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**INLAND TRANSPORT COMMITTEE**

Working Party on the Construction of Vehicles

Working Party on Lighting and Light Signalling (GRE)  
(Forty-ninth session, 30 September - 4 October 2002,  
agenda item 7.3.)

**PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 48**

(Installation of lighting and light-signalling devices)

Revision 1

Transmitted by the Expert from Germany

Note: The text reproduced below was prepared by the expert from Germany, in order to allow the signalling of intensified/emergency braking (TRANS/WP.29/GRE/47, paras. 9 and 10) and is a revised text of document TRANS/WP.29/GRE/2002/22.

The proposed amendments should also be considered for the candidate draft global technical regulation concerning uniform provisions with regard to the installation of lighting and light-signalling devices (document TRANS/WP.29/GRE/2001/6).

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

A. PROPOSAL:

Insert new paragraphs 2.26. to 2.29., to read:

- "2.26.     "Intensified braking" means a braking which results in an increased deceleration[, which occurs above the conditions during standard driving situations].
- 2.27.     "Emergency braking" means a braking which results in a high deceleration near the physical limits of tyre adhesion to the road surface.
- 2.28.     "Brake assistance system" means a part of the service braking system, which automatically initiates a braking manoeuvre with full deceleration, as a function of brake control activation.
- 2.29.     "Anti-lock braking system" is a part of a service braking system, which automatically controls the degree of slip, in the direction of rotation of the wheel(s), on one or more wheels of the vehicle during braking."

Paragraph 5.9., amend to read:

- "5.9.     In the absence of specific instructions, no lamps other than direction-indicator lamps, the vehicle-hazard warning signal, the **stop lamps in the case of emergency braking**, and amber side-marker lamps complying with paragraph 6.18.7. below, shall be flashing lamps."

Paragraph 6.6.7., amend to read:

- "6.6.7.     Electrical connections

~~The signal shall be operated by means of a separate control enabling~~  
~~Such that~~ all the direction-indicator lamps ~~to~~ flash in phase, by voluntary activation by the driver or by automatic means.

On M 1 and N 1 vehicles less than 6 m in length, with an arrangement complying with paragraph 6.5.5.2. above, the amber side-marker lamps, when mounted, shall also flash at the same frequency (in phase) with the direction indicator lamps.

An automatic activation of hazard warning lamps is allowed after an emergency braking manoeuvre and if the speed is reduced to  $v < [10]\text{km/h}$ , or after a crash.

After the vehicle has returned to standard traffic conditions, the hazard warning lamps shall be automatically switched off.

The voluntary operation of the hazard warning signal shall always be possible even on vehicles on which the automatic operation means are fitted."

Paragraph 6.7.2., amend to read:

"6.7.2.     Number

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

**In order to indicate an intensified/emergency braking, one optional additional pair of stop lamps of category S1 or S2 on all categories of vehicles."**

Paragraph 6.7.7., amend to read:

"6.7.7.     Electrical connections"

Insert new paragraphs 6.7.7.1. to 6.7.7.4., to read:

"6.7.7.1. Must light up when the service brake is applied. The stop lamps need not function if the device, which starts and/or stops the engine, is in a position, which makes it impossible for the engine to operate. The stop lamps may be activated by the application of a retarder or a similar device."

**6.7.7.2.     An intensified braking may be indicated when the vehicle speed is higher than 10 km/h and at least one of the following conditions is met:**

- (a)     The deceleration is higher than  $[5] \text{ m/s}^2$ ;
- (b)     An anti-lock brake system meshes in more than one wheel;
- (c)     Or similar conditions are fulfilled.

**In the case of an intensified braking:**

- (i)     the light emitting surface and/or luminous intensity of the stop lamps may be increased to a higher level within the relevant limits, or
- (ii)    the optional additional stop lamps of category S1 or S2 may be activated;

**6.7.7.3.     An emergency braking may be indicated when the vehicle speed is higher than 10 km/h and at least one of the following conditions is met:**

- (a)     The deceleration is higher than  $7 \text{ m/s}^2$ ;
- (d)     An anti-lock brake system meshes in more than one wheel;
- (e)     A brake assistance system is activated;
- (f)     Or similar conditions are fulfilled.

**In the case of an emergency braking the stop lamps shall flash with a frequency of  $5 \text{ Hz} \pm 2 \text{ Hz}$ .**

- 6.7.7.4. The flashing and the increase in light emitting surface and/or luminous intensity shall be activated and deactivated automatically according to the above conditions."**

Paragraph 6.11.9., amend to read:

**"6.11.9. Other requirements**

In all cases, the distance between the rear fog lamp and each stop lamp must be greater than 100 mm.

**This requirement does not apply to stop lamps dedicated to indicate intensified/emergency braking."**

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**B. JUSTIFICATION:**

The automatic activation of the hazard-warning signal helps to improve road safety and to avoid rear end collisions.

The display of an intensified/emergency braking improves road safety: Traffic flow can be improved and rear-end collisions can be avoided due to an improved reaction of the following drivers. Flashing stop lamps attract the driver's view to the vehicle ahead. Increasing light emitting surfaces or luminous intensities give the intuitive impression of approaching the vehicle ahead.

The automatic activation and deactivation ensure that the intensified emergency brake display is actuated immediately and that misuse is avoided.

The coupling of the activation to a brake assistance system or an anti-lock braking system ensure that the emergency brake display is also active on surfaces with low friction coefficient (low  $\mu$ ), e.g. wet or icy roads.

The threshold velocity of 10 km/h and the coupling of the activation to a brake assistance system and/or an anti-lock braking system and/or a deceleration of 7 m/s<sup>2</sup> ensure that the emergency brake display is only activated in severe braking situations.

Transitional provisions must be included in the amendments to this Regulation. They remain to be proposed.

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