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World Forum for Harmonization of Vehicle Regulations

Working Party on General Safety Provisions

Ninety-second session

Geneva, 16-20 April 2007

Item 2.2.3. of the provisional agenda

**BUSES AND COACHES**

Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles)

Safety of wheelchair users in vehicles

Proposal for draft amendments to Regulation No. 107

Submitted by the expert from Germany

The text reproduced below was prepared by the expert from Germany in order to propose amendments to ECE/TRANS/WP.29/GRSG/2006/7, submitted by the informal group on Safety of Wheelchair Users in Vehicles. The text is based on informal document No. GRSG-91-27, distributed during the ninety-first session of the Working Party on General Safety Provisions (GRSG) (ECE/TRANS/WP.29/GRSG/70, para. 15), and takes into account the comments addressed at that session. The proposed amendments to ECE/TRANS/WP.29/GRSG/2006/7 are marked in **bold** or ~~strikethrough~~ characters.

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

A. PROPOSAL

Annex 4,

Figure 29, renumber as Figure 30 and amend the title and pertaining text to read:

"Figure 30

**EXAMPLE OF A BACKREST PROVISIONS FOR A REARWARD-FACING  
WHEELCHAIR**

(see Annex 8, paragraph 3.8.5-6.)"

Annex 8,

Paragraph 3.8.4.1.3., amend to read:

"3.8.4.1.3. the support or backrest shall be designed for the wheels or the back of the wheelchair to rest against the support or backrest in order to avoid the wheelchair from tipping over and shall comply with the provisions of paragraph 3.8.5. ~~or 3.8.6. as appropriate;~~"

Paragraphs 3.8.5. to 3.8.5.2., amend to read:

"3.8.5. Backrest **and support** requirements

3.8.5.1. **A backrest fitted to a wheelchair space in accordance with paragraph 3.8.4. shall be capable of bearing a load of  $250 \pm 20$  daN applied to the centre of the padded surface of the backrest, perpendicular to the longitudinal axis of the vehicle, at a height of not less than 600 mm and of not more than 800 mm measured vertically from the floor of the wheelchair space, for a minimum of 1.5 seconds by means of a block 200 mm x 200 mm in the longitudinal plane of the vehicle towards the front of the vehicle. The backrest shall not deflect more than 100 mm or suffer permanent deformation or damage.**

3.8.5.2. **A support fitted to a wheelchair space in accordance with paragraph 3.8.4. shall be capable of withstanding a force of  $250 \pm 20$  daN applied to the centre of the support, perpendicular to the longitudinal axis of the vehicle, for a minimum of 1.5 seconds in the horizontal plane of the vehicle towards the front of the vehicle in the middle of the support. The support shall not deflect more than 100 mm or suffer permanent deformation or damage."**

Paragraphs 3.8.5.3. to 3.8.5.8., should be deleted.

Paragraph 3.8.6., amend to read:

"3.8.6. **Example of a backrest, which may be used as design guidance"**

Insert new paragraphs 3.8.6.1. to 3.8.6.6., to read:

- "3.8.6.1. The bottom edge of a backrest shall be at a height of not less than 350 mm and of not more than 480 mm measured vertically from the floor of the wheelchair space.
- 3.8.6.2. The top edge of a backrest shall be at a height of not less than 1,300 mm measured vertically from the floor of the wheelchair space.
- 3.8.6.3. A backrest shall have a width of:
- 3.8.6.3.1. not less than 270 mm and of not more than 420 mm up to a height of 830 mm measured vertically from the floor of the wheelchair space, and
- 3.8.6.3.2. not less than 270 mm and of not more than 300 mm at heights exceeding 830 mm measured vertically from the floor of the wheelchair space.
- 3.8.6.4. A backrest shall be fitted at an angle of not less than four degrees and of not more than eight degrees to the vertical with the bottom edge of the backrest positioned closer to the rear of the vehicle than the top edge.
- 3.8.6.5. The padded surface of a backrest shall form a single and continuous plane.
- 3.8.6.6. The padded surface of a backrest shall pass through any point on an imaginary vertical plane situated to the rear of the front end of the wheelchair space and situated not less than 100 mm and not more than 120 mm from the front end of the wheelchair space measured horizontally and not less than 830 mm and not more than 870 mm from the floor of the wheelchair space measured vertically."

Paragraph 3.11.3.1.1., amend to read:

- "3.11.3.1.1. Lifts shall only be capable of operation when the vehicle is at standstill. ~~When raising of the platform and before lowering is initiated~~ **Any movement of the platform shall be prohibited unless** a device preventing the wheelchair from rolling off ~~shall~~ **has been activated or has** automatically come into operation."

B. JUSTIFICATION

Reference to Figure 30 and paragraphs 3.8.4.1.3. to 3.8.6.6.

During the ninetieth GRSG session, the experts from Germany, Netherlands and the International Organization of Motor Vehicle Manufacturers (OICA) expressed their concern that the proposal by the informal group (ECE/TRANS/WP.29/GRSG/2006/7) might be too design restrictive regarding the requirements for rearward-facing wheelchair restraint systems. The aim

of this document is to offer larger possibilities for new designs and, at the same time, to provide reliable guidelines.

Reference to paragraph 3.11.3.1.1.

The aim of the text of this paragraph is to make sure that no wheelchair user can fall off the moving platform. Currently, there are several solutions that offer the same degree of safety i.e. making it impossible for the wheelchair user to roll off the platform, but which nevertheless are not "automatic" in the strict sense of the word. These solutions are based on the fact that it is simply not possible to move the platform unless the anti roll-off device is activated. Therefore, Germany believes that it is appropriate to provide explicit wording that allows such solutions.

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