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World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

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Item 5(e) of the provisional agenda

COLLECTIVE AMENDMENTS

Regulations Nos. 7 and 48

Proposal for 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 new provisions for interdependent lamp systems. The modifications to the current text of the Regulation No. 48, including Supplement 3 to the 04 series of amendments, are marked in bold or strikethrough 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 new paragraphs 2.7.30. and 2.7.30., to read:

"2.7.30. "Interdependent lamp system" means an assembly of two or three interdependent lamps providing the same function.

2.7.30.1. "Interdependent lamp" means a device operating as part of an Interdependent lamp system. Interdependent lamps operate together when activated, have separate apparent surfaces in the direction of the reference axis and separate lamp bodies, and may have separate light source(s)."

Paragraphs 2.13., amend to read:

"2.13. "Angles of geometric visibility" means the angles.....the lamp observed from infinity. **In the case of an interdependent lamp system, the above requirements shall be fulfilled when all its interdependent lamps are operated together.**

If measurements are taken closer to the lamp, the direction of observation shall be shifted parallel to achieve the same accuracy.

On the inside of the angles of geometric visibility no account is taken of obstacles, if they were already presented when the lamp was type-approved.

If, when the lamp below the horizontal."

Paragraph 2.16.1., amend to read:

"2.16.1. "A single lamp" means:

(a) a device or part of a device having one lighting or light-signalling function, one or more light source(s) and one apparent surface in the direction of the reference axis, which may be a continuous surface or composed of two or more distinct parts,

or

(b) any assembly of two independent lamps, whether identical or not, having the same function, both approved as type "D" lamp and installed so that:

(i) the projection of their apparent surfaces in the direction of the reference axis occupies not less than 60 per cent of the smallest quadrilateral circumscribing the projections of the said apparent surfaces in the direction of the reference axis, or

- (ii) the distance between two adjacent/tangential distinct parts does not exceed 15 mm when measured perpendicularly to the reference axis,
or
- (c) any assembly of two independent retro-reflectors, whether identical or not, that have been approved separately and are installed in such a way that:
 - (i) the projection of their apparent surfaces in the direction of the reference axis occupies not less than 60 per cent of the smallest quadrilateral circumscribing the projections of the said apparent surfaces in the direction of the reference axis, or
 - (ii) the distance between two adjacent/tangential distinct parts does not exceed 15 mm when measured perpendicularly to the reference axis.
or
- (d) **Any interdependent lamp assembly comprising of two or three interdependent lamps providing the same function, approved together as type "Y" and installed so that the distance between adjacent apparent surfaces in the direction of the reference axis does not exceed 75 mm when measured perpendicularly to the reference axis."**

Insert a new paragraph 5.7.2.2., to read:

"5.7.2.2. Or, in the case of interdependent lamps, the distance between adjacent apparent surfaces in the direction of the reference axis does not exceed 75 mm when measured perpendicularly to the reference axis."

Insert a new paragraph 5.11.4., to read:

"5.11.4. In the case of an interdependent lamp system, all light sources shall be switched on and off simultaneously."

Paragraph 5.18.1., amend to read:

"5.18.1. if at all fixed positions of the movable components the lamps on the movable components meet all the position, geometric visibility and photometric requirements for those lamps. ~~Should the above functions be obtained by an assembly of two lamps marked "D" (see paragraph 2.16.1.) only one of these lamps needs to meet the above mentioned requirements;"~~

Insert a new paragraph 5.18.2., to read:

"5.18.2 In the case where the functions referred to in paragraph 5.18 are obtained by an assembly of two lamps marked "D" (see paragraph 2.16.1.), only one of the lamps needs to meet the position, geometric visibility and photometric

**requirements for those lamps at all fixed positions of the movable components.
or"**

Paragraph 5.18.2. (former), renumber as paragraph 5.18.3

Insert a new paragraph 5.18.4., to read:

"5.18.4 In the case where the functions referred to in paragraph 5.18 are obtained by an interdependent lamp system either, of the following conditions shall apply:

a) Should the complete interdependent lamp system be mounted on the moving component(s), the requirements of paragraph 5.18.1 shall be satisfied. However, additional independent lamps for the above functions may be activated, when the movable component is in any fixed open position, provided that these additional independent lamps satisfy all the position, geometric visibility and photometric requirements applicable to the lamps installed on the movable component.

or

b) Should one or two of the interdependent lamps be mounted on the fixed component, the interdependent lamp(s) specified by the Applicant during the component approval procedure shall meet all the position and photometric requirements for those lamps, at all fixed positions of the movable component(s)."

Paragraph 6.5.7., amend to read,

"6.5.7. Electrical connections

Direction-indicator lamps shall switch on independently of the other lamps. All direction-indicator lamps on one side of a vehicle shall be switched on and off by means of one control and shall flash in phase. **This also applies to the case of interdependent lamps."**

Paragraph 6.7.2.2., amend to read:

"6.7.2.2 Only, when the median longitudinal plane of the vehicle is not located on a fixed body panel but separates one or two movable parts of the vehicle (e.g. doors), and lacks sufficient space to install a single device of the S3 or S4 category on the median longitudinal plane above such movable parts, either:

two devices of the S3 or S4 category type "D" may be installed, or

one device of the S3 or S4 category may be installed offset to the left or to the right of the median longitudinal plane, **or**
an interdependent lamp system of category S3 or S4 may be installed."

B. JUSTIFICATION

Modern vehicle designs, especially on smaller models, need to optimise rear access for cargo loading i.e. maximum width opening / low lift over. One solution to achieve this user requirement is to divide the rear combination lamps into more than one part, with one part on the fender, and the other part(s) on the tailgate / trunk lid. This design, infrequently used in the past, has become increasingly popular in recent years.

The division of a rear-lamp into two parts was introduced into the regulations under the provisions for "D" lamps on the basis that two independent lamps, that are not necessarily identical and maybe individually type approved and perhaps produced by different manufacturers, are installed on the vehicle in such a way that they comply with the "single lamp" definition in Regulation 48.

Modern vehicle design has to meet various legislative requirements whilst ensuring an appearance that is commercially acceptable. This places particular demands upon the design of signalling lamps that have to comply with positional, geometric visibility and photometric requirements. These demands can be satisfied by a divided lamp specifically designed and produced by one manufacturer that is mounted partly on the fender and partly on the moving component. In this case provisions for the "D" lamp impose unnecessary requirements and costs.

Combination rear lamps that are, in effect, one lamp with multiple light sources that is split into several parts have been granted type approvals based upon interpretation of the "single lamp" definition of Regulation 48. These lamps, installed on high class vehicles, are performing satisfactorily and are accredited to achieve good signalling performance and pleasing appearance. However, the interpretation of the provisions of regulation 48 allowing the type approval of these lamps is not generally accepted by all type approval authorities and it is necessary to introduce specific provisions into the regulations for "interdependent lamp systems".

This proposal, introducing interdependent lamps forming parts of an interdependent lamp system, is therefore intended to improve vehicle functionality and expand the scope for rear lamp combination design without compromising road user safety.
