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World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

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Item 4(e) of the provisional agenda

REGULATION No. 48

(Installation of lighting and light-signalling devices)

Automatic activation/deactivation of main beam

Proposal for draft Supplement 5 to the 04 series of amendments to Regulation No. 48

Submitted by the expert from the Working Party "Brussels 1952" */

The text reproduced below was prepared by the expert from the Working Party "Brussels 1952" (GTB) to introduce provisions for the automatic activation and deactivation of the main beam. The modifications to the existing text of the Regulation, including Supplement 3 to the 04 series of amendments, are marked in bold characters.

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Insert a new paragraph 6.1.7.1., to read:

"6.1.7.1. The control of the main beam may be automatic with regard to its activation and deactivation, the control signals being produced by a sensor system which is capable to detect surroundings and/or the position of other vehicles and/or reacts to the light emitted by the front lighting devices of an oncoming vehicle and the rear lighting devices of a preceding vehicle. However, it shall always be possible to switch the main beam ON and OFF manually."

Paragraphs 6.1.7.1. to 6.1.7.3. (former), renumber as paragraphs 6.1.7.2. to 6.1.7.4.

Insert new paragraph 6.1.8.1., to read:

"6.1.8.1 If the vehicle is equipped with a system as described in paragraph 6.1.7.2. above, visual information shall be provided to its driver to indicate that the automatic operation of the main beam function is activated."

Insert new paragraphs 6.1.9.3. to 6.1.9.4., to read:

"6.1.9.3. Sensor(s) system for automatic operation of the main beam:

**6.1.9.3.1. The main beam may be activated or deactivated automatically using a sensor system that shall be capable to detect other vehicles within a minimum field of $\pm 12^\circ$ horizontal and of $+5^\circ / -2^\circ$ vertical.
The sensor(s) system may derive data from a GPS.**

6.1.9.3.2. The correct reaction of the system shall be demonstrated by a test drive in clear atmosphere with a speed of 70km/h ± 10 km/h.

6.1.9.3.3. The sensor shall be able to detect on a straight flat road;

**an oncoming power driven vehicle at ≥ 200 m and
a preceding power driven vehicle at ≥ 100 m.**

6.1.9.4. To verify that the automatic activation and deactivation of the main beam does not cause any discomfort (e.g. excessive glare) to oncoming and preceding drivers, the technical service shall perform a test drive which comprises any situation relevant to the system control on the basis of the applicant's description. Obvious malfunctioning shall be contested."

B. JUSTIFICATION

Systems capable of automatically activating and deactivating the main beam using sensors to detect the presence of other power driven vehicles have been developed to assist the driver. A recent research conducted by the light laboratory (L-LAB) shows that drivers have a reluctance to operate the main beam and frequently select the dipped beam too early with the consequence that forward vision is restricted. Automatic operation of the main beam can help to overcome this problem but, at all times, the driver remains responsible for deciding whether it is appropriate to operate the main beam and if necessary to switch the main beam on or off manually.

Due to a lack of clarity and consistency in the interpretation of the current provisions of Regulation No. 48, some administrations have already granted type approvals for vehicles equipped with automatic activation and deactivation of the main beam and experience has shown that these systems are operating successfully. In addition to introducing the necessary provisions into the Regulation, the objective of this proposal is to ensure that different interpretations are avoided.
