

Evolverment of VRU-Proxi-29-03

Proposal of series 01 of amendments to
Regulation No. 158 Reversing Motion

History

- Original document ECE/TRANS/WP.29/GRSG/2022/10 was adopted as amended by GRSG-123-15-Rev.1 in GRSG April 2022 and translated in document ECE/TRANS/WP.29/2022/123r1e that was adopted by WP.29 in November 2022
- However, following proposed amendment was deleted

Paragraph 16.1.3.1., amend to read:

"16.1.3.1. The monitor defined size shall be visible without any **[permanent]** obstruction from the ocular reference point. A virtual testing is acceptable."

- GRSG 123 report: "Moreover, GRSG agreed to submit GRSG-123-31 to IWG VRU-Proxi, for a possible amendment of paragraph 16.1.3.1. that would amend the draft Supplement 2 to the original version of UN Regulation No. 158. Consideration would eventually be at its October 2022 session

Evolvement of Paragraph 16.1.3.1

Paragraph 16.1.3.1 in GRSG-123-31



VRU-Proxi-27-08: Changes by the Chair during 27th meeting



VRU-Proxi-29-03: latest proposal

April 2022

Paragraph 16.1.3.1., amend to read:

"16.1.3.1. The monitor defined size shall be visible without any **permanent** obstruction from the ocular reference point. **A**Virtual testing is acceptable.]

[In case of temporary obstruction, one means of detection as defined in paragraph 15.3 shall be provided to the driver. A virtual testing is acceptable ~~{In case of a temporary obstruction the size of the obstruction shall be minimized.}~~

[In case of a temporary obstruction the driver shall be able to see the monitor under the following conditions:

(a) The driver has adapted to the ambient light conditions.

(b) The driver is restrained by the installed crash protection system, adjusted in accordance with the manufacturer's instructions, and is free to move within constraints of that system. Virtual testing is acceptable.]"

January 2023

Paragraph 16.1.3.1., amend to read:

"16.1.3.1. The ~~monitor~~ defined size of the monitor shall be visible without obstruction from the ocular reference point. ~~Virtual testing is acceptable.~~

In case of temporary obstruction, the driver shall be able to see the close proximity rear view field of vision under the conditions defined in Annex 9 paragraph 1.3.3.5.

If the driver is not able to see the close proximity rear view field of vision in all normal adjusted driving positions, ~~it is deemed to comply to this requirement if the vehicle should all be fitted with at least an audible or haptic information signal given to the driver within a maximum of 0.6 seconds after the start of the backing event and an system complying with other means the technical requirements as described in paragraph 15.17.~~ when tested according to Annex 10]

Insert new Paragraph 1.3.3.5 to Annex 9, to read::

"1.3.3.5. ~~T~~Monitor visibility or the close proximity rear view field of vision

The driver has adapted to the ambient light conditions.

The driver seating position is adjusted to all driving positions in order to consider all driver heights.

In case of monitor located behind a temporary ~~obstacle~~ obstruction (for example steering wheel spoke during reversing manoeuvre), the driver shall be able to see the close proximity rear view field of vision display in the same location on the screen of a monitor in all normal reversing

motion conditions when the driver is restrained by the installed crash protection system, adjusted in accordance with the manufacturer's instructions, and is free to move within constraints of that system (e.g. head movement)."

It shall be demonstrated by the applicant to the Technical Service that ~~the all~~ extrem height of drivers and each binocular vision have been considered. Virtual testing is acceptable."

March 2023

Paragraph 16.1.3.1., amend to read:

"16.1.3.1. The defined size of the monitor shall be visible without obstruction from the ocular reference point.

In case of temporary obstruction, the driver shall be able to see the close proximity rear view field of vision under the conditions defined in Annex 9 paragraph 1.3.3.5.

If the driver is not able to see the close proximity rear view field of vision in all normal adjusted driving positions the vehicle shall be fitted with a system complying with other means as described in paragraph 15.1."

Insert new Paragraph 1.3.3.5 to Annex 9, to read:

"1.3.3.5. The close proximity rear view field of vision

The driver has adapted to the ambient light conditions.

The driver seating position is adjusted to all driving positions in order to consider all driver heights.

In case of monitor located behind a temporary obstruction (for example steering wheel spoke during reversing manoeuvre), the driver shall be able to see the close proximity rear view field of vision display in the same location on the screen of a monitor in all normal reversing motion conditions when the driver is restrained by the installed crash protection system, adjusted in accordance with the manufacturer's instructions, and is free to move within constraints of that system (e.g. head movement).

It shall be demonstrated by the applicant to the Technical Service that all height of drivers and each binocular vision have been considered. Virtual testing is acceptable."

Evolvement of proposed changes to Paragraphs 16.1.1.3 & 16.1.1.4

VRU-Proxi-27-03 CLEPA proposal



VRU-Proxi-27-08: Changes made by Chair during 27th meeting



VRU-Proxi-29-03 latest proposal

Paragraph 16.1.1.3., amend to read: *April 2022*

"16.1.1.3. Deactivation

The rear-view image shall remain visible during the backing event until either, the driver modifies the view, or the vehicle direction selector is no longer in the reverse position, or the backing event is finished.

~~Modifying the view means to switch to any other camera views.~~

The view can be manually switched off when the vehicle is not moving rearward.

The system may be switched off when the vehicle detects a coupling by means of a coupling device. **In that case the monitor may be used to display other views (e.g. view of a rear-mounted camera on a trailer)."**

Paragraph 16.1.1.4., amend to read:

"16.1.1.4. **Temporarily modified** ~~Automatic change of view~~

~~When there is a risk of collision, the field of view may change and focus on the collision area. It shall be demonstrated to the Technical Service that this change of view increases the safety.~~

~~When the vehicle is not driving straight, the field of view may change following the vehicle trajectory.~~

To enable an improved view while manoeuvring (e.g. when there is a risk of collision, the field of view may change and focus on the collision area or when the vehicle is not driving straight, the field of view may change following the vehicle trajectory), it shall be permitted to temporarily change the view, so that the requirements laid down in paragraphs 16.1. (default view) and 16.1.1. (object size) may not be fulfilled during this temporarily modified view.

The operation of this function shall be intuitive to the driver and should not cause additional safety risks or blind spots relevant for vehicle movement in such manoeuvres. The operation of the function shall cease when the manoeuvre has been completed and the view shall return to the default rear-view.

It shall be indicated to the driver, that a temporarily modified view is displayed. At any time, the driver shall be able to deactivate the function. The operator's manual shall inform the driver accordingly.

The vehicle manufacturer shall demonstrate the improvement of the rear-view by an analysis to the satisfaction of the Technical Service and the Type Approval Authority."

Paragraph 16.1.1.3., amend to read: *January 2023*

"16.1.1.3. Deactivation

The rear-view image shall remain visible during the backing event until either, the driver modifies the view, or the vehicle direction selector is no longer in the reverse position, or the backing event is finished.

~~Modifying the view means to switch to any other camera views.~~

The view can be manually switched off when the vehicle is not moving rearward.

The system may be switched off when the vehicle detects a coupling by means of a coupling device. **In that case the monitor may be used to display other views (e.g. view of a rear-mounted camera on a trailer)."**

Furthermore, at any time, the driver shall be able to deactivate the temporarily modified view, as described in paragraph 16.1.1.4.

Paragraph 16.1.1.4., amend to read:

"16.1.1.4. **Temporarily modified** ~~Automatic change of view~~

~~When there is a risk of collision, the field of view may change and focus on the collision area. It shall be demonstrated to the Technical Service that this change of view increases the safety.~~

~~When the vehicle is not driving straight, the field of view may change following the vehicle trajectory.~~

To enable an improved view while manoeuvring (e.g. when there is a risk of collision, the field of view may change and focus on the collision area or when the vehicle is not driving straight, the field of view may change following the vehicle's trajectory), it shall be permitted to temporarily change the view, so that the requirements laid down in paragraphs 16.1. (default view) and 16.1.1. (object size) may not be fulfilled during this temporarily modified view.

The operation of this function ~~should~~ be intuitive to the driver and ~~should~~ not cause additional safety risks or blind spots relevant for vehicle movement in such manoeuvres. The operation of the function shall cease when the manoeuvre has been completed and the view shall return to the default rear-view.

It shall be indicated to the driver, that a temporarily modified view is displayed. At any time, the driver shall be able to deactivate the function. The operator's manual shall inform the driver accordingly.

The vehicle manufacturer shall demonstrate the improvement of the rear-view by an analysis to the satisfaction of the Technical Service and the Type Approval Authority."

Paragraph 16.1.1.3., amend to read: *March 2023*

"16.1.1.3. Deactivation

The rear-view image shall remain visible during the backing event until either, the driver modifies the view, or the vehicle direction selector is no longer in the reverse position, or the backing event is finished.

~~Modifying the view means to switch to any other camera views.~~

The view can be manually switched off when the vehicle is not moving rearward.

The system may be switched off when the vehicle detects a coupling by means of a coupling device. In that case the monitor may be used to display other views (e.g. view of a rear-mounted camera on a trailer).

Furthermore, at any time, the driver shall be able to deactivate the temporarily modified view, as described in paragraph 16.1.1.4. ."

Paragraph 16.1.1.4., amend to read:

"16.1.1.4. **Temporarily modified** ~~Automatic change of view~~

~~When there is a risk of collision, the field of view may change and focus on the collision area. It shall be demonstrated to the Technical Service that this change of view increases the safety.~~

~~When the vehicle is not driving straight, the field of view may change following the vehicle trajectory.~~

To enable an improved view while manoeuvring (e.g. when there is a risk of collision, the field of view may change and focus on the collision area or when the vehicle is not driving straight, the field of view may change following the vehicle's trajectory), it shall be permitted to temporarily change the view, so that the requirements laid down in paragraphs 16.1. (default view) and 16.1.1. (object size) may not be fulfilled during this temporarily modified view.

The operation of this function should be intuitive to the driver and shall not cause additional safety risks or blind spots relevant for vehicle movement in such manoeuvres. The operation of the function shall cease when the manoeuvre has been completed and the view shall return to the default rear-view.

It shall be indicated to the driver, that a temporarily modified view is displayed. At any time, the driver shall be able to deactivate the function. The operator's manual shall inform the driver accordingly.

The vehicle manufacturer shall demonstrate the improvement of the rear-view by an analysis to the satisfaction of the Technical Service and the Type Approval Authority."