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# Literature studies regarding glare and visibility on road traffic of SVP for GTB TF CAVGS



**GTB**

*The International Automotive Lighting  
and Light Signalling Expert Group*

*Groupe de Travail "Bruxelles 1952"*

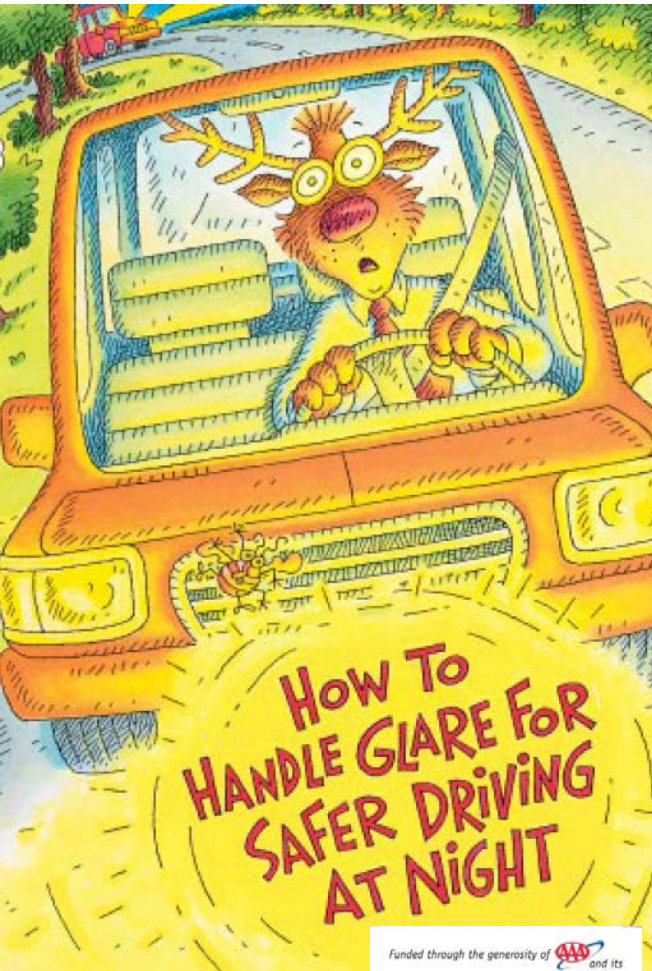
# Literature studies regarding glare and visibility on road traffic

- The chairman of GTB WG SVP has collected some literature, either received from GTB Members or by an own literature search.
- References or information were been sent from:
- Ad de Visser, Gerd Langhammer, Geoff Draper, Gunnar Lüttgens, Michael Sivac and Prof. Khanh,
- ...

# Literature studies regarding glare and visibility on road traffic

- The current list contains more than 300 references, which are still under review;
- Furthermore secondary literature will be investigated, if necessary;
- The review is still under consideration;

# Literature studies regarding glare and visibility on road traffic



Basic documents for the literature review are:

Presentation of :

Hanno Westermann, History and Scientific Back-up, Informal Document No. 30 (48th GRE, 9-12 April) 2002 (Concept Basis)

Ernst-Olaf Rosenhahn; Headlamp Glare and Auto-Levelling: Degree of Influence and Future Outlook; Presentation at WG FL, Turin, January 25, 2011 (Basis mainly investigations of TU Darmstadt)

Mace, D., P. Garvey, R. Porter, R. Schwab, and W. Adrian, Countermeasures for Reducing the Effects of Headlight Glare, AAA Foundation for Traffic Safety, Washington, D.C., 2001. (More general view)

# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- A):
  - Fundamentals to disability glare;
  - Fundamentals to discomfort glare;
  - Glare produced by head lamps;
  - Glare with respect to aspects as:
    - » Light distribution;
    - » Spectral power distribution;
    - » Size;
    - » Luminance, Contrast;
    - » Transient effects;
    - » Very small glare angles:





Literature studies regarding glare and visibility on road traffic

Fundamental Remark:

**Disability Glare and Discomfort Glare are independent!!**

That means:

One can have Disability Glare without feeling glare, or

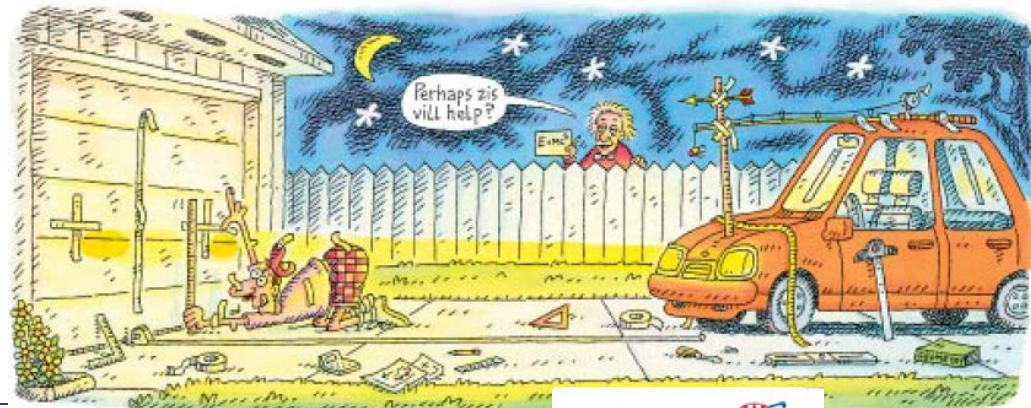
One can feeling glare without having Disability Glare !!!

# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- B):

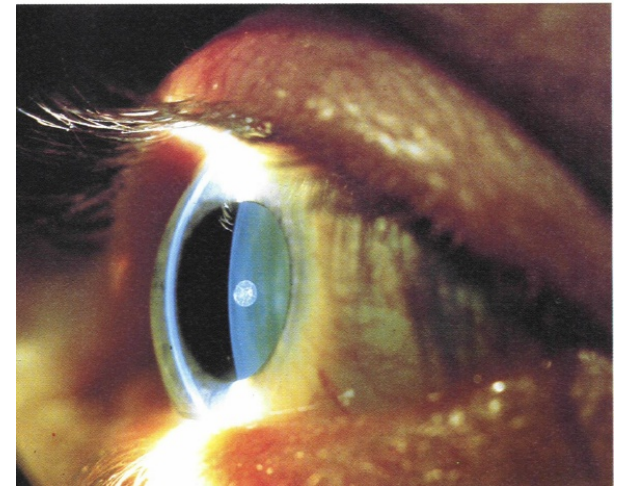
- Range of head lamps with respect to aspects as:

- » Aiming;
- » Pedestrian recognition;
- » CIE TC 4/45
- » ..



# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- C):
  - Visual acuity with respect to aspects as:
    - » Stray light in the eye;
    - » Age;
    - » Adaptation;



[From David H. Hubel, *Auge und Gehirn*]



# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- D):
  - Accident analysis with respect to aspects as:
    - » Night time accidents;
    - » ...;
    - » ...;

# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- E):
  - New technologies with respect to aspects as:
    - » AFS;
    - » ADB;
    - » ....;

# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- F):
  - Conditions of vehicles in traffic with respect to aspects as:
    - » Aiming;
    - » Wind screens;
    - » Mounting height;



# Literature studies regarding glare and visibility on road traffic

- The literature survey incorporates
- G):
  - Glare studies from:
    - » European Union;
    - » TNO;
    - » NHTSA;
    - » UMTRI;
    - » Rensselaer Polytechnical Institut ;
    - » Thesis's of different Universities;
    - » CIE
    - » And more ...

Literature studies regarding glare and visibility on road traffic

The work will continued,

More details are planned for GTB in Seattle



# Literature studies regarding glare and visibility on road traffic

- Thank you for your attention
- P. s. : If not otherwise identified, are all images are from
  - "Headlight Glare Brochure"

of

