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World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Lighting and Light-Signalling (GRE)

REPORT OF THE WORKING PARTY ON LIGHTING AND LIGHT-SIGNALLING (GRE) ON ITS FORTY-FIFTH SESSION

(2 - 6 October 2000)

1. GRE held its forty-fifth session from 2 October (afternoon only) to 6 October (morning only) 2000 in the Government Conference Center, Ottawa, Canada, under the chairmanship of Mr. G. Meekel (Netherlands). Experts from the following countries participated in the work following Rule 1(a) of the Rules of Procedure of WP.29 (TRANS/WP.29/690): Canada; Czech Republic; Finland; France; Germany; Hungary; Italy; Japan; Netherlands; Norway; Poland; Russian Federation; Spain; Sweden; United Kingdom; United States of America. A representative of the European Commission (EC) participated. Experts from the following non-governmental organizations also participated: International Organization of Motor Vehicle Manufacturers (OICA); International Motorcycle Manufacturers Association (IMMA); European Association of Automobile Suppliers (CLEPA); Working Party "Brussels 1952" (GTB); International Electrotechnical Commission (IEC). An expert from the Society of Automotive Engineers (SAE) took part in the session at the invitation by the secretariat.

OPENING OF THE SESSION

2. Speaking on behalf of the Government of Canada, Mr. B. Jonah, Director of Motor Vehicle Standards and Research, Transport Canada, welcomed the delegates, expressed the commitment to promoting the global harmonization, and offered the experience of his country in the area of vehicle lighting technology. He also paid tribute to the memory of the late former Prime Minister of Canada, Mr. P.E. Trudeau.

3. The Chairman of GRE expressed his thanks for the invitation, wished the experts a successful session and offered the condolences of GRE to the Canadian hosts.

GRE SESSION

4. The documents without a symbol distributed during the session are listed in annex 1 to this report.

REGULATION No. 48 - Development
(Installation of lighting and light-signalling devices)

(a) Electrical connections

Documentation: TRANS/WP.29/GRE/2000/16; informal document No. 7 of annex 1 to this report.

5. The expert from France introduced informal document No. 7. She objected to the proposal contained in document TRANS/WP.29/GRE/2000/16, and justified her proposition to allow under certain conditions an automatic operation of the hazard-warning signal.

6. The experts from Italy and Japan said that some automatic switching of lighting equipment existed already in certain vehicles on the market and would be made illegal by document TRANS/WP.29/GRE/2000/16. The expert from OICA supported their interventions. He suggested that instead of a general solution any problems caused by automatic switching of lighting equipment should be identified and resolved. He also said that any possible activation of stop lamps by an Adaptive Cruise Control (considered under separate agenda item) should be regarded as a part of this question.

7. The expert from the United Kingdom defended his proposal contained in document TRANS/WP.29/GRE/2000/16. He said that unless specific instructions were given in Regulation No. 48, any automatic switching of the lighting equipment should be at the discretion of the national legislation. The expert from the Netherlands supported his opinion.

8. In the discussion GRE realized that identifying all existing and possible automatic switching operations might not be a feasible way for resolving the problem. The expert from Germany suggested to consider separately only two categories of automatic switching; "only automatic" and "assisted", where the latter could be controlled and/or overruled by the driver.

9. The suggestion by Germany was considered a possible way forward. GRE agreed to continue the consideration of this matter at the next session and requested the secretariat to distribute informal document No. 7 with an official symbol. The Chairman invited the delegates to study the subject and submit proposals concerning similar situations and devices as outlined in informal document No. 7.

(b) Definition of a single lamp

Documentation: TRANS/WP.29/GRE/1999/3; TRANS/WP.29/GRE/1999/21; TRANS/WP.29/GRE/2000/3; TRANS/WP.29/GRE/2000/12; informal document No. 13 of annex 1 to this report.

10. After comparing the listed official working documents, GRE decided to use document TRANS/WP.29/GRE/2000/3 as a base for its work, in order to find a definition of a single lamp which could easily be applied by type approval authorities. To assist the consideration, the secretariat consolidated the proposed modifications of the document into informal document No. 13.

11. Further amendments were agreed and GRE adopted informal document No. 13, as amended. The adopted text concerning the definition of a single lamp (paragraphs 2.16.1. and 5.7.1.) is incorporated in annex 2 to this report; GRE agreed to submit it to WP.29 and AC.1 for their March 2001 sessions, as a proposal for draft Supplement 3 to the 02 series of amendments to Regulation No. 48.

(c) International harmonization of installation requirements (4-wheeled vehicles)

Documentation: TRANS/WP.29/GRE/1999/6/Rev.1.

12. The Chairman recalled that the subject had first been discussed during the forty-second session in April 1999 and gradually developed into a proposal for a future global technical regulation (gtr). He informed GRE that WP.29 had not yet assigned priorities to projects of future gtr(s) and kept the matter under discussion.

13. The expert from Canada explained that TRANS/WP.29/GRE/1999/6/Rev.1 contained the results of the forty-second and forty-third sessions and said that he had introduced modifications which would allow to consider the text as a basis for a future gtr (TRANS/WP.29/GRE/44, para. 9). The Chairman thanked the expert from Canada for the work which had been done and invited GRE to consider the proposal in detail.

14. Discussed by GRE was only a part of the proposal (paras. 1 to 5.24.). There were numerous comments and suggestions made and noted, of which the most important are mentioned below. During the discussion, it was made clear that a gtr should only contain technical prescriptions for the installation of lamps and was not expected to regulate the use of lamps.

Re. para. 1: applicable vehicle categories to be clarified (vehicles with less than 4 wheels should be excluded);
Re. paras. 2.1. to 2.2.4. deletion confirmed;
Re. para. 2.7.11. move the second sentence to para. 6.6.;
Re. para. 2.7.12. move the second sentence to para. 6.7.;
Re. para. 2.7.25. move the second sentence to para. [6...];
Re. para. 2.16.1. introduce the definition of a single lamp agreed for Regulation No.48 (see para. 11 above and annex 2);
Re. para. 2.20. part of the text reading "it is a lamp ... device; optional lamp" agreed to be deleted; further discussion necessary;
Re. para. 2.27. related to the scope of gtr, further discussion necessary;
Re. para. 5.3. side direction indicators should not be inserted (France);
Re. para. 5.5.4. further consideration necessary (Canada);
Re. para. 5.7. introduce para. 5.7.1. (see para. 11 above and annex 2);
Re. para. 5.8.3. not necessary to refer to "inner" edges (OICA);
Re. para. 5.8.4. amend the words "any surface" to read "any apparent surface" (GTB);
Re. para. 5.10. further discussion necessary;

Re. para. 5.12. further discussion necessary (Sweden, France);
Re. para. 5.15. further discussion necessary, differs significantly from TRANS/WP.29/GRE/1999/6 (OICA);
Re. para. 5.17. to be modified, part of the text relates to an ECE Reg.;
Re. para. 5.19. installation on movable components in the front not acceptable (OICA);
Re. para. 5.20. the proposed modifications not acceptable (OICA).

15. When concluding the discussion, the Chairman made it clear that more time and a concerted effort were necessary to progress in the work. Therefore, he suggested to hold an informal meeting, possibly on 10-12 January 2001, at Geneva, subject to the approval by WP.29. The expert from Canada agreed to prepare for that meeting a working document, by reflecting in TRANS/WP.29/GRE/1999/6/Rev.1 the comments made during the session and considering further improvements, wherever needed.
Note by the secretariat: the request for the informal meeting was approved by WP.29 at its one-hundred-and-twenty-second session and it shall be held, as proposed (TRANS/WP.29/743, para. 75).

(d) Colour of light emitted towards the front and the rear of the vehicle

Documentation: TRANS/WP.29/GRE/2000/7.

16. During the consideration of the subject, the expert from France proposed to reduce the luminous intensity limit of allowed red light to the front and white light to the rear from 0.5 cd to 0.2 cd. The expert from Canada suggested an alternative text, excluding the interior lighting for the observation from the rear.

17. None of the proposals were found acceptable. It was noted that it would require photometric measuring equipment for Regulation No. 48 approvals, whilst there had not been any difficulties encountered with the subject in question in other countries applying this Regulation.

18. GRE decided to decline the offer by the expert from GTB to study the question and prepare a working document and, instead, agreed to discontinue the consideration and remove the subject from its agenda.

(e) Replacing of failed light sources

Documentation: TRANS/WP.29/GRE/2000/27.

19. The detailed consideration of the proposal resulted in the adoption by GRE of a new paragraph 5.23., to be inserted into Regulation No. 48, and worded in line with document TRANS/WP.29/GRE/2000/27; GRE agreed to make it part of the proposal for draft Supplement 3 to the 02 series of amendments to the Regulation, to be submitted to WP.29 and AC.1 for consideration at their sessions of March 2001 (see annex 2 to this report).

(f) Swivelling passing beam for AFS systems

Documentation: Informal document No. 10 of annex 1 to this report.

20. The expert from Germany introduced the proposal and confirmed that it had been prepared in view of the demonstration of the Advanced Front-lighting Systems during the previous session and the agreement which had been reached concerning regulation No. 48 (TRANS/WP.29/GRE/44, paras. 68 and 69).

21. The expert from Canada suggested to modify the proposal (para. 6.2.9.), in order to allow that either the lamp or the beam pattern swivel according to the direction of vehicle travel.

22. GRE discussed the matter and decided to consider it in conjunction with the proposal by France (see paras. 23 below).

(g) Proposal to allow supplementary side lighting in bends

Documentation: Informal documents Nos. 8 and 14 of annex 1 to this report.

23. The expert from France presented the proposal to amend Regulation No. 48 by allowing to use existing fog lamps as bending lights, by switching them ON on one side only, in conjunction with the vehicle steering.

24. There was a general opinion that informal documents Nos. 8 and 10 should be combined. GRE agreed that the resulting proposal should contain provisions ensuring a fail-safe operation and also, with respect to the proposal by France (informal document No. 8) an amendment allowing that a lamp (other than direction indicator) be operated individually on one side of a vehicle. The expert from the Netherlands suggested that if special lamps are used for AFS function, their beam pattern should be specified.

25. Following the consideration of the subject and the comments made, the expert from Germany presented informal document No. 14, combining his proposal with that by France. He also presented a video showing the results of studies during which the trajectory of the vehicle and the movement of the eyes of the driver had been registered in order to define an area, which needed to be illuminated by AFS in bending roads.

26. GRE acknowledged the work done and agreed to continue the consideration of the proposal at the next session; the secretariat was requested to distribute informal document no. 14 with an official symbol.

AMENDMENTS TO ECE REGULATIONS

(a) Regulation No. 1 (Headlamps (R2 and HS1))

Documentation: TRANS/WP.29/GRE/2000/14.

27. The Chairman recalled that consideration of the proposal to allow the H8 category lamp to be used for Regulation No. 1 headlamps had been postponed during the previous session (TRANS/WP.29/GRE/44, para. 72).

28. GRE considered and adopted the proposal. It was agreed to transmit it for consideration to WP.29 and AC.1 for their March 2001 sessions, as a proposal for draft Supplement 8 to the 01 series of amendments. However, it was made clear that this amendment to Regulation No. 1 would be superfluous if by that time WP.29 and AC.1 had adopted the new draft Regulation "00", because, consequently Regulation No. 1 would at that time be brought into its 02 series of amendments. Note by the secretariat: Draft Regulation No. "00" (document TRANS/WP.29/1998/41 only) had been adopted by the vote of AC.1 during its sixteenth session (November 2000), together with the proposal for the 02 series of amendments to Regulation No. 1 (TRANS/WP.29/743, paras. 167 and 178); therefore, the proposal to amend Regulation No. 1 would not be put on the agendas of WP.29 and AC.1.

(b) Regulations Nos. 3, 4, 6, 7, 23, 38, 50, 77, 87 and 91

Documentation: TRANS/WP.29/GRE/2000/5; TRANS/WP.29/GRE/2000/5/Add.1; TRANS/WP.29/GRE/2000/22; TRANS/WP.29/GRE/2000/13.

29. The expert from GTB confirmed that document TRANS/WP.29/GRE/2000/5/Add.1 contained all necessary amendments to document TRANS/WP.29/GRE/2000/5,

including those agreed by GRE during its forty-fourth session. In addition, he recalled that, if adopted, both documents should be combined with a related proposal (TRANS/WP.29/GRE/2000/4), which had already been adopted by GRE (TRANS/WP.29/GRE/44, para. 44).

30. Noting the above, GRE considered and adopted TRANS/WP.29/GRE/2000/5/Add.1.

31. GRE also recalled its consideration during the forty-fourth session of document TRANS/WP.29/GRE/2000/13. The expert from Japan informed GRE that after a detailed study he could lift the reservation (TRANS/WP.29/GRE/44, paras. 51-55). In consequence, GRE adopted the proposal and agreed that for submission to WP.29 and AC.1 the modification of the trichromatic coordinates for amber light should be combined with the other adopted proposals related to Regulations Nos. 3, 6, 37, 50, 65 and 91 (see paras. 29 and 30 above).

32. Despite a long discussion, no conclusion was reached concerning document TRANS/WP.29/GRE/2000/22. GRE agreed in principle that footnote 3/ of paragraph 6.1. in Regulation No. 6 needed to be modified; however, the amendment proposed to section (ii) was found technically not acceptable and GRE invited GTB to re-consider the proposal.

33. In view of additional consideration needed, GRE agreed to resume consideration of this agenda item whenever an improved GTB proposal became available (see para. 32 above).

34. It was also agreed that, only after a final agreement was reached, all adopted documents (i.e. TRANS/WP.29/GRE/2000/4, TRANS/WP.29/GRE/2000/5, TRANS/WP.29/GRE/2000/5/Add.1 and TRANS/WP.29/GRE/2000/13) should be consolidated for all Regulations concerned and transmitted for consideration to WP.29 and AC.1; for Regulation No. 6 the final proposal should also contain a modified proposal based on TRANS/WP.29/GRE/2000/22, expected to be prepared by GTB.

(c) Regulation No. 7 (Position, stop and end-outline marker lamps)

Documentation: (TRANS/WP.29/GRE/1999/7); TRANS/WP.29/GRE/1998/21/Rev.2; TRANS/WP.29/GRE/2000/23; informal documents Nos. 4 and 6 of annex 1 to this report.

35. GRE again recalled that the corrections to the French text only (contained in document TRANS/WP.29/GRE/1999/7) applied to document TRANS/WP.29/GRE/1998/21/Rev.2 and that they had been adopted during the forty-third session of GRE (TRANS/WP.29/GRE/43, para. 38).

36. Concerning document TRANS/WP.29/GRE/1998/21/Rev.2, the secretariat presented informal document No. 4, containing the amendments which had been agreed in principle by GRE during its forty-fourth session, but by error had not been recorded in an annex to the session report (TRANS/WP.29/GRE/44, para. 26). To correct the error, the content of informal document No. 4 is reproduced below:

Paragraphs 14. and its subparagraphs, amend the references to "Supplement 5 to the 02 series of amendments" to read "Supplement 6 to the 02 series of amendments" (14 times) and eliminate the square brackets marking the period of "36" months (in paragraphs 14.1.2. and 14.1.4.).

Annex 1, first sentence, amend to read:

"In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal for all categories of devices included in this Regulation, except:

(a) for lamps with a permissible mounting height ≤ 750 mm above the ground, for which they are 15° above and 5° below the horizontal;

(b) for category S3 stop lamp for which they are 10° above and 5° below the horizontal."

37. With respect to document TRANS/WP.29/GRE/2000/23, GRE noted that the proposal paralleled that to Regulation No. 6 (see para. 32 above) and invited GTB to reconsider it (in particular section (ii)).

38. GRE agreed to resume consideration of the amendments to Regulation No. 7 whenever an improved GTB proposal became available (see para. 37 above). It was also agreed that the adopted documents (TRANS/WP.29/GRE/1999/7; TRANS/WP.29/GRE/1998/21/Rev.2 as amended by para. 36 above) should be consolidated with a modified proposal based on TRANS/WP.29/GRE/2000/23 and expected to be prepared by GTB. After a final agreement was reached, the resulting proposal should be and transmitted to WP.29 and AC.1 for consideration, together with other documents concerning Regulation No. 7 (see para. 34 above, concerning documents TRANS/WP.29/GRE/2000/4, TRANS/WP.29/GRE/2000/5 and TRANS/WP.29/GRE/2000/5/Add.1).

39. GRE considered also informal document No. 6, tabled by CLEPA. It acknowledged it as a useful overview of application of the consecutive series of amendments to Regulation No. 7, affecting only some of the lighting devices under the scope of the Regulation. Although GRE did not agree with the proposal by CLEPA to introduce this overview into the Regulation and/or transmit it for information to WP.29, it invited the secretariat to annex it to the session report (see annex 3). Following the comment made in the informal document, CLEPA was invited to prepare a similar overview application table for Regulation No. 6.

(d) Regulation No. 37 (Filament lamps)

Documentation: TRANS/WP.29/GRE/1999/13/Rev.1; TRANS/WP.29/GRE/2000/10/Rev.1; TRANS/WP.29/GRE/2000/20; TRANS/WP.29/GRE/2000/21; informal document No. 5 of annex 1 to this report.

40. Following the introduction given by the expert from IEC, GRE considered and adopted document TRANS/WP.29/GRE/2000/20 and part (a) only of document TRANS/WP.29/GRE/2000/21 (part (b) referring to filament lamp categories HIR1 and HIR2 was withdrawn from consideration). It was also agreed to transmit the adopted amendments to Regulation No. 37 to WP.29 and AC.1 for their sessions of March 2001, consolidated into a proposal for draft Supplement 21 to the 03 series of amendments to Regulation No. 37.

41. Concerning document TRANS/WP.29/GRE/2000/10/Rev.1, the expert from GTB confirmed that it included the proposal tabled by the United Kingdom and, therefore, it superseded document TRANS/WP.29/GRE/1999/13/Rev.1. Besides, it was noted that also included was the proposal concerning the modification of trichromatic coordinates of amber light (document TRANS/WP.29/GRE/2000/13).

42. During the discussion, the experts from the United Kingdom and the Netherlands wished to have more time to study the proposal TRANS/WP.29/GRE/2000/10/Rev.1, which had not been distributed in time before the session. In view of these two study reservations, GRE agreed to resume the consideration at the next session.

43. The expert from IEC tabled also informal document No. 5, explaining that Revision 3 of Regulation No. 37 was already overdue and should be done as soon as possible. In the informal document he enumerated the technical and

editorial changes which should be done when revising the Regulation. He also indicated that the new data sheets would be made available to the secretariat in an electronic format (MS Word), making the revised Regulation much easier to handle and entirely accessible via the Internet. GRE appreciated greatly the assistance provided by IEC. After an examination of the proposals of informal document No. 5, GRE agreed that the proposed technical and editorial modifications would not influence specifications of the filament lamps and agreed that such modifications could directly be done during the revision.

(e) Regulation No. 50 (Position, stop and direction indicator lamps for motorcycles)

Documentation: TRANS/WP.29/GRE/1999/5/Rev.1; TRANS/WP.29/GRE/1999/14/Rev.1.

44. The expert from IMMA informed GRE that the revised proposal (TRANS/WP.29/GRE/1999/14/Rev.1) included also the amendments table by GTB in document TRANS/WP.29/GRE/1999/5/Rev.1.

45. GRE considered and adopted document TRANS/WP.29/GRE/1999/14/Rev.1 with the following amendments:

Paragraphs 3.1.2. and 9., delete the words "or amber".

Paragraph 7.5.2. (ii), rearrange the text to read:

"(ii) when all light sources are illuminated, the maximum intensity for an assembly of two lamps is given by multiplying by 1.4 the value prescribed for a single lamp in paragraphs 7.1. to 7.4."

46. The amended document was adopted by GRE and it was also agreed to transmit it to WP.29 and AC.1 for consideration at their sessions of March 2001, as a proposal for draft Supplement 4 to Regulation No. 50.

(f) Regulation No. 53 (Installation of lighting and light-signalling devices on L3 category vehicles)

Documentation: TRANS/WP.29/GRE/1999/15/Rev.1; informal document No. 3 of annex 1 to this report.

47. The expert from Japan introduced informal document No. 3 showing the results of a study, which had proved that amber front position lamps improved the conspicuity of a motorcycle from the front. The presentation was acknowledged but, during the discussion questions were raised, in particular with respect to possible reduction of conspicuity of front direction indicator lamps.

48. For the time being GRE agreed not to allow the amber front position lamps and adopted document TRANS/WP.29/GRE/1999/15/Rev.1, amended as follows:

Paragraph 5.13., delete the words "[or amber]".

Paragraph 6.3.7., delete the words "except [amber] front position lamp".

Paragraph 6.6.1., delete the words "[if coloured white] or Two (one per side) [if coloured amber]".

Paragraph 6.6.7., delete the proposed amendments (i.e. para. 6.6.7. should not be modified).

49. It was also agreed to transmit the amended document to WP.29 and AC.1 for consideration at their sessions of March 2001, as a proposal for draft

Supplement 2 to the 01 series of amendments to Regulation No. 53.
Note by the secretariat: Draft Regulations Nos. "00" and "MH" (documents TRANS/WP.29/1998/41 and TRANS/WP.29/1998/42 only) had been adopted by the vote of AC.1 during its sixteenth session (November 2000), together with the proposal for Supplement 2 to the 01 series of amendments to Regulation No. 53 (TRANS/WP.29/743, paras. 170, 178 and 179); therefore, the current proposal to amend Regulation No. 53 should become Supplement 3 to the 01 series of amendments to Regulation No. 53.

(g) Regulation No. 65 (Special warning lamps)

Documentation: TRANS/WP.29/GRE/1999/10/Rev.1; informal document No. 12 of annex 1 to this report.

50. The expert from Germany introduced informal document No. 12. He explained that the modified values of effective luminous intensities (amending document TRANS/WP.29/GRE/1999/10/Rev.1, annex 5, paras. 6.2. and 6.3.), resulted from his consideration of the subject with the authorities in the United Kingdom (TRANS/WP.29/GRE/44, para. 42).

51. The proposal of informal document No. 12 was considered to be a good compromise by the expert from Sweden, although the expert from the United Kingdom wished to have more time to study it. He said that, in his country, the currently used special warning beacons were considered to be glaring and expressed his concern with even higher values proposed in informal document No. 12.

52. Noting the divergent views, GRE agreed to postpone further discussion and resume consideration of this matter at its next session. The experts were invited to keep their copies of informal document No. 12 and bring them for the next session discussion.

(h) Regulation No. 69 (Rear marking plates for slow vehicles)

Documentation: TRANS/WP.29/GRE/2000/17.

53. GRE considered and adopted the proposal, which had been prepared by the secretariat following the adoption of parallel amendments to Regulation No. 70 during the previous session (TRANS/WP.29/GRE/44, para. 47). It agreed with the explanation of the secretariat that the transitional provisions did not include the derogation for rear marking plates made as replacements for fitting to vehicles in use (draft Supplement 3 to the 01 series of amendments to Regulation No. 70, para. 13.6.).

54. GRE agreed to transmit the proposal (TRANS/WP.29/GRE/2000/17, not amended) to WP.29 and AC.1 for their sessions of March 2001, as a proposal for draft Supplement 2 to the 01 series of amendments to Regulation No. 69.

(i) Regulation No. 72 Motorcycle headlamps (HS1))

Documentation: TRANS/WP.29/GRE/2000/15.

55. GRE considered and adopted the proposal to allow the H8 category lamp to be used for Regulation No. 1 headlamps. It was agreed to transmit it for consideration to WP.29 and AC.1 for their March 2001 sessions, as a proposal for draft Supplement 3 to Regulation No. 72. However, it was made clear that this amendment to Regulation No. 1 would be superfluous if by that time WP.29 and AC.1 had adopted the new draft Regulation "00", because, consequently Regulation No. 72 would at that time be brought into its 01 series of amendments. Note by the secretariat: Draft Regulation No. "00" (document TRANS/WP.29/1998/41 only) had been adopted by the vote of AC.1 during its

sixteenth session (November 2000), together with the proposal for the 01 series of amendments to Regulation No. 72 (TRANS/WP.29/743, paras. 173 and 178); therefore, the proposal to amend Regulation No. 72 would not be put on the agendas of WP.29 and AC.1.

(j) Regulation No. 74 (Installation of lighting and light-signalling devices on mopeds)

Documentation: TRANS/WP.29/GRE/1999/16/Rev.1; informal document No. 3 of annex 1 to this report.

56. The previous consideration of informal document No. 3 was recalled (see para. 47 above).

57. Similarly to the decision taken concerning Regulation No. 53, GRE agreed not to allow the amber front position lamps and adopted document TRANS/WP.29/GRE/1999/16/Rev.1, amended as follows:

Paragraph 5.13., delete the words "[or amber]".

Paragraph 6.3.1., delete the words "[if coloured white] or Two (one per side) [if coloured amber]".

Paragraph 6.3.7., delete the proposed amendments (i.e. para. 6.3.7. should not be modified).

Paragraph 6.8.7., delete the words "[except amber front position lamp]"

58. It was also agreed to transmit the amended document to WP.29 and AC.1 for consideration at their sessions of March 2001, as a proposal for draft Supplement 2 to the 01 series of amendments to Regulation No. 74.
Note by the secretariat: Draft Regulations Nos. "00" and "MH" (documents TRANS/WP.29/1998/41 and TRANS/WP.29/1998/42 only) had been adopted by the vote of AC.1 during its sixteenth session (November 2000), together with the proposal for Supplement 2 to the 01 series of amendments to Regulation No. 74 (TRANS/WP.29/743, paras. 174, 178 and 179); therefore, the current proposal to amend Regulation No. 74 should become Supplement 3 to the 01 series of amendments to Regulation No. 74.

(k) Regulation No. 98 (Headlamps with gas-discharge light sources)

Documentation: TRANS/WP.29/GRE/2000/18; TRANS/WP.29/GRE/2000/19.

59. The expert from CLEPA explained that whilst the first document was only intended to align the English and Russian texts to the French version of the Regulation, the second document had been prepared with a view to making the Regulation more performance-oriented in the provisions related to failure mode.

60. The experts from the Netherlands and the United Kingdom made study reservations to document TRANS/WP.29/GRE/2000/18; Germany objected to the proposal.

61. Divergent opinions were noted during the consideration of document TRANS/WP.29/GRE/2000/19; the expert from France supported the proposal, whilst the experts from the Netherlands, Canada and the United Kingdom expressed their concerns with the provisions proposed.

62. In order to allow more time for consideration of the proposals, GRE agreed to postpone further discussion to the next session.

HARMONIZED PASSING BEAM PATTERN

(a) Asymmetrical passing beam

Documentation: TRANS/WP.29/GRE/1997/14; TRANS/WP.29/GRE/1999/18; informal document No. 11 of annex 1 to this report.

63. The expert from Germany introduced informal document No. 11, questioning the illuminance values proposed in documents TRANS/WP.29/GRE/1997/14 and TRANS/WP.29/GRE/1999/18 and providing a counter-proposal by Germany. The experts from the United Kingdom shared his concerns with increased glare, whilst the experts from the United States of America and SAE were concerned about the reduced top illumination which, in their view, might reduce the conspicuity of road signs or obstacles.

64. The expert from Canada suggested that a demonstration of headlamps conforming to various proposals might be a suitable way forward. He also suggested to consider a different beam pattern for the vehicle left and right side headlamps.

65. The expert from GTB stated that the GTB Coordinating Committee, which continued to work on developing the proposal for a harmonized passing beam pattern, should examine the proposal by Germany (informal document No. 11). He accepted the suggestion to assist in the consideration of the subject by a demonstration and agreed to try to arrange it for the next session of GRE.

66. The expert from Japan reiterated the commitment of his country to resolve the stalemate and find a suitable proposal for a harmonized asymmetrical passing beam pattern. He supported the idea of a demonstration and agreed to cooperate in its preparation.

67. Concluding the consideration, the Chairman invited the experts to study in detail the available working documents, together with informal document No. 12, in order to ensure an effective discussion during the next session. He expressed his hope that a demonstration might help progress.

(b) Symmetrical passing beam

Documentation: TRANS/WP.29/GRE/2000/24.

68. The expert from IMMA introduced the document and outlined the philosophy on the basis of which the proposal for a symmetrical harmonized beam pattern was prepared. He noted that: in both tables the minimum and maximum intensities (cd), and in the first table the minimum and maximum radial illuminance at 25 m (Lux), the limiting values of "<125 cc" and ≥125 cc" should be corrected to read "V_{max}<120 km/h" and "V_{max}≥120 km/h" respectively. He declared that the limit value of 120 km/h had been selected by the manufacturers. With respect to the "glare points", he said that these should be considered as proposals only, subject to further consideration.

69. The expert from Japan made his reservation to the value of 120 km/h. He said that in his country the speed limit for 2-wheeled vehicles is currently 80 km/h and should be increased to 100 km/h.

70. The Chairman of GRE considered the proposal by IMMA in principle acceptable and invited the experts to study it in detail for resumed consideration at the next session.

SIMPLIFICATION OF THE SYSTEM OF THE ECE HEADLAMP REGULATIONS

71. GRE noted that the proposals for new draft Regulations "00" and "MH" (documents TRANS/WP.29/1998/41 and Add.1 and TRANS/WP.29/1998/42 and Add.1) had been pending on the agenda of WP.29 since its one-hundred-and-sixteenth session (November 1998), together with the corresponding proposals to amend Regulations Nos. 1, 8, 20, 53, 56, 57, 72, 74, 76 and 82). The expert from the European Commission informed GRE that the consideration of these matters was now expected to take place in the WP.29 and AC.1 sessions of November 2000.
Note by the secretariat: Draft Regulations Nos. "00" and "MH" (documents TRANS/WP.29/1998/41 and TRANS/WP.29/1998/42 only) had been adopted by the vote of AC.1 during its sixteenth session (November 2000), together with the related proposals amending ten above-mentioned Regulations (TRANS/WP.29/743, paras. 167-176, 178 and 179).

OTHER BUSINESS

(a) Glare of headlamps

72. The Chairman recalled that the questions of glare had been under consideration already for some time and reiterated that the interest was to reduce the glare of headlamps as far as possible. He noted that the matter would now need to be addressed also in conjunction with the expected introduction of a new 42 Volt system.

73. During the discussion the question was raised concerning the new headlamps with ever decreasing diameter of the lens, where the glare was experienced far more often than with the former large lenses. The expert from GTB confirmed that this problem was being considered and agreed to keep GRE informed of any progress. In addition, it was noted that the Fourth PAL International symposium (Darmstadt, Germany, 25 and 26 September 2001) could also contribute to resolving the problems of glare;
(see also website: http://www.lt.e-technik.tu-darmstadt.de).

(b) General conditions for requiring mandatory installation of headlamp cleaning and automatic levelling devices

Documentation: TRANS/WP.29/GRE/1998/16.

74. GRE considered and adopted the proposal by GTB with amendments. It also agreed to transmit it to WP.29 and AC.1 as a part of the proposal for draft Supplement 3 to the 02 series of amendments to Regulation No. 48, to be submitted to WP.29 and AC.1 for consideration at their sessions of March 2001 (see annex 2 to this report, paragraphs 2.7.25. (new) and 6.2.9.). The experts from the Netherlands and Italy noted their study reservations, in order to examine the modified proposal.

(c) Advance braking warning systems

Documentation: TRANS/WP.29/GRE/2000/25.

75. The expert from GTB presented the proposal for guidelines allowing to evaluate lighting technology inventions. He said that the guidelines had been developed following the invitation by GRE at its thirty-ninth session (TRANS/WP.29/GRE/39, para. 58), in cooperation with the experts from the United States of America, where a similar proposal was being considered in parallel.

76. GRE agreed to study the proposal for a detailed consideration at the next session, under a separate agenda item. It was noted that, when finalized, the guidelines might e.g. be annexed to the Consolidated Resolution R.E.3.

77. For the "advance braking warning systems" it was agreed to consider them in conjunction with another device possibly affecting stop lamps – the Adaptive Cruise Control (ACC) (see paras. 79 and 80 below), under a new common other business agenda item "Conditions for the illumination of stop lamps".

(d) Illumination of stop lamps by an Adaptive Cruise Control Device (ACC)

Documentation: TRANS/WP.29/GRE/1999/17; informal documents No. 1 and 2 of annex 1 to this report.

78. The expert from the United States of America introduced the two informal documents, providing examples of the official interpretation by the US National Highway Traffic Safety Administration concerning the activation of vehicle stop lamps by an ACC. He recalled that informal document No. 2 was a response to the inquiry which had been received previously, the copies of which had been distributed to GRE experts during the forty-fourth session, as informal document No. 4 (TRANS/WP.29/GRE/44, para. 66).

79. GRE had a short exchange of views on the subject. It was agreed that informal documents Nos. 1 and 2 should also be transmitted to GRRF, having responsibility for the braking system and technical conditions under which the stop lamp might be allowed to activate (e.g. deceleration limit value), whilst the light-signalling function remained the responsibility of GRE.

80. It was also made clear that not only ACC, but also other systems, like e.g. regenerative braking, endurance braking, traction control, stability control, etc. might be considered in this respect. Therefore, GRE agreed to join for the future considerations the questions of ACC, advance brake warning and/or other devices into a new agenda item "Conditions for the illumination of stop lamps" (see also para. 77 above).

81. To facilitate the consideration of the new agenda item during the next session, the experts were invited to keep and bring with them their copies of informal document No 4 of the forty-fourth session and informal documents Nos. 1 and 2 of the present forty-fifth session.

(e) Advanced Front-lighting Systems (AFS)

82. The expert from GTB reported that the AFS group completed the proposals for amendments to ECE Regulations concerning the introduction of this new lighting technology and was expected to submit them to GTB for consideration during the next plenary session. With respect to timing, he considered it unlikely that any proposal could be finalized for consideration at the next session.

83. The expert from SAE said that his organization cooperates with the AFS group in order to harmonize relevant regulatory provisions. He said that for the rule-making in his country the headlamp related provisions needed to be finalized by Spring 2001 in order to issue the final rule within FMVSS 108.

84. GRE noted the information and agreed to keep the matter on its agenda, if solely for monitoring the progress.

(f) Possible amendments to the Convention on Road Traffic (Vienna 1968)

85. The expert from GTB reported that the work was in progress, following the invitation by GRE at its forty-third session (TRANS/WP.29/GRE/43, para. 109). He said that proposals to amendment annex 5 of the 1968 Convention on Road Traffic are being discussed, with a view to accommodating developments in lighting and light-signalling technology.

86. During the exchange of views on this matter, the use of headlamps during day-time, or directly day-time running lamps without the rear position lamps was given as an example of a discrepancy with the currently valid provisions of the 1968 Vienna Convention.

87. The Chairman recalled that the Working Party on Road Traffic Safety (WP.1) was currently considering updates to the 1968 Vienna Convention and said that in order to contribute, the GRE proposals should be prepared as soon as possible, for consideration at the next session in March 2001.

(g) Regulation No. 45 (Headlamp cleaners)

Documentation: TRANS/WP.29/GRE/2000/28.

88. GRE considered and adopted the proposal for a corrigendum to the French text of the Regulation. It was agreed to transmit it to WP.29 and AC.1 for consideration during their sessions of March 2001, as a proposal for draft Corrigendum 2 to Supplement 4 to the 01 series of amendments to the Regulation.

(h) Regulation No. 27 (Advance warning triangles)

Documentation: Informal document No. 9 of annex 1 to this report.

89. The secretariat drew the attention of GRE to an inquiry received from the Administrative Department of Yugoslavia, concerning a reference to an ISO standard in the Regulation (informal document No. 9).

90. GRE considered the subject and agreed that, whilst the ISO standard referred to in the valid version of the Regulation has been updated, the reference to a previous version of the standard remained to be applicable.

91. GRE invited GTB to consider the subject and, if necessary, make a proposal for amendments to Regulation No. 27, in order to update the reference(s) to ISO standard(s) and make them more precise. GTB was also kindly requested to send a reply to the inquiry by Yugoslavia, with a copy to the secretariat.

(i) Regulation No. 23 (Reversing lamps)

92. The expert from Japan drew the attention of GRE to an editorial error in the example of an approval mark in Supplement 5 to the Regulation, as published in its Rev.1/Amend.1 (a missing arrow).

93. GRE noted that the approval mark had been correct in the final document (TRANS/WP.29/450) on which the Rev.1/Amend.1 was based. It invited the secretariat to prepare a draft Corrigendum 1 to Supplement 5 and submit it to WP.29 and AC.1 for consideration during their sessions of March 2001.

(j) Declaration of intentions by Japan, concerning Regulation No. 48

94. The expert from Japan informed GRE that his Government intended to adopt Regulation No. 48, limited to M1 and N1 categories of vehicles only, possibly in the fiscal year 2001 (April 2001 - March 2002). He said that, for these

vehicle categories, the national legislation had already been well harmonized. However, for large-sized vehicles there were stricter national requirements, including e.g. additional direction indicators for preventing accidents with pedestrians. With respect to traffic conditions in Japan, the national requirements could not be waived, excluding the acceptance of large-sized vehicles, as approved to Regulation No. 48. He confirmed that further efforts would be made to harmonize the national legislation with Regulation No. 48 also for other categories of vehicles, as far as possible. He invited the experts to consider the intentions of his Government and announced that the representative of his country would also inform WP.29, during its one-hundred-and-twenty-second session in November 2000.

95. GRE appreciated the declaration by Japan as a positive step towards harmonization and expressed its hopes that in a second step the application could be extended also to other categories of vehicles.

(k) Elections of the Chairman and Vice-Chairman

96. GRE was informed that, due to the entering into force of the Terms of Reference and Rules of Procedure of WP.29 (TRANS/WP.29/690), the Chairman and possibly Vice-Chairman should be elected every second session of the year also by the subsidiary bodies of WP.29. This procedure should be mandatory for the year 2001, whilst for 2000 the continuation under the current Chairman was allowed (TRANS/WP.29/735, para. 17). GRE noted the information and agreed to maintain the current situation and to hold the election of the Chairman and Vice-Chairman at its forty-seventh session in October 2001.

(l) Tributes to Mr. D. Grainger and Mr. W. Van Dam, welcome to Mr. A. De Visser

97. Learning that Mr. D. Grainger intended to retire soon, GRE acknowledged his always-constructive cooperation and numerous contributions made during the years he represented OICA in the sessions and wished him a long and a happy retirement. Mr. Grainger wished GRE every success and expressed his hope for a reunion in the future.

98. The goodbye wish was also given to Mr. W. Van Dam, who was representing the IEC for the last time, before his retirement. GRE thanked him for his work and acknowledged the contributions he had made to its work. Mr. Van Dam introduced to GRE his successor, Mr. A. De Visser, and expressed his hope that he would continue to assist GRE in the light-source development work. Mr. De Visser was warmly welcomed.

(m) Acknowledgement to the organizers

99. At the end of the session, the Chairman of GRE thanked to all the staff members of Transport Canada who had taken part in organizing the session for their work and expressed his satisfaction with the session results. GRE joined the Chairmen and applauded the organizers.

AGENDA FOR THE NEXT SESSION

4.-9. For the forty-sixth session to be held in Geneva, from 27 March (14.30 h) to 30 March 2001 (12.30 h) 1/ GRE agreed on the following agenda:

4.-8. Regulation No. 48 – Development

4.-7. Electrical connections
4.-6. International harmonization of installation requirements (4-wheeled vehicles)
4.-5. Amendments concerning AFS systems (first step only)

4.-4. Amendments to ECE Regulations

2.1. Regulation No. 6 (Direction indicators) – (in relation to the set of amendments to Regulations Nos. 3, 4, 6, 7, 23, 38, 50, 77, 87 and 91)
2.2. Regulation No. 7 (Position, stop and end-outline marker lamps)
2.3. Regulation No. 37 (Filament lamps)
2.4. Regulation No. 65 (Special warning lamps)
2.5. Regulation No. 98 (Headlamps with gas-discharge light sources)

4.-3. Harmonized passing beam pattern

4.-2. Asymmetrical passing beam
4.-1. Symmetrical passing beam

4.0. Other business

4.1. Glare of headlamps
4.2. Conditions for the illumination of the stop lamps
4.3. Advanced Front-lighting systems (AFS)
4.4. Possible amendments to the Convention on Road Traffic (Vienna 1968)
4.5. Regulation No. 27 (Advance warning triangles)

1/ As part of the secretariat's efforts to reduce expenditure, all the official documents distributed prior to the session by mail will not be available in the conference room for distribution to session participants. Delegates are kindly requested to bring their copies of documents to the meeting.

Annex 1

LIST OF INFORMAL DOCUMENTS DISTRIBUTED WITHOUT A SYMBOL DURING THE SESSION

No.	Transmitted by	Agenda item	Language	Title
1.	United States of America	5.4.	E	Interpretation of S5.5.4, FMVSS No. 108 (an original NHTSA interpretation file)
2.	United States of America	5.4.	E	Interpretation of S5.5.4, FMVSS No. 108 (an original NHTSA interpretation file)
3.	Japan	2.6., 2.10.	E	Results of Test on Improvement of Visibility by Front Position Lamps on Motorcycle
4.	Secretariat	2.3.	E	Proposal for draft Supplement 6 to the 02 series of amendments to Regulation No. 7
5.	IEC	2.4.	E	Proposal concerning future Revision 3 of Regulation No. 37
6.	CLEPA	2.3.	E	CLEPA proposal to amend ECE Regulation 7 (and 6)
7.	France	1.1.	E/F	Regulation R48 – Electrical connections
8.	France	1.7.	E/F	Bend lighting function
9.	Secretariat	5.8.	E	Inquiry by the Federal Institution for Standardization, Belgrade: ECE Regulation No. 27/03
10.	Germany	1.6.	E	Proposal for draft amendment to Regulation No. 48 (concerning Advanced Front-lighting Systems)
11.	Germany	3.1.	E	Comments to the rational of harmonized passing beam pattern Document TRANS/WP.29/GRE/1999/18) and the harmonized symmetrical passing beam pattern Document TRANS/WP.29/GRE/2000/24
12.	Germany	2.7.	E	Proposal for draft amendments (Supplement 4) to regulation No. 65
13.	Secretariat	1.2.	E	Proposal for draft amendments to Regulation No. 48 (informal consolidation of amendments agreed during the session to document TRANS/WP.29/GRE/2000/3
14.	Germany	1.6.	E	Proposal for draft amendments to Regulation No. 48 (concerning Advanced Front-lighting Systems)

Annex 2

PROPOSAL FOR DRAFT SUPPLEMENT 3 TO THE 02 SERIES OF AMENDMENTS TO REGULATION No. 48, AS AGREED BY GRE DURING THE SESSION, on the basis of documents TRANS/WP.29/GRE/1998/16, TRANS/WP.29/GRE/2000/3 and TRANS/WP.29/GRE/2000/27

Insert a new paragraph 2.7.25., to read:

"2.7.25. "objective luminous flux" means a design value of the luminous flux of a replaceable light source. It shall be achieved, within the specified tolerances, when the replaceable light source is energized by the power supply at the specified test voltage, as indicated in the data sheet of the light source."

Paragraph 2.16.1., amend to read:

"2.16.1. "A single lamp" means 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 meeting the requirements of paragraph 5.7.1. below.

For the purpose of installation on a vehicle, a "single lamp" also means any assembly ....."

Insert a new paragraph 5.7.1., to read:

"5.7.1. Where a "single lamp" is composed of two or more distinct parts, it shall satisfy the following requirements:

5.7.1.1. the total area of the projection of the distinct parts (composing the apparent surface in the direction of the reference axis) on a plane tangent to the exterior surface of the transparent material and perpendicular to the reference axis shall occupy not less than 60 per cent of the smallest quadrilateral circumscribing the said projection or,

the maximum distance between two adjacent/tangential distinct parts (composing the apparent surface in the direction of the reference axis) shall not be more than 15 mm measured perpendicularly to the reference axis.

5.7.1.2. No distinct part of a single lamp shall be separated from another distinct part of that lamp by any part of the apparent surface of another lamp of a different colour."

Insert a new paragraph 5.23., to read:

"5.23. Lamps shall be fitted in a vehicle in such a way that the light source can be correctly replaced without the use of special tools, according to the instructions of the vehicle manufacturer. This requirement is not applicable to devices approved with a non-replaceable light source."

Paragraph 5.23. (former), renumber as paragraph 5.24.

Paragraph 6.2.9., amend the last subparagraph to read (footnote 4/ not modified):

"......

Dipped-beam headlamps with a light source having an objective luminous flux which exceeds 2,000 lumen shall only be installed in conjunction with the installation of headlamp cleaning device(s) according to Regulation No. 45 4/. In addition, with respect to vertical inclination, the provisions of paragraph 6.2.6.2.2. above shall not be applied."

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Annex 3

ECE REGULATION No. 7
APPLICATION OF THE CONSECUTIVE SERIES OF AMENDMENTS
TO VARIOUS LIGHT-SIGNALING DEVICES UNDER THE SCOPE OF THE REGULATION */

The transitional provisions under paragraph 14 of Regulation No. 7 shall be related to the lighting function that is being amended. A matrix schedule should inform about the amendment status relative to the lighting function, as shown here below :

Lighting device	Series of amendments				
	Original version	01	02		
Rear position lamp		**x**			
Stop lamp category S1			**x**		
Stop lamp category S2	**x**				
Stop lamp category S3	**x**				
End outline marker lamp (front)	**x**				
End outline marker lamp (rear)		**x**			
Front position lamp	**x**				
The **x** indicates a major technical modification. General amendments applicable to each function shall be indicated by an **x** in each column.					

*/ Note by the secretariat: The text of this annex reproduces informal document No. 6 of annex 1 to this report as submitted by CLEPA and it is therefore fully under responsibility of CLEPA.