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World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

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Geneva, 6 - 9 October 2009

Item 4(c) of the provisional agenda

REGULATION No. 48

(Installation of lighting and light-signalling devices)

Clarifications on installation requirements

Proposal for draft Supplement 5 to the 04 series of amendments to Regulation No. 48

Submitted by the expert from Germany */

The text reproduced below was prepared by the expert from Germany as an outcome of the discussion held during the sixty-first session of the Working Party on Lighting and Light-Signalling (GRE), regarding the revision of provisions on conspicuity markings, taking into account their future mandatory application to all heavy goods vehicles in the framework of the type approval directives of the European Community (EC). It reflects the outcome of consultations with vehicle and bodywork manufacturers and with goods vehicle operators. The modifications to the current text of the Regulation, including draft Supplement 4 to the 04 series of amendments (ECE/TRANS/WP.29/2009/91), are marked in bold or strikethrough 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

Paragraph 6.21.1.2.2., amend to read:

"6.21.1.2.2. to the side:

6.21.1.2.2.1. partial contour marking on vehicles exceeding 6,000 mm in length (~~including the drawbar for trailers~~) of the following categories:

- (a) N₂ with a maximum mass exceeding 7.5 tonnes and N₃ (with the exception of chassis-cabs incomplete vehicles and tractors for semi-trailers)
- (b) O₃ and O₄."

Paragraph 6.21.1.2.3., amend to read:

"6.21.1.2.3. **A line marking may be installed in place of the mandatory contour marking if the shape, structure, design or operational requirements of the vehicle make it impossible to install the mandatory contour marking.**

If the exterior surfaces of the bodywork are constituted of flexible material, this line marking shall be installed on (a) rigid part(s) of the vehicle; if possible, the required contour may be produced by additional conspicuity markings on the flexible material."

Insert new paragraphs 6.21.1.2.4. to 6.21.1.2.4.3., to read:

"6.21.1.2.4. **In cases where the manufacturer, after verification by the Technical Service responsible for type approval, can prove to the satisfaction of the authority responsible for type approval that it is impossible, due to the shape, structure, design or operational requirements of the vehicle, to comply with all or part of the requirements indicated in paragraphs 6.21.2. to 6.21.7. below, the provisions in paragraph(s) 6.21.1.2.4.1 to 6.21.1.2.4.3 shall apply. The necessary information shall be indicated in the test report and the communication form.**

6.21.1.2.4.1. **For the purpose of calculating the length of conspicuity markings, rear marking plates according to Regulation No. 70 may substitute all or part of the required conspicuity markings to the rear;**

6.21.1.2.4.2. **Notwithstanding the provisions of paragraph 6.17. above, retro-reflectors of category IV according to Regulation No. 3 may substitute all or part of the required conspicuity markings, their number and arrangement assuring compliance with the provisions of paragraphs 6.21.6. and 6.21.7. below;**

6.21.1.2.4.3. **In the case where the provisions of paragraphs 6.21.1.2.4.1. and 6.21.1.2.4.2. above are not applicable, parts of the required conspicuity markings may be**

omitted, provided that such omissions are restricted to the absolute minimum and that the remaining parts ensure a uniform signalization compatible with the objective of the requirements. 16/ The necessary information shall be indicated in the test report and the communication form.

16/ Contracting Parties to the respective Regulations can still require additional signalization system(s) for the vehicle in circulation."

Paragraph 6.21.1.3.2., amend to read:

"6.21.1.3.2. partial or full contour marking may be applied instead of mandatory line markings, and full contour marking may be applied instead of mandatory partial contour marking, **provided that the requirements in paragraphs 6.21.3. to 6.21.7. are met.**"

Paragraph 6.21.3., amend to read:

"6.21.3. Arrangement

The conspicuity markings shall be as close as practicable to horizontal and vertical, compatible with the shape, structure, design and operational requirements of the vehicle; **if this is not possible, the full or partial contour markings, when fitted, shall follow as close as practicable the contour of the outer shape of the vehicle.**

Furthermore, the conspicuity markings shall be spaced as evenly as possible over the horizontal dimensions of the vehicle such that the total length or width of the vehicle can be identified."

Paragraph 6.21.4.1.3., amend to read (the reference to footnote 16/ and footnote 16/, shall be deleted):

"6.21.4.1.3. However, if the manufacturer can prove to the satisfaction of the authority responsible for type approval that **the criteria as prescribed in paragraphs 6.21.1.2.3. and 6.21.1.2.4., are met**, the cumulative length may be reduced, **provided that the signalization is uniform and clear to achieve a sufficient perception of the vehicle outline in width.**"

Paragraph 6.21.4.2.3., amend to read (the reference to footnote 16/ and footnote 16/, shall be deleted):

"6.21.4.2.3. However, if the manufacturer can prove to the satisfaction of the authority responsible for type approval, that **the criteria as prescribed in paragraph 6.21.1.2.3. and 6.21.1.2.4., are met**, the cumulative length may be reduced, **provided that the signalization is uniform and clear to achieve a sufficient perception of the vehicle length.**"

Paragraph 6.21.4.3.1. to 6.21.4.3.2., amend to read:

"6.21.4.3.1. Line markings and contour markings lower element(s) **when fitted:**

As low as practicable within the range:

Minimum: not less than 250 mm above the ground.

Maximum: not more than 1,500 mm above the ground.

However, a maximum mounting height of **2,500** mm may be accepted where **the shape, structure, design or operational conditions of the vehicle** prevent compliance with the maximum value of 1,500 mm or, if necessary, to fulfil the requirements of paragraphs 6.21.4.1.2., 6.21.4.1.3., 6.21.4.2.2. and 6.21.4.2.3., or the horizontal positioning of the line marking or the lower element(s) of the contour marking.

The necessary information shall be indicated in the test report and the communication form."

6.21.4.3.2. Contour markings upper element(s) **when fitted:**

As high as practicable, but within 400 mm of the upper extremity of the vehicle."

Paragraphs 6.21.5. to 6.21.5.2.2., amend to read:

"6.21.5. Visibility

The conspicuity marking shall be considered visible, if at least 80 per cent of the illuminating surface of the **installed** marking is visible when viewed by an observer positioned at any point within the observation planes defined below. **The distance of 100m as defined below prescribed the geometrical conditions, the test may be carried out in a distance not shorter than 25 m:**

6.21.5.1. for rear conspicuity markings (see Annex 11, Figure 1) the observation plane is perpendicular to the longitudinal axis of the vehicle situated **100 m** from the extreme end of the vehicle and bounded by:

6.21.5.1.1. in height, by two horizontal planes 1 m and 3.0 m respectively above the ground,

6.21.5.1.2. in width, by two vertical planes which form an angle of **4°** outwards from the vehicle's median longitudinal plane and which pass through the intersection of the vertical planes parallel to the vehicle's median longitudinal plane delimiting the vehicle's overall width, and the plane perpendicular to the longitudinal axis of the vehicle that delimits the end of the vehicle.

- 6.21.5.2. for side conspicuity markings (see Annex 11, figure 2) the observation plane is parallel to the longitudinal median plane of the vehicles situated **100** m from the extreme outer edge of the vehicle and bounded by:
- 6.21.5.2.1. in height, by two horizontal planes **1.0** m and 3.0 m respectively above the ground,
- 6.21.5.2.2. in width, by two vertical planes which form an angle of **4°** outwards from a plane perpendicular to the vehicle's longitudinal axis and which pass through the intersection of the vertical planes perpendicular to the vehicle's longitudinal axis delimiting the vehicle's overall length and the extreme outer edge of the vehicle."

Paragraphs 6.21.6.1. to 6.21.6.2., amend to read:

"6.21.6.1. To the side:

As close as practicable to being parallel to the median longitudinal plane of the vehicle, compatible with the shape, structure, design and operation requirements of the vehicle; **if this is not possible, it shall follow as close as practicable the contour of the outer shape of the vehicle.**

6.21.6.2. To the rear:

As close as practicable to being parallel to the transverse plane of the vehicle, compatible with the shape, structure, design and operation requirements of the vehicle, **if this is not possible, it shall follow as close as practicable the contour of the outer shape of the vehicle.**"

Paragraph 6.21.7.2., amend to read:

"6.21.7.2. In the case of a partial contour marking, each upper corner shall be described by two lines at 90°, to each other and each at least 250 mm in length; **if this is not possible, the marking shall follow as close as practicable the contour of the outer shape of the vehicle.**"

Paragraph 6.21.7.4., shall be deleted

Paragraph 6.21.7.5. (former), renumber as paragraph 6.21.7.4.

Annex 1,

Insert a new paragraph 10.7., to read:

"**10.7. Comments regarding conspicuity marking (according to paragraphs 6.21.1.2.4., 6.21.1.2.5. and 6.21.4.3.1. of the Regulation).....**"

Annex 11, amend to read:

Annex 11

VISIBILITY OF CONSPICUITY MARKINGS TO THE REAR AND
SIDE OF A VEHICLE

(see paragraph 6.21.5. of this Regulation)

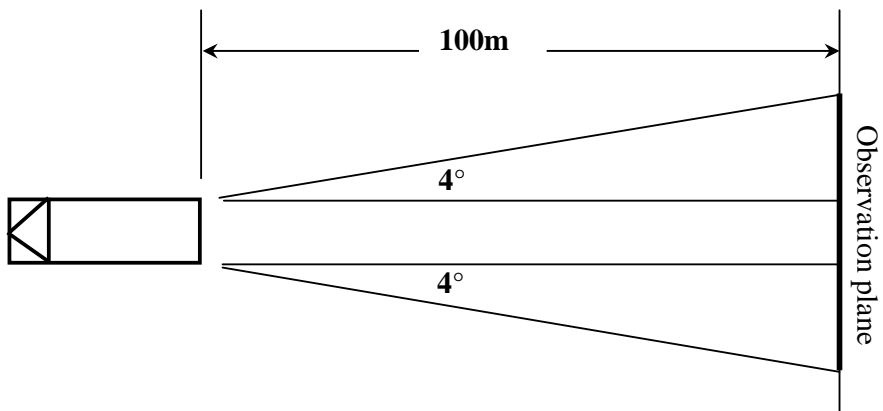


Figure 1

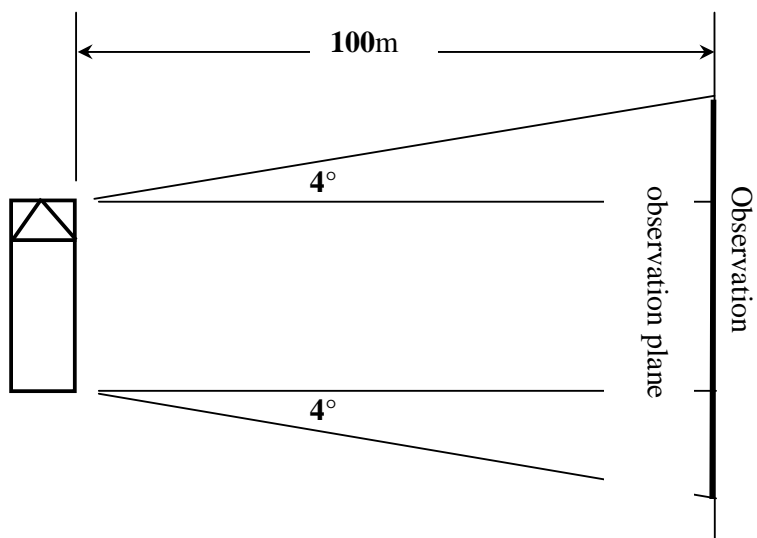


Figure 2

B. JUSTIFICATION

Background

The provisions concerning conspicuity markings, including:

- (a) Definitions in paragraph 2.7.17.
- (b) New paragraph 6.21., and
- (c) Transitional provisions

were introduced into Regulation No. 48 by the 03 series of amendments which entered into force on 10 October 2006. They are applicable to:

- (a) new vehicle type approval from 10 October 2007, and
- (b) as an option by Contracting Parties, to national/regional vehicle type approval from 10 October 2009.

Existing approvals cease to be valid on 10 October 2011.

At present, vehicles for which conspicuity marking is mandatory, either as full contour marking or partial contour marking, are, as a rule, first registered in the territory of Contracting Parties on the basis of national type approval. Mandatory compliance with Regulation No. 48 provisions regarding conspicuity marking is not required for the time being.

The directives of the European Community (EC) regarding Whole Vehicle Type Approval (WVTA) in their most recent version are intended to extend the application of the relevant technical requirements (including those on lighting and light-signalling in Regulation No. 48) to:

- (a) all categories of vehicles, and also
- (b) to single vehicle approval.

As from 10 July 2011, EU Member States will issue certificates of conformity for new vehicles regarding lighting installation only if the vehicle complies with Regulation No. 48 requirements. In addition, such requirements may also be introduced by other Contracting Parties.

Motor vehicles and trailers for the transport of goods are normally built with closed bodywork which permits the installation of conspicuity markings without problems. However, the increasing diversification of the road transport market requires more and more vehicles whose bodywork is designed to cover dedicated transport purposes. A few examples are:

- (a) Tanker vehicles
- (b) Vehicles/chassis for container transport
- (c) Vehicles with flexible bodywork (curtain-sider)
- (d) Vehicles for the transport of concrete
- (e) Vehicles for special loads, such as timber, cables, etc.
- (f) Large capacity tipper vehicles
- (g) Vehicles for the transport of substances with high temperature, e.g. bitumen
- (h) Low bed trailers

In such cases, it is often not possible to install conspicuity markings to the full extent of the requirements or in such a way that their performance is maintained during normal vehicle operation. Examples of typical constructions are given in the Annex below.

In order to ensure consistent application of the Regulation, it is considered necessary to amend the provisions of paragraph 6.21. in such a way that they cover as many special vehicle configurations as possible, taking into account the objectives of traffic safety and the practical constraints of vehicle design.

The proposal is intended to find:

- (a) a long-term solution;
- (b) a description of the exceptions which are clearly readable and resulting in uniform use (interpretations) of the specifications
- (c) a hierarchic process given by a stepwise description of the decision procedure to be followed by the authorities. In any case the results must be recorded in the communication form.
