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Working Party on Lighting and Light-Signalling (GRE)

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

(1 - 5 October 2001)

ATTENDANCE

1. GRE held its forty-seventh session from 1 October (afternoon only) to 5 October (morning only) 2001 in Geneva, 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; People's Republic of China; 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 for Standardization (ISO); 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).
2. The documents without a symbol distributed during the session are listed in the annex to this report.

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

(a) Electrical connections

Documentation: TRANS/WP.29/GRE/2000/16/Rev.1; TRANS/WP.29/GRE/2001/2; TRANS/WP.29/GRE/2001/9; TRANS/WP.29/GRE/2001/33; TRANS/WP.29/GRE/2001/41; informal document No. 11 of the annex to this report.

3. The expert from the United Kingdom re-stated his position that no lamp or device should be automatically operated, unless such operation is specified by the Regulation (TRANS/WP.29/GRE/2000/16/Rev.1).

4. The expert from Germany has drawn the attention of GRE to his proposal (TRANS/WP.29/GRE/2001/33), specifying conditions under which automatic switching of the passing beam headlamps and daytime running lamps could be allowed. He requested that GRE considers the subject with urgency, because for his country the automatic use of passing beam headlamps in daytime was not acceptable.

5. Referring to TRANS/WP.29/GRE/2001/41, the expert from GTB described the work in progress on developing a package proposal, regarding automatic switching of lighting and light-signalling devices, following the request by GRE during the previous session (TRANS/WP.29/GRE/46, para. 9). He confirmed that attention was given to all relevant devices and proposals (including the French TRANS/WP.29/2001/2), but that more time was needed to submit an official proposal for consideration by GRE.

6. During the discussion, which followed, GRE adopted paragraph 5.13. of document TRANS/WP.29/GRE/2000/16/Rev.1 (with the word "instruction" modified to read "provision") and it also adopted document TRANS/WP.29/GRE/2001/33, however, with the wording substantially amended.

7. Although the experts from France, Germany and Italy stated reservations with respect to the provision of paragraph 5.13., GRE agreed to transmit the adopted text (see para. 6 above) to WP.29 and AC.1 as a proposal for draft Supplement 4 to the 02 series of amendments to Regulation No. 48, for consideration during their sessions of March 2002. (Note by the secretariat: for the adopted wording see paragraphs 5.13., 6.2.7., 6.19.7. and 6.19.8. of document TRANS/WP.29/2002/10, scheduled to be considered during the one-hundred-and-twenty-sixth session of WP.29, under agenda item 4.2.10.)

8. GRE agreed that, following the above-noted adoption, the most urgent question of automatic operation in front lighting might soon be resolved and, therefore, more time could be given to GTB to elaborate the proposal concerning automatic operation of other lighting and light-signalling devices. The expert from GTB acknowledged the decision and indicated that the proposal (see para. 5 above) should be ready for consideration at the forty-ninth session of GRE, in October 2002.

9. Concerning the rear-end light-signalling, the expert from Germany made a presentation of the accident avoidance research, in which various possibilities of emergency braking brake light display were tested and evaluated, with various thresholds for activation and deactivation (informal document No. 11):

- (a) increased brake light surface area and intensity at high deceleration;
- (b) integral brake light (S3 lamp indicating braking deceleration degree);
- (c) flashing hazard warning lamps at high deceleration;
- (d) continuously alighted rear direction indicator lamps at high deceleration.

10. The expert from Germany said that the study should be completed by the end of November 2001 and that the final report would be available in the website of the Bundesanstalt fuer Strassenwesen (Federal Highway Research Institute): <http://www.bast.de> .

11. The presentation was followed by a discussion and GRE accepted the offer of the expert from Germany to bring for the next session two demonstration cars. The secretariat was requested to include the demonstration of the emergency brake light display in the session agenda.

(b) Amendments concerning the AFS systems (first step)

Documentation: TRANS/WP.29/GRE/2001/15/Rev.1; TRANS/WP.29/GRE/2001/36.

12. The work on this item started with detailed consideration of the proposal by GTB concerning bend lighting (TRANS/WP.29/GRE/2001/15/Rev.1). The proposal was adopted, however, deleting the modifications proposed for paragraphs 6.3.6. and 6.3.7.

13. Considered and adopted by GRE was also the GTB proposal concerning the cornering lamps (TRANS/WP.29/GRE/2001/36), however, with a number of modifications. GRE noted that introduction of cornering lamps into Regulation No. 48 should soon be followed by the adoption of a new draft Regulation on cornering lamps (agenda item 5.3., document TRANS/WP.29/GRE/2001/35).

14. GRE agreed to transmit the adopted documents (see paras. 12 and 13 above) to WP.29 and AC.1 as a part of the proposal for draft Supplement 4 to the 02 series of amendments to Regulation No. 48 (see para. 7 above), for consideration during their sessions of March 2002. (Note by the secretariat: for the adopted wording see document TRANS/WP.29/2002/10, scheduled to be considered during the one-hundred-and-twenty-sixth session of WP.29, under agenda item 4.2.10.)

(c) Installation of retro-reflective markings and materials

Documentation: TRANS/WP.29/GRE/2001/13.

15. Resuming the consideration of the proposal by GTB, GRE recalled its consideration of the subject during the previous session (TRANS/WP.29/GRE/46, paras. 21 and 22). During the detailed consideration, the following amendments to the document were agreed in principle:

Paragraph 2.7.17. (new), amend the word "faced" to read "covered".

Paragraph 2.26. (new), amend the value of "[30] km/h" to read "40 km/h".

Paragraph 5.15., amend to read (inserting a new entry at the end):

".....

retro-reflective lines

or contour markings:

white or yellow to the side,

white, yellow or red to the rear"

Paragraph 6.14.2., amend to read:

"..... in Regulation No. 3.
On vehicles of categories M2, M3 and N they may be supplemented by retro-reflective lines or contour markings, conforming to Regulation No. 104.
Additional retro-reflecting devices and materials"

Paragraph 6.14.3., amend to read:

"..... or more strips shall identify the entire rear width, respectively shape,"

16. The consideration of the proposal has not been concluded. Whilst a number of experts supported the provisions of Regulation No. 104 concerning the colour of marking stripes at the rear of the vehicle, the experts from Finland, Sweden and United Kingdom considered that rear-marking stripes should only be red. The Chairman of GRE suggested further study of the document, and consideration of it again at the next session, together with amendments to be proposed by GTB to the technical provisions of Annex 5 to the 1968 Vienna convention on Road Traffic (TRANS/WP.29/GRE/46, para. 73).

17. The expert from GTB agreed to review document TRANS/WP.29/GRE/2001/13, where, in particular, the wording agreed in principle by GRE for paragraphs 6.14.2. and 6.14.3. should be paralleled in the corresponding subparagraphs of 6.15., 6.16. and 6.17.

(d) Development of the Regulation

Documentation: TRANS/WP.29/GRE/2001/11; TRANS/WP.29/GRE/2001/23; TRANS/WP.29/GRE/2001/31; TRANS/WP.29/GRE/2001/38; TRANS/WP.29/GRE/2001/39; TRANS/WP.29/GRE/2001/40; informal documents Nos. 8 and 16 of the annex to this report.

18. The expert from GTB informed GRE that reconsideration of document TRANS/WP.29/GRE/2001/11 has not yet been concluded (TRANS/WP.29/GRE/46, paras. 18-20). Noting that this was not an urgent matter, the Chairman of GRE suggested to remove the proposal from the agenda, and re-insert it only after a new proposal from GTB was submitted.

19. Concerning the proposal by OICA, to adapt the direction indicator tell-tale prescriptions to the use of devices with multiple LED light sources (light-emitting diodes), it was noted that for a number of experts it was not acceptable to require only optional operational tell-tale in such case (new para. 6.5.8.2.). Although there was a general understanding of technical difficulties to detect reliably a proportion of the failed LEDs, GRE considered the proposal unacceptable and invited OICA to reconsider it. The Chairman noted that, besides the technical content, the proposal needed also formal reconsideration, because it looked like an addition to the existing para. 6.5.8. of Regulation No. 48, not like its replacement. Similarly to the item above, the secretariat was requested to remove the proposal from the agenda, and re-insert it only after a new proposal from OICA was received.

20. Following the introduction of document TRANS/WP.29/GRE/2001/31 by the expert from GTB, the proposal concerning the Distributed Lighting and Light-Signalling Systems (DLS) was considered in detail. GRE noted that, at the end of the Justification section of the document, the "Notes" should be eliminated. The following amendments to the proposal were agreed in principle during the first reading:

Paragraph 2.7., insert the square brackets, indicating a need for reconsideration, as follows:

"..... to other road users. [Lighting units of adaptive front lighting systems,] rear registration plate lamps and"

Paragraph 2.7.1.1.5., delete the words reading "producing electro-luminescence / fluorescence"

Paragraph 2.7.1.1.7., should be deleted.

Paragraph 3.2.3., correct the word "whol" to read "whole".

Paragraph 6.2.8., correct the word "operational" to read "operating".

Paragraph 6.2.9., amend to read:

".... lock of steering.
Dipped-beam headlamp with a light source having an objective luminous flux exceeding 2000 lumen shall only be installed in conjunction with the installation of headlamp cleaning device according to Regulation No. 45. 4/ In addition,"

21. The expert from the European Commission accepted the notion by GTB that paragraph 2.7. was intended to introduce a complete set of definitions concerning light sources. However, he said that this paragraph would need further modifications, if the definitions in Regulation No. 48 continued to apply to other ECE Regulations concerning lighting and light-signalling devices.

22. The expert from the United Kingdom objected to the use of the term "light-generator" (para. 2.7.27.1.) for a device collecting and distributing light.

23. The expert from Japan was concerned with the fail-safe procedure proposed by GTB (para. 5.24.). Following the invitation by the Chairman, he agreed to consider proposing to GTB an improved procedure. The expert from GTB, who acknowledged that that this subject had been difficult, accepted his offer.

24. GRE also discussed document TRANS/WP.29/GRE/2001/38, tabled by the Netherlands, and presenting an interpretation of paragraph 5.22. of Regulation No. 48. The majority of the experts identified with the view presented by the expert from the Netherlands, but some objections were noted. In conclusion, GRE supported the idea of allowing a choice of additional main-beam headlamps on heavy vehicles (N3 category), when the total number of simultaneously lit remained limited to four, and invited the expert from the Netherlands to propose for consideration at the next session amendments to Regulation No. 48, eliminating the current interpretation problem.

25. Consideration of the question of "single lamp" definition was resumed on the basis of document TRANS/WP.29/GRE/2001/39, tabled by Italy. He admitted that his proposal was due to be examined in detail by GTB, at its next meeting in Kyoto, in November 2001. In view of this, GRE agreed to postpone the detailed consideration of the proposal to its next session.

26. Another proposal for a definition of "single lamp" was presented by Japan, as a modification of TRANS/WP.29/GRE/2001/39 (informal document No. 8), in particular with a view to bend lighting. The discussion revealed that the provision concerning bend lighting should rather be introduced into paragraph 6.2. The expert from Japan presented the modified proposal at the end of the session, as informal document No. 16. His proposal was not considered due to lack of time, and GRE may wish to resume its consideration at its forty-eighth session.

27. The proposal by OICA (TRANS/WP.29/GRE/2001/40) to eliminate from Regulation No. 48 the requirement of vertical separation of 600 mm from mandatory lamps for the installation of supplementary rear signalling lamps, was not supported by any of the parties to Regulation No. 48 and, therefore, rejected by GRE.

AMENDMENTS TO ECE REGULATIONS

(a) Regulation No. 37 (Filament lamps)

Documentation: TRANS/WP.29/GRE/2000/10/Rev.1 and Rev.1/Add.1;
TRANS/WP.29/GRE/2001/32.

28. GRE considered in detail documents TRANS/WP.29/GRE/2000/10/Rev.1 and Rev.1/Add.1 and agreed that the modified trichromatic coordinates were an improvement and allow to optimize the colourimetric measurements. This opinion was not shared by the expert from the United Kingdom, who considered the boundaries of white light shifted too much towards the blue light and, therefore, legitimized the existing problem of the bluish appearance of high output headlamps. His concerns were supported by the expert from the United States of America.

29. Although GRE noted that the support for the proposal was not unanimous, it decided to adopt document TRANS/WP.29/GRE/2000/10/Rev.1, as modified by TRANS/WP.29/GRE/2000/10/Rev.1/Add.1. Following the reminder by the expert from IEC, it was agreed that to correct an error in the proposal, all paragraphs after par. 3.7. shall be renumbered (i.e. 3.7. to 3.8., etc).

30. Document TRANS/WP.29/GRE/2001/32, proposing to introduce into the Regulation new H14 category lamp, was also considered and adopted by GRE. The secretariat was requested to consolidate the three adopted documents and transmit the resulting proposal to WP.29 and AC.1 for consideration during their March 2002 session, as a proposal for draft Supplement 22 to the 03 series of amendments to Regulation No. 37. (Note by the secretariat: see document TRANS/WP.29/2002/9.)

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

Documentation: TRANS/WP.29/GRE/1999/10/Rev.1; TRANS/WP.29/GRE/2001/17;
informal document No. 13 of the annex to this report. Also distributed was informal document No. 12 of the forty-fifth GRE session.

31. Resuming the consideration of the proposals to improve visibility of vehicles using special warning lamps, the expert from the United Kingdom confirmed his pending reservation to the existing formal proposals

(TRANS/WP.29/GRE/46, para. 45). However, he evaluated informal document No. 13 as a step in a positive direction.

32. The expert from Germany explained that informal document No. 13 consolidated and replaced all related formal working documents, as well as informal document (No. 12) of the forty-fifth GRE session. He was prepared to consider a counter proposal for the night and day levels of luminous intensities by the United Kingdom (TRANS/WP.29/GRE/46, paras. 45 and 46).

33. The expert from the United Kingdom stated that he continued to support the present levels of luminous intensities in Regulation No. 65, and his proposal would be not to change them. He also said that research in his country indicated that the currently used special warning lamps already glared and caused difficulties in accident areas, particularly during the night. He agreed to make the report of this research available to GRE.

34. The Chairman was hopeful that the situation might be resolved at the next session and requested the secretariat to distribute informal document No. 13 with an official symbol.

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

Documentation: TRANS/WP.29/GRE/2000/19; TRANS/WP.29/GRE/2001/16/Rev.1; TRANS/WP.29/GRE/2001/30; informal document No. 10 of the annex to this report.

35. The expert from GTB informed GRE that the revised proposal concerning bend lighting (TRANS/WP.29/GRE/2001/16/Rev.1) incorporated failure provision of document TRANS/WP.29/GRE/2000/19, however, in an improved form, that should eliminate the reservation by the United Kingdom (TRANS/WP.29/GRE/46, para. 52). GRE endorsed his opinion, and adopted document TRANS/WP.29/GRE/2001/16/Rev.1 without modification (see also paras. 12 and 14 above). It also agreed to transmit it to WP.29 and AC.1 for consideration at their March 2002 sessions, as a proposal for draft Supplement 2 to the Regulation. (Note by the secretariat: see document TRANS/WP.29/2002/11.)

36. The initial consideration of the proposal by GTB (TRANS/WP.29/GRE/2001/30) to introduce in Regulation No. 98 provisions concerning the DLS (see para. 20 above) raised some questions and remarks. The experts from Italy and the Netherlands pointed out that references in the document to "non-replaceable gas-discharge light sources not approved under Regulation No. 99" would need careful consideration. The expert from GTB justified the philosophy of the document and stated that such references were necessary, in order to ensure that the not approved light sources were tested and complied with the requirements. Considering the subject, both the expert from the European Commission and the Chairman were of the opinion that it should first be clarified what a non-replaceable gas-discharge light source meant exactly, and if it needed to be defined also in Regulation No. 48. The following discussion led to the suggestions to eliminate some paragraphs from the proposal (including paras. 1.3.-1.5., and the amendment to para. 1.6.) and, instead, insert the usual reference to definitions in Regulation No. 48.

37. The Chairman invited the experts to continue their study of document TRANS/WP.29/GRE/2001/30 and proposed to resume its consideration at the next session.

38. Informal document No. 10, tabled by France, re-opened the question of a need for an operating tell-tale, requested by the United Kingdom (TRANS/WP.29/GRE/46, para. 52), to a headlamp functioning in a failure mode, as proposed by CLEPA (TRANS/WP.29/GRE/2000/19). GRE was of the opinion that after resolving the matter for Regulation No. 98 by adopting

TRANS/WP.29/GRE/2001/16/Rev.1 (see para. 35 above), the design described by informal document No. 10 required to address the tell-tale requirement also in Regulation No. 48. After realizing that more time was needed to resolve the divergence of opinions and to propose a generally acceptable solution, the Chairman closed the discussion and proposed to resume it at the next session. He requested the experts to retain for that purpose their copies of informal document No. 10.

(d) Regulations Nos. 50, 53 and 74

Documentation: TRANS/WP.29/GRE/2001/25; TRANS/WP.29/GRE/2001/2; TRANS/WP.29/GRE/2001/27. Also distributed was informal document No. 12 of the forty-sixth GRE session.

39. In his introduction of the proposals, the expert from IMMA reiterated that allowing the amber colour front position lamps for motorcycles was in the interest of global harmonization and would also improve the conspicuity of motorcycles from the front, besides avoiding practical problems in design and marketing. In this respect, he recalled the position paper (informal document No. 12), which had been distributed during the forty-sixth session. He also said that the amber position lamps were already allowed for motorcycles by Amendment 1 to the 1968 Vienna Convention, which entered into force on 3 September 1993, and therefore the footnote referring to that subject in document TRANS/WP.29/GRE/2001/25 should be deleted.

40. In the consideration of the proposal it had been recalled that the introduction of the amber colour for the front position lamps of motorcycles had not been adopted in the recent Supplements to the three Regulations, expected to enter into force on 4 and 5 December 2001. The examination of the opinions of present delegations has again demonstrated diverging opinions: support by five countries, opposition by three and abstention by ten countries, whilst of the non-governmental organizations two were supportive and two abstained.

41. The Chairman, concluding that the support for the proposal was insufficient, proposed, however, to keep the matter on the agenda. The expert from France informed GRE that corrections were necessary in the French versions of documents TRANS/WP.29/GRE/2001/26 and TRANS/WP.29/GRE/2001/27, where "amber" should be translated as "jaune-auto" and the words "intensities actually measured" as "intensité lumineuse réellement mesuré".

(e) Regulation No. 112 (Headlamps emitting an asymmetrical passing beam)

Documentation: TRANS/WP.29/GRE/2001/14/Rev.1.

42. Document TRANS/WP.29/GRE/2001/14/Rev.1, introducing in Regulation No. 112 provisions concerning the bend lighting was considered and adopted without modification (see also paras. 12 and 14 above). GRE agreed to transmit it to WP.29 and AC.1 for consideration at their March 2002 sessions, as a proposal for draft Supplement 2 to the Regulation. (Note by the secretariat: see document TRANS/WP.29/2002/13.)

43. The expert from GTB drew the attention of the secretariat to an error in the English version of footnote 6/ to paragraph 5.3. of document TRANS/WP.29/773 (draft Regulation No. 112), and requested that it be corrected in the final version of the Regulation (the end of footnote 6/ to read: "... shall not be applied when these lamps are installed.")

- (f) Regulation No. 104 (Retro-reflective markings for heavy and long vehicles and their trailers)

Documentation: TRANS/WP.29/GRE/2001/34; informal document No. 14 of the annex to this report.

44. Considering the proposal by Germany to allow combinations of marked and unmarked vehicles, GRE accepted the justification provided. However, it considered it unnecessary to insert an additional sentence proposed in document TRANS/WP.29/GRE/2001/34 and considered the deletion of the existing sentence sufficient. The modified document was adopted and GRE agreed to transmit it to WP.29 and AC.1 for consideration at their March 2002 sessions, as a proposal for draft Supplement 2 to the Regulation. (Note by the secretariat: see document TRANS/WP.29/2002/12.)

45. Discussing the report of the accident reduction achieved in the United States of America by retro-reflective tape stripe-marking (informal document No. 14), the expert from Germany recalled the same convincing results of the large-scale experiments done in 1989, 1990 and 1993. He said that a new report was being published as a "white book" and agreed to provide it to the interested experts (contact Prof. H.J. Schmidt Clausen, Technical University Darmstadt). He said that the white book should be available later also in the University website. The expert from Canada noted that the same retro-reflective stripe marking as in the United States of America was required in his country and the study of its effect was in progress. He asked for a copy of the white book as a means of comparison with the effects of contour marking.

INTERNATIONAL HARMONIZATION OF INSTALLATION REQUIREMENTS (4-wheeled vehicles)

Documentation: TRANS/WP.29/GRE/2001/6; informal document No. 1 of the annex to this report,

46. The Chairman acknowledged progress reached in the consideration of the proposal for a candidate draft global technical regulation (TRANS/WP.29/GRE/2001/6) during the informal meeting in Ottawa, Canada (4-7 September 2001), and thanked the Canadian Government for organizing it and providing facilities. He considered it unrealistic to complete the work during the regular sessions of GRE and proposed to convene another informal meeting. GRE accepted his proposal to hold that meeting in Geneva, Palais des Nations, from 8 to 10 January 2002 (without interpretation), if approved by WP.29, at its one-hundred-and-twenty-fifth session. The secretariat was requested to ensure the availability of a meeting room and projection equipment, and prepare the informal meeting agenda. (Note by the secretariat: WP.29 endorsed the request (TRANS/WP.29/815, para. 71) and the meeting was held, as proposed - see agenda TRANS/WP.29/GRE/2002/1.)

47. The expert from Japan presented informal document No. 1, showing low effect only of daytime running lamps in bright light, but at the same time causing reduction of the relative visibility of motorcycles. During the discussion the concerns voiced by Japan were acknowledged and other experts provided complementary information sources: the expert from Canada stated that the General Motors study provided to the Government of the United States of America included the Southern States having a similar latitude to that of Japan and suggested to provide the study to the expert from Japan. The expert from Germany recalled that the effects of the daytime running lamps were reviewed during the PAL 2001 International Lighting Symposium and suggested to visit the website, where the respective paper was available. Concluding the discussion, GRE confirmed that the use of lamps in daytime was a legislative requirement and as such in the competence of the Governments and the European

Union, whilst technically in the competence of the Working Party on Road Traffic Safety (WP.1).

HARMONIZED PASSING BEAM PATTERN

(a) Asymmetrical passing beam

Documentation: TRANS/WP.29/GRE/1997/14; TRANS/WP.29/GRE/1999/18; TRANS/WP.29/GRE/2001/4; informal documents Nos. 12 and 15 of the annex to this report. Also distributed was informal document No. 11 of the forty-fifth GRE session.

48. GRE recalled that this item had been skipped during the previous session and noted the documents on the table (TRANS/WP.29/GRE/46, para. 68). The expert from GTB explained that TRANS/WP.29/GRE/2001/4 was GTB's reaction to informal document No. 11 of the forty-fifth session of GRE. He said that the harmonized passing beam pattern of TRANS/WP.29/GRE/1999/18 was the best achievable compromise after eight years of work in the GTB's Coordinating Committee.

49. To give the experts a practical experience the harmonized passing beam was demonstrated by the experts from GTB on a section of the road within the premises of the Palais des Nations on 2 October 2001, from 20.30 to 22.45 h (informal document No. 12). Working in small groups, each expert was asked to evaluate and compare the performance and glare of the current UNECE and the proposed harmonized passing beam.

50. The results of the demonstration (informal document No. 15) were discussed in GRE on 3 and 4 October 2001. The practical comparison of the beam patterns showed that:

- (a) the subjective glare rating was approx. $W = 5.5$ for the harmonized beam pattern, i.e. about 0.5 worse in comparison with the ECE passing beam (approx $W = 6.0$, where $W = 5$ meant "just acceptable glare", whilst $W = 7$ meant "satisfactory level of glare");
- (b) the range of the headlamp did not vary with the changed light distribution;
- (c) The disability glare for the harmonized passing beam pattern increased by about 15 to 28 per cent, i.e. reducing the visibility by 5 to 6 metres.

51. The discussion of the demonstration results revealed again the complexity of the passing beam harmonization. GRE acknowledged the work done by GTB and its Coordinating Committee and agreed in principle that harmonization was desirable. On the other side, the first practical experience prompted the expert from Germany to register his study reservation, and concerns with glare were mentioned by others, including the expert from the Netherlands. It was mentioned during the discussion that one of the difficult points in the harmonization exercise was the illumination of overhead signs provided by the passing beam pattern standardized in the United States of America. The expert from Germany reiterated that the overhead signs could conveniently be illuminated by front position lamps, however, the obstacle was their amber colour in the United States of America. The expert from Canada noted, that, aimed about 5 degrees down, the United States passing beam pattern was almost identical with that of UNECE. In addition, he pointed out that the situation on the road was dynamic, whilst the demonstration gave only static experience.

52. The examination of the opinions of the present delegations, done by the Chairman, revealed that the type approval values for a harmonized beam pattern

proposed in TRANS/WP.29/GRE/1999/18 were accepted by 6 countries, objected to by none, and 11 countries and the European Community abstained (including Germany with the study reservation). Of the non-governmental organizations, three supported the proposal (OICA cautiously) and one abstained. There was little change only in the number of abstaining countries, when the Chairman tried to examine the situation for the case of light intensity values somewhat lower in points HV and B50L of the testing screen. The Chairman considered it positive that no objections were registered and proposed to continue the consideration of the GTB proposal at the next session. The expert from GTB accepted the Chairman's request to provide for the next session comparison tables for the UNECE, Japanese, USA, and the proposed harmonized passing beam, in order to assist the abstaining countries in their consideration and possible change of the position towards the support of the GTB proposal.

(b) Symmetrical passing beam

Documentation: TRANS/WP.29/GRE/2000/24; TRANS/WP.29/GRE/2001/24; informal document No. 9 of the annex to this report.

53. The expert from IMMA recalled the initial consideration of the proposal (TRANS/WP.29/GRE/2000/24) during the forty-fifth session (TRANS/WP.29/GRE/45, paras. 68-70), but informed GRE that, after a continued consideration, the decision was made to reinstall the engine capacity value of 125 cm³ as a break point between the small and large two-wheelers. He said that informal document No. 9 proposed to introduce the harmonized passing beam (based on TRANS/WP.29/GRE/2000/24) into Regulation No. 113. He invited GRE to study informal document No. 9, in particular with respect to the acceptance of:

- (i) engine capacity as a base for the categorization of two-wheelers (see TRANS/WP.29/GRE/2001/24); and
- (ii) illumination values above and below the cut-off line.

54. Considering TRANS/WP.29/GRE/2001/24, the expert from Italy considered it technically preferable to use the maximum speed of 120 km/h as a break point between the motorcycle categories with respect to headlamp installation, but did not consider his position as an objection to the proposal to use instead the engine capacity value.

55. The examination of the opinions of the present delegations showed a majority support for the IMMA proposal (based on TRANS/WP.29/GRE/2000/24): support by ten countries, no objection, abstention by six countries and the European Community; three non-governmental organizations supported the proposal, one abstained.

56. Given the majority support, GRE started the consideration of informal document No. 9 (see para. 53 above). The expert from IMMA noted some comments, referring mainly to typing errors in the document. Following a comment by the expert from the European Commission, concerning the table in annex X2, the expert from Germany said that it would be preferable to measure the positions of the specified points on the measuring screen in angular degrees, instead of millimetres. The expert from IMMA noted the comments, and agreed to correct the document and transmit it to the secretariat for distribution with an official document symbol, for consideration at the next session of GRE.

(c) Harmonized driving beam pattern

Documentation: TRANS/WP.29/GRE/2001/28.

57. The expert from GTB introduced the proposal, and drew attention to the differences between the UNECE driving beam and the beam pattern standardized in the United States of America.

58. The expert from the United States of America confirmed that a work notice had already been issued by NHTSA, asking for comments.

59. In the following discussion, the expert from GTB explained that, in the current design of headlamps, focus was on the passing beam and the resulting driving beam pattern might not be optimal. He said that the harmonization of the driving beam pattern should make the task easier both for the designer and the manufacturer of headlamps.

60. The examination of the opinions of present delegations showed only the United States of America and the European Community abstaining, whilst all other countries and non-governmental organizations supported the proposal. Based on this majority support, the Chairman suggested that GTB should use the document as a base for proposing draft amendments to Regulations Nos. 98 and 112.

OTHER BUSINESS

(a) Glare of headlamps

Documentation: Informal document No. 6 of the annex to this report.

61. The expert from the United States of America distributed copies of the Notice of request for comments regarding glare from the front of motor vehicles at night (informal document No. 6), published on 28 September 2001. He said that the period for comments was 60 days and invited the experts to respond. The presentation was followed by an exchange of views, focusing on aiming and levelling of headlamps.

(b) Conditions for the illumination of stop lamps

Documentation: TRANS/WP.29/GRE/1999/17; TRANS/WP.29/GRE/2000/25. Also distributed were informal documents Nos. 1 and 2 of the forty-fifth GRE session and informal document No. 4 of the forty-fourth GRE session.

62. The Chairman proposed to postpone the consideration of this item to the next session. The experts were asked to retain and bring for that purpose their copies of the above-mentioned informal documents.

(c) Cornering lamps

Documentation: TRANS/WP.29/GRE/2001/35.

63. The expert from GTB introduced briefly the proposal for a new draft Regulation concerning cornering lamps (TRANS/WP.29/GRE/2001/35). He confirmed that such lamps, used to provide supplementary illumination, when the vehicle is negotiating corners at low speed, were already in use in Canada, Japan and the United States of America.

64. The Chairman invited the experts to study the proposal and send any comments to GTB. He proposed to examine the proposal in detail at the next session. He also reminded the delegates that, when no comments were received,

the proposal would be considered acceptable and submitted for adoption at the next session.

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

65. The Chairman asked GTB about the state of preparation of amendments, since the review of the lighting provisions in the Convention was distributed (TRANS/WP.29/GRE/1999/23). He said that the window of opportunity to amend the Convention should not be missed, because its amending procedure was more complicated than that of ECE Regulations.

66. The Chairman of GTB said that the work was in progress and accepted the invitation to table the proposals for consideration at the next session of GRE, in April 2002. He noted that, until now, only the question of the stop lamp illumination and the use of rear position lamps with the use of lamps in daytime had been identified. The expert from Hungary drew attention to the recent change of chromaticity coordinates for amber light and said that these should also be changed in the Convention. The expert from the United Kingdom suggested that the problem of the colour of the rear retro-reflective contour marking should also be resolved.

(e) Technical requirements regarding the use of headlighting during daytime

67. The Chairman informed GRE that in the European Community a draft commitment between the European Commission and the EC vehicle manufacturers is under consideration to equip 2002 model year vehicles with daytime running lamps, in order to improve vehicle conspicuity and reduce the dangers of accidents with pedestrians. He asked for the opinion of GRE concerning this matter and reviewed the technical possibilities of the use of headlighting in daytime.

68. The secretariat informed GRE that the Working Party on Road Traffic Safety had examined the situation in the ECE countries concerning the headlighting use in daytime through a questionnaire, and the results of the survey should be published soon as a working document. The Chairman suggested to use this document as a base for consideration of this subject at the next session. (Note by the secretariat: the survey results were issued under document symbol TRANS/WP.1/2002/12, and should soon be available from the WP.1 website: <http://www.unece.org/trans/roadsafe/wp1page.html> (go into "Working documents" and select "2002").

(f) Regulation No. 10 (Electromagnetic compatibility)

Documentation: TRANS/WP.29/GRSG/2000/15; informal documents Nos. 2 and 7 of the annex to this report.

69. GRE noted that references to Regulation No. 10 in TRANS/WP.29/GRSG/2000/15 were correct. The expert from the Czech Republic informed GRE that the GRSG document had already been converted into a WP.29 working document (TRANS/WP.29/2001/59). (Note by the secretariat: this document was adopted by WP.29 at its November 2001 session - see TRANS/WP.29/815, para. 142 and final document TRANS/WP.29/835).

70. The expert from Japan introduced informal document No. 2, asking for the approximation of the FM radio frequency band specifications in Regulation No. 10 to those used in his country. GRE agreed to consider the proposal at the next session and requested the secretariat to distribute it with an official symbol.

71. The expert from France presented informal document No. 7, proposing the amendments to the Regulation, concerning the electromagnetic immunity testing. The expert from the Czech Republic considered the proposal advantageous. He said that the BCI method was already described in the Regulation and the proposal only extends its application. He also suggested a few corrections to the document and provided them to the secretariat.

72. The Chairman suggested considering the proposed amendments to Regulation No. 10 at the next session and requested the secretariat to distribute for that purpose informal documents Nos. 2 and 7 with an official symbol.

(g) 1997 Agreement (Inspections) - Proposal for draft Rule No. 2

Documentation: TRANS/WP.29/2001/19.

73. Consideration of this item was postponed, until the final proposal was received from the experts from CITA (International Motor Vehicle Inspection Committee). (Note by the secretariat: During the one-hundred-and-twenty-fifth session, the expert from CITA informed WP.29 that the expert advice would be ready for the June 2002 session of WP.29 at the earliest (TRANS/WP.29/815, para. 116). Therefore, consideration of this item by GRE should be postponed to the forty-ninth session, scheduled for October 2002.)

(h) Conversion to 42 Volt electric system

Documentation: Informal document No. 5 of the annex to this report. Also distributed was informal document No. 11 of the forty-sixth session.

74. GRE endorsed the reply to the United States Council for Automotive Research (USCAR), as proposed by the Chairman of GTB (informal document No. 11 of the forty-sixth session) and authorized the Chairman to sign it and send it to USCAR. (Note by the secretariat: letter Ref. No. 01/TRANS/3801 - ECE 433(1-7), dated 5 October 2001.)

75. The initial examination of informal document No. 5 revealed that the list of standards and regulations, that might be affected by conversion to a 42 Volt vehicle electric system was extensive, and that a number of items were unlikely to be affected. GRE agreed to consider the question at the next session. To facilitate this work, the experts were kindly requested to retain their copies of informal document No. 5 and bring them to the next session.

(i) Implications of the use of non-regulated lighting devices

76. Due to lack of time, consideration of this subject was postponed to the next session.

(j) Light source modules

Documentation: TRANS/WP.29/GRE/2001/29.

77. The experts were invited to study the proposal by GTB, to introduce in Regulation No. 7 provisions concerning light source modules. The expert from GTB explained that TRANS/WP.29/GRE/2001/29 was a sample proposal and after its finalization, proposals for other Regulations would follow. GRE agreed to consider this item in detail at the next session.

(k) Regulation No. 86 (Installation of lighting and light-signalling devices for tractors)

Documentation: Informal document No. 3 of the annex to this report.

78. The secretariat introduced the inquiry received from Belarus (informal document No. 3) and requested the advice of the GRE experts concerning the possible alignment of the tractor maximum design speed in Regulation No. 86 (6 to 30 km/h) to that of EC Directive 97/54/EC (6 to 40 km/h). GRE agreed to study the question for consideration at the next session. The experts were invited to keep their copies of informal document No. 3, as a background information for this subject.

(l) Regulation No. 113 (Headlamps emitting a symmetrical passing beam)

Documentation: Informal document No. 4 of the annex to this report.

79. Due to lack of time, consideration of this item was postponed to the next session. The secretariat was requested to distribute informal document No. 4 with an official symbol.

(m) Regulation No. 6 (Direction indicators)

80. The secretariat informed GRE that an alert had been received from the expert from Poland, concerning an incomplete figure (referring to categories 5 and 6 of direction indicators) in annex 1 to the Regulation. GRE authorized the error to be corrected, as Corrigendum 1 to Supplement 5 to the 01 series of amendments to Regulation No. 6. (Note by the secretariat: see document TRANS/WP.29/2002/8.)

ELECTION OF OFFICERS

81. Following the announcement by the Secretary on Monday, 1 October 2001, and in compliance with Rule 13 of the Rules of Procedure (TRANS/WP.29/690), GRE called the election of officers on Wednesday, 3 October 2001. GRE re-elected Mr. G. Meekel (Netherlands) Chairman, and elected Mr. M. Gorzkowski (Canada) Vice-Chairman for the two sessions scheduled for the year 2002.

AGENDA FOR THE NEXT SESSION

82. For the forty-eighth session to be held in Geneva, from Tuesday, 9 April (14.30 h) to Friday, 12 April 2002 (12.30 h), GRE agreed on the following agenda: 1/ 2/

1. Regulation No. 48
 - 1.1. Electrical connections
 - 1.2. Amendments concerning AFS systems
 - 1.3. Distributed Lighting Systems (DLS)
 - 1.4. Installation of retro-reflective markings and materials
 - 1.5. Development of the Regulation
2. Amendments to ECE Regulations
 - 2.1. Regulation No. 7 (Position, stop, and end-outline marker lamps) (amendments concerning light source modules)
 - 2.2. Regulation No. 10 (Electromagnetic compatibility)
 - 2.3. Regulations Nos. 50, 53 and 74

- 2.4. Regulation No. 65 (Special warning lamps)
- 2.5. Regulation No. 86 (Installation of lighting and light-signalling devices for tractors)
- 2.6. Regulation No. 98 (Headlamps with gas-discharge light sources)
- 2.7. Regulation No. 112 (Headlamps emitting an asymmetrical passing beam)
- 2.8. Regulation No. 113 (Headlamps emitting a symmetrical passing beam)
3. International harmonization of lighting and light-signalling installation requirements (proposal for candidate draft global technical regulation)
4. Proposals for new ECE Regulations
 - 4.1. Cornering lamps
 - 4.2. Adaptive Front-lighting System (AFS) - including a practical demonstration
5. Harmonized passing beam pattern
 - 5.1. Asymmetrical passing beam
 - 5.2. Symmetrical passing beam
 - 5.3. Harmonized driving beam pattern
6. Other business 2/
 - 6.1. Glare of headlamps
 - 6.2. Conditions for the illumination of the stop lamps
 - 6.3. Emergency brake light display (including practical demonstration)
 - 6.4. Possible amendments to the Convention on Road Traffic (Vienna 1968)
 - 6.5. Technical requirements regarding the use of motor vehicle lighting during daytime
 - 6.6. Conversion to 42 Volt electric systems

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.

2/ To allow proper consideration of items listed under "Other business", GRE accepted the proposal by the Chairman to consider these items on Monday, 9 April 2002.

Annex

LIST OF INFORMAL DOCUMENTS DISTRIBUTED WITHOUT A SYMBOL DURING THE SESSION

No.	Transmitted by	Agenda item	Language	Title
1.	Japan	3.	E	Points of Concern Regarding Daytime Running Lamps
2.	Japan	5.6.	E	Proposal for draft amendments to Regulation No. 10
3.	Belarus	5.11.	E	Proposal for draft amendments to Regulation No. 86
4.	Belarus	5.12.	E	Proposal for draft corrigenda to Regulation No. 113
5.	Secretariat	5.8.	E	Revision of Standards for 42 V Automotive Electrical systems (communication from USCAR, dated 4 June 2001)
6.	United States of America	5.1.	E	Notice of Request for Comment Regarding Glare from the Front of Motor Vehicles at Night
7.	France	5.6.	E/F	Proposal for draft amendments to Regulation No. 10 (Electromagnetic compatibility of vehicles of categories L, M, N, O)
8.	Japan	1.4.	E	Proposal for draft amendments to Regulation No. 48 (concerning TRANS/WP.29/GRE/2001/39)
9.	IMMA	4.2.	E	Proposal for draft amendments to draft Regulation No. [113]
10.	France	2.3.	E	Information concerning the approval of a headlamp and driving beams according R98
11.	Germany	1.1.	E	Emergency Brake Display for Rear End Accident Avoidance - Presentation by Dr. J. Gall, Bundesanstalt für Strassenwesen
12.	GTB	4.1.	E	Presentation of Harmonised Beam Pattern (Test details, procedure and setup)
13.	Germany and France	2.2.	E	Proposal for draft amendments (Supplement 3) to Regulation No. 65
14.	United States of America	2.6.	E	The Effectiveness of Retro-reflective Tape on Heavy Trailers

No.	Transmitted by	Agenda item	Language	Title
15.	GTB	4.1.	E	Results of the Harmonised Beam Pattern Presentation
16.	Japan	1.4.	E	Proposal for draft amendments to Regulation No. 48

Redistribution of informal documents from the previous sessions of GRE
(referring to agenda items of the current session)

44th session:

4.	United States of America	5.2.	E	Request for Interpretation & Petition for Rulemaking - FMVSS 108 (Petition concerning brake-lamp illumination requirements)
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45th session:

1.	United States of America	5.2.	E	Interpretation of S5.5.4., FMVSS No. 108 (an original NHTSA interpretation file)
2.	United States of America	5.2.		Interpretation of S5.5.4., FMVSS No. 108 (an original NHTSA interpretation file)
11.	Germany	4.1.	E	Comments to the rationale of harmonized passing beam pattern (document TRANS/WP.29/GRE/1999/8) and the harmonized symmetrical passing beam pattern (document TRANS/WP.29/GRE/2000/24)
12.	Germany	2.2.	E	Proposal for draft amendments (Supplement 4) to Regulation No. 65

46th session:

11.	Secretariat	5.8.	E	Conversion of vehicle electric systems to 42 Volts
12.	IMMA	2.4.	E	IMMA Position paper on the question of amber for motorcycle position lamps