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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**

Geneva, 24-27 April 2018

Item 4 of the provisional agenda

**Simplification of lighting and light-signalling Regulations****Proposal for Supplement [6] to the 03 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 with the aim to introduce into the 03 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.

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\* 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.

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## I. Proposal

*Paragraph 2.7.16.4.*, amend to read:

"2.7.16.4. retro-reflecting materials approved as Class D or E according to Regulations Nos. 104 **or [RRD]** and used for other purposes in compliance with national requirements, e.g. advertising."

*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 [RRD]**, 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 6.1.*, amend to read:

"6.1. MAIN-BEAM HEADLAMP (Regulations Nos. 98 ~~and~~,112 **and [RID]**);"

*Paragraph 6.2.*, amend to read:

"6.2. DIPPED-BEAM HEADLAMP (Regulations Nos. 98 ~~and~~,112 **and [RID]**);"

*Paragraph 6.2.7.*, amend to read:

"6.2.7. Electrical connections

The control for changing over to the dipped beam must switch off all main-beam headlamps simultaneously.

The dipped beams 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 authority responsible for type approval.

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

The requirements of paragraph 5.5.2. shall not apply to dipped-beam headlamps.

Dipped-beam headlamps with a light source or LED module(s) producing the principal dipped beam and having a total objective luminous flux which exceeds 2,000 lumen shall only be installed in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45. 9/

With respect to vertical inclination the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped-beam headlamps:

- (a) with LED module(s) producing the principal dipped beam, or
- (b) with a light source producing the principal dipped beam and having an objective luminous flux which exceeds 2,000 lumen.

Only dipped-beam headlamps according to Regulations Nos. 98 ~~and~~ 112 **and [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 6.3.9.*, 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

Operating tell-tale mandatory for direction indicator lamps of categories 1, 1a, 1b, 2a and 2b. It may be visual or auditory or both. If it is visual it shall be a flashing light which, at least in the event of the malfunction of any of these direction indicator lamps, is either extinguished, or remains alight without flashing, or shows a marked change of frequency. If it is entirely auditory it shall be clearly audible and shall show a marked

change of frequency, at least in the event of the malfunction of any of these direction indicator lamps.

It shall be activated by the signal produced according to paragraph 6.4.2. of Regulation No. 6 **or according to paragraph 5.6.3. of Regulation No. [LSD]** or another suitable way. 15/

If a motor vehicle is equipped to draw a trailer, it must be fitted with a special visual operational tell-tale for the direction-indicator lamps on the trailer unless the tell-tale of the drawing vehicle allows the failure of any one of the direction-indicator lamps on the vehicle combination thus formed to be detected.

For the optional pair of direction-indicator lamps on trailers/operating tell-tale shall not be mandatory."

*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. 3 **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 6.14.2., 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. FRONT RETRO-REFLECTOR, NON-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]**) 16/"

*Paragraph 6.20.*, amend to read:

"6.20. CORNERING LAMP (Regulations Nos. 119 **or [LSD]**)"

*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 authority responsible for type approval 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., 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 fulfillment is deemed acceptable, retro-reflective devices like retroreflectors of class IV of Regulations Nos. 3 **or [RRD]** or brackets containing retroreflecting 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 retroreflective devices shall be installed per 1500 mm.

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

*Paragraph 6.21.7.4.*, amend to read:

"6.21.7.4. Where rear marking plates conforming **either** to the 01 series of amendments to Regulation No. 70 **or to Regulation No. [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])**

Where not otherwise specified below, the requirements for main-beam headlamps (paragraph 6.1.) and for dipped-beam headlamps (paragraph 6.2.) of this Regulation apply to the relevant part of the AFS."

*Paragraph 6.22.6.1.2.*, amend to read:

"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 degrees 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 20/ 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 Table 14 of Regulation No. [RID]** 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.*, 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 6.22.8.3.*, amend to read:

"6.22.8.3. 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. 45 22/ 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 6.22.9.4.*, amend to read:

"6.22.9.4. 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."

## **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 03 series amendments to Regulation No. 48.
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