

Distr.  
GENERAL

TRANS/WP.29/GRSP/2001/17  
4 September 2001

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Passive Safety (GRSP)

(Thirtieth session, 3-6 December 2001,  
agenda item 1.3.1.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 16  
(Safety-belts)

Transmitted by the Expert from Germany

Note: The text reproduced below was prepared by the expert from Germany to clarify and extend the requirements for "special type belts" of Regulation No. 16. It is based on the text of two documents distributed without a symbol (informal document Nos. 9 and 10) during the twenty-ninth session (TRANS/WP.29/GRSP/29, para. 38).

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Note: This document is distributed to the Experts on Passive Safety only.

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**A. PROPOSAL**

Paragraph 2.1., amend to read:

"... absorbing energy or for retracting the belt.

The arrangement can be tested and approved as a safety belt arrangement or as a restraint system."

Paragraph 2.1.3. (former), renumber as paragraph 2.1.1., and amend to read:

"2.1.1. Three-point belt

A belt which is essentially a combination of a lap strap and a diagonal strap;"

Paragraph 2.1.1. (former), renumber as paragraph 2.1.1.1.,

Paragraph 2.1.2. (former), renumber as paragraph 2.1.1.2.

Insert a new paragraph 2.1.2., to read:

"2.1.2. S-type belt

A belt arrangement other than a three point belt or a lap belt;"

Paragraph 2.1.4. (former), renumber as paragraph 2.1.2.1. and amend to read:

"2.1.2.1. Harness belt

A S-type belt arrangement comprising a lap belt and shoulder straps; a harness belt may be provided with an additional crotch strap assembly;"

Insert a new paragraph 2.1.2.2., to read:

"2.1.2.2. A diagonal belt can be tested and approved as a S-type belt in form of a restraint system within the vehicle together with, for example, a knee bar arrangement;"

Paragraph 2.17., amend to read:

"2.17. Restraint System

A system for a specific vehicle type or a type defined by the vehicle manufacturer and agreed by the Technical Service consisting of a seat and a belt fixed to the vehicle by appropriate means and consisting additionally of all elements which are provided to diminish the risk of injury to the wearer, in the event of an abrupt vehicle deceleration, by limiting the mobility of the wearer's body;"

Annex 7,

The text after figure 6, amend to read:

"...

P = pelvis reference ... manikin

The displacement measurement at point P shall not contain rotational components around the hip axis and around a vertical axis.

Annex 16,

The note below the table, amend to read:

Note: In all cases S-type belts may be fitted in place of all possible A or B type belts, provided their anchorages comply with Regulation No. 14. Where a harness belt has been approved as a S-type belt according to this Regulation, using the lap belt strap, the shoulder belt straps and possibly one or more retractors, one or two additional crotch straps including their attachments for their anchorages may be provided by the manufacturer/applicant. These additional anchorages must not meet the requirements of Regulation No. 14. The dynamic tests of the harness belt system shall be carried out without the crotch strap (assembly), if there is any. An installation requirement for the consumer shall be provided by the manufacturer/applicant for all vehicles where the crotch strap assembly can be used. The manufacturer of the harness belt shall prescribe the mounting of the additional reinforcement elements for the anchorages of crotch straps and their installation in all vehicles where an installation is provided for."

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#### **B. JUSTIFICATION:**

Regulation No. 16 contains requirements for adult safety-belts, the definitions taken not stringently for e.g. the three-point safety-belt which is in principle a combination of a lap belt and of a diagonal belt; the term restraint system has for example been introduced and scheduled only to the needs of a car manufacturer asking for a certificate of a system consisting of a diagonal belt and a knee bar. The definition of the S-type belt (annex 16) is missing. For the clarification, accomplishment and stringency of the existing definitions of Regulation No. 16, the following proposals seem to be helpful:

- New (stringent) numbering of existing belt definitions including new definitions for "S-type belts" and "restraint system".
- Clarification and extension of the note which belongs to Regulation No. 16, annex 16 "Safety belt installation showing the belt types and retractor types"; its present text follows:

**Note:** In all cases S- type belts may be fitted in place of an A or B type belt, provided anchorages complying with Regulation No. 14 are used. This wording alone might outrule certain harness belts which was not its intention.

- In case of a modification of Regulation No. 16 - following the undermentioned proposal - Regulation 14 should have a short modification respectively.

Re. annex 7, figure 6:

The location of the pelvis reference point P is prescribed to be on the centre line of the manikin (without tolerance) which could mean to be on the torso part of the manikin (linear movement and rotating around the hip axis and around a vertical axis).

A clarification of the displacement measurement procedure at point P seems to be necessary to exclude not intended rotational displacement components and to achieve comparability between video evaluation of the hip movement and displacement measurement following point P. At lap belt tests for example the rotational component around the hip axis in the driving direction amounts to about 90 mm which is decisive for pass or fail.

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