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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 6 (a) the provisional agenda

Regulation No. 48 (Installation of lighting and light-signalling devices):**Proposals for amendments to the 05 and 06 series of amendments****Proposal for a new series of amendments to Regulation
No. 48****Submitted by the expert from the Society of Automotive Engineers
(SAE)***

The text reproduced below is based on ECE/TRANS/WP.29/GRE/2018/22 (previously GRE-78-21-Rev.1) submitted by the Task Force on Headlamp Switching (TF HS) and it is limited to the paragraphs addressed in this informal document. The understanding of SAE is that the main purpose of ECE/TRANS/WP.29/GRE/2018/22 is to set requirements that would not allow vehicles to travel under dark ambient conditions without their night-time lamps being switched ON (specifically, the road illumination lamps) and to clarify (a) the automatic functioning of the daytime running lights (DRL) and (b) allowances for the dipped-beam headlamps and DRL to be temporary switched OFF by the driver. The modifications to the current text of the Regulation No. 48 are marked in bold for new or strikethrough for deleted characters.

* 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:

Add new paragraphs 2.37. to 2.40., to read:

- “2.37. “Switch ON” means to manually or automatically operate an illuminating or signalling function to effectively emit light, irrespective of whether the function is operating correctly or not.
- 2.38. “Switch OFF” means to manually or automatically operate an illuminating or signalling function to stop emitting light, irrespective of whether the function is operating correctly or not.
- 2.39. “Activate” means to manually or automatically enable an illuminating or signalling function, irrespective of whether light is emitted or not (e.g. enable stand-by mode).
- 2.40. “Deactivate” means to manually or automatically disable an illuminating or signalling function, irrespective of whether light is emitted or not (e.g. disable stand-by mode).”

Paragraph 5.11.1.3., amend to read:

- "5.11. The electrical connections shall be such that the front and rear position lamps, the end-outline marker lamps, if they exist, the side-marker lamps, if they exist, and the rear registration plate lamp can only be switched ON and OFF simultaneously.
- 5.11.1. This ~~condition~~ **requirement** does not apply **while one or more of the following conditions exist:**
 - 5.11.1.1. (a) ~~When front and rear position lamps are switched ON, as well as side-marker lamps when combined or reciprocally incorporated with said lamps, are switched ON as parking lamps; or~~
 - 5.11.1.2. (b) ~~When side-marker lamps flash in conjunction with direction indicators; or~~
 - 5.11.1.3. (c) ~~When light signalling system operates according to 6.2.7.6.2. daytime running lamps are activated;~~
 - 5.11.2. (d) ~~To front position lamps when their front position lamps’ function is substituted under the provisions of paragraph 5.12.1. below.~~
- 5.11.32. ~~In the case of an interdependent lamp system, a~~ **All light sources in each individual lamp listed in paragraph 5.11 shall be switched ON and OFF simultaneously when such lamps is switched ON and OFF.**

Paragraph 6.1.7.1., amend to read:

- “6.1.7.1. Except when they are used to give intermittent luminous warnings at short intervals, the main-beam headlamps may be switched ON only when ~~the master light switch is in headlamps ON position or in "AUTO" (automatic) position and the dipped-beam headlamps are switched ON manually~~ or the conditions for automatic activation of dipped-beam **headlamps** exist. ~~In the latter case, The main beam headlamps shall be switched OFF~~ **manually** or the conditions for automatic activation of dipped-beam headlamps ceased to exist.”

Paragraphs 6.2.7. and its subparagraphs, amend to read:

- “6.2.7. Electrical connections

- 6.2.7.1. ~~The control for changing over to the dipped beam shall switch off all main-beam headlamps simultaneously.~~ **When changing from main to dipped-beam, all main-beams shall be switched OFF immediately and simultaneously.**
- 6.2.7.2. The dipped-beam may remain switched ~~on~~ON at the same time as the main-beam.
- 6.2.7.3. In the case of dipped-beam headlamps **equipped with light sources whose rise time to full intensity is more than [500] milliseconds** ~~according to Regulation No. 98, these gas-discharge-light sources shall remain switched on~~ON during the main-beam **headlamps** operation, **except when the latter are used to give intermittent luminous warnings at short intervals.**
- 6.2.7.4. 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.
- ~~6.2.7.5. 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.~~
- ~~6.2.7.5.6.~~ The dipped-beam headlamps shall be switched ON and OFF automatically ~~relative to the ambient light conditions (e.g. switch ON during night time driving conditions, tunnels, etc.)~~ according to the requirements of conditions **described in Annex 13 or, providing that the dipped beam headlamps are switched ON at least under ambient light conditions described in Annex 13, the automatic switching may be controlled by other factors (e.g. time of the day, vehicle location, rain, fog, etc.).**
- 6.2.7.6. Irrespective of the requirements of paragraph 6.2.7.5, it shall always be possible to switch the dipped beam headlamps ON manually.
- 6.2.7.7. Under conditions requiring the dipped beam headlamps to be switched ON, the dipped-beam headlamps may remain switched OFF or, once automatically switched ON, may be switched OFF manually and remain switched OFF while one or more of the following conditions exist:
- (a) the automatic transmission control is in the park position;
 - (b) the parking brake is fully engaged;
 - (c) the vehicle was not set in motion for the first time after the device, which starts, and/or stops the propulsion system was set in a position which makes it possible for the propulsion system to operate;
 - (d) the vehicle speed does not exceed [10] km/h. [In this case, the lamps referred to in paragraph 5.11. shall be switched ON];
 - (e) the front fog lamps are switched ON. In this case, the lamps referred to in paragraph 5.11. shall be switched ON.
- 6.2.7.8. The automatic operation of the dipped-beam headlamps shall be resumed as soon as the conditions described in paragraph 6.2.7.7. no longer exist. The driver shall at all times be able to engage the automatic operation.

~~6.2.7.7. Without prejudice 6.2.7.56.1., the dipped beam headlamps may switch ON and OFF automatically relative to other factors such as time or ambient conditions (e.g. time of the day, vehicle location, rain, fog, etc.).”~~

Paragraph 6.9.8, amend to read:

“6.9.8. Tell-tale **optional**.

~~Circuit closed tell tale mandatory.~~

~~This tell tale shall be non flashing and shall not be required if the instrument panel lighting can only be turned on simultaneously with the front position lamps.~~

~~This requirement does not apply when light signalling system operates according to paragraph 6.2.7.6.2.~~

However, a tell-tale indicating failure is mandatory if required by the component regulation.”

Paragraph 6.10.8, amend to read:

“6.10.8. Tell-tale **optional**.

~~Circuit closed tell tale mandatory. It shall be combined with that of the front position lamps.~~

~~This requirement does not apply when light signalling system operates according to paragraph 6.2.7.6.2.~~

However, a tell-tale indicating failure is mandatory if required by the component regulation.”

Paragraphs 6.19.7. and its subparagraphs, amend to read:

“6.19.7. Electrical connections

6.19.7.1. The daytime running lamps shall be switched ON automatically when the device which starts and/or stops the ~~engine (propulsion system)~~ is set in a position which makes it possible for the ~~engine (propulsion system)~~ to operate **and**

(a) **the headlamps are not activated; and/or**

(b) **the front fog lamps are not switched ON.**

6.19.7.2. However, the daytime running lamps may remain OFF **or, once automatically switched ON, may be switched OFF manually and remain OFF** while **at least one of** the following conditions exists:

~~6.19.7.1.1~~ (a) ~~the automatic transmission control is in the park position; or~~

~~6.19.7.1.2~~ (b) ~~the parking brake is in the applied position~~ **fully engaged; or**

~~6.19.7.1.3~~ (c) ~~Prior to the vehicle being~~ **was not** set in motion for the first time after each manual activation of the propulsion system **the device, which starts and/or stops the propulsion system was set in a position which makes it possible for the propulsion system to operate;**

~~6.19.7.2.~~ (d) ~~The daytime running lamps may be switched OFF manually when the vehicle speed does not exceed [10] km/h, provided they switch ON automatically when the vehicle speed exceeds 10 km/h or when the vehicle has travelled more than 100 m] and they remain ON until deliberately switched off again.~~

- 6.19.7.3. The automatic operation of the daytime running lamps shall be resumed as soon as the conditions described in paragraphs 6.19.7.2 no longer exist.**
- 6.19.7.34. The daytime running lamp shall switch OFF automatically when **either of the following conditions exists:**
- (a) the device which starts and/or stops the ~~engine (propulsion system)~~ is set in a position which makes it impossible for the ~~engine (propulsion system)~~ to operate; ~~or~~
 - (b) the front fog lamps **are switched ON** ~~or~~;
 - (c) **the headlamps are activated** ~~switched ON~~, except when ~~the latter they~~ are used to give intermittent luminous warnings at short intervals.⁴⁵
- 6.19.7.45. The lamps referred to in paragraph 5.11. may be switched ON when the daytime running lamps are switched ON. **If this option is chosen, at least the rear position lamps shall be switched ON.**
- 6.19.7.56. If the distance between the front direction-indicator lamp and the daytime running lamp is equal or less than 40 mm, the electrical connections of the daytime running lamp on the relevant side of the vehicle may be such that **during the entire period (both ON and OFF cycle) of activation of the direction-indicator lamp**, either:
- (a) It is switched OFF; or
 - (b) Its luminous intensity is reduced during the entire period (both ON and OFF cycle) of activation of a front direction-indicator lamp.
- 6.19.7.67. If a direction-indicator lamp is reciprocally incorporated with a daytime running lamp, the electrical connections of the daytime running lamp on the relevant side of the vehicle shall be such that the daytime running lamp is switched OFF during the entire period (both ON and OFF cycle) of activation of the direction-indicator lamp.”

Paragraph 6.22.7.3, amend to read:

- “6.22.7.3 **The dipped-beam headlamps** ~~switching ON and OFF of the passing beam~~ ~~is subject to~~ **shall fulfil** the requirements for "Electrical connection" in paragraph 5.12. and 6.2.7. of this Regulation.”

II. Justification

Paragraphs 2.37. to 2.40.

1. New definitions are proposed to add clarity in the regulation when the defined expressions are used. The difference from ECE/TRANS/WP.29/GRE/2018/22 is that the “... ON” and “... OFF” functions are separated for easier references to the defined terms.

Paragraph 5.11.1.

2. It is reworded to keep it in line with similar paragraphs throughout Regulation No.48. Sub-paragraph (c) is modified to clarify the intent of this provision, without the use of reference to a specific paragraph that may be renumbered in the future amendments. The intent being that all marker lamps do not have to be switched ON simultaneously when the conditions for the switching ON of DRL apply (i.e. conditions for switching ON of dipped beam headlamps do not exist). The word “activated” is used as this provision would also

cover situations when conditions for switching ON DRL exist and DRLs are switched OFF manually or are still switched OFF after the activation of the propulsion system.

Subparagraph 5.11.1.(d)

3. Amended to stay in line with other provisions under 5.11.1.

Paragraph 5.11.2.

4. Amended to lessen the emphasis on “in case of ...”. One could infer that there may be other cases related to “other marker lamps systems” where the light sources do not have to be switched ON and OFF simultaneously.

5. GRE should consider adding a general paragraph stating that with the exception of direction indicators all light sources of each individual light signalling device – including “Y”, “D” or other letter lamp – must be switched on at the same time. Regulations Nos. 6 and 48 allow for sequential direction indicators. However, until otherwise decided by the Working Party on Lighting and Light-Signalling (GRE), no other lamp should be sequentially illuminated.

Paragraph 6.1.7.1.

6. Clarifies the text in view of mandatory automatic switching ON of dipped-beam headlamps and allowance for manual switching OFF.

Paragraph 6.2.7.1.

7. Amended to clarify the text.

Paragraph 6.2.7.3.

8. Amended as this paragraph should be technology neutral and address required/desired dipped beam intensity not specific technology requiring a ramp-up time for reaching full photometric output. Also, clarified that the dipped-beam headlamps do not have to be switched ON when the main-beam headlamps are used to flash warning signal.

Paragraph 6.2.7.5.

9. Deleted as the automatic switching ON of the headlamps becomes mandatory.

10. Present 6.2.7.6. is renumbered as 6.2.7.5. and it will require automatic switching of dipped beam headlamps. Also, automatic switching should be allowed under other conditions than ambient light condition, related for example to the time of the day, vehicle location (e.g. tunnel), atmospheric conditions, etc. However, the paramount intent is to prevent vehicles from traveling under dark ambient conditions without dipped beam headlamps switched ON. Hence, requirement to follow conditions in Annex 13 must remain.

Paragraph 6.2.7.6.

11. Assures that the driver can switch ON dipped-beam headlamps at any time.

Paragraph 6.2.7.7.

12. Would allow the dipped beam to stay OFF or be manually switched OFF despite the ambient light conditions requiring the dipped beam headlamps to be switched ON. However, this aberration would be allowed only under conditions that the vehicle is either stationary or is moving at slow speed; (needed to satisfy specific location’s requirements; e.g. in refineries, at military installations, etc) or when the road illumination is already provided by the front fog lamps.

Paragraph 6.2.7.8.

13. Assures that the automatic operation of dipped-beam headlamps resumes once the conditions allowing it to be switched OFF no longer exist or the driver decides to switch dipped-beam headlamps back ON.

14. Former 6.2.7.7. is deleted as its intent is covered in para. 6.2.7.5.

Paragraphs 6.9.8. and 6.10.8.

15. Applicable to position lamps and perhaps to all lamps listed in para. 5.11. This amendment would require that a vehicle must travel with either dipped-beam or DRL switched ON. Temporary, manual switching OFF of headlamps is allowed under specific conditions. Dipped-beam headlamps are automatically re-switched ON, when prescribed conditions stop to exist. When the vehicle is traveling with DRL switched ON, there is no need for lamps listed in para. 5.11 to be switched ON; therefore, there is no need to inform driver that these lamps are switched ON. Furthermore, as lamps listed in 5.11 must be switched ON together with dipped beam headlamps, there is no need for a mandatory tell-tale indicating activation of these lamps.

16. If a failure tell-tale is required, proposal should be drafted and submitted to the Working Party on General Safety Provisions (GRSG) to change the colour of position lamp tell-tale to yellow or at least allow this tell-tale to have colour other than green.

Paragraph 6.19.7.1.

17. Amended to clarify that DRL must not switch ON when the headlamps or front fog lamps are switched ON manually or the conditions exist for automatic headlamp activation (hence reference to dipped beam headlamps being “activated” not “switched ON”).

Paragraph 6.19.7.2.

18. Would continue the allowance for manual switching OFF the DRL. The language of this paragraph would be aligned with the proposed text for the allowance of the dipped beam headlamps manual switching OFF (para. 6.2.7.6.).

Paragraph 6.19.7.3.

19. Assures that the automatic operation of DRL resumes once the conditions allowing DRL to be switched OFF no longer exist.

Paragraph 6.19.7.4.

20. Footnote 15 was deleted as it applies to old transitional provisions (Supplement 4 to 03 series of amendments) that already expired. The former paragraph 6.19.7.3. was amended for clarification.

Paragraph 6.19.7.5.

21. Would allow to illuminate just the rear position lamp without the need for illumination of other devices listed in para. 5.11. This reinstates the intent, inadvertently eliminated by ECE/TRANS/WP.29/2017/110.

Paragraph 6.19.7.6.

22. Amended, so it is clear that switching OFF or dimming of DRL applies only when the direction indicator is operating.

Paragraph 6.22.7.3.

23. Clarifies the text.