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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

Sixty-second session

Geneva, 6 - 9 October 2009

Item 5(g) of the provisional agenda

COLLECTIVE AMENDMENTS

REGULATIONS Nos. 6, 7, 48, 77 and 91

Proposal for draft Supplements to Regulations Nos. 6, 7, 48, 77 and 91

Submitted by the expert from Japan \*/

The text reproduced below was prepared by the expert from Japan in order to correct inconsistencies among the Regulations in object. The modifications to the current text of the Regulations are marked in bold or strikethrough characters.

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\*/ 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

A.1 PROPOSAL TO AMEND REGULATION No. 6 - (Direction indicators) (The following proposal is based upon the current text of the Regulation including Supplement 18 to the 01 series of amendments to the Regulation).

Annex 1, amend to read:

".....

In all cases, the minimum vertical angles of light distribution in space of direction indicator lamps are 15° above and 15° below the horizontal except:

- (a) direction indicator lamps with a mounting height ~~of equal to or less than~~ 750 mm above the ground, for which they are 15° above and 5° below the horizontal;

.....

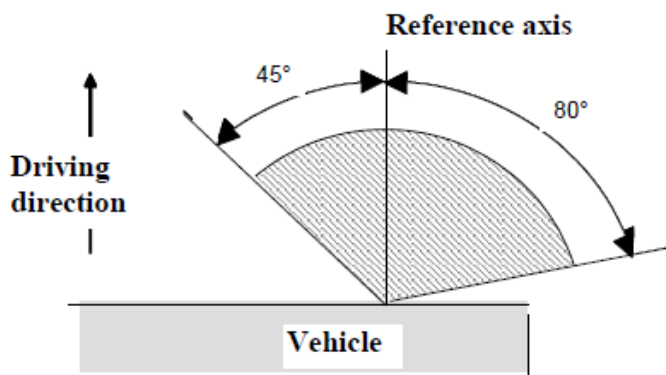
On and above the H plane  
for all lamps.

Under the H plane for

lamps intended for:

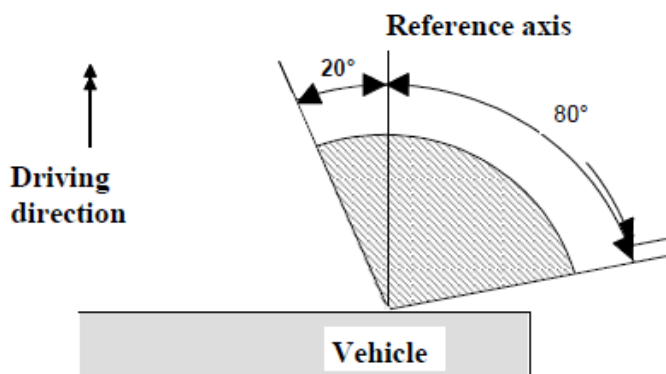
(a) M<sub>2</sub>, M<sub>3</sub> or N<sub>2</sub> category  
of vehicles or

(b) M<sub>1</sub> or N<sub>1</sub> category of  
vehicles and being  
installed at a mounting  
height of equal to or more  
than 750 mm above the  
ground.



Under the H plane for

lamps intended for M<sub>1</sub> and  
or N<sub>1</sub> category of vehicles,  
and being installed at a  
mounting height less than  
750 mm above the  
ground.



H plane: "horizontal....

....."

Annex 2, item 9, amend to read:

"9. Concise description:

.....

Only for limited mounting height ~~of equal to or~~ less than 750 mm above the ground:  
yes/no 2/

..."

Annex 3, amend to read:

"..... The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height ~~of equal to or~~ less than 750 mm from the ground for this device. ...."

Annex 4, paragraph 2.1.3., amend to read:

"2.1.3. However, in the case where a device is intended to be installed at a mounting height ~~of equal to or~~ less than 750 mm above the ground, the photometric intensity is verified only up to an angle of 5° downwards."

A.2 PROPOSAL TO AMEND REGULATION No. 7 - (Front and rear position (side) lamps, stop lamps and end out-line marker lamps) (The following proposal is based upon the current text of the Regulation including Supplement 15 to the 02 series of amendments to the Regulation).

Annex 1, amend to read:

".....

In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal for all categories of devices included in this Regulation, except:

- (a) for lamps with a permissible mounting height **≤less than 750 mm** above the ground, for which they are 15° above and 5° below the horizontal;"

.....

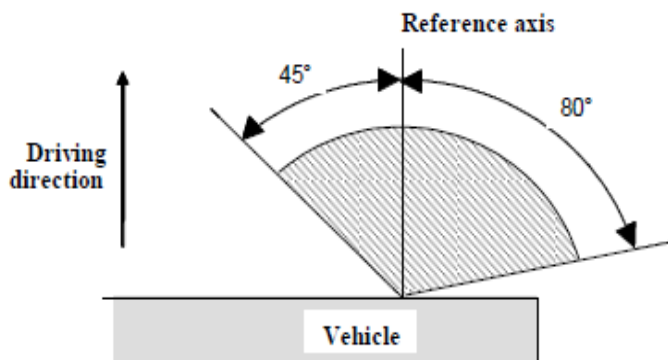
Front position lamps, End-outline marker lamps

On and above the H plane for all lamps.

Under the H plane for lamps intended for;

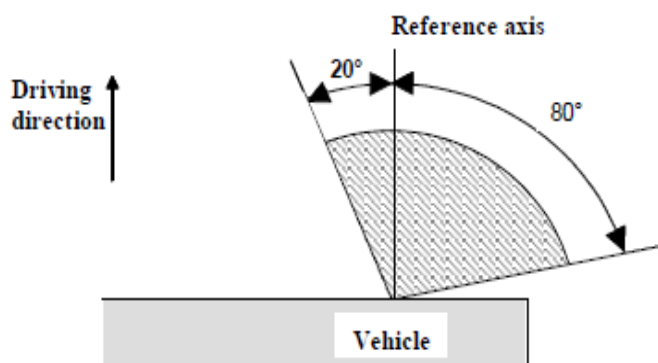
(a) M<sub>2</sub>, M<sub>3</sub>, N<sub>2</sub> or N<sub>3</sub> category of vehicles or

(b) M<sub>1</sub> or N<sub>1</sub> category of vehicles, and being installed at a mounting height of equal to or more than 750 mm above the ground.



Under the H plane for

lamps intended for M<sub>1</sub> and or N<sub>1</sub> category of vehicles, and being installed at a mounting height less than 750 mm above the ground.



Rear position lamps  
end-outline marker lamps

....."

Annex 2, amend to read:

Annex 2, item 9, amend to read:

"9. Concise description:

....

Only for limited mounting height ~~of equal to or~~ less than 750 mm above the ground:  
yes/no 2/

..."

Annex 3, paragraph 1, amend to read:

"1. Front position (side) lamp

.....

..... The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height ~~of equal to or~~ less than 750 mm from the ground for this device."

Annex 4, paragraph 2.3., amend to read:

"2.3. However, in the case where a device is intended to be installed at a mounting height ~~of equal to or~~ less than 750 mm above the ground, the photometric intensity is verified only up to an angle of 5° downwards."

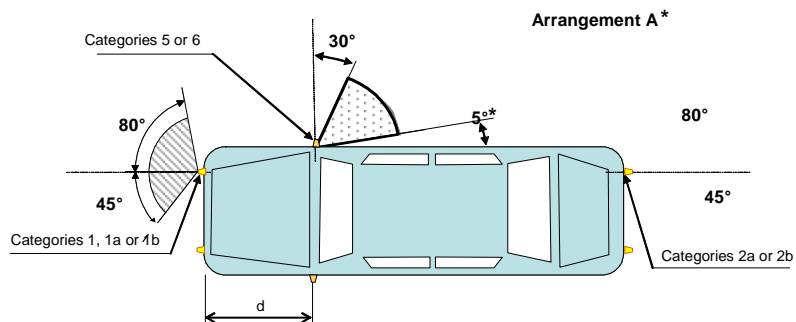
A.3 PROPOSAL TO AMEND REGULATION No. 48 - (Installation of lighting and light-signalling devices) (The following proposal is based upon the current text of the Regulation including Supplement 3 to the 04 series of amendments to the Regulation).

Paragraph 6.5.5.1., amend to read:

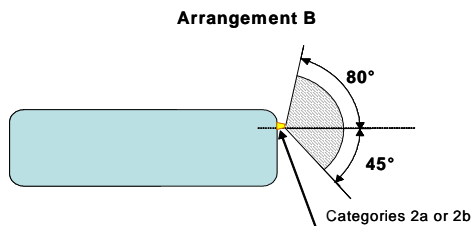
"6.5.5.1. Horizontal angles, (see figure below)

Vertical angles: 15° above and below the horizontal for direction-indicator lamps of categories 1, 1a, 1b, 2a, 2b and 5. The vertical angle below the horizontal may be reduced to 5° if the lamps are less than 750 mm above the ground; 30° above and 5° below the horizontal for direction-indicator lamps of category 6. The vertical angle above the horizontal may be reduced to 5° if the optional rear lamps are not less than 2,100 mm above the ground.

FIGURE (see paragraph 6. 5.)



For  $M_1$  and  $N_1$  category vehicles, the value of  $45^\circ$  inward for the direction indicator lamps of categories 1, 1a or 1b, whose lower edge of the apparent surface is less than 750 mm above the ground, may be reduced to  $20^\circ$  under the horizontal plane containing the reference axis of this lamp.



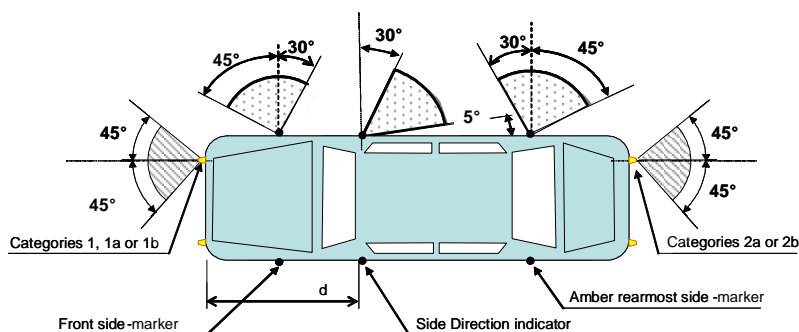
For  $M_1$  and  $N_1$  category vehicles, the value of  $45^\circ$  inward for the direction indicator lamps of categories 1, 1a or 1b, ~~whose lower edge of the apparent surface is~~ **if the lamps are less than 750 mm above the ground**, may be reduced to  $20^\circ$  under the horizontal plane containing the reference axis of this lamp."

Paragraph 6.5.5.2., amend to read:

"6.5.5.2. or, at the discretion of the manufacturer, for M<sub>1</sub> and N<sub>1</sub> category vehicles (\*\*):

Front and rear direction-indicator lamps, as well as side-marker lamps

Horizontal angles see figure below:



The value of 45° inward for the direction indicator lamps of categories 1, 1a or 1b, ~~whose lower edge of the apparent surface is~~ **if the lamps are less than 750 mm** above the ground, may be reduced to 20° under the horizontal plane containing the reference axis of this lamp.

Vertical angles....  
..."

Paragraphs 6.9.5. to 6.9.5.2., amend to read:

"6.9.5. Geometric visibility

6.9.5.1. Horizontal angle for the two position lamps:

45 ° inwards and 80 ° outwards.

For M<sub>1</sub> and N<sub>1</sub> category vehicles ~~where the lower edge of the apparent surface of the lamps is,~~ **if the lamps are less than 750 mm** above the ground, the value of 45° inward may be reduced to 20° under the horizontal plane containing the reference axis of this lamp.

In the case of trailers, ...

....

6.9.5.2. For M<sub>1</sub> and N<sub>1</sub> category vehicles, as an alternative to paragraph 6.9.5.1., at the discretion of the manufacturer or his duly accredited representative, and only if a front side-marker lamp is installed on the vehicle.

Horizontal angle: 45° outwards to 45° inwards.

~~Where the lower edge of the apparent surface of the lamps is~~ **If the lamps are** less than 750 mm above the ground, the value of 45° inward may be reduced to 20° under the horizontal plane containing the reference axis of this lamp.

Vertical angle: 15°..."

A.4 PROPOSAL TO AMEND REGULATION No. 77 - (Parking lamps) (The following proposal is based upon the current text of the Regulation including Supplement 12 to the Regulation).

Annex 1, item 10., amend to read:

"10. Only for limited mounting height ~~of equal to or~~ less than 750 mm above the ground yes/no 2/"

Annex 2, amend to read:

"..... The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height ~~of equal to or~~ less than 750 mm from the ground for this device."

Annex 3, amend to read:

".....  
In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal except for lamps with a mounting height ~~of equal to or~~ less than 750 mm above the ground, for which they are 15° above and 5° below the horizontal."

Annex 4, paragraph 2.3., amend to read:

"2.3. However, in the case where a device is intended to be installed at a mounting height ~~of equal to or~~ less than 750 mm above the ground, the photometric intensity is verified only up to an angle of 5° downwards."



A.4 PROPOSAL TO AMEND REGULATION No. 91 - (Side marker lamps) (The following proposal is based upon the current text of the Regulation including Supplement 11 to the Regulation).

Annex 1, amend to read:

".....

The angle of 10° below the horizontal may be reduced to 5° in case of lamps with a mounting height ~~of equal to or~~ less than 750 mm above the ground.

....."

Annex 2, item 9., amend to read:

"9. Concise description: 3/

.....

Light source module specific identification code: .....

**Only for limited mounting height less than 750 mm above the ground: yes/no 2/**

Geometrical conditions of installation and relating variations,

if any: ....."

Annex 3, amend to read:

"..... The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height ~~of equal to or~~ less than 750 mm from the ground for this device.

..."

Annex 4, paragraph 2.5., amend to read:

"2.5. However, in the case where a device is intended to be installed at a mounting height ~~of equal to or~~ less than 750 mm above the ground, the photometric intensity is verified only up to an angle of 5° downwards."

## B. JUSTIFICATION

The expert from Japan found inconsistencies among the Regulations in object and made a proposal to align it.

### Regulations Nos. 6, 7, 77 and 91

The minimum angles of light distribution may be reduced if the lamps are equal to or less than 750 mm above the ground in Regulations Nos. 6, 7, 77 and 91. On the other hand, these angles may be reduced if the lamps are less than 750 mm above the ground in Regulation No. 48. Therefore, the requirements contained in Regulations Nos. 6, 7, 77 and 91 were aligned based on Regulation No. 48.

Regulations Nos.6 and 7, Annex 1

Explanations are added for the figures of minimum horizontal angles to make it clear that the height of the lamps affect the angles.

Regulation No.48

Vertical angles may be reduced if the lamps are less than 750 mm above the ground. According to paragraph 5.8., this means the highest point of the apparent surface is less than 750 mm . On the other hand, horizontal angles may be reduced if the lower edge of the apparent surface is less than 750 mm. Therefore, the requirement was aligned based on the definition of measuring the height in paragraph 5.8. has been aligned. In addition, the vertical arrow in the approval mark (see Figure 1) can be used as a symbol for horizontal angles reduction.

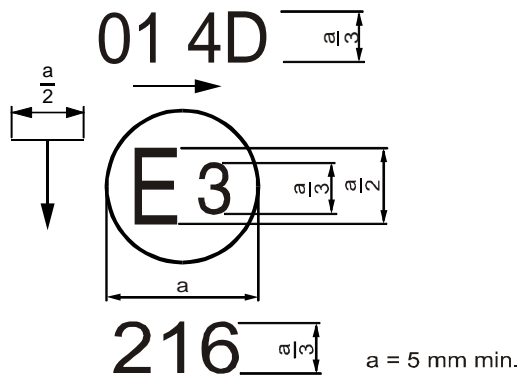


Figure 1

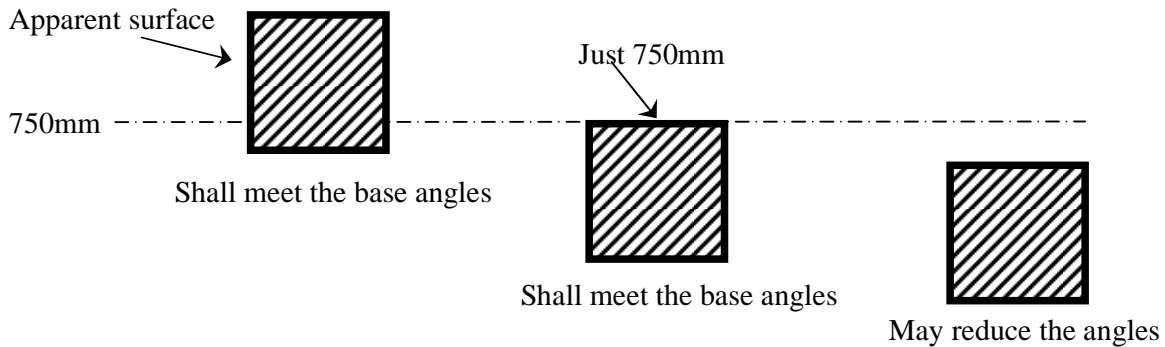


Figure 2

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