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Working Party on Lighting and Light-Signalling (GRE)
(Forty-ninth session, 30 September - 4 October 2002,
agenda item 3.1.)

PROPOSAL FOR A NEW DRAFT REGULATION:

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF
ADAPTIVE FRONTLIGHTING SYSTEMS (AFS)
FOR MOTOR VEHICLES

Transmitted by the Expert from France

Note: The text reproduced below was prepared by the expert from France with the aim to improve the automatic levelling requirements and the photometric measurement provisions. The inserted text is in **bold** characters.

Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

A. PROPOSAL:

General amendment: Through all the Regulation amend the word "luminance" to read "illuminance".

Paragraph 5.2.1.2., amend to read:

"5.2.1.2. The use of lighting unit(s), which according to the Applicants description provide a cut-off as defined in annex 9 of this Regulation, that projects into a zone extending horizontally from 8 degrees left to 8 degrees right and vertically upwards from a horizontal line positioned at 0.9 degrees down,

shall be confined to vehicles that provide, if it applies in accordance with paragraph 6.20.6.1.3. of Regulation No. 48:

5.2.1.2.1. an automatic levelling device **for said lighting units**, if on either side of the system

(i) the combined objective luminous flux from the light source(s) **which can be simultaneously energized** exceeds 2,000 lumen and

(ii) the combined light output **of those lighting units which can be simultaneously energized** exceeds 650 lumen, within the isolux area ≥ 0.5 lx, **or**

5.2.1.2.2. a levelling device being automatically or manually adjustable, if the provisions of paragraph 5.2.1.2.1. above do not apply."

Insert new paragraph 5.2.1.3., to read:

"5.2.1.3. **Lighting units not being covered by the provisions of paragraph 5.2.1.2. above do not need to be installed with a levelling device.**"

Annex 3, footnote 4/ of Table 1, amend to read:

"... shall not be less than **0.1** lx (**63** cd)"

Annex 10:

Paragraph 1.8., amend to read:

"1.8. The photometric requirements for each single measuring point (angular position) of a lighting function or mode as specified in this Regulation apply to half of the sum of the respective measured ~~illuminance~~ values from all lighting units of the system applied for this function or mode or from all lighting units as indicated in the respective requirement; **however in those cases where a provision is specified for one side only, the division by the factor of 2 does not apply. (These cases are: paragraphs 5.2.1., 6.3.2.1.2. and 6.3.2.1.3., 6.4.1. and 6.4.2., note 4 of table 1 of annex 3, and paragraph 3.2. of annex 9).**"

Paragraph 2.2., amend to read:

"... specified in Regulation No. 99. In this case, the ~~illuminance~~
measured photometric values shall be corrected accordingly. ~~The~~
~~measured photometric values~~ **They** shall be multiplied by a factor of
0.7 prior to the check for compliance."

Paragraph 2.4., amend to read:

"... to supply the light sources.

The measured photometric values shall be multiplied by a factor
of 0.7 prior to the check for compliance, **except if this correction**
factor is already applied according to the provisions of
paragraph 2.2. above."

* * *

B. JUSTIFICATION:

Re. paragraph 5.2.1.2. and 5.2.1.3.:

a) Today automatic levelling is required generally, if 2000 lm for one complete side is exceeded. This applies also for a "fast track" R.98/R.112 additional bend lighting. The above-proposed provisions are insofar in line with this policy.

Since load dependent glare to the opposing traffic on one hand, and visibility range reduction on the other hand are strongly related to the central parts of the beam with a cut-off, only those are intended to be subjected to automatic levelling. Any partial beam, which does not project a cut-off into the said angular area, is considered insofar as it can cause the automatic levelling requirement for the central parts of the beam.

b) The new paragraphs 5.2.1.2.2. and 5.2.1.3. are needed to "answer" completely the corresponding provisions of 6.20.6.1.3. of the Regulation No. 48 draft amendment concerning passing beam levelling.

Re. Annex 3 and annex 10:

When amended as proposed above, all photometric values in this addendum are specified consistently on level of one side or one average side of the system, even in those cases where one side is addressed only.

The amendments to paragraph 2.2. apply to illuminances as well as to luminous intensities and luminous flux values.

The cases covered by paragraph 2.2. and 2.4. are overlapping. The factor 0,7 must be applied once only.
