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Working Party on Brakes and Running Gear

Seventy-fourth session

Geneva, 19–22 February 2013

Report of the Working Party on Brakes and Running Gear on its seventy-fourth session (19–22 February 2013)

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I. Attendance

1. The Working Party on Brakes and Running Gear (GRRF) held its seventy-fourth session from 19 to 22 February 2013 in Geneva. The meeting was chaired by Mr. B. Frost (United Kingdom). Experts from the following countries participated in the work, following Rule 1(a) of the Rules of Procedure of the World Forum for Harmonization of Vehicle Regulations (WP.29) (TRANS/WP.29/690, ECE/TRANS/WP.29/690/Amend.1 and Amend. 2): Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Italy, Japan, the Netherlands, Norway, Poland, Republic of Korea, Russian Federation, Slovakia, Spain, Sweden, Switzerland, South Africa and the United Kingdom of Great Britain and Northern Ireland. Experts from the European Commission (EC) also participated. Experts from the following non-governmental organizations (NGOs) participated: European Association of Automotive Suppliers (CLEPA), International Motorcycle Manufacturers Association (IMMA), International Organization for Standardization (ISO), and International Organization of Motor Vehicle Manufacturers (OICA). Upon the special invitation of the Chair, experts from the following non-governmental organizations participated: the International Association of the Body and Trailer Building Industry (CLCCR), the European Tyre and Rim Technical Organisation (ETRTO), the Imported Tyre Manufacturers' Association (ITMA) and Federation of European Manufacturers of Friction Materials (FEMFM).

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRRF/2013/1 and Add.1,
Informal document GRRF-74-01.

2. GRRF adopted the agenda ECE/TRANS/WP.29/GRRF/2013/1, its Add.1 and the running order GRRF-74-01 with the amendments noted below. The informal documents distributed during the session are listed in Annex I to this report.

Correction of document references for items 7(b):

Replace ECE/TRANS/WP.29/GRRF/2012/9 *by* ECE/TRANS/WP.29/GRRF/2013/9

III. Advanced Emergency Braking Systems (agenda item 2)

Documentation: Informal documents GRRF-74-17, GRRF-74-20 and GRRF-74-21.

3. The expert from EC, chairing the informal group on Advanced Emergency Braking Systems (AEBS), reported on the progress made. He introduced GRRF-74-17 produced by the informal group and amending ECE/TRANS/WP.29/2011/93. Japan withdrew GRRF-74-20 and GRRF-74-21. GRRF adopted the proposal from the informal group, as reproduced in Annex II and requested the secretariat to submit the proposal to WP.29 and the Administrative Committee of the 1958 Agreement (AC.1) for consideration at their June 2013 sessions as draft Supplement 1 to the 01 series of amendments to UN Regulation No. [130]. GRRF noted the completion of the work by the informal group and acknowledged the work done by its experts.

IV. Regulations Nos. 13 and 13-H (Braking) (agenda item 3)

A. Electronic Stability Control (ESC)

Documentation: ECE/TRANS/WP.29/GRRF/2013/10,
Informal documents GRRF-74-06 and GRRF-74-07.

4. The Chair of the informal working group on "Alternative Method to assess the Electronic Vehicle Stability Control system" (AMEVSC) reported on the progress made by the group on using test reports, e.g. according to various annexes of UN Regulation No. 13. He introduced GRRF-74-07, reporting on the work accomplished and the conclusion of the group on the rights and obligations when using a test reports procedure (e.g. as defined in Regulation No. 13, Annex 19) linked to the 1958 Agreement. GRRF endorsed these conclusions. The summary of these conclusions is listed in the form of a table in Annex III to this report.

5. The Secretary to the informal working group on AMEVSC introduced GRRF-74-06 on the use of a simulation tool as an AMEVSC, amending ECE/TRANS/WP.29/GRRF/2013/10 and especially the justification section. GRRF adopted this proposal as amended below. GRRF requested the secretariat to submit the proposal to WP.29 and AC.1 for consideration at their June 2013 sessions as part of the draft Supplement 10 to the 11 series of amendments to Regulation No. 13.

Annex 21, Appendix 1, paragraph 1.4., amend to read:

"1.4. The availability of the simulation tool software, to the software version used, shall be maintained for a period of not less than 10 **years following the date of the approval of the vehicle.**"

Annex 21, Appendix 2, footnote 1, amend to read:

"¹ Parameters not ~~taken into account~~ **included** shall limit the use of the simulation tool."

6. GRRF noted the completion of the work by the informal group and acknowledged the work done by its experts.

B. Automated Connections between Vehicles (ACV)

Documentation: ECE/TRANS/WP.29/GRRF/2013/2,
Informal documents GRRF-74-22, GRRF-74-23 and GRRF-74-42.

7. The expert from Sweden, chairing the informal group on Automated Connections between Vehicles (ACV), reported on the progress made by the group (GRRF-74-42). He introduced the group's most recent proposal (GRRF-74-22) amending ECE/TRANS/WP.29/GRRF/2013/2 and introducing provisions for ACV. He reported that the informal group updated the previous proposal (ECE/TRANS/WP.29/GRRF/2013/2), taking into account the concerns of GRRF on interoperability and safety provided by such systems (GRRF-74-23). He added that some additional work was still needed and sought GRRFs guidance, whether the relevant ISO standard shall be referenced or copied into the Regulation. The Chair of GRRF offered to follow up on this issue after the March 2013 session of WP.29. This item would be reviewed at GRRFs September 2013 session on the basis of a revised proposal to be submitted in due time by the ACV group.

C. Clarifications

Documentation: ECE/TRANS/WP.29/GRRF/2011/34,
ECE/TRANS/WP.29/GRRF/2012/11,
ECE/TRANS/WP.29/GRRF/2012/21,
ECE/TRANS/WP.29/GRRF/2013/3,
Informal documents GRRF-74-13 and GRRF-74-33.

8. The Chair recalled the purpose of ECE/TRANS/WP.29/GRRF/2012/11 on introducing an electro-hydraulic transmission for electrical brake systems. The expert from Germany reported on the progress made. He added that a revised proposal might be submitted for consideration at the September 2013 session of GRRF. GRRF agreed to resume the discussion at its next session, keeping the document as a reference.

9. The expert from Japan introduced ECE/TRANS/WP.29/GRRF/2013/3, superseding ECE/TRANS/WP.29/GRRF/2011/34 and proposing clarification on the reference to Regulation No. 10 in Regulations Nos. 13 and 13-H. The expert from OICA introduced GRRF-74-13, proposing a similar amendment to Regulations Nos. 13 and 13-H but also amending Regulations Nos. 79 and 89 as well as the new Regulations on Advance Emergency Braking System (AEBS) and Lane Departure Warning System (LDWS). Following the discussion, the expert from the Russian Federation withdrew GRRF-74-33. GRRF agreed to reconsider GRRF-74-13 at its next session on the basis of an official document.

10. The expert from Germany introduced ECE/TRANS/WP.29/GRRF/2012/21, proposing to remove the signature of the Type Approval Authority from the test report defined in Annex 12 of Regulation No. 13. GRRF adopted this document and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their June 2013 sessions as part of draft Supplement 10 to the 11 series of amendments to Regulation No. 13 (see para. 5).

D. Braking symbols in Regulation No. 121 (Identification of controls, tell-tales and indicators)

Documentation: ECE/TRANS/WP.29/GRRF/2012/14,
ECE/TRANS/WP.29/2012/30,
Informal documents GRRF-74-15, GRRF-74-16, GRRF-74-32 and
GRRF-74-39.

11. The expert from Italy introduced GRRF-74-15, recalling the unintended deletion of paragraph 12.5. in Revision 2 to Regulation No. 13-H and proposing its reintroduction. GRRF agreed to this proposal and requested the secretariat to submit the proposal, as reproduced in Annex IV to this report, to WP.29 and AC.1 for consideration at their June 2013 sessions as draft Corrigendum 3 to the Revision 2 to Regulation No. 13-H.

12. The Chair recalled the purpose of ECE/TRANS/WP.29/2012/30 tabled by the Working Party on General Safety Provisions (GRSG) proposing to remove the ESC tell-tale requirements from UN Regulations Nos. 13 and 13-H and to insert these requirements into UN Regulation No. 121. GRRF agreed during its last session on this proposal and on cleaning up the transitional provisions of Regulations Nos. 13 and 13-H (ECE/TRANS/WP.29/GRRF/2012/14). The expert from OICA introduced GRRF-74-16 proposing to revise the transitional provisions taking into account the corresponding guidelines by WP.29. The expert from the Netherlands presented GRRF-74-39, proposing to revise the transitional provisions that are currently valid and to delete obsolete transitional provisions. The expert from the Russian Federation introduced GRRF-74-32

updating GRRF-74-16. The expert from the United Kingdom volunteered to organize an ad hoc meeting aimed at preparing an official document on the basis of GRRF-74-32 and GRRF-74-39 for the next session of GRRF. The expert from the Netherlands requested the presence of the secretariat to guide the work on this issue.

E. Other business

Documentation: ECE/TRANS/WP.29/GRRF/2012/16,
Informal documents GRRF-74-02, GRRF-74-11, GRRF-74-14 and
GRRF-74-31.

13. The expert from OICA presented GRRF-74-11 superseding ECE/TRANS/WP.29/GRRF/2012/16, to align Regulation No. 13-H with FMVSS 135 on electric vehicle requirement with special regard to the regenerative braking system. GRRF requested the secretariat to submit the proposal as reproduced in Annex VIII to WP.29 and AC.1 for consideration at their June 2013 sessions as part of the draft Supplement 10 to the 11 series of amendments to Regulation No. 13 and draft Supplement 15 to the 00 series of amendments to Regulation No. 13-H.

14. The expert from the Russian Federation introduced GRRF-74-02 proposing a correction in the Russian version of Regulation No. 13. GRRF adopted this proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their June 2013 sessions as draft Corrigendum 4 to the 11 series of amendments to Regulation No. 13 (Russian only).

Paragraph 5.2.1.33. (Russian only), amend to read:

"5.2.1.33. Транспортные средства категории N₁, имеющие не более трех осей, могут быть оснащены функцией обеспечения устойчивости...".

15. The expert from the Netherlands introduced GRRF-74-14, proposing an amendment to Regulation No. 13. GRRF agreed on this proposal as reproduced below and requested the secretariat to submit the proposal to WP.29 and AC.1 for consideration at their June 2013 sessions as part of the draft Supplement 10 to the 11 series of amendments to Regulation No. 13 (see para. 10).

Annex 10, paragraph 4.1.2., correct to read:

"4.1.2. The provision of paragraph 4.1.1. does not have to be fulfilled, if a semi-trailer with a K_c factor less than 0.95 meets at least the braking performance specified in paragraph 3.1.2.1. or in paragraph 3.1.3.1., as appropriate, of Annex 4 to this Regulation."

16. The expert from CLEPA introduced GRRF-74-31, proposing corrections and clarifications to Regulation No. 13. GRRF agreed to reconsider this proposal at its September 2013 session, based on an official document, which the expert from CLEPA volunteered to prepare.

V. Regulation No. 55 (Mechanical couplings) (agenda item 4)

Documentation: Informal documents GRRF-74-24, GRRF-74-25 and GRRF-74-26.

17. The Chair from the Informal Group on the revision of Regulation No. 55 introduced GRRF-74-24, GRRF-74-25 and GRRF-74-26. GRRF noted the intention to bring forward two proposals and agreed on the proposed Terms of Reference and Rules of Procedures as

reproduced in Annex V however, the Informal Group was invited to provide GRRF with further clarity of the scope of the second proposal for consideration. GRRF expected to consider the first proposal of the informal group on the basis of an official document at its next session in September 2013.

VI. Motorcycle braking (agenda item 5)

A. Regulation No. 78

Documentation: ECE/TRANS/WP.29/GRRF/2013/7,
Informal documents GRRF-73-10, GRRF-74-34 and GRRF-74-35.

18. The expert from IMMA introduced GRRF-74-35, superseding GRRF-73-10, proposing to clarify some provisions and to simplify the test procedures in Regulation No. 78. The proposal received several comments, including GRRF-74-34, introduced by the expert from India. GRRF agreed to reconsider IMMA's proposal on the basis of an updated official document taking into account the comments received. The expert from IMMA volunteered to prepare the document and to submit it in due time to the secretariat. The expert from IMMA introduced ECE/TRANS/WP.29/GRRF/2013/7, a proposal to amend certain requirements in Regulation No. 78. GRRF considered that clarification of the intention of the proposal and further justification was necessary. The expert from IMMA agreed to amend the document in line with the comments received and submit for consideration at GRRF's September 2013 session.

B. Global Technical Regulation No. 3

Documentation: ECE/TRANS/WP.29/GRRF/2013/8,
Informal documents GRRF-73-11 and GRRF-74-36.

19. The expert from IMMA introduced GRRF-74-36, superseding GRRF-73-11, introducing similar amendments to those proposed for Regulation No. 78. The Chair noted the requirement for a Contracting Party to sponsor this proposal. The expert from Italy volunteered to clarify before the next AC.3 session if Italy would sponsor this amendment. GRRF agreed to reconsider IMMA's proposal on the basis of an updated official document taking into account the various comments received. The expert from IMMA volunteered to prepare the document and to submit it in due time to the secretariat.

VII. Regulation No. 90 (Replacement brake linings) (agenda item 6)

Documentation: ECE/TRANS/WP.29/GRRF/2013/4,
Informal document GRRF-74-19.

20. The expert from FEMFM introduced ECE/TRANS/WP.29/GRRF/2013/4 taking into account the remarks received during the previous session of GRRF. He recalled the purpose of the proposal and underlined that so called "chemically and physically identical replacement brake lining assemblies" and "chemically and physically identical drum brake linings" should not have to be retested but should be approved on the basis of the homologation of the original equipment supplier. In that case, the applicants for approval should only demonstrate that they supply the brake lining assemblies or the drum brake linings for the vehicle or brake manufacturer as original equipment for the specific model(s) for which approval is being sought, and that they produce the parts under the same

production conditions, quality assurance system, and with the same results of the conformity of production tests as for the original parts. The expert from OICA introduced GRRF-74-19, expressing some concerns with the proposal made by FEMFM. The expert from Spain underlined the need for GRRF to confirm the endorsement of the philosophy behind the proposal made by FEMFM. The expert from the Russian Federation observed that the proposal is consistent with an approach which is already used in other parts of Regulation No. 90. The expert from CLEPA volunteered to organize a meeting with OICA, FEMFM as well as interested Contracting Parties and NGOs interested in this issue. GRRF agreed to resume consideration at its next session.

VIII. Tyres (agenda item 7)

A. Global Technical Regulation on tyres

Documentation: ECE/TRANS/WP.29/GRRF/2012/22,
Informal documents GRRF-74-09 and GRRF-74-38.

21. The Secretary of the informal group for a tyre GTR reported on the progress made. He presented the latest version of the text of a draft GTR (GRRF-74-38) amending ECE/TRANS/WP.29/GRRF/2012/22. GRRF reviewed the document and agreed on the technical aspect of this proposal. GRRF noted that some decisions needed to be taken by WP.29 and AC.3. GRRF adopted ECE/TRANS/WP.29/GRRF/2012/22, as amended and reproduced in GRRF-74-38, keeping in square brackets the "Adhesion Performance on Wet Surfaces" provisions (paragraph 3.12.). GRRF requested the secretariat to submit the proposal as amended below to WP.29 and AC.3 for consideration at their June 2013 sessions and for vote at their November 2013 session. GRRF expected to review, during its September 2013 sessions any guidance received as necessary.

Paragraph 2.58., replace ASTM by ASTM International

Footnote 1, paragraph 3.14.1., amend to read:

¹ Contracting Parties who utilize load ranges higher than E for LT may apply national requirements.

22. The expert from France introduced GRRF-74-09 proposing a status report on developing the tyre GTR. He volunteered to prepare an updated report as a final report for phase 1 of the development of the tyre GTR to be presented to WP.29 and AC.3 at their sessions in June 2013.

23. GRRF noted the completion of the work on the phase 1 by the informal group and acknowledged the work done by its experts.

B. Regulation No. 117 (Tyres - Rolling resistance, rolling noise and wet grip)

Documentation: ECE/TRANS/WP.29/GRRF/2013/9,
ECE/TRANS/WP.29/GRRF/2012/19,
Informal documents GRRF-74-04, GRRF-74-08 and GRRF-74-43.

24. The expert from ETRTO introduced GRRF-74-04 amending ECE/TRANS/WP.29/GRRF/2012/19 on the testing procedure for snow tyres of the category C3. He also introduced GRRF-74-43 showing some test results justifying their proposal. GRRF agreed on this proposal as amended by Annex VI and requested the

secretariat to submit the proposal to WP.29 and AC.1 for consideration at their June 2013 sessions as draft Supplement 4 to the 02 series of amendments to Regulation No. 117.

25. The expert from ETRTO presented a joint proposal by France, EC and ETRTO (GRRF-74-08) amending ECE/TRANS/WP.29/GRRF/2013/9 on wet grip testing provisions for Tyres of category C2 and C3. GRRF agreed on this proposal as amended in Annex VII to this report and requested ETRTO to provide technical data supporting the choice of the proposed limit values for the next GRRF session in September 2013. GRRF requested the secretariat to submit the proposal to WP.29 and AC.1 for consideration at their November 2013 sessions as draft Supplement 5 to the 02 series of amendments to Regulation No. 117.

C. Other business

Documentation: Informal documents GRRF-74-03, GRRF-74-27, GRRF-74-28, GRRF-74-29 and GRRF-74-30.

26. The expert from ETRTO introduced GRRF-74-03, proposing minor amendments to Regulation No. 106. GRRF agreed to reconsider an amended proposal specifically to ensure that "CFO" and "CHO" do not become mandatory markings contrary to previous GRRF intention. GRRF agreed to reconsider this proposal with minor amendments and requested the secretariat to distribute it as an official document at the September 2013 session of GRRF.

27. The expert from EC introduced GRRF-74-27 and some questionnaires (GRRF-74-28, GRRF-74-29 and GRRF-74-30), informing GRRF about activities in the European Union on Tyre Pressure Monitoring Systems (TPMS) for trucks and coaches. GRRF welcomed the initiative by the EC and their efforts in sharing and transparency at this early stage. The expert from OICA proposed to provide the information available, to directly contact the consultants in these activities and to clarify the timeline for collecting the information.

IX. Intelligent Transport Systems (ITS) (agenda item 8)

Documentation: Informal document GRRF-74-12 and WP.29-157-06.

28. The Chair recalled that WP.29-157-06, dealing with design/control principles of Advanced Driver Assistance Systems (ADAS), was referred to GRRF and the other subsidiary bodies of WP.29, for detailed consideration. The expert from OICA introduced GRRF-74-12 proposing a list of comments on this issue. GRRF reviewed this document and agreed on the comments. GRRF decided to correct on page 3 in the first paragraph "recommended requirements" by "[minimum] [recommended] requirements".

X. Regulation No. 79 (agenda item 9)

A. Regulation No. 79

Documentation: ECE/TRANS/WP.29/GRRF/2013/5,
Informal document GRRF-74-37.

29. The expert from CLEPA presented GRRF-74-37, on behalf of CLCCR, proposing to introduce into Regulation No. 79 provisions permitting the type approval of positive steering of trailers using energy supply and electrical control from the towing vehicle. His

proposal focused on the energy supply connectors and the transmission of steering control data (digital information interchange). The expert from the Netherlands proposed extending the work to the power supply provisions necessary to guarantee a good functionality as well as a sufficient level of safety. GRRF agreed to add this as a new item on the agenda of the next session.

30. The expert from CLEPA introduced ECE/TRANS/WP.29/GRRF/2013/5 proposing to align the test speed and braking performance requirements for vehicles of the category M₁ and N₁ in the event of energy source failure with those in Regulations Nos. 13 and 13-H. GRRF adopted this proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their June 2013 sessions as draft Supplement 4 to the 01 series of amendments to Regulation No. 79.

B. Lane Keeping Assist System (LKAS) and Parking Assist System (PAS)

Documentation: ECE/TRANS/WP.29/GRRF/2013/6,
Informal documents GRRF-74-05, GRRF-74-18, GRRF-74-40 and
GRRF-74-41.

31. The expert from Japan proposed to establish an informal group on LKAS and PAS (GRRF-74-40) and introduced a draft terms of reference as reproduced in ECE/TRANS/WP.29/GRRF/2013/5 and GRRF-74-05. He presented GRRF-74-41, showing the need for minimum requirements applying for those systems, if fitted in a vehicle. The expert from OICA introduced GRRF-74-18, objecting to the need for such a Regulation on these new technologies, claiming that Annex 6 of Regulation No. 79 covered those systems. GRRF agreed to reconsider the proposal at its September 2013 session and invited Japan to provide a more detailed justification for such systems, including a cost-benefit analysis if possible.

XI. International Whole Vehicle Type Approval (IWVTA) (agenda item 10)

Documentation: Informal documents WP.29-156-21-Rev.1 and GRRF-74-44.

32. The GRRF Ambassador recalled the principles of IWVTA and introduced GRRF-74-44. He proposed to assess the table containing relevant items for GRRF. GRRF agreed to upgrade the priority of the item "tyres installation" from "(c)" to "(b)".

33. The expert from OICA volunteered to develop a proposal on Regulation No. 13-H, splitting this regulation into three parts: braking system, brake assist system and electronic stability control system for consideration at the September 2013 session of GRRF.

34. The expert from ETRTO volunteered to develop a proposal on a new Regulation on tyre installation for consideration at the September 2013 session of GRRF.

35. GRRF requested the secretariat to create a specific agenda item to accommodate both issues.

XII. 1997 Agreement

Documentation: ECE/TRANS/WP.29/2013/32.

36. The Chair recalled that ECE/TRANS/WP.29/2013/32, dealing with the update of the Rule No. 2, was referred to GRRF and the other subsidiary bodies of WP.29 for detailed

consideration. The expert from the Russian Federation introduced ECE/TRANS/WP.29/2013/32 proposing to harmonize Rule No. 2 with the provisions set in the European Union Directive 2010/48/EC and asked for comments. Some experts noted that the corresponding European Union Directive was still under consideration for amendments. GRRF preferred to wait for the completion of this work to avoid a further update of Rule No. 2.

XIII. Other Business (agenda item 12)

A. Report of the 158th session of WP.29 in November 2012

Documentation: ECE/TRANS/WP.29/1099.

37. The secretariat reported on the highlights of the 158th session of WP.29 (ECE/TRANS/WP.29/1099).

B. Any other business

Documentation: Informal document GRRF-74-10.

38. The expert from OICA introduced a proposal (GRRF-74-10) to implement the type approval administrative procedure called "revision". GRRF agreed to resume consideration of this subject on the basis of an official document.

39. GRRF was informed that Mr. Jennison and Mr. Sawada would no longer attend GRRF. GRRF thanked both for their excellent contributions. GRRF wished Mr. Jennison all the best for his retirement and Mr. Sawada all the best in his new responsibilities.

XIV. Provisional agenda for the seventy-fifth session

40. The following provisional agenda was adopted for the seventy-fifth session of GRRF, scheduled to be held in Geneva from 17 September 2013 (starting at 9.30 a.m.) to 19 September 2013 (concluding at 5.30 p.m.).¹

1. Adoption of the agenda.
2. Advanced Emergency Braking Systems.
3. Regulations Nos. 13 and 13-H (Braking):
 - (a) Electronic Stability Control (ESC);
 - (b) Automated Connections between Vehicles (ACV);
 - (c) Clarifications;
 - (d) Braking symbols in Regulation No. 121 (Identification of controls, tell-tales and indicators);
 - (e) Other business.
4. Regulation No. 55 (Mechanical couplings).

¹ GRRF noted that the deadline for submission of official documents to the UNECE secretariat was 20 June 2013, twelve weeks prior to the session.

5. Motorcycle braking:
 - (a) Regulation No. 78;
 - (b) Global Technical Regulation No. 3.
6. Regulation No. 90 (Replacement brake linings).
7. Tyres:
 - (a) Global Technical Regulation on tyres;
 - (b) Regulation No. 117;
 - (c) Other business.
8. Intelligent Transport Systems (ITS).
9. Steering equipment:
 - (a) Regulation No. 79;
 - (b) Lane Keeping Assist System (LKAS) and Parking Assist Systems (PAS).
10. International Whole Vehicle Type Approval (IWVTA):
 - (a) Regulation on tyre installation;
 - (b) Regulation No. 13-H.
11. 1997 Agreement.
12. Election of officers.
13. Other business:
 - (a) Highlights of the March 2013 and June 2013 sessions of WP.29;
 - (b) Any other business.

Annex I

List of informal documents considered during the session

A. List of informal documents (GRRF-74-...) of the session (English only)

| <i>No.</i> | <i>(Author) Title</i> | <i>Follow-upⁱ</i> |
|------------|---|------------------------------|
| 1 | (Secretariat) Running order | (a) |
| 2 | (Russian Federation) Proposal to draft Corrigendum to Revision 7 to Regulation No. 13 (Braking on vehicles of categories M, N and O) | (a) |
| 3 | (ETRTO) Proposal to draft corrigendum to Regulation No. 106 | (c) |
| 4 | (ETRTO) Proposal to amend the document ECE/TRANS/WP.29/GRRF/2012/19 to consider comments made during the Working Party on Noise on its fifty-sixth session (Geneva, 3-5 September 2012) | (b) |
| 5 | (Secretariat) Correction to the table 1 in ECE/TRANS/WP.29/GRRF/2013/6 | (d) |
| 6 | (AMEVSC) Proposal for Supplement 10 to the 11 series of amendments to Regulation No. 13 (Heavy vehicle braking) | (a) |
| 7 | (AMEVSC Chair) Report of GRRF Alternative Method for Electronic Vehicle Stability Control (AMEVSC) Informal Working Group | (f) |
| 8 | (EC, France and ETRTO) Proposal for editorial correction to ECE/TRANS/WP.29/GRRF/2013/9 | (b) |
| 9 | (France) Proposal for the final report on the development of the global technical regulation on Tyres | (e) |
| 10 | (OICA) Proposal for amendments to Regulation Nos. 13, 13-H, 30, 54, 55, 79 and 90 | (d) |
| 11 | (CLEPA and OICA) Proposal for amendments to Regulations Nos. 13 and 13-H (Braking) | (a) |
| 12 | (OICA) OICA comments to the draft Design Principles for Control Systems of ADAS (Informal document WP.29-157-06) | (b) |
| 13 | (OICA and CLEPA) Reference to Regulation No. 10 in Regulations Nos. 13, 13-H, 79 and 89 and the new Regulations on LDWS and AEBS | (c) |
| 14 | (Netherlands) Proposal for draft corrigendum to Regulation No. 13 | (b) |
| 15 | (Italy) Proposal for Corrigendum 3 to Revision 2 of Regulation No. 13-H | (a) |
| 16 | (OICA) Proposal for amendments to Regulations Nos. 13 and 13-H (Brakes of vehicles) | (f) |
| 17 | (AEBS and LDWS) Proposal for a Supplement 1 to the 01 Series of amendments to UN Regulation No. [130] (Advanced Emergency Braking Systems) | (b) |
| 18 | (CLEPA and OICA) CLEPA/OICA comments to Japan proposal to regulate LKAS and PAS | (f) |
| 19 | (OICA) OICA comments to FEMFM proposal ECE/TRANS WP.29/GRRF/2013/4 Identical disc/drums – Identical linings | (f) |
| 20 | (Japan) Necessity of Collision Warning before Emergency Braking Phase | (f) |
| 21 | (Japan) Japanese position for the warning requirements of AEBS | (f) |
| 22 | (ACV) Proposed amendment to Regulation No. 13 | (e) |
| 23 | (ACV) Annex 2 to GRRF-74-22 | (f) |
| 24 | (R55) Terms of reference and rules of procedure of the GRRF informal group on "Different amendments on ECE Regulation No. 55.01" | (b) |
| 25 | (R55) List of proposed amendments to ECE R55 to be presented in GRRF | (b) |
| 26 | (R55) Proposal for Amendments to Regulation No. 55 | (e) |

| <i>No.</i> | <i>(Author) Title</i> | <i>Follow-upⁱ</i> |
|------------|---|------------------------------|
| 27 | (EC) Study on TPMS for reduction of LCV and HDV fuel consumption and CO ₂ emissions | (f) |
| 28 | (EC) TPMS Questionnaire, TPMS manufacturers | (f) |
| 29 | (EC) TPMS Questionnaire, TYRE manufacturers | (f) |
| 30 | (EC) TPMS Questionnaire, VEHICLE manufacturers | (f) |
| 31 | (Secretariat) Proposal for amendments and corrections to Regulation No. 13 | (e) |
| 32 | (Russian Federation) Transitional Provisions to Regulations Nos. 13 & 13H, comments on the GRRF-74-16 by OICA | (e) |
| 33 | (Russian Federation) Proposal for correction to the document ECE/TRANS/WP.29/GRRF/2011/34 | (e) |
| 34 | (India) Comments from India on GRRF-73-11 and GRRF-73-10 (Reissued for technical reason) | (f) |
| 35 | (IMMA) Proposals for amendments to Regulation No. 78 (Reissued for technical reason) | (c) |
| 36 | (IMMA) Proposals for amendments to GTR No. 3 (Reissued for technical reason) | (c) |
| 37 | (CLCCR) Proposal for amendment to Regulation No. 79 | (d) |
| 38 | (Tyre GTR) Proposal for amendments to ECE/TRANS/WP.29/GRRF/2012/22 – Draft Tyre GTR | (b) |
| 39 | (The Netherlands) Discussion paper revised transitional provisions to Regulation No. 13 and No. 13-H | (d) |
| 40 | (Japan) Formulating the UN Regulation concerning Lane Keeping Assist System (LKAS) | (f) |
| 41 | (Japan) Traffic Accidents caused by Lane Departure in Japan | (f) |
| 42 | (ACV Chair) Report of the GRRF informal group on Automated Connections between Vehicles (ACV) | (f) |
| 43 | (ETRTO) Tests supporting provisions for the snow test for tyres of category C3 | (f) |
| 44 | (GRRF Ambassador) Priority of Discussion on Technical Requirements for IWVTA and Draft Report to IWVTA Informal Meeting | (f) |
| 45 | (GRRF Ambassador) UN/WP29/GRRF ambassador to UN/IWVTA | (f) |
| 46 | (Secretariat) Summary of decisions on documents considered at the 74 th session of GRRF and follow-up | -- |

ⁱ Notes:

- (a) Endorsed or adopted without changes.
- (b) Endorsed or adopted with changes.
- (c) Resume consideration on the basis of an official document.
- (d) Kept as reference document/continue consideration.
- (e) Revised proposal for the next session.
- (f) Consideration completed or to be superseded.
- (g) Withdrawn.

B. Reconsideration of informal documents from the previous sessions of GRRF or other Working Parties (English only)

| <i>No.</i> | <i>(Author) Title</i> | <i>Follow-upⁱ</i> |
|--------------------|--|------------------------------|
| AEBS-LDW-17-04 | (OICA and CLEPA) CLEPA/OICA proposal for AEBS Step 2 | (f) |
| GRRF-72-02 | (OICA and CLEPA) Proposal for amendment to Regulation Nos. 13 and 13-H | (f) |
| GRRF-73-08 | (EC and France) Amendments to the 02 series of amendments to Regulation No. 117 (Tyre rolling noise, wet grip adhesion and rolling resistance) | (f) |
| GRRF-73-10 | (IMMA) Proposal for an amendment to Regulation No. 78 (Uniform provisions concerning the approval of vehicles of categories L ₁ , L ₂ , L ₃ , L ₄ and L ₅ with regard to braking) | (f) |
| GRRF-73-11 | (IMMA) Proposal for an amendment to GTR No. 3 (Motorcycle Brake Systems) | (f) |
| GRRF-73-16 | (Japan) The necessity of New Regulations for New Technologies regarding R79 | (f) |
| GRRF-73-18 | (ETRTO) Wet grip adhesion for C2 & C3 Tyres. Proposal for minimum requirements | (f) |
| GRRF-73-21 | (ETRTO) Wet grip adhesion for C2 & C3 Tyres. Tyre industry position with respect to implementation of new minimum requirements for wet grip on C2 and C3 tyres | (f) |
| GRRF-73-23 | (OICA and CLEPA) Proposal for amendments to Regulation No. 79 (Steering Equipment for vehicles) | (f) |
| IG R55-01-02 | (IG R55) Terms of references: IG R55 | (f) |
| WP.29-156-21 Rev.1 | (IWVTA) Proposal for "Candidate items for technical regulations applicable to IWVTA" and "Guideline for GRs to review technical regulations applicable to IWVTA" | (f) |
| WP.29-157-06 | (IG ITS) Draft for Design Principles for Control Systems of ADAS | (f) |
| WP.29-158-21 | (Russian Federation) Proposal for draft amendment of Rule No. 2 on uniform provisions for periodical technical inspections of wheeled vehicles with regard to their roadworthiness. | (d) |

ⁱ Notes:

- (a) Endorsed or adopted without changes.
- (b) Endorsed or adopted with changes.
- (c) Resume consideration on the basis of an official document.
- (d) Kept as reference document/continue consideration.
- (e) Revised proposal for the next session.
- (f) Consideration completed or to be superseded.
- (g) Withdrawn.

Annex II

Proposal for Supplement 1 to the 01 series of Regulation No. [130] on AEBS.

Regulation on AEBS, Paragraphs 6.4.2.1. and 6.4.2.2., amend to read:

"6.4.2.1. At least one warning mode shall be provided no later than specified in Table I Column B of Annex 3.

In the case of the vehicles referred to in Table I, row 1 of Annex 3, the warning shall be haptic or acoustic.

In the case of the vehicles referred to in Table I, row 2 of Annex 3, the warning shall be haptic, acoustic or optical

6.4.2.2. At least two warning modes shall be provided no later than specified in Table I Column C of Annex 3."

Paragraphs 6.5.2.1. and 6.5.2.2., amend to read:

"6.5.2.1. At least one haptic or acoustic warning mode shall be provided no later than specified in Table I Column E of Annex 3.

6.5.2.2. At least two warning modes shall be provided no later than specified in Table I Column F of Annex 3."

Annex 3, Table I, amend to read:

| A | B | C | D | E | F | G | H | Row |
|--------------------------------|---|---|--|---|---|--|---|-----|
| | Stationary target | | | Moving target | | | | |
| | Timing of warning modes | | Speed reduction (ref. paragraph 6.4.4.) | Timing of warning modes | | Speed reduction (ref. paragraph 6.5.3.) | Target speed (ref. paragraph 6.5.1.) | |
| | At least 1 (ref. paragraph 6.4.2.1.) | At least 2 (ref. paragraph 6.4.2.2.) | | At least 1 (ref. paragraph 6.5.2.1.) | At least 2 (ref. paragraph 6.5.2.2.) | | | |
| $M_3^1, N_2 > 8t$ and N_3 | Not later than 1.4 s. before the start of emergency braking phase | Not later than 0.8 s. before the start of emergency braking phase | Not less than 20 km/h | Not later than 1.4 s. before the start of emergency braking phase | Not later than 0.8 s. before the start of emergency braking phase | No impact | 12 ± 2 km/h | 1 |

| | | | | | | | | |
|---|--|--|-----------------------|--|--|-----------|--------------------------|---|
| N ₂ ≤ 8 t ^{2,4} and M ₂ ^{2,4} | Not later than 0.8 s before the start of the emergency braking phase | Before the start of the emergency braking phase ³ | Not less than 10 km/h | Not later than 0.8 s before the start of the emergency braking phase | Before the start of the emergency braking phase ³ | No impact | 67 ± 2 km/h ⁵ | 2 |
|---|--|--|-----------------------|--|--|-----------|--------------------------|---|

Footnotes:

- 1/ Vehicles of category M3 with hydraulic braking system are subject to the requirements of row 2.
- 2/ Vehicles with pneumatic braking systems are subject to the requirements of row 1
- 3/ Values shall be specified by the vehicle manufacturer at the time of Type Approval (Annex 1, paragraph 15).
- 4/ Manufacturers of vehicles covered by row 2 may elect to gain vehicle Type Approval to the values specified in row 1; in this instance compliance shall be demonstrated with all the values contained in row 1.
- 5/ The values for the target speed in cell H2 shall be reviewed before 1st November 2021."

Annex III

Clarification on the use of test reports in Regulation No. 13

| | | | AMEVSC-10-10e | |
|--|---|------------------------------------|----------------------|-----------|
| Use of test reports - results of the review by the GRRF AMEVSC of the document resulting from the informal lunchtime meeting held during the 73rd GRRF (19th Sept.) | | | | |
| | | | Yes | No |
| 1 | The Approval Authority is responsible when signing a: | | | |
| | Vehicle type-approval test report (e.g. braking system): | | | |
| | Correctness of content: | | Yes | |
| | | Open method (flexibility) | Yes | |
| | | Standardized method (same for all) | | No |
| | | Technical Service is accredited | Yes | |
| | Sub-system test report (e.g., Trailer brake, vehicle stability function) | | | |
| | Correctness of content: | | Yes | |
| | | Open method (flexibility) | Yes | |
| | | Standardized method (same for all) | | No |
| | | Technical Service is accredited | Yes | |
| 2 | Responsibility of Technical Service when using a sub-system test report: | | | |
| | Fully responsible for the content (has the ability to check content) | | Yes | |
| | Limited responsible | | | No |
| | No responsibility | | | No |
| 3 | Obligation of the Approval Authority to accept a sub-system test report: | | | |
| | Signed by the same Approval Authority: | | | |
| | Must accept | | | No |
| | May accept | | Yes | |
| | Signed by another Approval Authority: | | | |
| | Must accept | | | No |
| | May accept | | Yes | |
| | Signed by Technical Service, but not signed by an Approval Authority: | | | |
| | Must accept | | | No |
| | May accept | | Yes | |
| | Signed by a Technical Service designated by another Approval Authority | | | |
| | Must accept | | | No |
| | May accept | | | No |
| | Technical Service not designated | | | |
| | Must accept | | | No |
| | May accept | | | No |
| Note: yellow highlighting indicates the AMEVSC conclusion. Red text indicates additions | | | | |

Annex IV

Proposal for Corrigendum 3 to Revision 2 of Regulation No. 13-H

Insert new paragraph 12.5., to read:

"12.5. Contracting Parties applying this Regulation shall continue to grant approvals to those types of vehicles which comply with the requirements of this Regulation as amended by Supplement 6 to the original version of this Regulation."

Annex V

Terms of Reference and Rules of Procedure of the GRRF informal group on the revision of Regulation No. 55

A. Introduction

As a result of discussions at the sixty-seventh session of GRRF, WP.29 was invited to authorize the establishment of an informal working group to propose a draft amendment to Regulation No. 55.

This was endorsed by WP.29 at its 156th session (March 2012) (ECE/TRANS/WP.29/1095, para. 47) pending adaptation of the relating terms of reference (ToR).

B. Objectives

The informal working group shall prepare draft amendments to Regulation No. 55 on:

- (a) Corrections and clarifications;
- (b) Take into account new technologies;
- (c) Introduce provisions for agricultural vehicles;
- (d) Review the D-value and V- Value formulas.

(GRRF-74-25 provides a detailed list of items in discussion)

C. Rules of procedure (RoP)

The informal working group is a subgroup of GRRF, and is open to all participants of GRRF and further experts invited by the informal group. A Chair and a Secretary will be elected in the informal working group.

The official language of the informal working group will be English.

An agenda and related documents will be circulated to all members of the informal working group at least 10 working days in advance of all scheduled meetings.

Decisions will be reached by consensus. When consensus cannot be reached, the Chair shall present the different viewpoints to GRRF. The Chair may seek guidance from GRRF as appropriate.

The progress of the informal group will be routinely reported to GRRF – whenever possible as an informal document and presented by the Chair or a representative.

All working papers will be distributed in electronic format. Meeting documents will be made available by the secretary on the website of WP.29.

D. Work plan and time schedule

1. First meeting on 21 June 2012 in Bonn: confirmation of Terms of Reference (ToR) and Rules of Procedure (RoP) , research to be done by experts on Regulation No. 55, election of Secretary, research for items to discuss in list of items as above, discussion of this items including categorization into "simple " and "complex" items.
2. Presentation of ToR and RoP at the 74th session of GRRF (February 2013).
3. Second meeting on 10-11 October 2012 in Bonn: closure of list, discussion of prepared proposals, further planning of work, preparation of "working document" to be transmitted to GRRF.
4. Meeting No. 3, 4 and 5 (place and date to define).
5. The informal group will provide a first proposal of consolidated corrections (paragraph B, objective a) in the year 2013 to GRRF. A second proposal will be submitted to GRRF within two years taking into account objectives b, c, and d, as mentioned under paragraph B.

Annex VI

Proposal for amendments to ECE/TRANS/WP.29/GRRF/2012/19

Annex 7, paragraph 4.7.2.1., amend to read:

- "4.7.2.1. The test shall be conducted with a standard 2 axle commercial vehicle in good running order with:
- (a) Low rear axle weight and an engine powerful enough to maintain the average percentage of slip during the test as required in paragraphs 4.7.5.1. and 4.7.5.2.1. below;
 - (b) A manual gearbox (automatic gearbox with manual shift allowed) having a gear ratio covering the speed range of at least 19 km/h between 4 km/h and 30 km/h;
 - (c) Differential lock on driven axle is recommended to improve repeatability;
 - (d) A standard commercial system controlling/limiting the slip of the driving axle during acceleration (Traction Control, ASR, TCS, etc.)."

Annex 7, paragraph 4.7.2.1.1., amend to read:

- "4.7.2.1.1. In the particular case where a standard commercial vehicle equipped with a traction control system is not available, a vehicle without Traction Control/ASR/TCS is permitted provided the vehicle is fitted with a system to display the percentage slip as stated in paragraph 4.3.4. and a mandatory differential lock on the driven axle used in accordance with operating procedure 4.7.5.2.1. If a differential lock is available it shall be used; if the differential lock, however, is not available, the average slip ratio should be measured on the left and right driven wheel."

Annex 7, paragraph 4.7.4.2., amend to read:

- "4.7.4.2. The driven tyres inflation pressure shall be 70 per cent of the one written on the sidewall.

The steer tyres are inflated at nominal sidewall pressure.

If the pressure is not marked on the sidewall, refer to the specified pressure in applicable tyre standards manuals corresponding to maximum load capacity."

Annex 7, paragraph 4.7.5.1., amend to read:

- "4.7.5.1. Mount first the set of reference tyres on the vehicle and when on the testing area.

Drive the vehicle at a constant speed between 4 km/h and 11 km/h and the gear ratio capable of covering the speed range of at least 19 km/h for the complete test programme (e.g. R-T1-T2-T3-R).

The Recommended Gear ratio selected is 3rd or 4th and shall give a minimum 10 per cent average slip ratio in the measured range of speed."

Annex 7, paragraph 4.7.5.2.1., amend to read:

"4.7.5.2.1. In the particular case 4.7.2.1.1. where a standard commercial vehicle equipped with a Traction Control system is not available, the driver shall manually maintain the average slip ratio between 10 and 40 per cent (Controlled Slip procedure in place of the Full Slip) within the prescribed range of speeds. If a differential lock is not available, the averaged slip ratio difference between the left and right driven wheel shall not be higher than 8 per cent for each run. All the tyres and runs in the test session are performed with Controlled Slip procedure."

Annex 7, paragraph 4.7.5.3., amend to read:

"4.7.5.3. Measure the distance between the initial speed and the final speed."

Annex 7, paragraph 4.7.5.4., amend to read:

"4.7.5.4. For every candidate tyre and the standard reference tyre, the acceleration test runs shall be repeated a minimum of 6 times and the coefficients of variation (standard deviation/average*100) calculated for minimum 6 valid runs on the distance shall be lower than or equal to 6 per cent."

Annex 7, paragraph 4.7.5.5., amend to read:

"4.7.5.5. In case of Traction Control System equipped vehicle, the Average Slip ratio shall be in the range from 10 per cent to 40 per cent (calculated as per 4.3.4.)"

Annex 7, paragraph 4.8.6., amend to read:

"4.8.6. Calculation of the Slip Ratio

The slip ratio can be calculated as the average of Slip ratio as mentioned in paragraph 4.3.4. or by comparing the average distance referred to in paragraph 4.7.5.3. of the minimum 6 runs to the distance of a run done without slip (very low acceleration)

$$\text{Slip Ratio \%} = \left[\frac{\text{Average distance} - \text{No slip distance}}{\text{No slip distance}} \right] \times 100$$

No slip distance means the wheel distance calculated on a run done with a constant speed or a continuous low acceleration."

Annex 7 - Appendix 3, paragraph 5., amend to read:

"5. Test results: average accelerations (m/s²)

| <i>Run number</i> | <i>Specification</i> | <i>SRTT (1st test)</i> | <i>Candidate 1</i> | <i>Candidate 2</i> | <i>Candidate 3</i> | <i>SRTT (2nd test)</i> |
|-----------------------|----------------------|------------------------|--------------------|--------------------|--------------------|------------------------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Mean | | | | | | |
| Std-deviation | | | | | | |
| Slip ratio (per cent) | | | | | | |
| CV (per cent) | ≤ 6 per cent | | | | | |
| Validation SRTT | (SRTT) ≤ 6 per cent | | | | | |
| SRTT average | | | | | | |
| Snow index | | 1.00 | | | | |

"

Annex VII

Proposal for amendments to ECE/TRANS/WP.29/GRRF/2013/9

Paragraph 12.4., amend to read:

"12.4. As from 1 November 2016, Contracting Parties applying this Regulation shall refuse to grant ECE approval if the tyre type to be approved does not meet the requirements of this Regulation as amended by the 02 series of amendments including the stage 2 rolling resistance requirements set out in paragraph 6.3.2. and the wet grip requirements set out in paragraphs 6.2.2. and 6.2.3."

Paragraph 12.7., amend to read:

"12.7. As from the dates given below, any Contracting Party applying this Regulation may refuse to allow the sale or entry into service of a tyre which does not meet the requirements of this Regulation as amended by the 02 series, and which does not meet the stage 2 rolling resistance requirements set out in paragraph 6.3.2. and the wet grip requirements set out in paragraphs 6.2.2. and 6.2.3.:

| <i>Tyre class</i> | <i>Date</i> |
|-------------------|-----------------|
| C1 and C2 | 1 November 2018 |
| C3 | 1 November 2020 |

"

Paragraphs 12.8. to 12.10., shall be deleted.

Part A, paragraph 4.1.4.1., amend to read:

"4.1.4.1. Tyre preparation and break-in

The test tyres shall be trimmed to remove all protuberances on the tread surface caused by mould air vents or flashes at mould junctions.

Fit the test tyres on rims specified by a recognized tyre and rim standards organization as listed in Appendix 4 of Annex 6."

Part B, paragraph 1.1., amend to read:

"1.1. Track characteristics

...

The surface friction value for the wetted track shall be established by one or other of the following methods according to the discretion of the Contracting Party:"

Paragraph 2.1.2.1., amend to read:

"2.1.2.1. Fit the test tyres on rims specified by a recognized tyre and rim standards organization as listed in Appendix 4 of Annex 6. Ensure proper bead seating by the use of a suitable lubricant. Excessive use of lubricant should be avoided to prevent slipping of the tyre on the wheel rim. "

Paragraph 2.2.1., amend to read:

"2.2.1. The vehicle used shall have two axles and be equipped with an anti-lock braking system (e.g. standard production vehicle of M₂, M₃, N₁, N₂ or N₃ category). The ABS shall continue to fulfil the utilisation of adhesion requirements defined in the UN Regulations as appropriate, and shall be comparable and constant throughout the tests with the different tyres mounted."

Paragraph 2.2.1.1., shall be deleted

Paragraph 2.2.1.2., shall be renumbered 2.2.1.1.

Paragraph 2.2.2.2., amend to read:

"2.2.2.2. Vehicle equipment

...

(a) Configuration "Configuration C1": ...

(b) Configuration "Configuration C2": ...

(c) Configuration "Configuration C3": ..."

Paragraph 2.2.2.4., amend to read:

"2.2.2.4. Tyre load

The static load on each axle shall remain the same throughout the test procedure. The static load on each tyre shall lie between 60 per cent and 100 per cent of the candidate tyre's load capacity. This value shall not exceed 100 per cent of the load capacity of the reference tyre..."

Annex VIII

Proposal superseding ECE/TRANS/WP.29/GRRF/2012/16

A. Regulation No. 13

Annex 4, paragraph 1.4.1.2.2., amend to read:

"1.4. Type-0 test (ordinary performance test with brakes cold)...

1.4.1.2.2. Every test shall be repeated ...

In the case of a vehicle equipped with an electric regenerative braking system...

This requirement is deemed to be satisfied if the batteries are at one of the following state of charge conditions where state of charge 3/ is determined by the method set out in Appendix 1 to this annex:

- (a) At the maximum charge level as recommended by the manufacturer in the vehicle specification; or
- (b) At a level not less than 95 per cent of the full charge level, where the manufacturer has made no specific recommendation; or
- (c) at the maximum level which results from automatic charge control on the vehicle, or
- (d) when the tests are conducted without a regenerative braking component regardless of the state of charge of the batteries."

Annex 4, paragraph 1.5.3.1.3., amend to read:

"1.5.3.1.3. In the case of vehicles ...

... against the criteria of paragraphs 1.5.3.1.1. and 1.5.3.2. of this annex.

The tests may be conducted without a regenerative braking component. In this case, the requirement on the state of charge of the batteries is not applicable."

Annex 4, Appendix, introductory paragraph, second sentence, amend to read:

"The procedure requires the use of a bi-directional DC Watt-hour meter or a bi-directional DC Ampere-hour meter."

B. Regulation No. 13-H

Annex 3, paragraph 1.4.1.2.3., amend to read:

"1.4.1.2.3. In the case of a vehicle ...

Category A. ...

Category B. The contribution of the electric regenerative braking system to the braking force generated shall not exceed that minimum level guaranteed by the system design.

This condition is deemed to be satisfied if the state of charge of the batteries is in one of the following conditions:

- (a) At the maximum charge level recommended by the manufacturer, as listed in the vehicle specification;
- (b) At a level not less than 95 per cent of the full charge level, where the manufacturer has made no specific recommendation;
- (c) at a maximum level resulting from automatic charge control on the vehicle; or
- (d) when the tests are conducted without a regenerative braking component regardless of the state of charge of the batteries."

Annex 3, paragraph 1.5.2.4., amend to read:

"1.5.2.4. In the case of vehicles ...
... of this annex.
The tests may be conducted without a regenerative braking component. In this case, the requirement on the state of charge of the batteries is not applicable."

Annex 3, paragraph 1.5.3.1., amend to read:

"1.5.3.1. Vehicles equipped with an electrical regenerative braking system of category B may have their batteries re-charged or replaced by a charged set, in order to complete the recovery procedure.
The procedures may be conducted without a regenerative braking component."

Annex 3, Appendix, introductory paragraph, second sentence, amend to read:

"The procedure requires the use of a bi-directional DC Watt-hour meter or a bi-directional DC Ampere-hour meter."

Annex IX

GRRF informal groups

| <i>Informal group</i> | <i>Chair</i> | <i>Secretary</i> |
|--|--|---|
| Tyre GTR | Mr. I. Yarnold (United Kingdom) Phone: +44 207 944 2080 Fax: +44 207 944 2169 E-mail: ian.yarnold@dft.gsi.gov.uk | Mr. J.-C. Noirhomme (ETRTO) Phone: +32 2 344 4059 Fax: +32 2 344 1234 E-mail: info@etrto.org |
| Automated Connections between Vehicles (ACV) | Mr. A. Gunneriusson (Sweden) Phone: +46 243 755 48 Fax: +46 243 750 89 E-mail: anders.gunneriusson@transportstyrelsen.se | Ms. Annie Luchie (CLCCR) Phone : +32 2 706 79 72 Fax: +32 2 706 79 76 E-mail: annie.luchie@agoria.be |
| Revision of Regulation No. 55 | Mr. J. Westphäling (Germany) Phone: +49 160 7043962 E-mail: juergen.westphaeling@tuev-sued.de | Mr. Bolennarth Svensson Phone: +46 706 177217 E-mail: svensson@vbg.com |