

The present informal document was prepared by the group of interested experts discussing the new 07 series of UN R48. It supports document ECE/TRANS/WP29/GRE/2019/11.

In this document the reasons and explanations for the proposed amendment are presented, for each of the paragraphs included in document ECE/TRANS/WP29/GRE/2019/11.

Paragraph 2.3.5.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 2.3.6.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 2.3.10.

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 2.3.11.

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 2.7.6.

Due to the constant increase of lighting and light signaling functions operated in automatic way, it was deemed useful to clarify the conditions in which a function is put by its manual or automatic operation. The four new definitions in sub-paragraphs 2.7.6.1. to 2.7.6.4. have been introduced to better clarify whether the operation of a function has caused it to actually emit light or has just put it in a “standby” condition, allowing it to emit light only after a further manual or automatic input (manual or automatic).

Consequently, the whole sections 5 and 6 of UN Regulation No. 48 were verified for coherence and consistency of the various functions switching conditions to these new definitions; the changes made to a number of paragraphs in document ECE/TRANS/WP29/GRE/2018/44 for this purpose will be commented in the present document with a simple reference to the above explanation.

The definition for “Sequential activation” has been moved at the end of paragraph 2.7.6. and the sub-paragraph numbering has been changed accordingly; moreover the wording has been updated to be coherent and consistent with the new definitions above indicated.

Paragraph 2.10.11 new

Definition of “V plane” added because the point of intersection of the “H plane” and the “V plane” defines the “V-H point” used in lighting Regulations.

Paragraph 2.7.6.5.

The text in square brackets was added for clarification.

Paragraph 4.2.

The TF HS was established to the aim of simplify and clarify certain aspects of the headlamp and DRL switching and related interaction; as such, the proposal to be prepared by the TF should have been treated as a “supplement” to the present 06 Series of amendments to UN Regulation 48.

However the proposal the TF finally prepared involved more complex changes than originally expected, also requesting technical modification to the vehicles to fulfill the updated requirements.

For this reasons, it was deemed more suitable to present it as a new series of amendment, the 07 and consequently it was necessary to introduce the suitable changes in this paragraph.

Paragraph 5.7.1.1.

See explanation for paragraph 2.7.6.

Paragraph 5.9.

The terminology has been updated to avoid confusion with the one introduced with the new definitions in paragraph 2.7.6. an editorial changes in relation to document GRE-2018-44.

Paragraph 5.9.2.

See explanation for paragraph 2.7.6.

Paragraph 5.11. and related sub paragraphs

Sub-paragraphs 5.11.1.1. to 5.11.2. renumbered as indents (a) to (d) of paragraph 5.11.1. and sub-paragraph 5.11.3. renumbered as sub-paragraph 5.11.2. Wording of these sub-paragraphs and related indents changed for editorial improvement.

The daytime running lamps are added because

Paragraph 5.12.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 5.12.1.1.

See explanation for paragraph 2.7.6.

Paragraph 5.14.3.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 5.14.4.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 5.18.3.

See explanation for paragraph 2.7.6.

Paragraph 5.18.4.

See explanation for paragraph 2.7.6.

Paragraph 5.21.1.

See explanation for paragraph 2.7.6.

Paragraph 5.26.

This proposed amendment of 5.26 is intended to reduce the discomfort caused by the glaring effects of increasingly performant rear-signalling lamps, when seen at short distance, while assuring correct perception of the signals in all cases.

The categories which are allowed to vary of the different lamps are directly mentioned.

The possibility that stop lamps of category S4 can vary independently from the other rear lamps is been moved to paragraph 5.26.3.

The environmental conditions which allow a variation are now listed in paragraph 5.26.1. The last two sentence are moved to paragraph 5.26.4.

In addition for France the wording “prescribed intensity relationship [if applicable] is maintained throughout variation transitions” is not precise enough. Therefore France proposed in document GRE-2019-04 to add Solution A **or** B. Solution A would allow that the different rear lamps can vary without the others. Solution B would allow that the lamps may vary only together.

Paragraph 5.26.2.

In addition to the “environmental conditions” where an increase and reduction is allowed “traffic conditions” were added. For traffic conditions only reduction should been allowed in the case the distance is less then [20 m]. The reduction may remain until the speed is above [20 km/h]. This should avoid a kind of “flickering” (ON/OFF/ON...). CZ proposed as an alternative to request that the reduction has to remain until the distance is [50 m] or more.

Paragraph 6.1.

Editorial changes in relation to document WP.29-2018-99 Rev.01.

Paragraph 6.1.2.

See explanation for paragraph 2.7.6.

Paragraph 6.1.7.1.

Editorial changes in relation to modification to paragraph 2.7.6. In addition a wording simplification is proposed.

Paragraph 6.1.7.2.

See explanation for paragraph 2.7.6.

Paragraph 6.1.7.3.

See explanation for paragraph 2.7.6.

Paragraph 6.1.7.4.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.1.7.5.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.1.7.6.

See explanation for paragraph 2.7.6.

Paragraph 6.1.9.1.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.1.9.3.

See explanation for paragraph 2.7.6.

Paragraph 6.1.9.3.1.

See explanation for paragraph 2.7.6.

Paragraph 6.2.

Editorial changes in relation to document WP.29-2018-99 Rev.01.

Paragraph 6.2.7.1.

Changes aiming for simplification of wording; no change in the requirement's meaning.

Paragraph 6.2.7.2.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.2.7.3.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.2.7.5.

Paragraph is deleted and the requirements contained in it are reworded and moved to other more suitable paragraphs.

The requirement contained in this paragraph is the one that, having been remained unchanged after the introduction of automatic headlamps switching requirement, caused misunderstanding and different interpretations.

The main work of the Task Force Headlamp Switching was concentrated on this requirement, for manual override, on its clarification and necessary updating in view to allow compatibility with specific circulation exigencies and local in-use requirements.

Paragraph 6.2.7.6. (old)

Numbering updated (to 6.2.7.5., after deletion of the existing paragraph with same number).

Existing sentence in parenthesis deleted since it was considered redundant.

A sentence, referring to the switching condition of DRL linked to the dipped beam headlamp switching prescribed in the present paragraph, is added, in square brackets since there was not unanimous agreement among the TF HS experts about its effective need. The GRE group of interested experts came to the conclusion that the sentence has to be added to paragraph 6.19.7.4 (new).

A further sentence is added to provide a link with the subsequent sub-paragraphs providing exceptions to the general requirement of this paragraph.

Paragraph 6.2.7.5.1. (new)

This paragraph was added to provide the exceptions to the general requirements on automatic headlamps switching ON. The requirements in the respective subparagraphs should allow, that country specific "user requirements" from a technical perspective can be realized.

In particular, for the allowance to maintain OFF (or switch OFF) the headlamp until the vehicle has reached a certain speed, the existing value of 10 km/h has been changed in 15 km/h to take into account the difficulty to exactly measure such a low speed; the chosen value takes into account the tolerances allowed by Regulation No. 39 for the speedometers (an indicated speed of 15 km/h can correspond to a true speed of only 10 km/h).

If GRE decides to delete paragraph 6.2.7.5.2. (new) it is important that paragraph 6.2.7.5.1. (new) contains a list of **all** specific requirements of **all** UN R48 contracting parties to allow the realization of the national user requirements.

Subparagraph (d) becomes important for vehicles been used in e.g. explosive areas like refineries. Further amendments may be necessary. It is necessary to define a procedure for the switching to avoid misuse. Therefore Alternative 2 and 3 were added for discussion.

Paragraph 6.2.7.5.2. (new)

This paragraph was added to provide a further exception to the general requirements on automatic headlamps switching ON to allow the vehicle driver to manually switch OFF the dipped beam headlamps even under conditions requiring the dipped beam headlamps to be switched ON, to be able to fulfil specific in-use requirements (e.g.: the prohibition to circulate with headlamps switched ON in areas – mainly not open to normal traffic – like petrol refineries or the mandatory headlamps switching OFF when the vehicle is stopped at a railway crossing) or local safety rules requiring lamps switching OFF in approaching the border of certain Countries or to allow circulation with headlamps switched OFF in case of vehicle owned by the army or police or similar safety corps during service operation.

This further exception has been allowed under condition that the automatic switching is resumed each time the propulsion system is put in operation (manually) and that a clear indication/warning is provided to the driver throughout the entire period that the headlamps are switched OFF and the automatic switching is deactivated.

Paragraph 6.2.7.6. (new)

This paragraph contains part of the requirement previously contained in the deleted present paragraph 6.2.7.5.. The dipped beam headlamps manual switching ON was unanimously considered to be necessary, even when the automatic switching is present, to always allow the driver to switch ON the headlamps when so desired or needed, in particular for ambient conditions with reduced visibility (i.e.: daytime fog or rain situations) hardly detectable by the automatic switching sensors or in case of failure of the automatic switching. The mandatory presence of the manual switching (manual override) has been now expressed in a more clear way than before and in a paragraph different from the one mandating the automatic switching, to reduce the danger of confusion and misunderstanding.

Paragraph 6.2.7.7. (new)

Due to the introduction, in the previous paragraph, of certain conditions allowing exceptions to the automatic switching, it was deemed necessary to specify the obligation to resume it as soon as the conditions allowing for exceptions no longer exist and to mandate the presence of a mean allowing the driver to engage at any time the automatic switching.

Paragraph 6.2.7.8.

Numbering updated (after introduction of a new paragraph 6.2.7.7.).

The allowance for additional conditions for dipped beam automatic switching has been confirmed by means of a modified wording, aiming to avoid the discrepancy of interpretation pointed out during the TF HS works. The majority of Experts in the TF deem preferable to allow that the additional conditions for automatic switching may be used independently from the basic conditions prescribed in paragraph 6.2.7.5.

Paragraph 6.2.8.2.

Editorial changes in relation to modification to paragraph 2.7.6. In addition UN R48 has to be fulfilled by vehicles by combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.2.9.

See explanation for paragraph 2.7.6.

Paragraph 6.4.7.1.

See explanation for paragraph 2.7.6. In addition UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.4.7.2.

See explanation for paragraph 2.7.6. In addition some editorial changes, connected with the said paragraph, have been introduced.

Furthermore the existing value of 10 km/h has been changed in 15 km/h to take into account the difficulty to exactly measure such a low speed; the chosen value takes into account the tolerances allowed by UN Regulation No. 39 for the speedometers (an indicated speed of 15 km/h can correspond to a true speed of only 10 km/h).

Paragraph 6.5.7

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.6.7.2.

See explanation for paragraph 2.7.6. In addition some editorial changes, connected with the said paragraph, have been introduced.

Paragraph 6.6.9.

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.7.7.1.

See explanation for paragraph 2.7.6.

Paragraph 6.7.7.2.

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.8.9.

Editorial change, aimed to clarify the requirement (without modify its meaning); a wording already used in other paragraph was used, for text consistency.

Paragraph 6.9.7.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.9.8.

The TF HS Experts decided to re-introduce the sentence (deleted with Supplement 10 to the 06 series of amendment, as a consequence of other amendments in that supplement) allowing to do not switch ON the tell-tale for front position lamps when used in connection with DRL. Same wording of the sentence previously existing has been used, just updating the reference to the involved paragraph.

In addition a small editorial correction has been introduced.

Paragraph 6.9.9.1.

See explanation for paragraph 2.7.6. Editorial changes in relation to modification to said paragraph have been introduced.

Paragraph 6.10.7.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.10.8.

The TF HS Experts decided to re-introduce the sentence (deleted with Supplement 10 to the 06 series of amendment, as a consequence of other amendments in that supplement) allowing to do not switch ON the tell-tale for front position lamps when used in connection with DRL. Same wording of the sentence previously existing has been used, just updating the reference to the involved paragraph.

Paragraph 6.11.7. and related sub-paragraphs, up to 6.11.7.4.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.11.7.5.

See explanation for paragraph 2.7.6.

Paragraph 6.12.7.

See explanation for paragraph 2.7.6. In addition UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.12.9.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.18.9.

Editorial change, aimed to clarify the requirement (without modify its meaning); a wording already used in other paragraph was used, for text consistency.

Paragraph 6.19.7.

Numbering of the paragraph and related sub-paragraphs and indents has been changed to give them a structure similar to that of paragraph 6.2.7.

Paragraph 6.19.7.1.

A clarification about the condition for DRL automatic switching ON in relation to the switching condition of headlamp and front fog lamp is introduced for coherence and consistency with the requirements in paragraph 6.19.7.4 (new numbering).

Paragraph 6.19.7.2.

The conditions for the existing exceptions to the mandatory automatic DRL switching ON were confirmed by the TF HS Experts, with the deletion of condition referred to the vehicle having travelled for more than 100 m with DRL OFF (which was judged an unnecessary burden) and with the change to the speed limit value (for which please refer to the explanation to paragraph 6.2.7.5.1. for the same change). The wording of present sub-paragraphs of paragraph 6.19.7.1., containing the above requirements, has been updated for better clarity.

Paragraph 6.19.7.3. (new)

This paragraph has been added to specify the obligation to resume the automatic switching as soon as the conditions allowing for exceptions no longer exist.

Paragraph 6.19.7.4.

Numbering updated, due to the introduction of new paragraph 6.19.7.3..
The wording and the structure of this paragraph has been updated to improve clarity, without changes to the meaning of the requirements.

Paragraph 6.19.7.5.

Numbering updated, due to the introduction of new paragraph 6.19.7.3..
The TF HS Experts decided to re-introduce the sentence (deleted with Supplement 10 to the 06 series of amendment, as a consequence of other amendments in that supplement) allowing for the possibility to switch ON, together with the DRL, the rear position lamps only and not necessarily all the lamps prescribed in paragraph 5.11..

The European Commission proposed that the rear position lamps “shall” instead of “may” been switched ON together with the Daytime Running Lamps. Regarding this worsening of the requirements the group of interested experts agreed that further discussions are necessary. The increase of CO2-Emissions and the safety-benefits have to be worked out and have to be considered.

Paragraph 6.19.7.5.

Numbering updated, due to the introduction of new paragraph 6.19.7.3..

During discussion in TF HS it was pointed out that a proposal exists in GRE from 2016 to change from “optional” to “mandatory” the DRL switching OFF or luminous intensity reduction in case of they are located at less than 40 mm from front direction indicator lamps. Consequently the TF HS Experts deemed useful to introduce, in square brackets as a reminder, the change from “may” to “shall” related to the application of the above described requirement; in addition an editorial improvement of the wording, in line with the one already used in the present paragraph 6.19.7.6. (now renumbered 6.19.7.7., see below) has been introduced.

Please note that an updated proposal on the above subject was presented at the 79th GRE session (April 2018) by Germany and Italy; the discussion on this proposal was deferred to the next session (80th, October 2018) based on a further updated proposal.

The proposal from OICA considers that when the distance between direction indicators of categories 1a and 1b and dipped-beam headlamps is in the range of 20 mm to 40 mm, it is not required to switch-off nor to dim the dipped-beam headlamps (see prescriptions of paragraph 6.5.3. of Regulation No. 48). Therefore, in order to align the two requirements “dipped beam & direction indicator” versus “daytime running lamp & direction indicator” it should be optional for categories 1a and 1b to be switched off or to be dimmed.

Paragraph 6.19.7.6.

Numbering updated, due to the introduction of new paragraph 6.19.7.3..
Editorial changes in relation to modification to paragraph 2.7.6.

The proposal from OICA differentiates between “totally common apparent surfaces” and “partially common apparent surfaces” of the DRL and the Direction Indicator. Furthermore the spirit of the requirements of new paragraphs 6.19.7.6.2. (a) and (b) were also incorporated. This proposal would align two days designs already on the street.

Paragraph 6.20.7.

See explanation for paragraph 2.7.6.

Paragraph 6.20.7.2.

See explanation for paragraph 2.7.6. Editorial changes in relation to modification to said paragraph have been introduced. In addition the existing value of 10 km/h has been changed in 15 km/h to take into account the difficulty to exactly measure such a low speed;

the chosen value takes into account the tolerances allowed by UN Regulation No. 39 for the speedometers (an indicated speed of 15 km/h can correspond to a true speed of only 10 km/h).

Paragraph 6.20.9.

See explanation for paragraph 2.7.6.

Paragraph 6.22.7.1.1.

See explanation for paragraph 2.7.6.

Paragraph 6.22.7.1.3.

See explanation for paragraph 2.7.6.

Paragraph 6.22.7.1.5.

See explanation for paragraph 2.7.6.

Paragraph 6.22.7.2.

See explanation for paragraph 2.7.6.

Paragraph 6.22.7.3.

Editorial change, without modify the paragraph's meaning.

Paragraph 6.22.7.4.4.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.22.8.2.

Editorial changes in relation to modification to paragraph 2.7.6. Furthermore UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.22.9.3.1.3.

Editorial changes in relation to modification to paragraph 2.7.6.

Paragraph 6.23.

Because of the General Safety discussions in Brussels the European Commission made the proposal to make emergency stop signal mandatory. The group of interested experts agreed that the requirements in UN R48.07 have to be aligned with the discussions/decisions in Brussels.

In the Interinstitutional File 2018/0145(COD) the following is been mentioned:

Article 3 “Definitions”

For the purposes of this Regulation, the definitions laid down in Article 3 of Regulation (EU) 2018/858 shall apply.

In addition, the following definitions shall apply:

(7) 'emergency stop signal' means ~~rapid flashing stop lamps~~ a light-signalling function to indicate to other road users to the rear of the vehicle that a high retardation force is being applied to the vehicle relative to the prevailing road conditions;

Article 6 “Advanced vehicle systems for all categories of motor vehicle”

1. Motor vehicles shall be equipped with the following advanced vehicle systems:

- (a) intelligent speed assistance;*
- (b) alcohol interlock installation facilitation;*

- (c) driver drowsiness and attention monitoring;*
- (d) advanced distraction recognition;*
- (e) emergency stop signal;***
- (f) reversing detection.*

Based on the above the group of interested experts came to the conclusion that the emergency stop signal should become mandatory for motor vehicles and for trailers it should still be optional. As the discussion in Brussels no longer is limiting the signal to flashing of stop lamps also the flashing of the direction indicators should be maintained in UN R48.07.

Paragraph 6.23.7.3. and related sub-paragraphs

See explanation for paragraph 2.7.6.

Paragraph 6.24.9.1.

See explanation for paragraph 2.7.6.

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.

Paragraph 6.24.9.2.

See explanation for paragraph 2.7.6.

Paragraphs 6.25.7.3. to 6.25.7.6.

See explanation for paragraph 2.7.6.

Paragraph 6.26.7.,

See explanation for paragraph 2.7.6.

Paragraph 6.27.7. c)

The existing value of 10 km/h has been changed in 15 km/h to take into account the difficulty to exactly measure such a low speed; the chosen value takes into account the tolerances allowed by UN Regulation No. 39 for the speedometers (an indicated speed of 15 km/h can correspond to a true speed of only 10 km/h).

Paragraph 12.6. and related sub-paragraphs (new)

The TF HS was established to the aim of simplify and clarify certain aspects of the headlamp and DRL switching and related interaction; as such, the proposal to be prepared by the TF should have been treated as a “supplement” to the present 06 Series of amendments to UN Regulation 48.

However the proposal that the TF HS finally prepared involved more complex changes than originally expected, also requesting technical modification to the vehicles to fulfill the updated requirements. For this reasons, it was deemed more suitable to present it as a new series of amendment.

As new 07 series of amendments the document is then presented with a proposal for transitional provisions, based on the structure suggested by the “General Guidelines for United Nations regulatory procedures and transitional provisions in un Regulations” (document ECE/TRANS/WP.29/1044/Rev.2).

The main paragraphs got a heading for better understanding what is behind it. Furthermore the proposal from OICA under “new registration” differentiated between mandatory installation of emergency stop signal and a second date of mandatory fulfilment of UN R48.07 for vehicles already on the street. This will allow vehicle manufacturers to have

sufficient time for updating the vehicles already on the street with the lot of new mandatory requirements.

Annex 2

Editorial changes to update the number of the series of amendments in the marking examples.

Annex 6, Paragraph 5.4.3.,

UN R48 has to be fulfilled by vehicles with combustion engines, electric vehicle etc. Therefore, engine is been replaced by propulsion system which is more neutral.