

Proposal to amend GRE/2020/14

The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal

Paragraph 6.19.7.4. (former), renumber to 6.19.7.5. and amend to read:

"6.19.7.45. ~~The lamps referred to in paragraph 5.11. may be switched ON~~ When daytime running lamps are switched ON, ~~if this option is chosen~~, at least the rear position lamps shall be switched ON. **Other lamps may also be switched ON according to paragraph 5.11.**"

However, the rear position lamps and other lamps according to paragraph 5.11. may be switched OFF when the daytime running lamps are switched ON, and remain switched OFF as long as the following conditions are met:

- ~~• The windshield wiper is not switched ON in its continuous or automatically controlled operation, and/or~~
- ~~• The windshield wipers have not been used more than [3] times within the past [1] minute, and/or~~
- ~~• No wetness of the road as defined in Annex 10 has been detected, and~~
- ~~• Good visibility conditions as defined in Annex 10 and Annex 12 footnote 1, have been detected [both at the front and at the rear of a vehicle].~~
- **ambient light conditions outside vehicle are above 4,000 lux (measured according to the requirements of Annex 13), and/or**
- **the front wiper system is not operating continuously either in manual or automatic mode, and/or**
- **the front wiper system has not wiped the screen more than [6] times within the past [60] seconds with the exception of wiping in relation to screen cleaning, and/or**
- **the rear wiper system (if installed) is not operating in intermittent or continuous mode with the exception of wiping in relation to screen cleaning.**

I. Justification

1. OICA has drafted revised criteria under which the rear position and other lamps according to paragraph 5.11 may be switched off:
2. A new criteria specifying an intermediate ambient light level of 4,000 lux has been added to ensure that even under slightly dull/cloudy conditions at least the rear position lamps and other lamps according to paragraph 5.11 remain switched ON.
3. The language of the first line of the original proposal was improved referring to the 'front wiper system' as opposed to 'windshield wiper' as it is the system that is switched to a manual or automatic mode.

4. The second original performance based requirement was amended to 6 times within the past 60 seconds to avoid a 'disco effect' when the wiper system is activated in response to irregular events such as screen cleaning by the vehicle in front or splashing water/spray from oncoming vehicles. The number of times remains in square brackets for discussion by GRE.
5. The rear wiper system was also added to the requirements as an optional input for vehicles fitted with such devices.
6. The 'exception of wiping in relation to screen cleaning' was added to both the front and rear wiper system switching criteria.
7. OICA propose to delete 'No wetness of the road as defined in Annex 10 has been detected' as there are a number of very different methods that can be used (ex. sound, light, moisture). These methods should not be defined in Annex 10 in order to remain technology neutral. For this application OICA believes the combination of light and rain sensors outweigh the performance of existing wet road sensor solutions. Light and rain sensors are already prevalent on many modern vehicles.
8. OICA propose to delete 'Good visibility conditions as defined in Annex 10 and Annex 12 footnote 1 - *Good visibility is defined by Meteorological Optical Range (MOR)*. A formally defined distance, essentially equivalent to visibility: the length of path in the atmosphere over which the light from a known source is reduced to 0.05 of its original intensity.*

Strict adherence to the definition (of MOR) would require mounting a transmitter and receiver of appropriate spectral characteristics on two platforms which could be separated, for example along a railroad, until the transmittance was 5 per cent. Any other approach strictly gives only an estimate of MOR. The estimation of visibility is affected by many subjective and physical factors.

Equipment needed to measure MOR also creates its own challenges, the systems used today are predominantly static and are shielded from the weather (as much as possible). This is the complete opposite to an automotive environment where the sensors themselves would be exposed to all atmospheric conditions, especially water and dirt. Such sensors are also quite large and would take up significant packaging space within the vehicle. They also require regular calibration.

OICA therefore conclude that the use of MOR as a measurement of visibility is not feasible in a dynamic vehicle mounted environment.