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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

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Item 5(g) of the provisional agenda

#### Collective amendments- Regulation Nos. 48 and 112

## Proposal for collective amendments to Regulations Nos. 48 and 112

### Submitted by the expert from Germany\*

The text reproduced below was prepared by the expert from Germany with the support of the expert from The Netherlands, to introduce requirements to avoid intentional non approved (voltage) variation of the principal passing beam, using halogen light sources and to harmonize this with operating voltage requirements in UN Regulation 48. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106, ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## I. Proposal

### A. Proposal for Supplement 3 to the 06 series of amendments to Regulation No. 48

Paragraph 5.9.2., amend to read:

- ~~"5.9. In the absence of specific instructions, the photometric characteristics (e. g. intensity, colour, apparent surface, etc.) of a lamp shall not be intentionally varied during the period of activation of the lamp.~~
- ~~5.9.1. Direction indicator lamps, the vehicle hazard warning signal, amber side-marker lamps complying with paragraph 6.18.7. below, and the emergency stop signal shall be flashing lamps.~~
- 5.9.2. The photometric characteristics of any lamp, **except from those producing the principal passing beam**, may vary:
- (a) in relation to the ambient light;
  - (b) as a consequence of the activation of other lamps; or
  - (c) when the lamps is being used to provide another lighting function; provided that any variation in the photometric characteristics is in compliance with the technical provisions for the lamp concerned..
- ...."

Insert a new paragraph 5.27.4., to read:

- ~~"5.27. For vehicles of M and N categories the applicant shall demonstrate to the Technical Service responsible for type approval testing that the electric power supply conditions for the devices indicated in 2.7.9, 2.7.10, 2.7.12, 2.7.14 and 2.7.15 above comply, when the electrical system of the vehicle is in a constant voltage operating condition, representative for the relevant category of powered vehicle as specified by the applicant, with the following provisions:~~
- ~~5.27.1. The voltage supplied at the terminals of devices which, according to their type approval documentation, have been tested by the application of a special power supply/electronic light source control gear, or in a secondary operating mode or at a voltage requested by the applicant, shall not exceed the voltage specified for the relevant devices or functions as they have been approved.~~
- ~~5.27.2. In all cases of electric power supply conditions not covered by paragraph 5.27.1., the voltage at the terminals of the device(s) or function(s) shall not exceed 6.75V (6 Volt Systems), 13.5V (12 Volt Systems) or 28.V (24 Volt Systems) by more than 3 per cent.~~
- ~~5.27.3. The provisions of paragraphs 5.27.1. and 5.27.2. shall not apply to devices which include an electronic light source control gear or a variable intensity control being part of the device.~~
- 5.27.4. In the particular case where devices equipped with a filament light source produce the principal passing beam in conjunction with an electronic light source control gear, which is stabilizing the voltage, the effective voltage (root-mean-square, r.m.s.), determined over a sufficient**

long time to measure the correct value at the terminals of the filament light source when the electrical system of the vehicle is in a constant voltage operating condition according to paragraph 5.27., shall be not less than 6.0 V (6 Volt-Systems), 12.0 V (12 Volt-Systems) or 24.0 V (24 Volt-Systems).

The manufacturer shall demonstrate, by measurements for the approval test of the corresponding device, that the required photometric performance according to the relevant Regulation under stabilized conditions is met.

*Paragraph 5.27.4.(former), renumber as paragraph 5.27.5.*

~~5.27.5. A report shall be attached to the approval documentation describing the methods used to demonstrate compliance and the results obtained."~~

## **B. Proposal for Supplement 5 to the 01 series of amendments to Regulation No. 112 (Headlamps emitting an asymmetrical passing beam)**

*Paragraph 5.3.1.3., amend to read:*

~~"5.3.1.3. A means of controlling the voltage at the terminals of the device, within the limits as defined in Regulation No. 48, may, for convenience, be located within the body of the headlamp. However, for the purposes of type approval of the passing and/or driving beam according to the provisions of this Regulation..., such means of voltage control shall not be considered to be part of the headlamp and shall be disconnected during the testing to verify performance according to the requirements of this Regulation. "~~

*Insert a new paragraph 5.3.1.4., to read:*

**"5.3.1.4. In the case that the stabilized conditions of the voltage are different from the conditions for testing as specified in paragraph 6.1 to this Regulation, additional measurements for the principal passing beam shall be carried out under these different conditions, to verify that the minimum and maximum requirements in the paragraphs 5.9. and 6 .2. to this Regulation are met."**

## **II. Justification**

1. During the sixty-seventh session of GRE, ECE/TRANS/WP.29/GRE/2012/12 proposed by the expert from GTB was adopted. The expert from International Electrotechnical Commission (IEC) introduced the informal documents GRE-67-17 and GRE-67-30, raising some concerns to the proposal. GRE noted that the experts from Germany and the Netherlands raised their objection to the possibility for a general voltage variation of filament lamps.

2. Unnecessary reduction of the lifetime of halogen filaments light sources is potentially detrimental to traffic safety, especially when there is no mandatory tell-tale showing the malfunction of a lamp.

3. This is the reason why the German expert, with the support of the expert from The Netherlands, proposes to introduce requirements to avoid intentional (voltage) variation of the principal passing beam, using halogen light sources.
  4. Paragraph 5.9. of UN Regulation No. 48 is clarified.
  5. A lower voltage limit is proposed in (new) paragraph 5.27.4. of the 06 series of amendments to UN Regulation No. 48. The verification of the compliance with the beam requirements under deviating conditions is proposed in a new paragraph 5.3.1.4. of UN Regulation No. 112.
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