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agenda item 2.4.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 65

(Special warning lamps)

Transmitted by the Experts from France and Germany

Note: The text reproduced below was prepared jointly by the experts from France and Germany in view of the consideration of the proposal to improve the visibility of vehicles using the special warning lamps. It is based on the text of a document without a symbol (informal document No. 13), distributed during the forty-seventh session of GRE. It represents a further revision of document TRANS/WP.29/GRE/1999/10/Rev.1, consolidating it also with document TRANS/WP.29/GRE/2001/17 (TRANS/WP.29/GRE/47, paras. 31-34). The amendments propose consideration as Supplement 3 to the Regulation, however, a suggestion is made to modify them into the 01 series of amendments.

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

GE.02-20323

The list of contents, amend to read:

".....

13. Transitional provisions

14. Names and addresses of technical services

ANNEXES

.....

Annex 9 - Guidelines for mounting requirements"

The text of the Regulation,

Paragraphs 1. and 1.1., amend to read:

"1. DEFINITIONS

For the purpose of this Regulation,

1.1. "Special warning lamp" means a lamp emitting blue or amber light intermittently for use on vehicles."

Insert new paragraphs 1.1.1. to 1.1.3., to read:

"1.1.1. "Rotating or stationary flashing lamp" means a special warning lamp emitting light intermittently all around its vertical axis (Category T).

1.1.2. "Directional flashing lamp" means a special warning lamp emitting light intermittently in a limited angular area (Category X)

1.1.3. "Complete bar" means a special warning lamp with two or more optical systems emitting light intermittently all around its vertical axis."

Paragraphs 1.9. to 1.9.2., amend to read:

"1.9. Measuring directions

1.9.1. The effective intensities shall be determined in the directions within an angle of 360° around the reference axis of the special warning lamp (Category T):

1.9.1.1. in a horizontal plane perpendicular to the reference axis and passing through the reference centre of the special warning lamp;

1.9.1.2. in cones, the generating lines of which produce with the above-mentioned horizontal plane angles, the values of which are indicated in the table in annex 5 to this Regulation.

1.9.2. The effective intensities of directional flashing lamps (Category X) shall be measured in the directions indicated in paragraph 7.3.1 of annex 5 to this Regulation."

Paragraph 2.1., amend to read:

"..... It shall specify whether the special warning lamp is intended to emit amber (A) or blue (B) light, whether it falls within the directional flashing lamp (X) category, or whether it falls within the rotating or stationary flashing lamp (T) category, and whether it has one level of intensity (class 1), or two levels of intensity (class 2). "

Insert a new paragraph 3.4., to read:

"3.4. Directional flashing lamps having a 'wide angle effect' (see definition of paragraph 7.3.1. in annex 5) shall bear an arrow indicating the 'wide angle' side and the mounting position. The arrow showing in which position the device has to be installed shall be directed outwards from the vehicle."

Paragraph 4.4.1.3., amend to read:

"4.4.1.3. 'T' or 'X' according to the category of the unit, followed by 'A' or 'B' according to the colour of the unit (see paragraph 2.1. above)."

Paragraph 7., amend to read:

"7. CHECKING THE COLOUR OF THE SPECIAL WARNING LAMP

The colour shall comply with the colorimetric boundaries prescribed in Annex 3 to this Regulation.

The colorimetric characteristics of the light emitted"

Insert new paragraphs 13. to 13.8., to read:

"13. TRANSITIONAL PROVISIONS

13.1. As from the official date of entry into force of **[Supplement 3]** */, no Contracting Party applying this Regulation shall refuse to grant approvals under this Regulation as amended by **[Supplement 3]** */.

13.2. As from 24 months after the date of entry into force of **[Supplement 3]** */, Contracting Parties applying this Regulation shall grant approvals only if the type of special warning lamps to be approved meets the requirements of this Regulation as amended by **[Supplement 3]** */.

13.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to a preceding version of this Regulation, up to Supplement 2.

13.4. Approvals granted under this Regulation earlier than 24 months after the date of entry into force of **[Supplement 3]** */ and all extensions of approvals, granted subsequently, shall remain valid indefinitely. When the type of special warning lamps approved to a preceding version of the Regulation up to its Supplement 2 meets the requirements of this Regulation as amended by **[Supplement 3]** */, the

Contracting Party which granted the approval shall notify the other Contracting Parties applying this Regulation thereof.

- 13.5. No Contracting Party applying this Regulation shall refuse a type of special warning lamps approved under this Regulation as amended by **[Supplement 3]** */.
- 13.6. As from the official date of entry into force of **[Supplement 3]** */ , no Contracting Party applying this Regulation shall prohibit the fitting on a vehicle of special warning lamps approved under this Regulation as amended by **[Supplement 3]** */.
- 13.7. Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of special warning lamps approved under the preceding version of the Regulation up to its Supplement 2 during the 48 months period which follows the date of entry into force of **[Supplement 3]** */.
- 13.8. Upon the expiration of a period of 48 months after the date of entry into force of **[Supplement 3]** */ , Contracting Parties applying this Regulation may prohibit the fitting of special warning lamps, which do not meet the requirements of this Regulation as amended by **[Supplement 3]** */ , on a new vehicle for which national type or individual approval was granted more than 24 months after the entry into force of **[Supplement 3]** */ to this Regulation.

*/ Proposed: **[01 series of amendments]**"

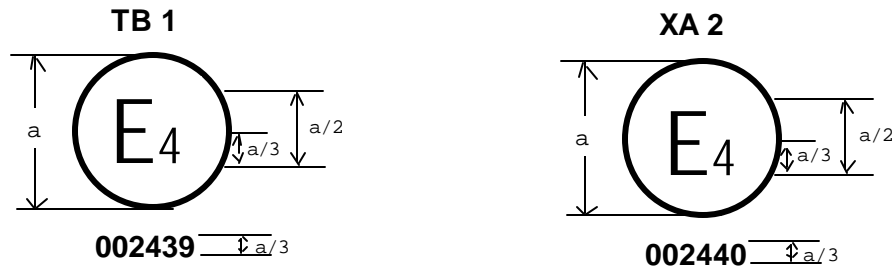
Paragraph 13 (former), renumber as paragraph 14.

Annex 1, item 1, amend to read:

- "1. Special warning lamp / rotating / stationary flashing lamp / directional flashing lamp / complete bar / blue / amber 2/"

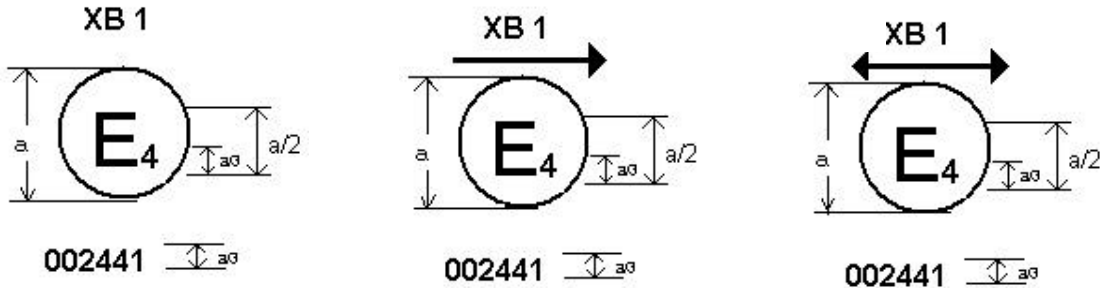
Annex 2, add the following examples of approval marks:

"



The above approval mark affixed to:

- a special warning lamp indicates that it has been approved in the Netherlands (E4) under approval number 002439. The approval number shows that the approval was granted in accordance with the requirements of the Regulation in its original form and that it is a blue colour rotating or stationary flashing special warning lamp of class 1 (TB 1).
- a directional flashing lamp indicates that it has been approved in the Netherlands (E4) under approval number 002440. The approval number shows that the approval was granted in accordance with the requirements of the Regulation in its original form and that it is amber colour directional flashing lamp of class 2 (XA 2). **The marking without an arrow indicates that the lamp has a narrow-angle effect.**



$a \geq 8 \text{ mm}$

The above approval mark affixed to:

- a directional flashing lamp indicates that it has been approved in the Netherlands (E4) under approval number 002441. The approval number shows that the approval was granted in accordance with the requirements of the Regulation in its original form, and that it is a blue colour directional flashing lamp of class 1 (XB 1).

The marking without an arrow indicates that the lamp has a narrow-angle effect.

The arrow indicates that the lamp has a wide-angle effect on the side indicated by the direction in which the arrow is pointing, which also indicates the side of the vehicle on which the device is to be mounted. The double-side arrow indicates that the lamp has a wide-angle effect to both sides, which also indicates that the lamp could be mounted on both sides of the vehicle."

Annex 5,

Paragraph 4 , amend to read:

- "4. Voltage for test:
 - 4.1. For filament lamps the voltage shall be regulated so that the standard filament lamp provides the required **objective** luminous flux. **If not applicable, it is allowed to make the measurements with a standard filament lamp at reference flux conditions nearly at 12 V**

and recalculate the measured values by a factor, which is determined with this standard filament lamp at 13.5 Volt.

- 4.2. All measurements on lamps equipped with non-replaceable light sources (filament lamps, discharge lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V, respectively.

In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply. The test laboratory may require from the manufacturer the special power supply needed to supply the light sources."

Insert a new paragraph 5., to read:

- "5. For any lamp equipped with non-filament light source(s), the luminous intensities measured after one minute and after 30 minutes of operation shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated by applying the ratio achieved at HV between one minute and 30 minutes of operation."

Paragraph 5. (former), renumber as paragraph 6.

Paragraph 6.(former), renumber as paragraph 7., and amend to read:

- "7. Frequency, time, and intensity of the emitted light

- 7.1. The frequency, the "ON" time and the "OFF" time shall be as specified in the table below:

		Colour blue or amber	
		rotating system or flash light sources (category T and X)	flashing filament lamps (category X)
Frequency f (Hz)	max.	4	2
	min.	2	1
"ON" time t_H (s)	max.	0.4/f	0.4/f
"OFF" time t_D (s)	min.	0.1	0.25

"

Insert new paragraphs 7.2. to 7.3.1.2., to read:

"7.2. The effective luminous intensities (J_e) within the relevant vertical angles for a special warning lamp (Category T) shall be as specified in the table below:

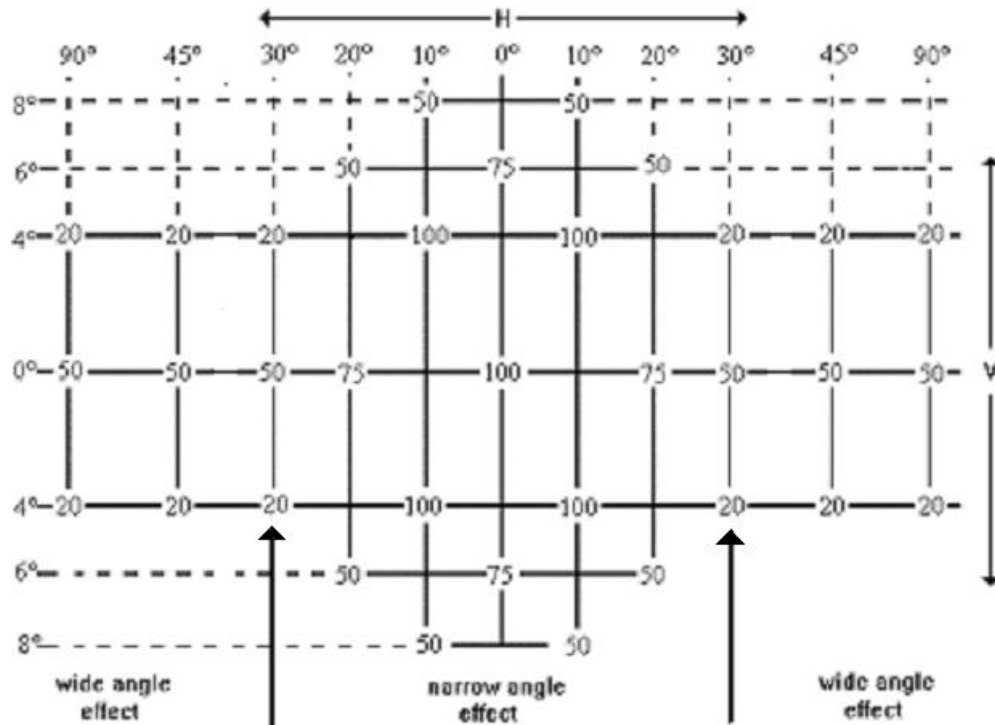
Category T			Colour	
			blue	amber
Minimum value of the effective luminous intensity J_e , within the specified vertical angles and a horizontal angle of 360° around the reference axis	0°	by day	140	300
		by night	60	130
	± 4°	by day	70	---
		by night	30	---
	± 8°	by day	----	220
		by night	----	90
Maximum value of the effective luminous intensity J_e	Inside ± 2°	by day	2000	
		by night	1000	
	Inside ± 8°	by day	1500	
		by night	600	
	Outside the above areas	by day	1000	
		by night	300	

7.2.1. In the case of a special warning lamp device put together by more than one unit, the geometrical arrangement as installed at the vehicle seems to be acceptable, if the light distribution inside a horizontal angular range of 360° and in a vertical angular range as specified for the relevant category will be verified in viewing distance of 20 m, from the vehicle on a vertical plane that is perpendicular to the longitudinal axis of the vehicle and located midway between the lamp units on a side of the vehicle."

- 7.3. The effective luminous intensities in the reference axis for a directional flashing lamp (Category X) shall be as specified in the table below:

Category X			Colour	
			blue	amber
Minimum value of the effective luminous intensity I_e on the reference axis	H = 0°	by day	200	400
	V = 0°	by night	100	200
Maximum value of the effective luminous intensity J_e	inside H = ± 10° V = ± 4°	by day	2000	
		by night	1000	
	inside H = ± 20° V = ± 8°	by day	1500	
		by night	600	
	Outside the above areas	by day	1000	
		by night	300	

7.3.1. Table of standard light distribution for special warning flash lamp (Category X)



"Minimum horizontal angular range of category "narrow angle effect" is 30° left to 30° right and for category "wide angle effect" 90° directed outwards the vehicle and 30° to the inside.

7.3.1.1. The direction $H = 0^\circ$ and $V = 0^\circ$ corresponds to the reference axis. (On the vehicle it is horizontal, parallel to the median longitudinal plane of the vehicle and oriented in the required direction of visibility). It passes through the centre of reference. The values shown in the table give, for the various directions of measurements, the minimum intensities as a percentage of the minimum required in the axis for each lamp (in the direction $H = 0^\circ$ and $V = 0^\circ$).

7.3.1.2 Within the field of light distribution of paragraph 7.3.1 schematically shown as a grid, the light pattern should be substantially uniform, i.e. the light intensity in each direction of lowest minimum value being shown on the grid lines surrounding the questioned direction as a percentage."

Paragraphs 7. to 7.3. (former), renumber as paragraphs 8. to 8.3.

Add a new Annex 9, to read:

"Annex 9

GUIDELINES FOR MOUNTING REQUIREMENTS */

1. Mounting

1.1. Mounting accuracy of special warning lamps

When mounted correctly, each lamp shall be within 1° of the position specified. In the case of intermediate quick release devices, the mounting shall be made on a fixing zone for which it is intended. To check mounting accuracy, the lamp shall be mounted five times on an appropriate test fixture, and its attitude determined. In no cases shall the inclination vary by more than 1° from the mounting plane or from a plane perpendicular to the mounting tube axis.

1.2. Mounting position of directional flashing lamps

In width: The inner edges of the directional flashing lamps should be as far away as possible to each other.

In height: Not less than 500 mm and not more than 2100 mm above the ground.
In application of the special warning flash lamps as a front warning system not less than 800 mm above the ground or 650 mm if the shape of the bodywork makes it impossible to keep within 800 mm and not more than 1200 mm or 1400 mm if the shape of the bodywork makes it impossible to keep within 1200 mm.

2. Geometric visibility

The apparent surface of a special warning lamp shall be visible within the field defined by the following angles of geometric visibility.

2.1. Rotating or stationary flashing lamps (Category T)

a) horizontal angle 360°

b) vertical angle:

- 1) for blue lights, 4° above and below the horizontal plane passing through the centre of the light source;
- 2) for amber lights, 8° above and below the horizontal plane passing through the centre of the light source;

*/ Nothing in this annex shall preclude the national authorities to impose requirements differing from these guidelines.

The vertical angle below the horizontal plane can be smaller if the geometric visibility of the lamp is met at a point located 1 m above the surface on which the vehicle stands and at 20 m from the vehicle.

In the case where more than one lamp is fitted, the requirements are met if at least one lamp is visible under the conditions specified.

2.2. Directional flashing lamps (Category X)

a) horizontal angle:

- Directional flashing lamp of category "narrow angle effect":
30° to the left and to the right to the axis through the centre of the light sources parallel to the longitudinal axis of the vehicle
- Directional flashing lamp of category "wide angle effect":
90° directed outwards the vehicle and 30° to the inside to the axis through the centre of the light sources parallel to the longitudinal axis of the vehicle

b) vertical angle: 8° above and below to the axis through the centre of the light sources parallel to the longitudinal axis of the vehicle.

3. Electrical connections

The directional flashing lamps shall be switched on only together with the special warning lamp."
