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Item 4(b) of the provisional agenda

REGULATION No. 48
(Installation of lighting and light-signalling devices)

Daytime running lamps switching

Proposal for Supplement 4 to the 04 series of amendments to Regulation No. 48

Submitted by the Chairman of the Working Party on Lighting and Light-Signalling */

The text reproduced below was submitted by the Chairman of the Working Party on Lighting and Light-Signalling (GRE) as an outcome of the GRE informal meeting held on 11 December 2008, regarding the automatic switching of the dipped beam headlamps installed on a vehicle equipped with the daytime running lamps. The proposal is based on a document without symbol (informal document No. GRE-60-10), distributed during the sixtieth session of GRE. The modifications to the current text of the Regulation, including draft

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

Supplement 3 to the 04 series of amendments to Regulation No. 48, are marked in bold or strikethrough characters.

A. PROPOSAL

Paragraph 5.11., 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 does not apply:

5.11.1.1. When front and rear position lamps are switched ON, as well as side-marker lamps when combined or reciprocally incorporated with said lamps, as parking lamps; or

5.11.1.2. when side-marker lamps are permitted to flash or

[5.11.1.3. when [at least] the rear position lamps are operating in conjunction with the daytime running lamps.]"

Paragraphs 6.1.7.1. to 6.1.7.3 (former), renumber as paragraphs 6.1.7.2 to 6.1.7.4.

Insert new paragraph 6.1.7.1., to read:

"6.1.7.1. The main-beam headlamps may be switched ON, in a steady-burning state, only when the master light switch is in headlamps ON position or in "AUTO" (automatic) position and the conditions for automatic activation of dipped beam exist. In the later case, the main beam headlamps shall be switched off automatically when the conditions for automatic activation of dipped beam ceased to exist."

Paragraphs 6.1.7.1. to 6.1.7.3. (former), renumber as paragraphs 6.1.7.2 to 6.1.7.4.

Paragraph 6.2.7., 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.

6.2.7.2. The dipped beam may remain switched on at the same time as the main beams.

6.2.7.3. In the case of dipped-beam headlamps according to Regulation No. 98, the gas-discharge light sources shall remain switched on during the main-beam operation.

- 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 authority responsible for type approval.
- 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."

Insert new paragraphs 6.2.7.6. to 6.2.7.8., to read:

- "6.2.7.6.** If daytime running lamps are present and operate according to paragraph 6.19., the dipped-beam headlamps shall be switched ON and OFF automatically relative to the ambient light conditions (e.g. switch ON during nighttime driving conditions, tunnels, etc.). Without prejudice to the above, they 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.).
- 6.2.7.7.** Paragraph 6.2.7.6. does not apply if [*/]:
- 6.2.7.7.1.** [a tell-tale is present according to paragraph 6.19.8.1., and[/or]] the instrument panel is not illuminated when daytime running lamps are switched ON; or
- [6.2.7.7.2.** daytime running lamps operate in conjunction with [at least] the rear position lamps.]
- 6.2.7.8.** If the dipped beam headlamps are switched ON and OFF automatically, relative to the ambient light conditions, this switching function shall operate according to the requirements of Annex 12.

[*/ This exemption applies to vehicles of categories M₁ and N₁ until 66 months, and for vehicles to other M and N categories until 84 months, after the official date of entry into force of the 04 series of amendment to this Regulation.]"

Paragraph 6.19.7.1., amend to read:

- "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. **However, the** daytime running lamps may remain OFF while **the following conditions exist:**

- 6.19.7.1.1. the automatic transmission is in the park ~~or neutral~~ position; or
- 6.19.7.1.2. the parking brake is **in the** applied **position**; or
- 6.19.7.1.3. **prior to the vehicle being** set in motion for the first time **after each manual activation of the propulsion system.**
- [6.19.7.2. 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 daytime running lamp shall switch OFF automatically when **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** the front fog lamps or headlamps are switched ON, except when the latter are used to give intermittent luminous warnings at short intervals. 14/
- 6.19.7.4. ~~Furthermore~~ The lamps referred to in paragraph 5.11. are not switched ON when the daytime running lamps are switched ON, **[except for [at least]rear position lamps when the daytime running lamps are operating in conformance to paragraph 6.2.7.7.2.]"**

Paragraphs 6.19.7.2. and 6.19.7.3. (former), renumber as paragraphs 6.19.7.5. and 6.19.7.6.

Paragraph 6.19.8., amend to read:

- "6.19.8. Tell-tale
- [6.19.8.1. **Mandatory, if daytime running lamps operate according to paragraph 6.2.7.7.1.**
- 6.19.8.1.1. **Closed-circuit tell-tale activated while daytime running lamps are switched ON, or**
- 6.19.8.1.2. **Closed-circuit tell-tale - visual or auditory or both and activated only when daytime running lamps are switched ON and conditions for automatic switching of dipped beam headlamps according to requirements of Annex 12 are satisfied.**
- 6.19.8.3. **Otherwise,] closed-circuit tell-tale optional."**

Insert new paragraph 12.21., to read:

- "12.21. **As from [48] months from the official date of entry into force of Supplement 4 to the 04 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements**

of this Regulation as amended by Supplement 4 to the 04 series of amendments."

Insert a new Annex 12, to read:

"Annex 12

| AUTOMATIC SWITCHING CONDITIONS DIPPED-BEAM HEADLAMPS <u>1/</u> | | |
|---|-------------------------------------|-----------------------------------|
| Ambient light (outside the vehicle) on a horizontal surface | Dipped-beam headlamps | Response time |
| less than [1000] lux | ON | fast <u>2/</u> |
| between [1000] lux and 7,000 lux | at manufacturer's discretion | as applicable <u>2/ 3/</u> |
| more than 7,000 lux | OFF | slow <u>3/</u> |

- 1/ Compliance with these conditions shall be demonstrated by the applicant, by simulation or other means of verification accepted by the Technical Service responsible for type approval."**
- 2/ This requirement shall be deemed to have been met when the dipped-beam headlamps are activated in no more than 2 seconds.**
- 3/ This requirement shall be deemed to have been met when the dipped-beam headlamps are switched OFF in [more than 60 seconds, but] no more than 300 seconds."**

B. JUSTIFICATION

Paragraph 5.11.1.3.:

This paragraph would allow illumination of only rear position lamps in conjunction with daytime running lamps. This provision is questioned by some experts as an unnecessary addition of power consumption. However, if this allowance is kept in the final text of this proposal, then some experts consider that only rear position lamps should be allowed to stay illuminated; hence, for clarity, the words "at least", suggested by the expert from the International Organization of Motor Vehicle Manufacturers (OICA), would have to be removed unless the OICA expert justifies reason for keeping them.

Para. 6.1.7.1.:

This paragraph would permit permanent activation of main beam headlamps only when dipped beam headlamps are activated. Such provision would maintain current practice by the industry and prevent accidental switching ON of main beam during the day.

Paragraph 6.2.7.:

This provision would make sure that if the driver flashes or uses main beam for signalling during the daytime and when the daytime running lamps are ON, the main beam would not remain ON indefinitely. During the daytime the main beam tell-tale is not as aggressive as during darkness and there is no feedback from the driver's field of vision, hence the vehicle may travel for the rest of the trip with main beam ON, providing unnecessary glare to other road users and adding to the vehicle's emissions.

Paragraph 6.2.7.6.:

This paragraph is the main reason for this supplement. It introduces requirement for mandatory automatic switching of dipped beam headlamps when these headlamps need to be illuminated due to ambient light conditions. This paragraph also allows supplemental logic for automatic switching of dipped beam related to other conditions possibly requiring activation of night time lights on a vehicle during the daytime. Such conditions may include specific local dipped beam activation requirements transmitted to a vehicle via transponders, wireless or adverse weather conditions - illumination of dipped beam could be triggered by activation of windscreen wipers. The informal GRE meeting on 11 December 2008 agreed that Regulation No. 48 should not specify detailed parameters for these additional and optional switching logic schemes, but that they must not interfere with the requirements for day - night automatic switching.

Paragraph 6.2.7.7.:

This paragraph would introduce alternatives to automatic switching of headlamps, which are designed to reduce the likelihood of unintentional use of daytime running lamps, without rear position lamps, in conditions where this would be inappropriate. Some contracting parties consider that these alternatives should be temporary exempted, allowing vehicle manufacturers time to develop more suitable automatic dipped beam switching equipment, which would eventually become the only, mandatory solution on all vehicle categories. This exemption would be conditioned upon provision of failsafe methods of informing the driver that his vehicle does not have night time driving lights activated (dipped beam, position lamps, etc) or of providing rear position lamps. If GRE decides that this exemption should be temporary and its time of application would be governed by a footnote. The final time and application provisions of the footnote have to be decided by GRE.

Paragraph 6.2.7.7.1.:

The proposed method to inform drivers of the state of their night time lamp activation, would be a dark instrument panel. To date, based on Canadian experience, this is the most reliable way of informing drivers that the vehicle night time lights are not illuminated. The presence of just a circuit-closed daytime running lamp tell-tale was found to be barely noticeable in daytime light or twilight and positively not noticeable while the instrument panel is illuminated. However, in this case, such a tell-tale could be considered as failing to meet the requirements of Regulation No. 121 ("5.3.6. Means that shall be provided for making tell-tales and their identification visible and recognizable to the driver under all driving conditions"). The concern remains, that the

information that the daytime running lamps are ON, does not convey the message that all other lamps are OFF. The square brackets are left to allow the expert from OICA the opportunity to propose an alternative method of communication, other than a dark instrument panel, of the information that the vehicle night time lamps are OFF.

Paragraph 6.2.7.7.2.:

Some experts objected to the use of rear position lamps in conjunction with daytime running lamps. They are concerned about increased emissions and premature light source burn-out. The pros and cons of this provision should be discussed in GRE.

Paragraph 6.2.7.8.:

This paragraph requires that the automatic switching of dipped beams must be governed by conditions set in a new Annex [12] to Regulation No. 48 that define the ambient light conditions when the automatic switching must be activated.

Paragraph 6.19.7.1.:

Provides reformatted and slightly amended provisions already in Regulation No. 48. The amendments are:

- (a) deletion of the neutral position of the automatic transmission. The neutral setting of the transmission is between reverse and drive positions; so switching from park to reverse would already activate the daytime running lamps. Since vehicles with automatic transmission are rarely, if at all, left in neutral, this allowance could only lead to ambiguity in interpretation of the text.
- (b) the additional text in the last subparagraph adds clarity that this allowance is only for the time the vehicle is moved for the first time after each activation of the engine and not after each stop. Also, GRE should determine, if the text "for the first time" is clear and does not create possibility for different interpretation by different approval authorities.

Paragraph 6.19.7.2.:

Was an attempt to add allowance for a manual switch permitting temporary deactivation of the daytime running lamp. Such a switch would allow the driver to deactivate daytime running lamps while the vehicle slowly approaches an area where there is a requirement for extinguishing of the headlamps at night (e.g. a road checkpoint, boarder crossing etc.). Paragraph 6.2.7.5. allows the dipped beam headlamps to be deactivated while the daytime running lamps would stay ON, leading to certain confusion and possibly to an unwanted confrontation.

Para. 6.19.7.4.:

Adds allowance for the rear position lamps to stay ON together with daytime running lamps. This provision is questioned by some experts.

Para. 6.19.8.:

The provisions in square brackets would be added only if a positive/clear tell-tale is developed to inform driver that the vehicle night time lamps are not operating.

In Annex 12 the threshold for activation of dipped beam headlamps must be discussed by GRE together with the specification of a minimum time after which the dipped beam headlamps are

switched OFF when the ambient light conditions indicate that there is sufficient ambient light for the vehicle to travel without position lamps activated.

Para. 12.21.:

The Transitional Provisions give manufacturers lead time before the conformance to this amendments will be mandatory. GRE will have to decide on the actual number of months vis-à-vis the time constraint in the footnote to paragraph 6.2.7.7.

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