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World Forum for Harmonization of Vehicle Regulations**Working Party on Lighting and Light-Signalling****Eighty-eighth session**

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Item 4 of the provisional agenda

Simplification of Lighting and Light-Signalling UN Regulations**Proposal for a new [03] series of amendments to UN
Regulation No. 86****Submitted by the Informal Working Group on Simplification of
Lighting and Light-Signalling Regulations***

The text reproduced below was prepared by the Informal Working Group on Simplification of Lighting and Light-Signalling Regulations (IWG SLR) with the aim to enable the phasing out of the installation of older lamps/devices. The modifications to the existing text of the UN Regulation No. 86 are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2023 as outlined in proposed programme budget for 2023 (A/77/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Paragraph 6.1., amend to read:

“6.1. Main-beam headlamps (UN Regulations Nos. ~~98, 112 and 113~~ or 149)”

Paragraph 6.1.2., amend to read:

“6.1.2. Number: Two, type-approved according to:

~~–UN Regulations Nos. 98 or 112 or 113,~~

~~or~~

~~–Classes A, B, BS, CS, D, DS or ES of the 00 series of amendments to UN Regulation No. 149,~~

~~or~~

- Classes A, B, BS, CS or DS of the 01 ~~and~~or subsequent series of amendments to UN Regulation No. 149.

Optionally, one additional pair type-approved according to:

~~–UN Regulations Nos. 98 or 112 or 113,~~

~~or~~

~~–Classes A, B, BS, CS, D, DS or ES of the 00 series of amendments to UN Regulation 149,~~

~~or~~

- Classes A, B, BS, CS, **D**, DS, **ES** or RA of **the 00 or subsequent series of amendments** ~~the 01 and subsequent series of amendments~~ to UN Regulation No. 149.”

Paragraph 6.1.7., amend to read:

“6.1.7. Electrical connections: The main-beam headlamp may be switched ~~on~~ **ON** either simultaneously or in pairs. For changing over from the dipped to the main-beam at least one pair of main-beams shall be switched ~~on~~ **ON**. For changing over from the main to the dipped-beam all main-beam headlamps shall be switched ~~off~~ **OFF** simultaneously.

The dipped-beams may remain switched ~~on~~ **ON** at the same time as the main-beams.

However, when the vehicle is fitted with secondary main-beam(s) type-approved in accordance with the 01 or subsequent series of amendments to UN Regulation No. 149, at least one of the following lamps shall remain switched ON with the secondary main-beam(s):

(a) **Dipped-beam(s);**

(b) **Main-beam of Class A or B approved according to the 01 and subsequent**

**series of amendments to UN Regulation
No. 149.”**

Paragraph 6.2., amend to read:

“6.2. Dipped-beam headlamps (UN Regulations Nos. ~~98, 112 and 113~~ or 149)”

Paragraph 6.2.2., amend to read:

“6.2.2. Number: Two (or four - see paragraph 6.2.4.2.4.), type-approved according to
~~UN Regulations Nos. 98 or 112 or 113,~~
or
~~Classes A, AS, B, BS, CS, D, DS or ES of the 00 series of amendments to UN Regulation No. 149,~~
or
- Classes AS, BS, C, CS, DS or V of the 01 ~~and~~ or subsequent series of amendments to UN Regulation No. 149.”

Paragraph 6.3.2., amend to read:

“6.3.2. Number: **Two; Class “F3” and type-approved according to the 03 or subsequent series of amendments to UN Regulation No. 19, or to the 00 or subsequent series of amendments to UN Regulation No. 149.”**

Paragraph 6.4.2., amend to read:

“6.4.2. Number: One or two, **type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 23, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”**

Paragraph 6.5.2., amend to read:

“6.5.2. Number: The number of devices shall be such that they can emit signals which correspond to one of the arrangements referred to in paragraph 6.5.3.
The devices shall be type-approved according to the 01 or subsequent series of amendments to UN Regulation No. 6, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.7.2., amend to read:

“6.7.2. Number: Two S1 or S2 category devices and one S3 or S4 category device.
The devices shall be type-approved according to the 02 or subsequent series of amendments to UN Regulation No. 7, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.8.2., amend to read:

“6.8.2. Number: Two or four (see paragraph 6.8.4.2.), **type-approved according to the 02 or subsequent series of amendments to UN Regulation No. 7, or to the 00 or subsequent series of amendments to UN Regulation No. 148.**”

Paragraph 6.9.2., amend to read:

“6.9.2. Number: Two or more (see paragraphs 6.9.4.3. and 6.9.5.1.), **type-approved according to the 02 or subsequent series of amendments to UN Regulation No. 7, or to the 00 or subsequent series of amendments to UN Regulation No. 148.**”

Paragraph 6.10.2., amend to read:

“6.10.2. Number: One or two, **type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 38, or to the 00 or subsequent series of amendments to UN Regulation No. 148.**”

Paragraph 6.11.2., amend to read:

“6.11.2. Number: Dependent upon the arrangement.
The devices shall be type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 77, or to the 02 or subsequent series of amendments to UN Regulation No. 7, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.12.2., amend to read:

“6.12.2. Number: Two visible from the front and two visible from the rear.
Optional: additional lamps may be fitted as follows:
(a) Two visible from the front;
(b) Two visible from the rear.
The devices shall be type-approved according to the 02 or subsequent series of amendments to UN Regulation No. 7, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.14.2., amend to read:

“6.14.2. Number: Two or four (see paragraph 6.14.5.1.),
~~the performances of which shall~~ **type-approved according to conform to** the requirements concerning Class IA or IB retro-reflectors in **the 02 or subsequent series of amendments to UN Regulation No. 3, or in the 00 or subsequent series of amendments to UN Regulation No. 150.**

Additional retro-reflecting devices and materials (including two retro-reflectors not complying with paragraph 6.14.4. below), are permitted provided they do not impair the effectiveness of the mandatory lighting and light-signalling devices.”

Paragraph 6.15.2., amend to read:

“6.15.2. Number:

Such that the requirements for longitudinal positioning are complied with. These ~~performances of these devices~~ shall **be type-approved according to** ~~conform to~~ the requirements concerning Class IA or IB retro-reflectors in **the 02 or subsequent series of amendments to UN Regulation No. 3, or in the 00 or subsequent series of amendments to UN Regulation No. 150.**

Additional retro-reflecting devices and materials (including two retro-reflectors not complying with paragraph 6.15.4. below), are permitted provided they do not impair the effectiveness of the mandatory lighting and light-signalling devices.”

Paragraphs 6.16.2. to 6.16.6, amend to read:

“

6.16.2. Number
6.16.3. Arrangement
6.16.4. Position
6.16.4.1. Width
6.16.4.2. Height
6.16.4.3. Length
6.16.5. Geometric visibility
6.16.6. Orientation

Such that the device is able to illuminate the site of the registration plate.

The devices shall be type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 4, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.17.2., amend to read:

“6.17.2. Number:

Two or four, **type-approved according to** ~~conform to~~ the requirements concerning Class IA or IB retro-reflectors in **the 02 or subsequent series of amendments to UN Regulation No. 3, or in the 00 or subsequent series of amendments to UN Regulation No. 150.”**

Paragraph 6.18.2., amend to read:

“6.18.2. Minimum number per side:

Such that the rules for longitudinal positioning are complied with.

The devices shall be type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 91, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”

Paragraph 6.19.2., amend to read:

“6.19.2. Number: Two or four (see paragraph 6.19.4.2.), **type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 87, or to the 00 or subsequent series of amendments to UN Regulation No. 148.**”

Paragraph 6.20.2., amend to read:

“6.20.2. Number: Two or four, **type-approved according to the 01 or subsequent series of amendments to UN Regulation No. 119, or to the 00 or subsequent series of amendments to UN Regulation No. 149.**”

Paragraph 6.21.2., amend to read:

“6.21.2. Number: According to the presence
The devices shall be type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 104, or to the 00 or subsequent series of amendments to UN Regulation No. 150.”

Paragraph 6.22.2., amend to read:

“6.22.2. Number: According to:
- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.**”

Paragraph 6.22.3., amend to read:

“6.22.3. Arrangement: According to:
- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.**”

Paragraph 6.22.4., amend to read:

“6.22.4. Position
Width: According to:
- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.**”
Height: No individual specifications.
Length: According to:

- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.”**

Paragraph 6.22.5., amend to read:

“6.22.5. Geometric visibility

According to:

- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.”**

Paragraph 6.22.6., amend to read:

“6.22.6. Orientation:

According to:

- Annex 15 of **the 01 series of amendments to UN Regulation No. 69; or**
- Annex 25 of **the 00 series of amendments to UN Regulation No. 150; or**
- **Annex 11 of the 01 or subsequent series of amendments to UN Regulation No. 150.”**

Paragraph 6.24.2., amend to read:

“6.24.2. Number:

One or two (one per side), **type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 23, or to the 00 or subsequent series of amendments to UN Regulation No. 148.”**

Paragraph 6.25.2., amend to read:

“6.25.2. Number:

Two or four (see paragraph 6.25.5.1.),

~~The performances of these devices shall conform~~ **type-approved according** to the requirements concerning Class IIIA or IIIB retro-reflectors in **the 02 or subsequent series of amendments to UN Regulation No. 3, or in the 00 or subsequent series of amendments to UN Regulation No. 150.”**

Paragraph 12., insert a new paragraph to read:

“**12.3. Transitional provisions applicable to [03] series of amendments.**

12.3.1. As from the official date of entry into force of the [03] series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the [03] series of amendments.

12.3.2. As from 1 September [2028], Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September [2028].

- 12.3.3. **Until 1 September [2030], Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September [2028].**
- 12.3.4. **As from 1 September [2030], Contracting Parties applying this Regulation shall not be obliged to accept type approvals, and extensions thereof, issued to the preceding series of amendments to this Regulation.**
- 12.3.5. **Notwithstanding the transitional provisions above, Contracting Parties who start to apply this Regulation after the date of entry into force of the most recent series of amendments are not obliged to accept type approvals which were granted in accordance with any of the preceding series of amendments to this Regulation.**
- 12.3.6. **Notwithstanding paragraph 12.3.4., Contracting Parties applying this Regulation shall continue to accept type approvals to the preceding series of amendments to this Regulation, for the vehicle types which are not affected by the changes introduced by the [03] series of amendments.**
- 12.3.7. **Contracting Parties applying this Regulation may grant type approvals according to any preceding series of amendments to this Regulation.**
- 12.3.8. **Contracting Parties applying this Regulation shall continue to grant extensions of existing approvals to any preceding series of amendments to this Regulation”**

Annex 6, paragraph 2., amend to read:

- “2. Colours and photometric minimum requirements
- Each panel or foil shall be **type approved** according to the specifications of:
~~UN Regulation No.70, class 5 or UN Regulation No. 104, class F or UN Regulation No. 150, class 5 or class F.~~
- **Class 5 in the 01 or subsequent series of amendments to UN Regulation No.70, or**
 - **Class F in the 00 or subsequent series of amendments to UN Regulation No. 104, or**
 - **Class 5 or Class F in the 00 or subsequent series of amendments to UN Regulation No. 150.”**

II. Justification

A. General

1. This proposal is based on the initial request from the expert from the European Commission during the eighty-fifth session of the Working Party on Lighting and Light-Signalling (GRE), by proposing alternative transitional provisions to the new 01 series of amendments to UN Regulation Nos. 148, 149 and 150 (informal document GRE-85-30 and ECE/TRANS/WP.29/GRE/85, para. 10). IWG SLR was requested to consider the issue and to report back to GRE about the most appropriate way to amend the affected UN Regulations. The question was whether it would be at a device level or at the installation level.

2. After analysis, IWG SLR agreed that the most practical way to introduce changes made to the 01 series of the device UN Regulations (Nos. 148, 149 and 150) into the UN Regulations for installation of lighting and light-signalling Devices (Nos. 48, 53, 74 and 86) was to prescribe them in the individual specifications (paragraph 6) of each lighting and light signalling function. During the eighty-sixth session of GRE, this approach was generally supported with the request to avoid proliferation of new series of amendments to the installation UN Regulations (ECE/TRANS/WP.29/GRE/86, para. 9).

3. To determine which requirements needed to be added into UN Regulation No. 86, the International Organization of Motor Vehicle Manufacturers (OICA) conducted an initial evaluation on the technical changes (in terms of increase of performance) that were made to the mandatory devices in the 01 series of the three UN device Regulations during the Stage 2 / Step 1 of the SLR work (informal document SLR-54-10).

4. As a result of the evaluation, the main technical changes were introduced into UN Regulation 149 for road illumination devices, as summarized below:

- Dipped-beam headlamps (passing beam headlamps): improved and simplified photometric tables
- Main-beam headlamps (driving beam headlamps): Revised and unified beam pattern for main-beams.
 - New main-beam classes
 - Improved and simplified photometric tables (bigger measurement area for better harmonization with the United States of America)
 - Introduction of auxiliary main beam
- Cornering lamps: Revised and unified beam pattern for cornering lamps
 - Increase of required minimum level (for harmonization with the United States of America). Cornering lamps are optional.
- Front fog lamps: only Class “F3” is permitted for new vehicle types

5. For transparency and for the sake of clarity, the proposal also specifies – for those functions that had no increase in performance (e.g. paragraph 6.5. “Direction-indicator lamp”) - the applicable series of amendments of the pertinent UN Regulations.

6. The fitment of the lamps, whether mandatory or optional, was also taken into account where applicable.

7. The words ‘and extensions thereof’ have been added in paragraph 12.3.4 for clarification to avoid any different interpretation of the conditions. This is a specific request from the expert of the European Commission.

B. Specific changes made to individual paragraphs

Driving Beam and Passing Beam Headlamp

Paragraph 6.1.

8. Removal of reference to the old device UN Regulations.

Paragraph 6.1.2.

9. Removal of reference to the device UN Regulations which have now been superseded by the 01 series of amendments to UN Regulation No. 149 for the mandatory pair. The wording was improved to avoid any misinterpretation.

10. Update of the list of relevant Classes from the original or 01 series of amendments to UN Regulation No. 149 for the additional pair.

Paragraph 6.2.

11. Removal of reference to the old device UN Regulations.

Paragraph 6.2.2.

12. Removal of reference to the device UN Regulations which have now been superseded by the 01 series of amendments to UN Regulation No. 149. The wording was improved to avoid any misinterpretation.

Slow moving vehicle (SMV) rear marking plate

Paragraph 6.22.

13. Addition of reference to the relevant Annex of the 01 series of amendments to UN Regulation No. 149. The wording was improved to avoid any misinterpretation.

Signalling panels and foils

Annex 6, paragraph 2.

14. Addition of reference to the relevant Classes of the 01 series of amendments to UN Regulation No. 149. The wording was improved to avoid any misinterpretation.
