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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****Seventy-ninth session**

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Item 4 of the provisional agenda

Simplification of lighting and light-signalling Regulations**Proposal for Supplement [18] to the 04 series of amendments
to Regulation No. 48****Submitted by the Informal Working Group on Simplification of
Lighting and Light-Signalling Regulations (IWG SLR)***

The text reproduced below was prepared by IWG SLR on the basis of GRE-78-14 and with the aim to introduce into the 04 series of amendments to Regulation No.48 references to the three new simplified Regulations on Light-Signalling Devices (LSD), Road Illumination Devices (RID) and Retro-Reflective Devices (RRD). The modifications to the existing text of Regulation No. 48 are marked in bold for new or strikethrough for deleted characters. Some text is shown in square brackets to indicate that discussion and a decision are required.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, cluster 02.4), 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 2.7.16.4., amend to read:

“2.7.16.4. Retro-reflecting materials approved as Class D or E or F according to Regulations Nos. 104 **or [RRD]** and used for other purposes in compliance with national requirements.”

Paragraph 2.7.28., amend to read:

“2.7.28. "Adaptive front lighting system" (or "AFS") means a lighting device type-approved according to Regulations Nos. 123 **or [RID]**, providing beams with differing characteristics for automatic adaptation to varying conditions of use of the dipped-beam (passing-beam) and, if it applies, the main-beam (driving-beam).”

Paragraph 3.2.6.2., amend to read:

“3.2.6.2. The related AFS control signals and their technical characteristics as defined according to Annex 10 of Regulation No. 123 **or Annex 14 to Regulation No. [RID]**.”

Paragraph 5.9.3., amend to read:

“5.9.3. The photometric characteristics of a direction indicator lamp of categories 1, 1a, 1b, 2a or 2b may be varied during a flash by sequential activation of light sources as specified in paragraph 5.6. of Regulation No. 6 **or paragraph 5.6.11. of Regulation No. [LSD]**.

This provision shall not apply when direction indicator lamps of categories 2a and 2b are operated as emergency stop signal according to paragraph 6.23.1. of this Regulation.”

Paragraph 6.1., amend to read:

“6.1. Main-beam headlamp (Regulations Nos. 98, ~~and~~ 112 **and [RID]**)”

Paragraph 6.1.2., amend to read:

“6.1.2. Number

Two or four, type approved according to

- Regulations Nos. 98 or 112, excluding Class A headlamp

or

- Regulation [RID], Classes B and D headlamps only

For vehicles of the category N₃: Two extra main-beam headlamps may be installed.

Where a vehicle is fitted with four concealable headlamps the installation of two additional headlamps shall only be authorized for the purpose of light-signalling, consisting of intermittent illumination, at short intervals (see paragraph 5.12. above) in daylight.”

Paragraph 6.2., amend to read:

“6.2. Dipped-beam headlamp (Regulations Nos. 98, ~~and~~ 112 **and [RID]**)”

Paragraph 6.2.2., amend to read:

- “6.2.2. Number
 Two, type approved according to
 - Regulations Nos. 98 or 112, excluding Class A headlamp,
or
 - **Regulation [RID], Classes B and D headlamps only.**”

Paragraph 6.2.7., amend to read:

- “6.2.7. Electrical connections
 The control for changing over to the dipped-beam shall switch off all
 main-beam headlamps simultaneously.
 The dipped-beam may remain switched on at the same time as the main-
 beams.
 In the case of dipped-beam headlamps according to Regulations Nos. 98
or [RID], the gas-discharge light sources shall remain switched on
 during the main-beam operation.
 One additional light source or one or more LED module(s), located
 inside the dipped-beam headlamps or in a lamp (except the main-beam
 headlamp) grouped or reciprocally incorporated with the respective
 dipped-beam headlamps, may be activated to produce bend lighting,
 provided that the horizontal radius of curvature of the trajectory of the
 centre of gravity of the vehicle is 500 m or less. This may be
 demonstrated by the manufacturer by calculation or by other means
 accepted by the Type Approval Authority.
 Dipped-beam headlamps may be switched ON or OFF automatically.
 However, it shall be always possible to switch these dipped-beam
 headlamps ON and OFF manually.”

Paragraph 6.2.9., amend to read:

- “6.2.9. Other requirements

 Only dipped-beam headlamps according to Regulations Nos. 98 or 112
or [RID] may be used to produce bend lighting.
 ”

Paragraph 6.3., amend to read:

- “6.3. Front fog lamp (Regulations Nos. 19 **or [RID]**)”

Paragraph 6.3.2., amend to read:

- “6.3.2. Number
 Two; complying with **either** the requirements of the 03 and subsequent
 series of amendments to Regulation No. 19 **or the requirements of**
Regulation No. [RID].”

Paragraph 6.3.7., amend to read:

“6.3.7. Electrical connections

It shall be possible to switch the front fog lamps ON and OFF independently of the main-beam headlamps, the dipped-beam headlamps or any combination of main- and dipped-beam headlamps, unless

- (a) The front fog lamps are used as part of another lighting function in an AFS; however, the switching ON of the front fog lamps function shall have the priority over the function for which the front fog lamps are used as a part, or
- (b) The front fog lamps cannot be simultaneously lit with any other lamps with which they are reciprocally incorporated as indicated by the relevant symbol ("") according to paragraph 10.1. of Annex 1 to Regulation No. 19 **or item 9.5.1. of Annex 1 of Regulation No. [RID].**”

Paragraph 6.3.9., amend to read:

“6.3.9. Other requirements

In the case where there is a positive indication in the communication form in item 10.9. of Annex 1 of Regulation No. 19 **or item 9.5.8. of Annex 1 of Regulation No. [RID]** the alignment and the luminous intensities of the Class "F3" front fog beam may be automatically adapted in relation to the prevailing ambient conditions. Any variations of the luminous intensities or alignment shall be performed automatically and in such a way that no discomfort, neither for the driver nor to other road users, is caused.”

Paragraph 6.4., amend to read:

“6.4. Reversing lamp (Regulations Nos. 23 **or [LSD]**)”

Paragraph 6.5., amend to read:

“6.5. Direction-indicator lamp (Regulations Nos. 6 **or [LSD]**)”

Paragraph 6.5.8., amend to read:

“6.5.8. Tell-tale

.....

It shall be activated by the signal according to paragraph 6.2.2. of Regulation No. 6 **or according to paragraph 5.6.3. of Regulation No. [LSD]** or another suitable way.¹³

.....”

Paragraph 6.7., amend to read:

“6.7. Stop lamp (Regulations Nos. 7 **or [LSD]**)”

Paragraph 6.8., amend to read:

“6.8. Rear registration plate lamp (Regulations Nos. 4 **or [LSD]**)”

Paragraph 6.9., amend to read:

“6.9. Front position lamp (Regulations Nos. 7 **or [LSD]**)”

Paragraph 6.10., amend to read:

“6.10. Rear position lamp (Regulations Nos. 7 **or [LSD]**)”

Paragraph 6.11., amend to read:

“6.11. Rear fog lamp (Regulations Nos. 38 **or [LSD]**)”

Paragraph 6.12., amend to read:

“6.12. Parking lamp (Regulations Nos. 77 or 7 or **[LSD]**)”

Paragraph 6.13., amend to read:

“6.13. End-outline marker lamp (Regulations Nos. 7 or **[LSD]**)”

Paragraph 6.14., amend to read:

“6.14. Rear retro-reflector, non-triangular (Regulations Nos. 3 or **[RRD]**)”

Paragraph 2.7.16.4., amend to read:

“6.14.2. Number

Two, the performances of which shall conform to the requirements concerning Class IA or IB retro-reflectors in Regulations Nos. 3 or **[RRD]**. 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., amend to read:

“6.15. Rear retro-reflector, triangular (Regulations Nos. 3 or **[RRD]**)”

Paragraph 6.15.2., amend to read:

“6.15.2. Number

Two, the performances of which shall conform to the requirements concerning Class IIIA or Class IIIB retro-reflectors in Regulations Nos. 3 or **[RRD]**. 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.”

Paragraph 6.16., amend to read:

“6.16. Rear retro-reflector, triangular (Regulations Nos. 3 or **[RRD]**)”

Paragraph 6.16.2., amend to read:

“6.16.2. Number

Two, the performances of which shall conform to the requirements concerning Class IA or IB retro-reflectors in Regulations Nos. 3 or **[RRD]**. Additional retro-reflecting devices and materials (including two retro-reflectors not complying with paragraph 6.16.4. below), are permitted provided they do not impair the effectiveness of the mandatory lighting and light-signalling devices.”

Paragraph 6.17., amend to read:

“6.17. Side retro-reflector, non-triangular (Regulations Nos. 3 or **[RRD]**)”

Paragraph 6.17.2., amend to read:

“6.17.2. Number

Such that the requirements for longitudinal positioning are complied with. The performances of these devices shall conform to the requirements concerning Class IA or IB retro-reflectors in Regulations Nos. 3 or **[RRD]**. Additional retro-reflecting devices and materials (including two retro-reflectors not complying with paragraph 6.17.4. below), are permitted provided they do not impair the effectiveness of the mandatory lighting and light-signalling devices.”

Paragraph 6.18., amend to read:

“6.18. Side-marker lamps (Regulations Nos. 91 **or [LSD]**)”

Paragraph 6.19., amend to read:

“6.19. Daytime running lamp (Regulations Nos. 87 **or [LSD]**)¹⁴”

Paragraph 6.20., amend to read:

6.20. Cornering lamp (Regulations Nos. 119 **or [RID]**)

Paragraph 6.21., amend to read:

“6.21. Conspicuity markings (Regulations Nos. 104 **or [RRD]**)”

Paragraph 6.21.1.2.5., amend to read:

“6.21.1.2.5. In cases where the manufacturer, after verification by the Technical Service, can prove to the satisfaction of the Type Approval Authority that it is impossible, due to the operational requirements which may require special shape, structure or design of the vehicle, to comply with the requirements contained in paragraphs 6.21.2. to 6.21.7.5. below, then partial fulfilment of some of these requirements is acceptable. This is conditional upon a portion of the requirements being met where possible, and the application of conspicuity markings that partially meet requirements maximised on the vehicle structure. This may include fitting of additional brackets or plates containing material compliant with Regulations Nos. 104 **or [RRD]** where structure is available to ensure clear and uniform signalling compatible with the objective of conspicuity.

Where partial fulfilment is deemed acceptable, retro-reflective devices like retro-reflectors of class IVA of Regulations Nos. 3 **or [RRD]** or brackets containing retro-reflecting material compliant with photometric requirements of Class C of Regulations Nos. 104 **or [RRD]** may substitute part of the required conspicuity markings. In this case, at least one of these retro-reflective devices shall be installed per 1,500 mm.

The necessary information shall be indicated in the communication form.”

Paragraph 6.21.4.2.1.1., amend to read:

“6.21.4.2.1.1. For motor vehicles, each end of the vehicle, or in the case of tractors for semi-trailers each end of the cab;

However, an alternative marking mode within 2,400 mm from the front end of the motor vehicle is allowed where a series of retro-reflectors of Class IVA of Regulations Nos. 3 **or [RRD]** or Class C of Regulations Nos. 104 **or [RRD]** are mounted followed by the required conspicuity marking as follows:

- (a) Retro-reflector size minimum 25 cm²;
- (b) One retro-reflector mounted not more than 600 mm from the front end of the vehicle;
- (c) Additional retro-reflectors spaced not more than 600 mm apart;
- (d) The distance between the last retro-reflector and the start of the conspicuity marking shall not exceed 600 mm;”

Paragraph 6.21.7.4., amend to read:

“6.21.7.4. Where rear marking plates conforming to **either** the 01 series of amendments to Regulation Nos. 70 **or to Regulation [RRD]** are installed these may be considered, at the discretion of the manufacturer, as part of

the conspicuity marking to the rear, for the purposes of calculating the length of the conspicuity marking and its proximity to the side of the vehicle.”

Paragraph 6.22., amend to read:

“6.22. Adaptive front lighting system (AFS) (Regulations Nos. 123 **or [RID]**)”

Paragraph 6.22.6.1.2.1., amend to read:

“6.22.6.1.2.1. In case the passing-beam is generated by several beams from different lighting units, the provisions according to paragraph 6.22.6.1.2. above apply to each said beam's "cut-off" (if any), which is designed to project into the angular zone, as indicated under item 9.4. of the communication form conforming to the model in Annex 1 to Regulations Nos. 123 **or [RID]**.”

Paragraph 6.22.6.3., amend to read:

“6.22.6.3. Horizontal orientation:

For each lighting unit the kink of the elbow of the cut-off line, if any, when projected on the screen, shall coincide with the vertical line through the reference axis of said lighting unit. A tolerance of 0.5 degree to that side which is the side of the traffic direction shall be allowed. Other lighting units shall be adjusted according to the applicant's specification, as defined according to Annex 10 of Regulation No. 123 **or Annex 14 of Regulation No. [RID]**.”

Paragraph 6.22.7.4.3., amend to read:

“6.22.7.4.3. The Class E mode(s) of the passing-beam shall not operate unless the vehicle's speed exceeds 70 km/h and one or more of the following conditions is/are automatically detected.

- (a) The road characteristics correspond to motorway conditions ¹⁷ and/or the vehicle's speed exceeds 110 km/h (E-signal applies);
- (b) In case of a Class E mode of the passing-beam which, according to the system's approval documents /communication sheet, complies with a 'data set' of Table 6 of Annex 3 of Regulation No. 123 **or of Regulation No. [RID], Table 14**, only.

Data set E1: the vehicle's speed exceeds 100 km/h (E1-signal applies);

Data set E2: the vehicle's speed exceeds 90 km/h (E2-signal applies);

Data set E3: the vehicle's speed exceeds 80 km/h (E3-signal applies).”

Paragraph 6.22.8.2., amend to read:

“6.22.8.2. A visual failure tell-tale for AFS is mandatory. It shall be non-flashing. It shall be activated whenever a failure is detected with respect to the AFS control signals or when a failure signal is received in accordance with paragraph 5.9. of Regulation No. 123 **or paragraph 4.13. of Regulation No. [RID]**. It shall remain activated while the failure is present. It may be cancelled temporarily, but shall be repeated whenever the device which starts and stops the engine is switched on and off.”

Paragraph 6.22.8.4., amend to read:

“6.22.8.4. A tell-tale to indicate that the driver has set the system into a state according to paragraph 5.8. of Regulation No. 123 **or paragraph 4.12. of Regulation No. [RID]** is optional.”

Paragraph 6.22.9.1., amend to read:

“6.22.9.1. An AFS shall be permitted only in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45¹⁹ for at least those lighting units, which are indicated under item 9.3. of the communication form conforming to the model in Annex 1 to Regulation No. 123 **or under item 9.3.3. in Annex 1 to Regulation No. [RID]**, if the total objective luminous flux of the light sources of these units exceeds 2,000 lm per side, and which contribute to the Class C (basic) passing-beam.”

Paragraph 6.22.9.5., amend to read:

“6.22.9.5. The means according to the provisions of paragraph 5.8. of Regulation No. 123 **or paragraph 4.12 of Regulation No. [RID]**, which allow the vehicle to be used temporarily in a territory with the opposite direction of driving than that for which approval is sought, shall be explained in detail in the owner’s manual.”

Paragraph 6.26., amend to read:

“6.26. Manoeuvring lamps (Regulations Nos. 23 **or [LSD]**)”

Paragraph 6.26.9.2., amend to read:

“6.26.9.2. At the request of the applicant and with the consent of the Technical Service the requirement of 6.26.9.1. may be verified by a drawing or simulation or deemed be satisfied if the installation conditions comply with paragraph ~~6.2.3.~~ **6.2.2.** of Regulation No. 23 **or paragraph 5.10.2. of Regulation No. [LSD]**, as noticed in the communication document in Annex 1, paragraph 9.”

II. Justification

1. Since the introduction of Corrigendum 2 to Revision 3 of Regulation No. 48, references to the device regulations have been included into Regulation No. 48.
2. With the new simplified Regulations on LSD, RID and RRD produced by IWG SLR, it is necessary to introduce additional references to Regulation No. 48. This amendment deals with such additional references for the 04 series amendments to Regulation No. 48.