GLARE COMPLAINTS
THEIR IMPACT UPON THE REGULATION OF AUTOMOTIVE LIGHTING

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Abstract

GTB has contributed to the regulation of automotive lighting since its creation in 1952. As the Groupe de Travail “Bruxelles 1952”, it was founded as a joint working group of ISO CIE and IEC. Over the decades it has been the main contributor to the 41 UN regulations and has also contributed to harmonisation activities with Japan and USA. Following a decision taken in the early 1990’s GTB was separated from the standardisation groups and is recognised as an association with special consultative status with the Economic and Social Council at the UN. It now has members from China, the EU countries, Japan and USA and further countries are expected to join in the near future.

The main purpose of GTB is to develop sound technical provisions addressing traffic safety and encouraging innovation. Its focus remains with the UN World Forum on Harmonisation in Geneva (WP.29 and GRE) but it is also working with other administrations that are not signatories to the UN agreements, such as USA, China, etc. To be effective GTB has to base its work on a combination of industrial experience, awareness of government concerns and research findings to justify the proposals to amend the regulations in line with technical progress.

In contrast to CIE, GTB is not a scientific group and it is normally working under time pressure. However GTB does have a working group focussed on Safety and Visual Performance that advises the other working groups. Vehicle lighting is a combination of safety and human factor issues, of concern to the regulators, whilst also being a major marketing feature due to its technical innovation and style. Governments are increasingly demanding that proposals for amendment are supported by research results to verify that safety is not compromised.

The UN regulatory system based upon reciprocal type approval takes a pragmatic approach to ensure safety is not compromised by relying upon the experience of the type approval authorities, and their technical services, but this is not sufficient for other regulatory systems based upon national certification or self certification. In these cases proposals for amendment have to be supported by research findings and impact assessments.

The major concern of all governments is the consistent complaint about glare from vehicle lighting and particularly from headlights. Much research has been carried out over many years and the results do not show a reliable link between headlamp performance characteristic and the complaints received from the road users. This situation is affecting work underway in Geneva to update the UN regulations and is also affecting critical work underway at NHTSA in the United States to regulate adaptive lighting technologies.

During this presentation the application of the headlamp evaluation methods developed by TC-4-45 (CIE188: 2010 and CIE S021/E: 2011) will be discussed. This has been used to validate a GTB proposal to introduce new criteria for the mandatory installation of auto headlamp levelling systems into the UN regulations. It also provided the basis for work carried out by the SAE Pedestrian Visibility Taskforce. The need for research to support the introduction of adaptive lighting systems into the US federal standard will also be addressed.