Alternative aiming/leveling (explanations)

Tomasz Targosinski Ph. D. Eng
Poland
70 GRE 21-23 October 2013
Informal document No. GRE-65-30 (65th GRE, 28-31 March 2011, agenda item 5(d))

„Analysis of the influence of aiming, on visibility distance and glare”
AUTOMATIC LEVELLING

AT PRESENT - DESIGN ORIENTED REQUIREMENT

- 2000 lm (artificial arbitrary criterion)
- Gas discharge (35W, 25W?)
- LED

No relation to performance
HISTORICAL ARTIFICIAL AIMING/LEVELING PROVISIONS
PRESENT REGULATORY (Reg.48)
ROAD ILLUMINATION DISTANCE [m]
Real sizes and distances

Possible road illumination distance in Reg 48. CoP tolerances not taken into account
Proposed road illumination distance dependent aiming/leveling (75m, 50m-100m)
First version of Polish proposal (aiming/leveling)

Informal document No. **GRE-65-13**
(65th GRE, 28-31 March 2011, agenda item 5(d))
Informal document No. GRE-67-33
(67th GRE, 26-29 March 2012, agenda item 4(c))

- Explanations regarding decision making

- Three possible options:
  Optimum (a)
  With information to drivers (c)
  Arbitrary obligatory automatic leveling (b)
BASE FOR REAL HUMAN DECISIONS IN MOST SITUATIONS

IMAGINATION
BELIEF
FEELINGS
EMOTIONS
INTERESTS

SCIENTIFIC
CONFIRMED
REAL
VERIFIABLE
REPEATABLE

RATIONALLITY IS IN MINORITY
WHO IS RESPONSIBLE FOR ROAD SAFETY? (in lighting domain)

LAW CREATORS (GTB, GRE, WP29, EU)

TECHNICAL SERVICE

PTI

GOVERNMENT

SERVICE

DRIVER

ADMINISTRATIVE SERVICE

MANUFACTURERS

MY BOSS

Me
Proposal reduce glare comparing present situation for most vehicles, especially cars

Glare reduction by proposal GRE 2012/21
HOW WILL WORK GRE/2012/21

1. GUARANTEED VISIBILITY DISTANCE \( >[75\text{m}] \)?

2. GUARANTEED GLARE PROTECTION? (ACCORDING PRESENT HEADLAMPS REG.)

2. GUARANTEED GLARE PROTECTION? (PRESENT HEADLAMPS REG.)

OBLIGATORY AUTOMATIC LEVELLING (German proposal)

3. INFORMATION FOR DRIVER (OPTIONAL)

3. INFORMATION FOR DRIVER

A (optimal)  B (outside GRE/2012/21)  C (possible)
Comments on GRE/2012/27 (Lighting & Signalling WG)

Headlamp Initial Aiming

Informal document No. GRE-67-27
(67th GRE, 26-29 March 2012, agenda item 4(c)(i))

Informal document No. GRE-68-20
(68th GRE, 15-18 October 2012, agenda item 4(c)(i))

OICA strong opposition against proposal
Polish strong response against OICA arguments

Informal document No. **GRE-68-31**
(68th GRE, 15-18 October 2012, agenda item 4(d))
Proposed Initial nominal aim to correspond to 75m theoretical range

- Under proposal,
  - **No overlap** between height bands
  - **Most** headlamps would be aimed **higher than at present**

It will depend on manufacturers decision and choice of range of amended Reg.48 (30 to 100m or 50 to 100m)

It will be safety oriented advantage and goal of amendment because of longer average road illumination distance.

- **Risks increased glare.**

Not true. Decreased glare comparing present state.
Polish greatly mitigated proposal(s)

ECE/TRANS/WP.29/GRE/2013/15

&

ECE/TRANS/WP.29/GRE/2013/57
Polish greatly mitigated proposal(s)

Near as today requirements
Fully optional requirements
GOOD, COMBINED PROPOSAL

true
„PERFORMANCE ORIENTED”

AS TODAY:
ARTIFICIAL 2000lm „DESIGN ORIENTED”

OR

NEARLY AS TODAY BUT
„PERFORMANCE ORIENTED”
ROAD ILLUMINATION DISTANCE AS CRITERION, NO RESTRICTIONS MANUFACTURER CHOICE
NO 2000 lm NO LIGHT SOURCE CRITERION

OICA

MANUFACTURER CHOICE
THANK YOU FOR YOUR ATTENTION