has been granted/refused/extended/withdrawn 2/ approval for general use, those can be used for all vehicles compatible with the following dimensional conditions**: **no interior part in a quoted A-zone as shown below (figure 2):** *

Figure 2



"

Annex 14, paragraph 2.2.3., amend to read:

"2.2.3. Results

Test results shall meet the requirements set out in paragraph 6.4.1.3.1. of this Regulation.
The forward displacement of the manikin may be controlled with regard to paragraph 6.4.1.3.2. of this Regulation (or 6.4.1.4. where applicable) during a test performed ~~with conditioning according to paragraph 1.6.1. of this annex~~ by means of a simplified adapted method.

A simplified, adapted method could be, e.g. the measurement of the speed at the chest reference point when its forward displacement is at 300 mm, without an airbag in front of it, during the conformity of production test."

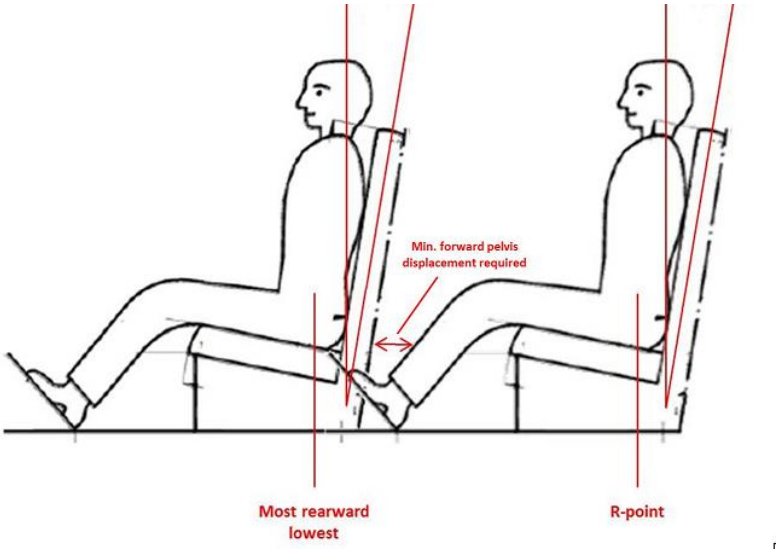
* *Note by the secretariat*: the text need further clarification.

Insert a new Annex 19, to read:

"Annex 19

Rear seats restraint system setup for dynamic test

Figure 1
Rear seats restraint system setup for dynamic test



"

II. Justification

The proposed amendments to UN Regulation No. 16 are based on the following arguments:

1. Alignment of requirements for front and rear seated occupants;
2. Specify the setup of dynamic testing in case of belt assembly or restraint system;
3. Enable the installation of advanced restraint systems through a clear type approval process also for rear seated occupants;
4. Define a minimum technical standard for limiting manikin movement in the component type approval process and conformity of production process;
5. Indicate a simplified adapted method to provide a common understanding for all parties involved such as technical services or manufacturers;
6. Clarify the role of inflatable protective structures, without rigid parts, as part of the restraint system. Discussions to clarify this aspect were held with technical services;
7. Define the effect that a component type approval for restraints system might have on the vehicle type approval.