

Proposal to amend GRE-82-25 (SLR)

Note: The text reproduced below was prepared by Japan to amend the GRE-IWG SLR's proposal GRE-82-25 for a new 09 series of amendments to UN Regulation No. 48, imposing automatic levelling as well as GRE-73-17(Germany and Japan) and keeping the current headlamp cleaner installation requirement.

The text with red characters below indicates the changes proposed by Japan.

I. Proposal

Sub-paragraphs of paragraph 6.2.6.2., amend to read:

6.2.6.2. Headlamp levelling device

6.2.6.2.1. In the case where a headlamp levelling device is necessary to satisfy the requirements of paragraphs 6.2.6.1.1. and 6.2.6.1.2., the device shall be automatic.

~~6.2.6.2.2. However, devices which are adjusted manually, either continuously or non-continuously, shall be permitted, provided that they have a stop position at which the lamps can be returned to the initial inclination defined in paragraph 6.2.6.1.1. by means of the usual adjusting screws or similar means.~~

~~These manually adjustable devices shall be operable from the driver's seat.~~

~~Continually adjustable devices shall have reference marks indicating the loading conditions that require adjustment of the dipped beam.~~

~~The number of positions on devices which are not continuously adjustable shall be such as to ensure compliance with the range of values prescribed in paragraph 6.2.6.1.2. in all the loading conditions defined in Annex 5.~~

~~For these devices also, the loading conditions of Annex 5 that require adjustment of the dipped beam shall be clearly marked near the control of the device (Annex 8).~~

6.2.6.2.32. In the event of a failure of devices ~~described~~ **prescribed** in paragraphs 6.2.6.2.1. and ~~6.2.6.2.2.~~, the dipped-beam shall not assume a position in which the ~~dip~~ **vertical orientation** is less **downward** than it was at the time when the failure of the device occurred.

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. 45¹.~~

[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. 45¹.]

~~With respect to vertical inclination the provisions of paragraph 6.2.6.2.2. above shall not be applied for dipped beam headlamps with a light source or LED module(s) producing the principal dipped beam and having an objective luminous flux which exceeds 2,000 lumens.~~

~~In the case of filament lamps for which more than one test voltage is specified, the objective luminous flux which produces the principal dipped beam, as indicated in the communication form for the type approval of the device, is applied.~~

[In the case of filament lamps for which more than one test voltage is specified, the objective luminous flux which produces the principal dipped-beam, as indicated in the communication form for the type approval of the device, is applied.]

~~In the case of dipped-beam headlamps equipped with an approved light source, the applicable objective luminous flux is the value at the relevant test voltage as given in the relevant data sheet in the Regulation, according to which the applied light source was approved, without taking into account the tolerances to the objective luminous flux specified on this datasheet.~~

[In the case of dipped-beam headlamps equipped with an approved light source, the applicable objective luminous flux is the value at the relevant test voltage as given in the relevant data sheet in the Regulation, according to which the applied light source was approved, without taking into account the tolerances to the objective luminous flux specified on this datasheet.]

Only dipped-beam headlamps according to Regulation Nos. 98, 112 or 150 may be used to produce bend lighting.

If bend lighting is produced by a horizontal movement of the whole beam or the kink of the elbow of the cut-off, it shall be switched ON only if the vehicle is in forward motion; this shall not apply if bend lighting is produced for a right turn in right hand traffic (left turn in left hand traffic).

[†] ~~Contracting Parties to the respective UN Regulations can still prohibit the use of mechanical cleaning systems when headlamps with plastic lenses, marked "PL", are installed."~~

[¹ Contracting Parties to the respective UN Regulations can still prohibit the use of mechanical cleaning systems when headlamps with plastic lenses, marked "PL", are installed.]"

II. Justification

Glare and Levelling (excerpted from GRE-73-17)

1. This proposal is aimed at reducing glare problems for drivers to improve road traffic safety by deleting an old exemption in Regulation No. 48 that allows manual leveling for dipped-beam headlamps, which was established forty years ago with the introduction of automatic leveling. At that time automatic leveling was becoming mandatory and manual leveling was allowed to manufacturers to provide a simple and cheap alternative at the beginning and for a certain period only.
2. Automatic leveling for all headlamps became mandatory at the beginning of the 1990s, starting with manual leveling (later only in limited cases). However, even at that time it was still a challenge for the manufacturers to ensure that all types of vehicles would meet this requirement. But the technical progress over the last two decades no longer justifies this exemption.
3. The experience over the years (especially during periodical inspections) has shown that many vehicle drivers do not know how to handle such manual leveling devices and/or use them (un)intentionally in a wrong way. Wrong use especially can worsen, or even cause, glare instead of actually avoiding it (which was one of the original intentions).
4. Incorrect use of manual leveling also could lead to a (drastic) reduction of the driver's distance visibility, thus reducing safety. This occurs for instance in cases when the control for the manual headlamp-leveling device is inadvertently left in position that gives the greatest downward inclination for the headlamps. While automatic leveling ensures optimal distance visibility and therefore can contribute significantly to an increase of night-time driving safety.
5. The improvements with respect to glare reduction and keeping the seeing-distance in an optimum will be underlined by several studies (e.g. University of Michigan Transportation Research Institute 2007-46), which was carried out in a country with a relative critical view on such aspects. Also the studies on pedestrian protection show clearly the safety benefit of a sufficient seeing distance.
6. The results of GTB organized field test showed that all headlamps, even with Halogen light sources, could cause glare for drivers depending on the pitch angles (GRE-68-38). It was made clear that light source was not a factor influencing the glare assessment, not to mention vehicle category. All this means that headlamps should have automatic leveling to solve the current glare problems on the road traffic.
7. Japan has tried to know how many accidents have happened because of glare from headlamps in Japan. As the result, our data center ITARDA (Institute of Traffic Accident Research and Data Analysis) says that at least 49 fatalities and 1,063 injuries were reported for these 10 years. We should not blink this fact even though these numbers are not so big.
8. The technical progress of recent years makes the manual operation outdated and offers safer sensor controlled solutions. From the aspect of technical progress, the environmental burden and road safety, automatic leveling devices must be accepted with not a little cost-benefit. Therefore, the experts from Germany and Japan propose, as a next step to improve road traffic safety, that vehicle should be equipped with automatic leveling, by deleting this old exemption which still allows manual operation of a leveling device for the dipped-beam headlamps.

Glare and Cleaner

9. GRE-82-25 deletes the headlamp cleaner installation requirement. However, Japan cannot find the justification. There were not enough studies and discussions in IWG SLR and VGL. The amendment would increase glare problems for drivers. Therefore, Japan proposes to keep the current requirement until the studies and discussions of glare and headlamp cleaner are completed and a new alternative requirement is found.