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PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 44
(Child Restraints)

Transmitted by the Expert from Japan

Note: The text reproduced below was prepared by the expert from Japan in order to propose the following amendments which would enable Japan to adopt Regulation No. 44:

- (a) Amend paragraph 7.2.1.1. in order to improve the comfort in handling of buckle and tongue.
- (b) Amend paragraphs 7.2.3.2.1.1., 7.2.3.2.1.2., 7.2.3.2.1.4. and 7.2.3.2.4. in order to enable the webbing sensitive retractor to be used.
- (c) Amend paragraphs 7.1.4.4.1.2.2., 7.1.4.2.1. and 7.4.1.2.2. in order to enable a rear-facing child restraint system installed with vehicle seats by two point belts, which are widely used in Japan and the United States of America, to be approved.

This document is based on a document distributed without a symbol (informal document No. 4) during the twenty-eighth session (TRANS/WP.29/GRSP/28, para. 79).

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

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A. PROPOSAL

Paragraph 7.1.4.2.1., amend to read:

"..... does not exceed 3 ms. In paragraph 7.1.4.4.1.2.2. this condition shall be exempted from application only in cases where Condition 2 has been applied."

Paragraph 7.1.4.2.2., amend to read:

"..... does not exceed 3 ms. In paragraph 7.1.4.4.1.2.2. this condition shall be exempted from application only in cases where Condition 2 has been applied."

Paragraph 7.1.4.4.1.2.2., amend to read:

"7.1.4.4.1.2.2. Child restraints in group 0 not supported by the dashboard, and carrycots:

In the case of child restraints in group 0 not supported by the dashboard, either condition 1 or condition 2 indicated below shall be satisfied.

In the case of carrycots, condition 1 below shall be satisfied.

Condition 1:

The head of the manikin shall not pass the planes AB, AD and DE as shown in Figure 3 below.

Condition 2:

The head of the manikin shall not pass the planes AD and DE as shown in Figure 3 below.

In addition, the angle forming a perpendicular with the child restraint seat back shall not exceed 60°, and the centre of mass of the manikin's head shall be positioned straight along the seat back surface and it shall not surpass this surface beyond the seat back upper edge."

Paragraph 7.2.1.1., amend to read:

"..... when all parts are engaged. However, this shall not apply for Y-shaped belt or for cases in which shoulder belt and waist belt are linked. Wherever the buckle is in contact"

Paragraph 7.2.3.2.1.1., amend to read:

"..... of the vehicle reaches 0.45 g, and/or when strap acceleration reaches 0.7 g as measured in the axis of strap extraction."

Paragraph 7.2.3.2.1.2., amend to read:

"..... accelerations of less than 0.3 g as measured in the axis of strap extraction."

Paragraph 7.2.3.2.1.4., amend to read:

"7.2.3.2.1.4. In the case of a vehicle-deceleration-sensor-type retractor, it shall lock when its sensing device is tilted by more"

Paragraph 7.2.3.2.4., amend to read:

"..... the retractor locks shall not exceed 50 mm in the case of vehicle-deceleration-sensor-type retractor, and 25 mm in the case of strap-acceleration-sensor-type retractor, starting at the length of unwinding"

* * *

B. JUSTIFICATION

Re. paragraph 7.2.1.1.:

Under current requirements, the composition is such that, unless the right and left tongue plates are inserted into the buckle simultaneously, the lock cannot be completely engaged. Such a mechanism is very hard for the user to employ. This requirement is not stipulated in Japan's Safety Regulations, which are based on years of experience, nor in FMVSS No. 213. The requirement is too burdensome on the user.

In the case of a harness belt combining shoulder and lap strap, or Y-shaped belt, it is not predictable for users to insert the harness belt tongue plate on only one side and not insert the other tongue plate. While in the case of a harness separating shoulder and lap strap, it is feared that the system is used inserting only the lap belts or the shoulder belts. In this case, the number of tongue plates is more than two, and it might cause misuse of them.

Re. paragraphs 7.2.3.2.1.1., 7.2.3.2.1.2., 7.2.3.2.1.4. and 7.2.3.2.4.:

The seating surface angle of the vehicle seat is not constant and when it is set reclining against the child restraint system (CRS), there is no compatibility with a regular vehicle-deceleration-sensor-type retractor because the retractor installation angle varies.

A special device, such as a gimbal mechanism, must be added.

This incurs additional costs and increases the burden on the user.

In Japan's market, a CRS with emergency locking retractor (ELR) attached is predominant and user demand for ELR is high.

The retractorless format is not readily acceptable in the market.

With respect to safety, it is mandatory that the dynamic tests of paragraph 8.1.3. be satisfied.
In the case of rollover, it is mandatory that the overturning test of paragraph 8.1.2. be satisfied.
Even with a webbing-sensor-type retractor, if the aforesaid conditions are satisfied, safety is equivalent to that with a vehicle deceleration-sensor-type retractor.

The proposed level of strap sensitivity is the same as in Japan's Safety Regulations and in FMVSS No. 209, which have been enforced for years without problems.

Re. paragraphs 7.1.4.4.1.2.2., 7.1.4.2.1., and 7.1.4.2.2.:

With respect to rear-facing CRS, a 3-point type safety-belt is necessary for satisfying the conditions given in the current Regulation, but in Japan, the United States of America type CRS, with which a 2-point type safety-belt can also be used, has been marketed. If the European type (3-point type safety-belt only) rear-facing CRS is brought into the Japanese market, the following problems could arise.

- (1) Because the 2-point type safety-belt is installed at a high rate, the CRS cannot be attached to the rear centre seat.
- (2) In attempting to satisfy the conditions given in the current Regulation, it will not be possible to install the CRS so that the seat back can be reclined to the sitting posture adequate for infants.
- (3) The CRS cannot be installed because the 3-point type safety-belt is inadequate in length. And because of this, it is feared that the CRS will be used at the passenger seat next to the driver's seat, which is equipped with an airbag, or that the CRS will be attached with only the lap portion of the safety-belt, which is an extremely dangerous form of misuse.
- (4) In attempting to satisfy the conditions given in the current Regulation, it will not be possible to install the CRS firmly with no slack because the lap belt of the 3-point type safety-belt cannot be tightened.

Accordingly, performance requirements should be revised so that the United States of America type rear-facing CRS, with which a 2-point type safety-belt can be used, will be acceptable when tested.

For this reason, respecting the dynamic test requirements for rear-facing CRS in group 0 not supported by the dashboard, the requirements of FMVSS No. 213 should be acknowledged as an alternative.

In light of the experience in the United States, applying FMVSS No. 213, this proposed revision should not present any problems in safety.

However, with respect to the seat back angle whereas 70° is stipulated in FMVSS No. 213, 60° is proposed in consideration of differences in the test seats for Regulation No. 44 and for FMVSS No. 213, and conformity with Japanese regulations.
