

## The GRE Proposal for Supplement 1 to the 05 series of amendments to Regulation No. 48 (Installation of lighting and light-signalling devices)

### An Overview of the Associated GTB Glare and Visibility Study

At its 155<sup>th</sup> session, the World Forum agreed to defer consideration of document ECE/TRANS/WP.29/2011/99 and Corr.1 to its June 2012 session, subject to a final review by GRE in March 2012. This proposal from GRE concerns the deletion of an old exemption in the Regulation that allows manual levelling for dipped-beam headlamps. The proposal included a 90 month transitional provision to firstly, provide sufficient time for a study, assigned to GTB, to define the basis for alternative requirements for the initial aim maintenance during the operation of a vehicle; and secondly, to allow the manufacturers time to adapt to the new requirements or to the removal of the exemption from the automatic levelling requirement in an event if the GTB study would not provide an agreeable alternative.

To allow maximum transparency of its work, and to allow participation of all experts involved in the subject matter, GTB proposed to organise the activity so that it would be open to all GRE experts, while still maintaining adherence to provisions of the GTB statutes. Additionally, it was decided to establish a special GTB taskforce to formally coordinate the numerous inputs to the study and to present a progress report to each GRE session.

The details of the GTB-led study were presented and agreed upon during the GRE at its 66<sup>th</sup> session and a copy of this presentation can be downloaded from the GRE website at <http://www.unece.org/fileadmin/DAM/trans/doc/2011/wp29gre/GRE-66-21e.pdf>.

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agenda item 17(b))

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## The GTB Glare and Visibility Study

**GTB TASK FORCE**  
**"COORDINATION of AUTOMOTIVE VISIBILITY and GLARE  
STUDIES (TF CAVGS)"**

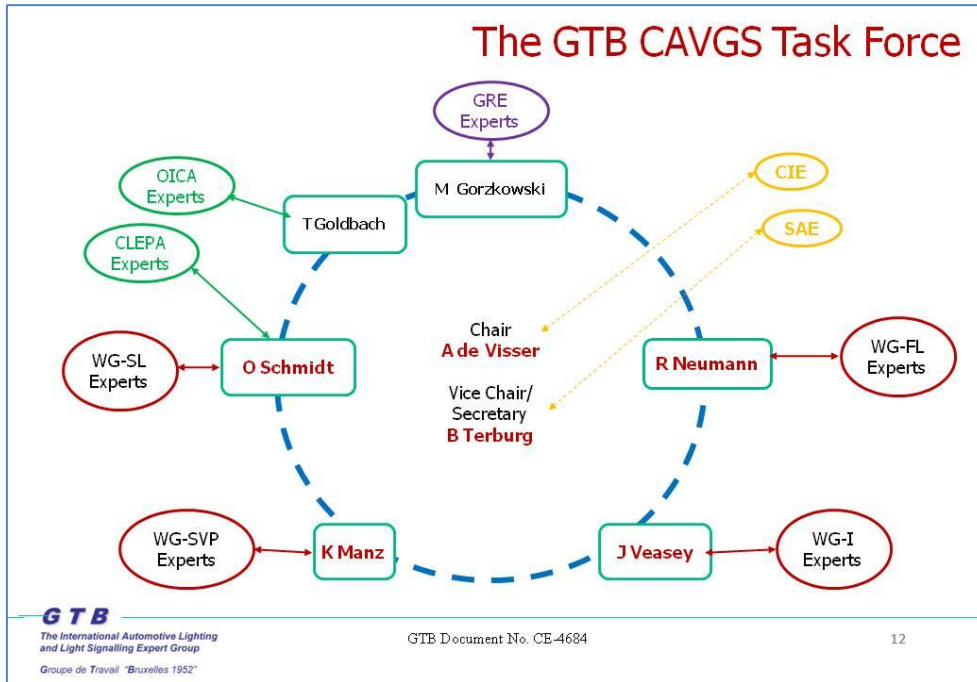
Overview for GRE66 – 06 October 2011

For more information  
[www.gtb-lighting.org/VGS/indexVGS.htm](http://www.gtb-lighting.org/VGS/indexVGS.htm)

**GTB**  
The International Automotive Lighting  
and Light Signalling Expert Group  
Groupe de Travail "Bruxelles 1952"

Further information can be found at the GTB website <http://www.gtb-lighting.org/> and there is a section of the GTB website dedicated to the Glare and Visibility Study that is publicly accessible at <http://www.gtb-lighting.org/VGS/indexVGS.htm>.

The actual work involved in the study, coordinated by the “CAVGS” Taskforce, is delegated to the permanent GTB working groups in consultation with other stakeholders as shown below.



With regard to the question of the maintenance of initial aim of the headlamp during the operation of the vehicle, the work is being carried out by the Front Lighting Working Group and the Safety and Visual Performance (SVP) Working Group.

### Scope of the GTB working group activity

Activities in the area of Automotive Visibility and Glare related to M and N Class vehicles

- coordinated by TF CAVGS
- conducted by GTB working groups; portions of these activities may be outsourced to third parties.

**Priority I:**

Head Lighting:  
Total performance of the passing beam as installed and in use during night time

**Priority II:**

Front Fog lamps:  
Total performance of the front fog lamps as installed

Signal Lighting:  
Total performance of signalling lamps as installed

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8

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The GTB Front Lighting Working Group is carrying out evaluations of headlamp systems installed on vehicles under controlled conditions on actual roads whilst the GTB SVP Working Group is conducting a survey of existing research.

As a first step a night-drive experiment was conducted on 21 April 2012 at the test track and facilities of DEKRA at Klettwitz in Germany with strong participation of vehicle and headlamp manufacturers. Academic support was provided by experienced researchers from the Technical University of Darmstadt Laboratory of Lighting Technology and by the Light Technology Institute of the Karlsruhe Institute of Technology. The experiments involved 25 different vehicles equipped with a range of headlamp systems and light sources and set up under various loading conditions. Evaluation of discomfort glare was carried out, using the De-Boer rating scale, by 47 subjects. Approximately 2800 glare ratings were performed.

An initial analysis of the results, carried out by the Darmstadt researchers was presented to the GTB meetings held at the end of May 2012 and in general it was concluded that a large volume of useful, statistically significant, data were produced. Further analysis of the results will be presented to the next meeting of the GTB Working Groups to be held in the Light Technology Institute of Karlsruhe in July, where a status report will be prepared for presentation to GRE at its 68<sup>th</sup> session in October 2012.

Although WP29 is awaiting further input with regard to the latest status of the proposal in ECE/TRANS/WP.29/2011/99, GRE confirmed that the GTB led study is still expected to deliver results according to the time period implied in the originally proposed 90 month transitional provision. This means that there is a limited time of around 40 months to reach a conclusion allowing GRE to discuss and agree on either a new approach, proposed by GTB, to address the headlamp levelling issue or to maintain the current approach proposed in ECE/TRANS/WP.29/2011/99 and cor.1. Concurrently, industry needs time to adapt the vehicle specifications for type approval to whichever provisions of the regulation agreed by GRE.

This study and development of provisions allowing maintenance of the initial headlamp aim is a significant scientific undertaking commissioned by GRE and GTB. It may provide an important contribution to the future development of the lighting and light signalling regulation with emphasis on performance based requirements.

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