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Working Party on Lighting and Light-Signalling (GRE)
(Fifty-fifth session, 3-7 October 2005,
agenda item 22.4.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 48

(Installation of lighting and light-signalling devices)

Transmitted by the expert from the Working Party "Brussels 1952" (GTB)

Note: The text reproduced below was prepared by the expert from GTB, in order to include into Regulation No. new 48 provisions concerning the installation of light-signalling devices with variable luminous intensities. The proposal is based on Revision 3 of this Regulation. The modifications to the existing text of the Regulation are marked in **bold** characters.

Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

A. PROPOSAL

Insert a new paragraph 2.7.1.3., to read:

"**2.7.1.3. "Variable intensity control" means the device which automatically controls (rear) light-signalling devices producing variable luminous intensities. The variable intensity control and its associated sensor(s), if any, may be part of the lamp, or part of the vehicle, or split between the said lamp and the vehicle.**"

Paragraph 2.10., amend to read:

"2.10. … to the most exterior point of the lens (see Annex 3 to this Regulation).

In the case of a light signalling device producing variable luminous intensities, the apparent surface that may be variable shall be considered under all conditions permitted by the variable intensity control, if applicable."

Insert a new paragraph 5.25., to read:

"**5.25. The installation of light signalling devices with automatic variable luminous intensity is allowed, provided that the rear direction indicator lamps, rear position lamps, stop lamps (except stop lamps of category S4) and rear fog lamps always simultaneously produce variable luminous intensity. No sharp variation of intensity shall be observed in transition. Stop lamps of category S4 may produce variable luminous intensity independent from the other lamps. It may be possible for the driver to set the functions above to luminous intensities corresponding to their steady category and to return them to their automatic variable category.**"

Paragraph 6.7.1., amend to read:

"6.7.1. …….on all categories of vehicles.

Devices of S3 **or S4** category: mandatory on …"

Paragraph 6.7.2., amend to read:

"6.7.2. Number

Two S1 or S2 category devices and one S3 **or S4** category device on all categories of vehicles."

Paragraph 6.7.2.1., amend to read:

"6.7.2.1. Except **in** the case where **a** category S3 **or S4** device is installed, two optional category S1 or S2 devices may be installed on vehicles in categories M2, M3, N2, N3, O2, O3, and O4."

Paragraph 6.7.2.2., amend to read:

"6.7.2.2. Only, when the median longitudinal plane of the vehicle is not located on a fixed body panel but separates one or two movable parts of the vehicle (e.g. doors), and lacks sufficient space to install a single device of the S3 **or S4** category on the median longitudinal plane above such movable parts, either:
two devices of the S3 **or S4** category type "D" may be installed, or
one device of the S3 **or S4** category may be installed offset to the left or to the right of the median longitudinal plane."

Paragraph 6.7.4.1., amend to read:

"6.7.4.1. ….. is less than 1,300 mm.

For S3 **or S4** category devices: the centre of reference shall be situated on the median longitudinal plane of the vehicle. However, in the case where the two devices of the S3 **or S4** category are installed, according to paragraph 6.7.2., they shall be positioned as close as possible to the median longitudinal plane, one on each side of this plane.

In the case where one S3 **or S4** category lamp offset from the median longitudinal plane is permitted according to paragraph 6.7.2., this offset shall not exceed 150 mm from the median longitudinal plane to the centre of reference of the lamp."

Paragraph 6.7.4.2.2., amend to read:

"6.7.4.2.2. For S3 **or S4** categories devices, the horizontal plane tangential to the lower edge of the apparent surface shall:
either not be more than 150 mm below the horizontal plane tangential to the lower edge of the exposed surface of the glass or glazing of the rear window, or
not be less than 850 mm above the ground.

However, the horizontal plane tangential to the lower edge of the apparent surface of **a** S3 **or S4** category device shall be above the horizontal plane tangential to the upper edge of the apparent surface of S1 or S2 categories devices."

Paragraph 6.7.4.3., amend to read:

"6.7.4.3. In length:

For S1 or S2 categories devices: at the rear of the vehicle.

For S3 **or S4** categories devices: no special requirement."

Paragraph 6.7.5., amend to read:

"6.7.5. Geometric visibility

Horizontal angle: For S3 **or S4** categories devices: ….

Vertical angle : For S3 **or S4** categories devices: …"

Paragraph 6.7.9.1., amend to read:

"6.7.9.1. The S3 **or S4** category device may not be reciprocally incorporated with any other lamp."

Paragraph 6.7.9.2., amend to read:

"6.7.9.2. The S3 **or S4** category device may be installed outside or inside the vehicle."

Paragraph 6.10.1., amend to read:

"6.10.1. Presence:

Devices of R1 or R2 categories: Mandatory"

Paragraph 6.11.1., amend to read:

"6.11.1. Presence:

Devices of F1 or F2 categories: Mandatory"

Paragraph 6.13.1., amend to read:

"6.13.1. Presence:

Devices of R1 or R2 categories: Mandatory on vehicles ..…"

B. JUSTIFICATION

For more than 30 years Regulations Nos. 6 and 7 have included photometric provisions regarding 2-level intensities for rear direction indicator lamps and stop lamps. These provisions were intended to define particular intensity limits for daytime and nighttime operation; it was assumed that their activation would be controlled by the conventional light switch. No further consideration was given to more detailed specifications, as such 2-level systems were practically never used in actual vehicle construction.

Technical development in light sources, sensors and electronic control gear now permits rear lighting systems having variable intensities with continuous adaptation to ambient light

conditions, which would not be restricted to daytime and night time but would also cover transient situations, such as entering/leaving a tunnel, or variable daylight conditions, e.g. cloudy sky or bright sunshine. In addition, such systems would be able to adjust intensity in order to compensate for reduced light output due to deposition of dirt on the lens or to adverse weather, e.g. fog, rain, snow, spray, dust or smoke.

In order to enable type approval of these systems it is proposed to:

(a) close the gap between existing maximum and minimum luminous intensity levels for 2-level systems;

(b) introduce new categories for rear position lamps (in Regulation No. 7) and for rear fog lamps (in Regulation No. 38) with suitable limit values which would provide a homogenous appearance of the respective rear lighting functions, i.e. position, stop, direction indicator and rear fog lamps.

The proposed maximum intensity levels correspond to levels already allowed on the road (for direction indicators and stop lamps), or are adjusted to achieve a uniform signal perception (for position and rear fog lamps) for all visibility conditions, taking into account the laboratory conditions for photometric approval tests.

In Regulations Nos. 6, 7 and 38 provisions have been inserted to cover the case of failure of the electronic control gear regulating the continuously variable level of luminous intensity.

Proposed by France, the new paragraph 7. has been inserted into these Regulations as a result of discussions in the GTB Working Group Photometry not only to allow devices with variable intensities.

General provisions regarding the installation of light-signalling devices having variable luminous intensity have been inserted into Regulation No. 48 as a new paragraph 5.25. This would require simultaneous production of variable levels, except for centre high-mounted stop lamps, which - by design - are not reciprocally incorporated or grouped with other rear lamps grouped with other rear lamps.

The proposal has also been used to introduce editorial corrections and to adjust certain luminous intensity figures for consistency.

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