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World Forum for Harmonization of Vehicle Regulations

Working Party on General Safety Provisions

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Geneva, 20 - 23 October 2009
Item 8 of the provisional agenda

REGULATION No. 46
(Devices for indirect vision)

Proposal for draft amendments to Regulation No. 46

Submitted by the expert from the United Kingdom */

The text reproduced below was prepared by the expert from the United Kingdom in order to reduce the blind spot on the passenger side of N₂ and N₃ vehicles. This document follows on from informal document GRSG-95-21 submitted by the expert from the United Kingdom during the ninety-fifth session of the Working Party on General Safety Provisions. The modifications to the current text of the Regulation are marked in bold characters.

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Insert new paragraphs 15.2.4.5.6. to 15.2.4.5.9.(including new Figure 8c), to read:

- "15.2.4.5.6. on the passenger side only, the field of vision described in paragraphs 15.2.4.5.1. to 15.2.4.5.5. shall be extended by means of any device, or combination of devices, such that the driver can see a flat horizontal portion of the road along the side of the vehicle, bounded by the vertical planes defined in Figure 8c.**
- 15.2.4.5.7. in the transverse direction, the parallel plane passing at a distance of 4.5 m in front of the plane mentioned in paragraph 15.2.4.5.1.**
- 15.2.4.5.8. to the rear, the plane parallel to the vertical plane passing through the driver's ocular points and situated at a distance of 1.75 m behind that plane.**
- 15.2.4.5.9. to the front, the plane parallel to the vertical plane passing through the driver's ocular points and situated at a distance of 3 m in front of that plane.**

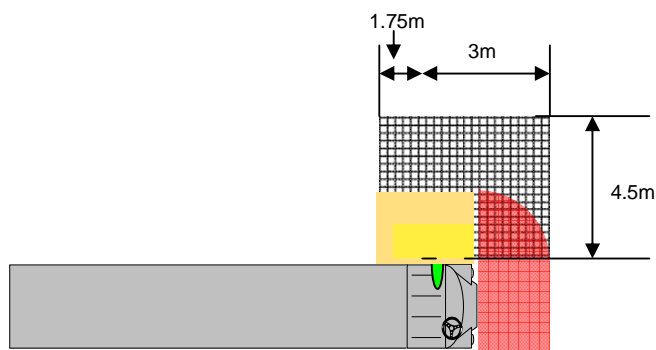


Figure 8c - Required field of vision for passenger side"

B. JUSTIFICATION

The United Kingdom would like to permit the use of any device, or combination of devices, to extend the field of vision (FoV) of the class V device on the passenger side of N₂ and N₃ vehicles. The reason for doing so is to reduce the occurrence of side-swipe incidents when these large vehicles are changing lanes on motorways and to better enable the driver to see vulnerable road users when manoeuvring or turning at junctions. The alternative would be to improve the driver's direct FoV, which may be much more difficult to achieve.

As discussed in informal document GRSG-95-21, UK research has shown that there is still a significant blind spot adjacent to the passenger side of the cab, despite the requirements for improved class V devices. Depending on the size of the vehicle, there is potential for a passenger car, travelling in the centre or far side of the adjacent lane, to disappear from the driver's view

from 1 m behind his eye-line and not be visible again until it is in the driver's direct view 4 m in front of his eye-line. As an average small passenger car is around 3 m long, this blind spot provides a high risk of sides-wipe accidents occurring. It is also of significant concern that vulnerable road users such as pedestrians or cyclists can easily remain unseen in this blind spot on the passenger side of the cab.

Extending the FoV requirement on the passenger side from an area measuring 2.75 m (long) x 2 m (out from the cab) to an area 4.75 m (long) x 4.5 m (out from the cab) would fully cover the front edge of the class IV device FoV and overlap a class VI device FoV (if fitted). This would probably be beyond the ability of a mirror system but may be within the capabilities of an additional camera/monitor system, vision support (radar sensing) system or other alternative solution.

Although there is a need to extend the field of vision requirement on the passenger side to cover this blind spot, it should not be necessary on the driver side if an optional class V device is installed, as the driver will have greater direct vision on his side of the vehicle. It is for this reason that the original requirement for class V devices is preserved.
