

Proposal for amendments to UN Regulation No. 158 (devices and motor vehicles with regard to the driver's awareness of vulnerable road users behind vehicles when reversing)

Submitted by the experts from VRU-Proxi Informal Working Group (VRU-Proxi)

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I. Proposal

Paragraphs 2.1.5.1. amend to read:

2.1.5.1. "**Acoustic** ~~Audible~~ information" means information using auditory signals provided by a detection system as defined in paragraph 2.1.5. above to enable the driver to detect objects in the area adjacent to the vehicle.

Paragraphs 6.1.2.1.2. amend to read:

~~"6.1.2.1.2. The dimensions of the reflecting surface shall be such that it is possible to inscribe therein:~~

~~(a) — A rectangle 40 mm high the base length of which, measured in millimeters, has the value "a";~~

~~(b) — A segment which is parallel to the height of the rectangle and the length of which, expressed in millimeters, has the value "b"."~~

Paragraphs 15.2.1. amend to read:

"15.2.1. Requirements

When tested under the conditions defined in Annex 9 the requirement for close-proximity rear-view field of vision shall be considered to be satisfied if the defined field of vision can be seen:

(a) For the test objects in the first row (Test objects A, B, and C):

A 0.15 m x 0.15 m area ~~or~~ **located on the side or on** the top of the test object shall be visible at least one position on each test object.

(b) for the test and I);

The whole test object shall be seen. “

Paragraphs 15.2.1.4. amend to read:

“15.2.1.4. Via a means of rear visibility (~~mirror or~~ RVCS or other, **except mirrors**) complying with this Regulation; or”

Paragraphs 17.2.1. amend to read:

17.2.1. The system shall have at least two kinds of information signal selected from **acoustic audible**, optical, and haptics.

Paragraphs 17.2.2. amend to read:

17.2.2. **Acoustic Audible** information

When an object is detected in the rear horizontal area as described in paragraph 1.3. of Annex 10. while the reverse gear is selected/engaged, **acoustic audible** information in accordance with ISO 15006:2011 shall be given.

In presenting **acoustic audible** information, the distance may be identified at two or more levels. These zones differentiated by levels (distance) and detection width may be indicated by changing the frequency of intermittent sound, and a faster intermittent sound or continuous sound shall be used as the distance becomes closer.

Paragraphs 17.2.3. amend to read:

17.2.3. Duration of signalling

Signalling for an object shall last as long as the object is detected and shall end when the object is no longer detected or when the system is deactivated.

To reduce the driver's discomfort, the **acoustic audible** signal can be automatically suspended temporarily after a certain time set by the manufacturer has elapsed, provided that the system remains activated. If, while the **acoustic audible** signal is automatically suspended temporarily, the distance to the object becomes short, the **acoustic audible** signal shall be automatically resumed. If the distance to the object becomes long, the **acoustic audible** signal may remain suspended.

Paragraphs 17.3.1. amend to read:

17.3.1. Response time

At least one of the **acoustic audible** or haptic information signals that meets the requirements as described in 17.2., shall be given to the driver within a maximum of 0.6 seconds after the start of the backing event, when tested according to paragraph 2. of Annex 10.

Annex 9, paragraph 1.3.3., amend to read:

“1.3. Test conditions.

1.3.1. Lighting

The ambient illumination conditions in which testing is conducted consists of light that is evenly distributed from above and is at an intensity of between 7,000 lux and 10,000 lux, as measured at the centre of the exterior surface of the vehicle's roof.

At the request of the manufacturer, the test may be carried out at lower ambient illumination intensity conditions.”

Annex 10 Paragraph 1., amend to read:

1. Rear horizontal area detection

Acoustic audible warning systems shall fulfil the test as specified in paragraph 1.3.1. in this Annex. However, if **acoustic audible** warning systems fulfil the test as specified in paragraph 1.4. in this Annex, the test as specified in paragraph 1.3.1. in this Annex shall be considered to be satisfied.

Annex 10 Paragraph 2.1., amend to read:

2.1. Test conditions

- (a) The vehicle shall be left in a parked parking status until it is ensured that all electronic systems are deactivated; or for a minimum of 30 minutes.
- (b) It is permissible for the test person or equipment to be already situated within the vehicle.
- (c) Ensure the vehicle gear selector is **not in reverse gear in neutral or forward gear**.
- (d) The test may start with opening the driver door. Once the door is opened, it shall be closed again.

II. Justification

1. New proposal of deletion that is not needed in this regulation taken from the regulation No.46.
 2. Combined document of agreed proposals, GRSG-121-17 and GRSG-121-39.
 - 3, The word “audible” is changed to “acoustic” for the alignment with other UN regulations such as Regulation No.127, No.151, No.159 etc.
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