Submitted by the expert of the Russian Federation

Informal document No. GRSG-127-36
127th GRSG session, 15–19 of April 2024
Agenda item 8

UN Regulation No. 66 (uniform technical prescriptions concerning the approval of large passenger vehicles with regard to the strength of their superstructure)

DRAFT proposals of the amendments to UN Regulation No. 66. (Uniform technical prescriptions concerning the approval of large passenger vehicles with regard to the strength of their superstructure)

The modifications to the current text of UN Regulation are marked in bold for new characters and as strikethrough for deleted ones.

I. Proposal

Include new paragraphs with the following content:

"**2.34 "Escape hatch" means an opening in the roof or the floor intended for use as an emergency exit by passengers in an emergency only.**

2.35 "Emergency exit" means an emergency door, emergency window or escape hatch."

5.1.3 the escape hatch in the roof is not jammed and remains operational. In the case of opening the escape hatch manually (in case of the hatch made of glass – without breaking it), the opening force applied in any direction shall not exceed 400 N;

Note: If there is only one escape hatch in the roof, the opening test shall be carried out from the outside. If there are two or more hatches, the opening test shall be carried out both from the inside and from the outside of the vehicle.

5.1.4 there was no destruction of the seat attachments. During testing, deformation or damage of the seat-to-floor attachment components is acceptable, provided that the seat remains attached to the floor by the standard fasteners and cannot inadvertently move, shift, or rotate around the attachment points.

5.1.5 there was no movement of traumatic objects (fire extinguishers, glass breakers, etc.) in the residual space."

Paragraph 5.4.5, amend to read:

"5.4.5 The basic principle is that the equivalent approval test method must be carried out in such a way that it represents the basic rollover test specified in Annex 5, **and would allow assessing compliance with the requirements of paragraph 5.1 of this Regulation**. If the equivalent approval test method chosen by the manufacturer cannot take account of some special feature or construction of the vehicle (e.g. air-conditioning installation on the roof, changing height of the waist rail, changing roof height) the complete vehicle may be required by the technical service to undergo the rollover test specified in Annex 5. **If the equivalent approval test method chosen by the manufacturer does not allow assessing compliance with the requirements of paragraph 5.1. of this Regulation, then the Contracting Party applying this Regulation may require the submission of the test results of the complete vehicle pursuant to Annex 5."**

Annex 5

Paragraph 2.1, amend to read:

"2.1 The vehicle to be tested need not be in a fully finished, "ready for operation" condition. ~~Generally~~ **Upon agreement with the technical service**, ~~any~~ alteration from the fully finished condition is acceptable if the basic features and behaviour of the superstructure are not influenced by it. **It is allowed to replace elements that do not affect the strength of the superstructure with the equivalent ones in mass and installation method, with the exception of the elements that can move and enter the residual space of passengers after the bus overturning.** The test vehicle shall be the same as its fully finished version in respect of the following:"

Paragraph 2.1.3, amend to read:

"2.1.3 elements, which do not contribute to the strength of the superstructure and are too valuable to risk damage (e.g. drive chain, dashboard instrumentation, driver's seat, kitchen equipment, toilet equipment, etc.) can be replaced, **upon agreement with the technical service**, by additional elements equivalent in mass and method of installation. These additional elements must not have a reinforcing effect on the strength of superstructure."

Paragraph 2.1.5, amend to read:

"2.1.5. In the case where occupant restraint devices are part of the vehicle type, a mass shall be attached to each seat fitted with an occupant restraint following ~~one of these two methods~~ **the method below**~~, at the choice of the manufacturer~~.

~~2.1.5.1. First method: That mass shall be:~~

~~2.1.5.1.1 50 per cent of the individual occupant mass (M_{mi}) of 68 kg,~~

~~2.1.5.1.2. placed to have its centre of gravity 100 mm above and 100 mm forward of the R point of the seat as defined in Regulation No. 21, Annex 5. 2.1.~~

~~5.1.3. fixed rigidly and securely so that it does not break away during the test.~~

2.1.5.~~2~~**1** ~~Second method: That mass~~ **That mass shall be:**

2.1.5.~~2~~**1**.1 an anthropomorphic ballast with a mass of 68 kg and shall be restrained with a 2 point safety-belt. The ballast must allow guiding and positioning for safety-belts,

2.1.5.~~2~~**1**.2. placed to have its centre of gravity and dimensioning according to figure A5.2.

2.1.5.~~2~~**1**.3. fixed rigidly and securely so that it does not break away during the test."

Include new paragraphs with the following content:

"2.2.4 All escape hatches and emergency exits shall be closed.

2.2.5 fire extinguishers shall be positioned in specially designated places and secured in a standard manner, as specified by the manufacturer. If it is possible to place different types of fire extinguishers in terms of size and mass, then, upon agreement with the technical service, a version of the fire extinguisher with the maximum parameters in terms of size and mass shall be provided for testing."

II. Justification

1. It is proposed to add the definitions “escape hatch” and “emergency exit”, as these terms will be mentioned throughout the text of the Regulation. These definitions are consistent with those in UN Regulation No. 107.

2. Initially, it was proposed to include additional safety requirements in the test methods for complete buses according to Annex 5, but at the working group meetings it was noted that such an approach entails non-equivalence of the test methods prescribed in this UN Regulation. The addition of the new provisions to section 5 would allow these requirements to be applied to all buses and at the same time confirm compliance with the requirements by all possible methods.

3. Paragraph 2.1.5. of Annex 5 describes two options for the test masses: 34 and 68 kilograms. It is proposed to keep the only option with the mass of 68 kg, as this option is as close as possible to the real-world values and this allows to assess both the superstructure of the bus and the seat attachments fully.