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### Inland Transport Committee

### World Forum for Harmonization of Vehicle Regulations

### Working Party on Brakes and Running Gear

#### Sixty-ninth session

Geneva, 1–4 February 2011

## Report of the Working Party on Brakes and Running Gear on its sixty-ninth session (1–4 February 2011)

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## I. Attendance

1. The Working Party on Brakes and Running Gear (GRRF) held its sixty-ninth session from 1 to 4 February 2011 in Geneva. The meeting was chaired by Mr. I. Yarnold (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 and TRANS/WP.29/690/Amend.1): Australia, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Italy, Japan, Netherlands, Norway, Poland, Russian Federation, Slovakia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland and United States of America. Experts from the European Commission (EC) also participated. Experts from the following non-governmental organizations participated: European Association of Automobile 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 Organization (ETRTO).

## II. Adoption of the agenda (agenda item 1)

*Documentation:* ECE/TRANS/WP.29/GRRF/2011/1  
Informal document GRRF-69-01

2. GRRF adopted the agenda ECE/TRANS/WP.29/GRRF/2011/1 as well as the running order GRRF-68-01.

## III. Automatic Emergency Braking and Lane Departure Warning Systems (AEBS/LDWS) (agenda item 2)

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/29/Rev.1  
ECE/TRANS/WP.29/GRRF/2011/15  
ECE/TRANS/WP.29/GRRF/2011/16  
Informal documents GRRF-69-02, GRRF-69-04 and GRRF-69-05,  
GRRF-69-19 and GRRF-69-21

3. The Chairman of the informal group on Automatic Emergency Braking and Lane Departure Warning Systems (AEBS/LDWS) reported on the progress made by the informal group from the last GRRF session to the meeting held on 31 January 2011 in conjunction with the proper session of GRRF.

4. The AEBS/LDWS Chairman introduced ECE/TRANS/WP.29/GRRF/2010/29/Rev.1 proposing a new regulation on LDWS. He added that additional lane markings from Japan (GRRF-69-02) and those from Canada should be introduced in the draft text of the Regulation. GRRF adopted ECE/TRANS/WP.29/GRRF/2010/29/Rev.1, as amended by GRRF-69-21 reproduced in Annex II, and requested the secretariat to submit it to the World Forum on Vehicle Regulations (WP.29) and the Administrative Committee of the 1958 Agreement (AC.1), for consideration at their June 2011 sessions, as draft new Regulation on lane departure warning systems.

5. The AEBS/LDWS Chairman reported on the progress made by the informal group on AEBS. He recalled that, following the guidance given by GRRF at its September 2010

session, two separate draft Regulations were on the GRRF agenda: GRRF-69-04 superseding ECE/TRANS/WP.29/GRRF/2011/15 on collision avoidance emergency braking systems and GRRF-69-05 superseding ECE/TRANS/WP.29/GRRF/2011/16 on collision mitigation emergency braking systems. The Russian Federation proposed to include a recognition clause in the draft collision mitigation Regulation clarifying that vehicles approved according to the collision avoidance Regulation would be deemed to comply with the requirements of collision mitigation regulation.

6. The AEBS/LDWS Chairman added that, at the request of OICA, the informal group had reconsidered the possibility to gather the two sets of requirements into one single Regulation, taking the form of a base Regulation (00 series of amendments) on collision mitigation systems, complemented by an 01 series of amendments on collision avoidance systems. GRRF had a lengthy discussion on the regulatory approach to be followed for AEBS, in particular on the scopes (GRRF-69-19 from EC) and the transitional provisions necessary in case of the one single Regulation approach. There was no clear opinion of GRRF on this issue and therefore the GRRF Chairman proposed to seek guidance from WP.29 on this issue at its next March 2011 session.

7. The AEBS/LDWS Chairman also requested guidance on a number of AEBS technical requirements. GRRF agreed that it was necessary to clarify in paragraph 5.1.1 that vehicles exempted from EVSC were not directly exempted from AEBS requirements. The secretariat suggested that vehicles not covered by the AEBS regulation be clearly listed in the paragraph "scope" and not in the requirement section.

8. GRRF agreed that means to interrupt the collision warning phase should remain optional. GRRF agreed that the alleyway test was an appropriate false reaction test. GRRF also agreed that, to differentiate AEBS from Adaptive Cruise Control systems, it was necessary to require a certain value of speed reduction applied by the AEBS when the latter applies the service brake during the warning phase. GRRF agreed that, for the purpose of describing the test targets, it was sufficient to refer to M<sub>1</sub> saloon cars or soft targets and that that radar frequency spectrum allocation should not be covered by the AEBS Regulation.

9. The AEBS/LDWS chairman reported that the next meeting of the informal group should be held on from 22 to 24 March 2011. GRRF agreed that the AEBS/LDWS informal group would meet prior to its next May 2011 session of GRRF. GRRF was also informed that a demonstration from CLEPA on AEBS should be organized during the May 2011 session of GRRF (possibly on Thursday 12 May 2011).

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

### **A. Electronic stability control (ESC) (agenda item 3(a))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/24  
ECE/TRANS/WP.29/GRRF/2011/2  
ECE/TRANS/WP.29/GRRF/2011/3  
ECE/TRANS/WP.29/GRRF/2011/8  
ECE/TRANS/WP.29/GRRF/2011/11  
Informal document WP.29-152-15, GRRF-67-21, GRRF-69-06,  
GRRF-69-06-Rev.1, GRRF-69-20 and GRRF-69-22

10. GRRF recalled GRRF-67-21 by the experts from CLEPA and OICA proposing to align global technical regulation (gtr) No. 8, Regulation No. 13 and Regulation No. 13-H with the requirements on the ESC malfunction tell-tale of Federal Motor Vehicle Safety Standard (FMVSS) No. 126. As requested by the Administrative Committee of the 1998

Agreement (AC.3), GRRF considered WP.29-152-15 proposing to correct gtr No. 8 with regard to the ESC malfunction tell-tale. GRRF adopted WP.29-152-15 as reproduced in Annex III, and requested the secretariat to submit it to WP.29 and AC.3, as draft Corrigendum 2 to gtr No. 8, for consideration at their June 2011 sessions. GRRF also adopted ECE/TRANS/WP.29/GRRF/2011/11 and ECE/TRANS/WP.29/GRRF/2010/24, both not amended, and requested the secretariat to submit them to WP.29 and AC.1, respectively as part of draft Supplement 8 to the 11 series of amendments to Regulation No. 13 and as part of draft Supplement 13 to Regulation No. 13-H, for consideration at their June 2011 session (see also paras. 11 and 16).

11. The expert from Japan introduced ECE/TRANS/WP.29/GRRF/2011/8 mandating Electronic stability function (EVSC) on N<sub>3</sub> vehicles with four axles. The expert from OICA proposed ECE/TRANS/WP.29/GRRF/2011/3 to exclude heavier vehicles from this obligation due to the low volume of production in Europe. GRRF adopted ECE/TRANS/WP.29/GRRF/2011/3, not amended, and requested the secretariat to submit it to WP.29 and AC.1, as part of draft Supplement 8 to the 11 series of amendments to Regulation No. 13, for consideration at their June 2011 session (see also paras. 10 and 16). GRRF agreed to reconsider the issue of heavier four-axle vehicles on the basis of a proposal by the experts from Denmark, EC, and Russian Federation supplemented by additional information (market penetration, axle and driver configuration, technical constraints, accident data, etc) from CLEPA and OICA on the EVSC of such vehicles.

12. The secretariat informed GRRF that the Working Party on General Safety (GRSG) had adopted a specific symbol on ESC (ECE/TRANS/WP.29/GRSG/78, para. 29) in Regulation No. 121 (Identification of controls, tell-tales and indicators) and that this amendment would be considered by WP.29 and AC.1 at their March 2011 sessions. He recalled that at its September 2010 session (ECE/TRANS/WP.29/GRRF/68, para. 12), GRRF had invited OICA to prepare a further amendment to Regulation No. 13, with adequate transitional provisions, to mandate for ESC failure, the specific ESC symbol introduced in Regulation No. 121 (see also para. 19).

13. The Chairman of the informal group on an Alternative Method to assess the vehicle Electronic Vehicle Stability Control system (AMEVSC) reported on the progress made by his group (GRRF-69-20). The AMEVSC Chairman presented ECE/TRANS/WP.29/GRRF/2011/2, GRRF-69-06 and GRRF-69-22 introducing the alternative method into Regulation No. 13. The expert from Germany requested more time to examine the legal aspects of this proposal. After discussion, GRRF adopted GRRF-69-06-Rev.1, as reproduced in Annex IV, and requested the secretariat to submit it to WP.29 and AC.1, as Supplement 9 to the 11 series of amendments to Regulation No. 13, for consideration at their November 2011 sessions, subject to a final review by GRRF at its September 2011 session. GRRF also agreed that, subject to the consent of WP.29, the AMEVSC group would continue to study further the use of simulation methods.

## **B. Clarifications (agenda item 3(b))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/19  
 ECE/TRANS/WP.29/GRRF/2010/21  
 ECE/TRANS/WP.29/GRRF/2010/21/Corr.1  
 ECE/TRANS/WP.29/GRRF/2010/26/Rev.1  
 ECE/TRANS/WP.29/GRRF/2011/5  
 ECE/TRANS/WP.29/GRRF/2011/6  
 Informal documents GRRF-69-09, GRRF-69-10, GRRF-69-18 and  
 GRRF-69-27

14. The expert from India introduced ECE/TRANS/WP.29/GRRF/2010/19 and GRRF-69-18 clarifying Regulation No. 13-H with regard to Brake Assist Systems (BAS). GRRF noted a number of comments and agreed to continue consideration of that matter at its September 2011 session on the basis of a revised proposal by the expert from India.

15. The expert from Japan introduced ECE/TRANS/WP.29/GRRF/2010/21 and ECE/TRANS/WP.29/GRRF/2010/21/Corr.1 proposing to replace, in Regulations Nos. 13 and 13-H, the fixed reference to Regulation No. 10 by a dynamic reference. The expert from CLEPA and OICA presented GRRF-69-09 proposing to do the same in Regulations No. 79, 89 and the new draft Regulation on LDWS. GRRF could not reach a final decision on this proposal and agreed to consider again the matter at its next session.

16. The experts from CLEPA and OICA presented ECE/TRANS/WP.29/GRRF/2010/26/Rev.1 and ECE/TRANS/WP.29/GRRF/2011/6 clarifying the periodic technical inspection requirements on system failures. GRRF adopted both documents, not amended and requested the secretariat to submit them to WP.29 and AC.1, for consideration at their June 2011 sessions, as part of draft Supplement 8 to the 11 series of amendments to Regulation No. 13 and as part of draft Supplement 13 to Regulation No. 13-H (see also paras. 10 and 11).

17. The experts from CLEPA and OICA presented ECE/TRANS/WP.29/GRRF/2011/5 and GRRF-69-10 clarifying Supplement 9 to Regulation 13-H with regard to brake assist requirements. After discussion, GRRF adopted GRRF-69-27 as reproduced in Annex IV, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Corrigendum 1 to Supplement 9 to Regulation No. 13-H.

### **C. Fully Automated Coupling Systems (FACS) (agenda item 3(c))**

*Documentation:* Informal documents GRRF-68-09, GRRF-69-03-Rev.1, GRRF-69-12, GRRF-69-13 and GRRF-69-14

18. The expert from Sweden presented GRRF-69-12 superseding GRRF-68-09 and amending Regulation No. 13 to cover fully automated coupling systems (FACS). GRRF considered GRRF-69-03-Rev.1 proposing draft Terms of reference and Rules of Procedure (ToR) for a new informal group on Brake related signals between vehicles (BRSBV), chaired by Sweden and with secretariat services from CLCCR. GRRF noted that WP.29 had endorsed, at its November 2010 session (ECE/TRANS/WP.29/1087, para. 31) establishing this informal group subject to submission of the ToR. GRRF invited the informal group to clarify its scope of work, with the view of adopting its ToR at the September 2011 session of GRRF. GRRF agreed to refer GRRF-69-12, GRRF-69-13 and GRRF-69-14 to the informal group.

### **D. Other business (agenda item 3(d))**

*Documentation:* Informal documents GRRF-69-08, GRRF-69-11 and GRRF-69-15

19. GRRF considered GRRF-69-08, also proposed by OICA to the Working Party on General Safety provisions (GRSG), on the colour used for the brake system malfunction tell tale in Regulation No. 121. GRRF noted a number of comments, agreed to consider again the matter at its September 2011 session and requested the secretariat to make GRRF-69-08 available with an official symbol.

20. The expert from Canada presented GRRF-69-15 proposing to add more ESC symbols in Regulation No. 121 and adding a reference to these symbols in Regulation-No. 13-H. GRRF noted a number of comments, agreeing to reconsider the

matter at its September 2011 session and requested the secretariat to make GRRF-69-15 available with an official symbol.

21. The expert from OICA introduced GRRF-69-11 requesting guidance on whether the latest supplement to a Regulation should apply in the case of an extension of approval for a new production site. GRRF considered that decision on the issue would impact all regulations and not only those of interest to GRRF. Therefore, GRRF invited the expert from OICA to raise the matter at WP.29 level.

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

*Documentation:* ECE/TRANS/WP.29/GRRF/2011/4  
ECE/TRANS/WP.29/GRRF/2011/7  
Informal document GRRF-69-24-Rev.1

22. The experts from CLEPA and OICA presented ECE/TRANS/WP.29/GRRF/2011/4 clarifying the definition of secondary couplings. The expert from the United Kingdom presented GRRF-69-24-Rev.1 supplementing ECE/TRANS/WP.29/GRRF/2011/4. GRRF adopted ECE/TRANS/WP.29/GRRF/2011/4, as amended by GRRF-69-24-Rev.1 that is reproduced in Annex V, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Supplement 3 to the 01 series of amendments to Regulation No. 55.

23. The experts from Germany introduced ECE/TRANS/WP.29/GRRF/2011/7 clarifying the notion of drawbar within the Regulation. GRRF noted a number of comments and agreed to continue consideration of this matter at its September 2011 session on the basis of a revised proposal by the expert from Germany.

## **VI. Regulation No. 90 (Replacement brake linings) (agenda item 5)**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/28  
ECE/TRANS/WP.29/GRRF/2011/9

24. The expert from OICA withdrew ECE/TRANS/WP.29/GRRF/2010/28 on original replacement brake linings.

25. GRRF considered ECE/TRANS/WP.29/GRRF/2011/9 by the experts from CLEPA and OICA proposing to correct the 02 series of amendments to Regulation No. 90. GRRF noted that some of the proposed editorial corrections in this document had already been introduced by the secretariat in the draft 02 series of amendments. GRRF agreed to continue consideration of that matter at its September 2011 session on the basis of a revised proposal by the experts from CLEPA and OICA.

## **VII. Tyres (agenda item 6)**

### **A. Global technical regulation on tyres (agenda item 6(a))**

26. GRRF noted the good progress made by the informal group on the tyre gtr which met on 1 February 2011 before the GRRF proper session.

**B. Regulations Nos. 30 and 54 (Pneumatic tyres) (agenda item 6(b))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2011/13  
ECE/TRANS/WP.29/GRRF/2011/14  
ECE/TRANS/WP.29/GRRF/2011/17  
Informal document GRRF-69-17

27. The expert from ETRTO introduced ECE/TRANS/WP.29/GRRF/2011/13 and ECE/TRANS/WP.29/GRRF/2011/14 harmonizing the definitions used in Regulations Nos. 30 and 54 with those of the 02 series of amendments to Regulation No. 117. GRRF noted a number of comments. The expert from India proposed in GRRF-69-17 to align the definitions used in the draft gtr on tyres and in those used in UNECE Regulations. The expert from Germany underlined that some proposed definitions diverged with those used within the European Union. GRRF agreed to continue consideration of that matter at its September 2011 session.

28. The expert from the Russian Federation presented ECE/TRANS/WP.29/GRRF/2011/17 correcting the Russian version of Regulation No. 54. GRRF adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Corrigendum 2 to Revision 2 of Regulation No. 54.

**C. Regulation No. 64 (Temporary use spare unit, run flat tyres, run flat-system and tyre pressure monitoring system) (agenda item 6(c))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2011/10  
Informal document GRRF-69-25

29. The expert from the United Kingdom introduced ECE/TRANS/WP.29/GRRF/2011/10 and GRRF-69-25 proposing to allow N<sub>1</sub> category vehicles to be fitted with a certain type of temporary spare wheel and tyre. GRRF adopted ECE/TRANS/WP.29/GRRF/2011/10, as amended by Annex VI, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Supplement 1 to the 02 series of amendments to Regulation No. 64

**D. Regulation No. 117 (Tyre rolling noise and wet grip adhesion) (agenda item 6(d))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2011/12  
ECE/TRANS/WP.29/GRRF/2011/18  
Informal document GRRF-69-16 and GRRF-69-23

30. The expert from EC introduced ECE/TRANS/WP.29/GRRF/2011/12 to improve the current wet grip test method. The expert from ETRTO proposed GRRF-69-23 to improve the wording of the EC proposal. GRRF noted the comment made by India in GRRF-69-16 on whether wet grip was to be an optional module in Regulation No. 117. GRRF noted a number of comments, in particular on scientific data supporting this proposal as well as on the availability of the standards quoted in ECE/TRANS/WP.29/GRRF/2011/12. GRRF agreed to reconsider this matter at its September 2011 session and asked EC and ETRTO to provide further information on the issues raised to facilitate the discussion.

31. The expert from the Russian Federation presented ECE/TRANS/WP.29/GRRF/2011/18 correcting the Russian version of Regulation No. 117. GRRF adopted ECE/TRANS/WP.29/GRRF/2011/18, not amended, and requested the



secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Corrigendum 2 to the 02 series of amendments to Regulation No. 117 (Russian only).

#### **E. Exchange of information on national and international tyre requirement (agenda item 6(e))**

32. GRRF noted that no new information was provided under this agenda item and agreed to defer consideration of this subject to its next session.

#### **F. Other business (agenda item 6(f))**

*Documentation:* Informal document GRRF-69-07

33. The expert from EC introduced GRRF-69-07 correcting Regulation No. 75 (Tyres for motorcycles/mopeds). GRRF adopted GRRF-69-07, as reproduced in Annex VII, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their June 2011 sessions, as draft Corrigendum 1 to Revision 2 of Regulation No. 75.

### **VIII. Draft Rule No. 2 (1997 Agreement) (agenda item 7)**

*Documentation:* ECE/TRANS/WP.29/2009/135.

34. The expert from the Russian Federation recalled ECE/TRANS/WP.29/2009/135 proposing a new draft Rule No. 2. He noted the comment by the expert from the Netherlands on a possible inconsistency between this proposal and R.E.3 regarding the braking efficiency required. GRRF supported ECE/TRANS/WP.29/2009/135 with no further comments.

### **IX. Revision of the consolidated Resolution on the Construction of Vehicles (R.E.3.) (agenda item 8)**

*Documentation:* ECE/TRANS/WP.29/2009/123 and its corrigenda 1 to 4  
ECE/TRANS/WP.29/2010/145, ECE/TRANS/WP.29/2011/42

35. GRRF noted that ECE/TRANS/WP.29/2011/42 would supersede ECE/TRANS/WP.29/2010/145, ECE/TRANS/WP.29/2009/123 and its corrigenda 1 to 4. GRRF supported ECE/TRANS/WP.29/2011/42 with no further amendments.

### **XI. Intelligent transport systems (ITS) (agenda item 10)**

*Documentation:* Informal documents WP.29-150-22 and GRRF-68-03

36. The GRRF chairman recalled the issues and background of the principles contained in WP.29-150-22. The Chairman of the AEBS/LDWS informal group reported that his group had considered that the principles contained in WP.29-150-22 could not cover all the possible cases and this needed to be taken into account by WP.29. OICA accepted the GRRF chairman's suggestion to present GRRF-68-03 to WP.29. On this basis, GRRF broadly supported the WP.29-150-22, recognizing that a further discussion would be undertaken in WP.29 based on the comments raised, and those from other groups.

## **XI. Proposal for new guidelines on the scope and administrative provisions in UNECE Regulations (agenda item 10)**

Documentation: ECE/TRANS/WP.29/2011/48  
Informal document WP.29-152-06

37. At the request of the World Forum (ECE/TRANS/WP.29/1087, para. 71), GRRF considered ECE/TRANS/WP.29/2011/48 superseding WP.29-152-06. GRRF noted a number of comments but gave overall supported to the proposal. Experts were invited to send possible additional comments via their WP.29 delegate for the June 2011 session of WP.29.

## **XII. Exchange of information on national and international requirements on primary safety (agenda item 11)**

38. GRRF noted that no new information was provided under this agenda item.

## **XII. Other business (agenda item 12)**

### **A. Tributes**

39. The GRRF Chairman thanked Mr. Thatcher (United Kingdom) for his expert and valuable contribution to the work of GRRF over many years and wished him a healthy, happy and long retirement.

## **XIII. Provisional agenda for the seventieth session**

40. GRRF noted that its seventieth session would be dedicated to AEBS and would be held in Geneva from 12 May 2011 (starting at 9.30 a.m.) to 13 May 2011 (concluding at 17.30 p.m.). GRRF agreed that the AEBS/LDWS informal group would meet prior to its proper session from 9 May 2011 (starting at 10.30 a.m.) to 11 May 2011 (concluding at 17.30 p.m.) (time to be confirmed by the AEBS/LDWS Chairman). Finally, GRRF noted that a demonstration on AEBS should be organized by CLEPA during the proper session of GRRF.

## Annex I

### List of informal documents considered during the session

#### List of informal documents (GRRF-69-...) of the session (English only)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(GRRF Chairman) Running order of the provisional agenda	(f)
2	(Japan) Draft amendment to ECE/TRANS/WP.29/GRRF/2010/29 Rev.1 (LDWS)	(a)
3- Rev.1	(Sweden) Draft Terms of Reference for the group of interested experts on Brake Related Signals Between Vehicles (BRSBV)	(e)
4	(AEBS/LDWS informal group) Draft amendments to the draft Regulation on collision Avoidance Automatic Emergency Braking Systems - ECE/TRANS/WP29/GRRF/2011/15 (AEBS-A)	(e)
5	(AEBS/LDWS informal group) Draft amendments to the draft Regulation on collision Mitigation Automatic Emergency Braking Systems - ECE/TRANS/WP29/GRRF/2011/16 (AEBS-M)	(e)
6- Rev1	(AMEVSC informal group) Updating of document ECE/TRANS/WP.29/GRRF/2011/2(Regulation No. 13 (Heavy vehicle braking) - ESC)	(a)
7	(EC) Proposal for Corrigendum 1 to Revision 2 of Regulation No. 75 (Pneumatic tyres (motorcycles/mopeds))	(a)
8	(OICA/Secretariat) Proposal for draft amendments to Regulation No. 121 (Identification of controls, tell-tales and indicators) from OICA	(c)
9	(CLEPA and OICA) Proposal for draft amendments to ECE Regulations Nos. 13, 13-H, 79, 89 and draft Regulation on LDWS	(d)
10	(CLEPA and OICA) Proposal for draft amendments to ECE Regulation No. 13-H	(b)
11	(OICA) Extensions of type approvals - Request for guidance from GRRF	(a)
12	(Sweden) Proposal for amendments to Regulation No. 13 (Heavy vehicle braking)	(f)
13	(Sweden) Proposal for amendments to Regulation No. 55 (Mechanical coupling components)	(f)
14	(Sweden) Proposal for amendments to Regulation No. 13 (Heavy vehicle braking)	(f)
15	(Canada) Proposal regarding R13-H with regard to symbols	(d)
16	(India) Comments from India on ECE/TRANS/WP.29/GRRF/2011/12 – Regulation No. 117 (Tyre rolling noise and wet grip adhesion)	(f)
17	(India) Comments from India on ECE/TRANS/WP.29/GRRF/2011/13 - Regulation No. 30 (Pneumatic tyres for motor vehicles and their trailers)	(f)
18	(India) Proposal for draft amendments to Regulation No. 13-H (Brakes of M1 and N1 vehicles)	(e)
19	(AEBS/LDWS Chair) Scope for the draft UNECE Regulation(s) on Automatic Emergency Braking Systems (AEBS)	(f)
20	(AMESC Chair) Report of GRRF Alternative Method Electronic Vehicle Stability Control (AMEVSC) Informal Working Group	(f)
21	(Secretariat) Adopted amendments to ECE/TRANS/WP.29/GRRF/2010/29/Rev.1 (Proposal for a new Regulation on Lane Departure Warning System)	(a)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
22	(AMEVSC Chair) Proposed amendment to document GRRF-69-06	(f)
23	(ETRTO) Proposal to amend ECE/TRANS/WP29/GRRF/2011/12 - Proposal for Supplement 1 to the 01 series of amendments to Regulation No. 117 (Tyre rolling noise and wet grip adhesion)	(d)
24-Rev.1	(United Kingdom) Proposal for draft amendments to ECE Regulations No. 55 (Mechanical couplings)	(a)
25	(United Kingdom) Proposal for draft amendments to ECE Regulations No. 64 (Temporary use spare unit, run flat tyres, run flat-system and tyre pressure monitoring system)	(a)
26	(Sweden) Brake electric/electronic interface embodiment alternatives - Three steps	(f)
27	(CLEPA and OICA) Amendments to ECE/TRANS/WP.29/GRRF/2011/5 - Proposal for amendments to Regulation No. 13-H (Brakes of M1 and N1 vehicles)	(a)
28	(Secretariat) Summary of decisions on documents considered at the 69th session of GRRF and follow-up	(f)

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

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
GRRF-67-21	(CLEPA/OICA) Proposal for amendments to Regulations Nos. 13, 13-H and gtr No. 8	(f)
GRRF-68-03	(OICA) OICA secretariat comments to document WP29-150-22 (Guidelines on establishing requirements for high priority warning signals)	(a)
GRRF-68-09	(Sweden) Proposal for amendments to Regulation No. 13 (other business)	(f)
WP.29-150-22	(Japan) Major Revisions made to High-priority Warning Guideline in response to the comments received by the end of December, 2009	(a)
WP.29-152-06	(Secretariat) Proposal for guidelines on the scope, administrative provisions and alternative requirements in Regulations annexed to the 1958 Agreement	(f)
WP.29-152-15	(USA) Proposal for amendments to gtr No. 8: ESC malfunction telltale	(a)

#### Notes:

- (a) Submitted with no change to WP.29 for consideration.
- (b) Submitted with changes to WP.29 for consideration.
- (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.

## Annex II

### Adopted amendments to the draft Regulation on lane departure warning systems

Adopted amendments to ECE/TRANS/WP.29/GRRF/2010/29/Rev.1 are shown in bold characters (see para. 4 of the report).

Paragraph 5.2.1.1., amend to read:

"5.2.1.1. it shall provide ... paragraph **6.5.** (departure warning test) ... paragraph 6.2.3."

Paragraph 5.2.2., amend to read:

"5.2.2. The system ... provisions of paragraph **6.6.** (failure detection test). The signal shall be constant."

Paragraph 6.2.3.1., amend to read:

"6.2.3.1. The visible ... of paragraph **6.5.** shall be those of one ....shall be recorded."

*Paragraphs 6.3. to 6.3.3., should be deleted*

*Paragraphs 6.4. to 6.4.2., renumber as paragraphs 6.3. to 6.3.2.*

*Paragraph 6.4.3., renumber as paragraph 6.3.3. and amend to read:*

"**6.3.3.** In the case ... specified in paragraph **6.5.** shall be performed ...has begun."

*Paragraph 6.5.and 6.6., renumber as paragraph 6.4. and 6.5.*

*Paragraph 6.6.1., renumber as paragraph 6.5.1. and amend to read:*

"6.5.1 Drive the vehicle at a speed of 65 km/h +/- **3 km/h** into the centre of the test lane in a smooth manner so that the attitude of the vehicle is stable.  
.....0.1 and 0.8 m/s."

*Paragraphs 6.6.2. to 6.8.1., renumber as paragraphs 6.5.2. to 6.7.1.*

*Annex 3,*

*Paragraph 1., amend to read:*

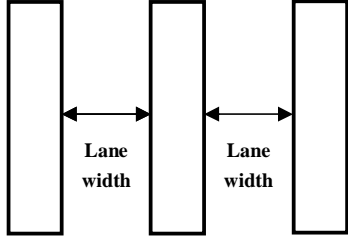
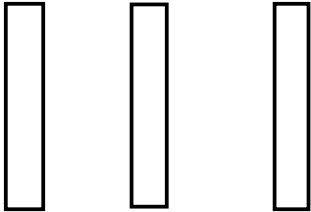
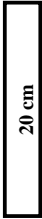
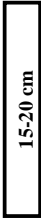

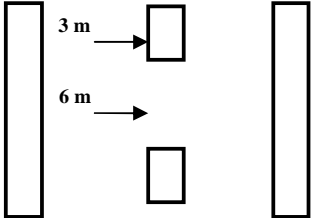
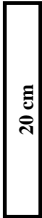
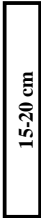

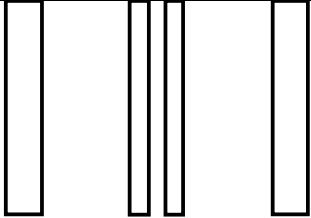
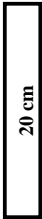


"1. For ... in paragraphs 6.2.3. and **6.5.** of this Regulation, the test...3.5 m."

*Paragraph 3., amend to read:*

"3. Table ... with paragraphs 6.2.3. and **6.5.** of this Regulation."

Table 1, insert the following road markings to read

"Table 1

PATTERN			COUNTRY	WIDTH		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			CANADA Traffic Flowing in Opposite Direction			
			CANADA Traffic flowing in same direction			
			CANADA Traffic flowing in opposite directions with lane changing prohibited			

PATTERN			COUNTRY	WIDTH		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			CANADA Traffic flowing in opposite directions with lane changing allowed only from one lane			
			CANADA Continuity lines in merging and diverging areas			
White Lines			CANADA Guiding Lines			
			JAPAN <sup>1</sup>			

<sup>1</sup> Excepted certain zones (e.g.: slip road, lane for slow vehicles ...)

## Annex III

### **Draft Corrigendum 2 to global technical regulation (gtr) No. 8**

GRRF adopted WP.29-152-15 as reproduced below. Changes to the present text of the gtr are shown in bold characters (see para. 10 of the report).

*Paragraph 5.4.3.*, correct to read:

"5.4.3. The manufacturer may use the ESC malfunction tell-tale in a flashing mode to indicate ESC operation **and/or the operation of ESC-related systems (as listed in paragraph 5.4 (i)).**"



## Annex IV

### Draft amendments to Regulations Nos. 13 and 13-H

#### Draft Supplement 8 to the 11 series of amendments to Regulation No. 13

GRRF adopted GRRF-69-06-Rev.1, as reproduced below. Changes to the present text of Regulation No. 13 are shown in bold (see para. 13 of the report).

*Insert a new paragraph 2.38., to read:*

**"2.38. "Character of the vehicle" means a descriptive term for a vehicle – tractor for semi-trailer, truck, bus, semi-trailer, full trailer, centre-axle trailer."**

*Annex 19, amend to read:*

## "Annex 19

### Performance testing of braking system components

#### Part 1

##### Performance testing of trailer braking components

1. General  
**Part 1** defines the test procedures applicable in defining the performance of the following:  
...
- 6.6.1. A test report shall be produced, the content of which shall be at least that defined in Appendix 8 to this Annex.

## Annex 19

### Performance testing of braking system components

#### Part 2

##### Performance testing of motor vehicle braking components

1. General  
**Part 2** defines the procedures applicable in defining the performance of the following:

- 1.1. A vehicle stability function.
- 1.1.1. General
  - 1.1.1.1. This section defines the procedure of determining the dynamic characteristics of a vehicle equipped with a vehicle stability function as specified in paragraph 5.2.1.32. of this Regulation.
  - 1.1.2. Information document
    - 1.1.2.1. The system manufacturer shall supply the Technical Service with an information document on the vehicle stability control function(s) for which performance verification is required. This document shall contain at least the information defined in Appendix 11 to this annex and shall be attached as an appendix to the test report.
  - 1.1.3. Definition of test vehicle(s)
    - 1.1.3.1. Based on the stability control function(s) and their application(s) defined in the system manufacturer's information document, the Technical Service shall carry out a vehicle based performance verification. This shall include one or more dynamic manoeuvres as defined in paragraph 2.1.3. of Annex 21 to this Regulation on a motor vehicle(s) which is representative of the application(s) defined in paragraph 2.1. of the system manufacturer information document.
    - 1.1.3.2. When selecting the motor vehicles(s) for evaluation, consideration shall also be given to the following:
      - (a) Braking system: the braking system of the test vehicle(s) to be evaluated shall comply with all of the relevant requirements of this Regulation;
      - (b) Vehicle category – M<sub>2</sub>, M<sub>3</sub>, N<sub>2</sub>, N<sub>3</sub>;
      - (c) Character of the vehicle;
      - (d) Vehicle configuration(s) (e.g. 4x2, 6x2, etc.): each configuration to be evaluated;
      - (e) Drive orientation (Left or right hand drive): not a limiting factor – evaluation not required;
      - (f) Single front axle steering: not a limiting factor – evaluation not required (see (g) and (h));
      - (g) Additional steering axles (e.g. forced steering, self-steering): to be evaluated;
      - (h) Steering ratio: to be evaluated – end-of-line programming or self-learning systems not a limiting factor;
      - (i) Drive axles: to be taken into consideration with regard to the use (loss) of wheel speed sensing in the determination of vehicle speed;
      - (j) Lift axles: lift axle detection / control and lifted condition to be evaluated;
      - (k) Engine management: communication compatibility to be evaluated;
      - (l) Gearbox type (e.g. manual, automated manual, semi-automatic, automatic): to be evaluated;

- (m) Drive train options (e.g. retarder): to be evaluated;
- (n) Differential type (e.g. standard or self-locking): to be evaluated;
- (o) Differential lock(s) (driver selected): to be evaluated;
- (p) Brake system type (e.g. air over hydraulic, full air): to be evaluated;
- (q) Brake type (disc, drum (single wedge, twin wedge, S-cam)): not a limiting factor, however, should other types become available, then comparative testing may be required;
- (r) Anti-lock braking configurations: to be evaluated;
- (s) Wheelbase: to be evaluated

In the case where vehicles conforming to the minimum and maximum wheelbases as specified in the information document are not available at the time of testing, minimum and maximum wheelbase verification may be carried-out using system manufacturer test data for real vehicles with a wheelbase within 20 per cent of the actual minimum and maximum wheelbase vehicles being tested by the Technical Service;

- (t) Wheel type (single or twin): to be covered in the system manufacturer's information document;
- (u) Tyre type (e.g. structure, category of use, size): to be covered in the system manufacturer's information document;
- (v) Track width: not a limiting factor – covered by variations in the centre of gravity evaluation;
- (w) Suspension type (e.g. air, mechanical, rubber): to be evaluated;
- (x) Centre of gravity height: to be evaluated

In the case where vehicles conforming to the maximum centre of gravity height as specified in the information document are not available at the time of testing, maximum centre of gravity height verification may be carried-out utilising system manufacturer's test data for real vehicles with a centre of gravity height within +20 percent of the actual maximum centre of gravity height of the vehicles being tested by the Technical Service;

- (y) Lateral acceleration sensor position: installation envelop as specified by the system manufacturer to be evaluated;
- (z) Yaw rate sensor position: installation envelop as specified by the system manufacturer to be evaluated.

#### 1.1.4. Test schedule

- 1.1.4.1. To evaluate the vehicle stability control function, the tests used shall be agreed upon between the system manufacturer and the Technical Service and shall include conditions, appropriate to the function being evaluated, that would without the intervention of the stability control function result in loss of directional control or roll-over control. The dynamic manoeuvres, test conditions and results shall be included in the test report.

The evaluation shall include the following, as appropriate:

- 1.1.4.1.1. Additional steering axles:**  
Evaluate the influence by a comparison of results with the axle in its normal steering mode and with the steering disabled so that it becomes a fixed axle, unless it is an end-of-line programming parameter.
- 1.1.4.1.2. Steering ratio:**  
Tests to be carried-out to determine the effectiveness of any end-of-line programming or self learning using a number of vehicles with different steering ratios, or the approval is restricted to the steering ratios actually tested.
- 1.1.4.1.3. Lift axle:**  
Tests to be carried-out with the lift axle in the raised and lowered conditions, with position detection and signal transfer being evaluated to establish that the change in wheelbase has been recognized.
- 1.1.4.1.4. Engine management:**  
Control of the engine, or any other source(s) of motive power, to be shown to be independent from driver demand.
- 1.1.4.1.5. Drive train options:**  
The effect of any options to be shown, e.g. retarder management to be independent of the driver in the case of a retarder.
- 1.1.4.1.6. Differential type/differential lock(s):**  
Effect of self-locking or driver selected locking to be shown, e.g. function maintained, reduced or switched-off.
- 1.1.4.1.7. Anti-lock braking configurations:**  
Each anti-lock braking configuration shall be tested on at least one vehicle.  
  
If the vehicle stability function is hosted on different systems (e.g. ABS, EBS), tests shall be carried-out on vehicles having the different hosting systems.
- 1.1.4.1.8. Suspension type:**  
Vehicles shall be selected on the basis of the suspension type (e.g. air, mechanical, rubber) of each axle or axle group.
- 1.1.4.1.9. Centre of gravity height:**  
Tests shall be carried-out on vehicles where it is possible to adjust the centre of gravity height so as to demonstrate that the roll-over control is able to adapt to changes in the centre of gravity height.
- 1.1.4.1.10. Lateral acceleration sensor position:**  
The effect of the lateral acceleration sensor being installed in different positions on the same vehicle shall be evaluated to confirm the installation envelop specified by the system manufacturer.
- 1.1.4.1.11. Yaw rate sensor position:**

The effect of the yaw rate sensor being installed in different positions on the same vehicle shall be evaluated to confirm the installation envelop specified by the system manufacturer.

**1.1.4.1.12. Loading:**

Vehicles shall be tested in both the laden and unladen/part laden conditions to demonstrate that the vehicle stability function is able to adapt to differing conditions of load.

In the case of a semi-trailer tractor, tests shall be carried-out as follows:

- (a) With a coupled semi-trailer, in the laden and unladen/part laden conditions, in which the roll-over control, if fitted, has been disabled.
- (b) In the solo condition (without a coupled semi-trailer or imposed load),
- (c) With a load simulating the laden condition (without a coupled semi-trailer).

**1.1.4.2. Evaluation of buses**

As an alternative, in the case of buses, trucks having the same braking system type may be used in the evaluation. However, at least one bus shall be included in the testing and the subsequent report.

**1.1. 5. Test report**

**1.1.5.1. A test report shall be produced, the content of which shall be at least that defined in Appendix 12 of this annex.**

...

## **Annex 19**

### **Appendix 7**

**Vehicle (trailer) stability function information document**

...

## **Annex 19**

### **Appendix 8**

**Vehicle (trailer) stability function test report**

...

## Annex 19

### Appendix 11

#### Vehicle (motor vehicle) stability function information document

1. **General:**
  - 1.1. **Name of manufacturer**
  - 1.2. **System**
  - 1.3. **System variants**
  - 1.4. **System options**
  - 1.4.1. **Control function (directional/roll-over/both) including an explanation of the basic function and/or philosophy of the control**
  - 1.5. **System configurations (where appropriate)**
  - 1.6. **System identification including software level identifier**
2. **Applications:**
  - 2.1. **List of motor vehicles by description and configuration that are covered by the information document**
  - 2.2. **Schematic diagrams of the respective configurations installed on the motor vehicles defined in item 2.1. above with consideration given to the following:**
    - (a) **Lift axles**
    - (b) **Steering axles**
    - (c) **Anti-lock braking configurations**
  - 2.3. **Scope of application with respect to suspension:**
    - (a) **Air**
    - (b) **Mechanical**
    - (c) **Rubber**
    - (d) **Mixed**
    - (e) **Anti-roll bar**
  - 2.4. **Additional information (if applicable) to the application of the directional control and roll-over control functions, for example:**
    - (a) **Wheelbase, track, centre of gravity height**
    - (b) **Wheel type (single or twin) and tyre type (e.g. structure, category of use, size)**
    - (c) **Gearbox type (e.g. manual, automated manual, semi-automatic, automatic)**
    - (d) **Drive train options (e.g. retarder)**
    - (e) **Differential type/differential lock(s) (e.g. standard or self-locking, automatic or driver selected)**
    - (f) **Management of the engine or any other source(s) of motive power**

- (g) Brake type
- 3. Component Description:
  - 3.1. Sensors external to the controller
    - (a) Function
    - (b) Limitations on the location of the sensors
    - (c) Identification (e.g. part numbers)
  - 3.2. Controller(s)
    - (a) General description and function
    - (b) Functionality of internal sensors (if applicable)
    - (c) Hardware identification (e.g. part numbers)
    - (d) Software identification
    - (e) Limitations on the location of the controller(s)
    - (f) Additional features
  - 3.3. Modulators
    - (a) General description and function
    - (b) Hardware identification (e.g. part numbers)
    - (c) Software identification (if applicable)
    - (d) Limitations
  - 3.4. Electrical Equipment
    - (a) Circuit diagrams
    - (b) Powering methods
  - 3.5. Pneumatic circuits
 

System schematics including anti-lock braking configurations associated with the motor vehicle types defined in item 2.1. of this appendix
  - 3.6. Safety aspects of the electronic system in accordance with Annex 18 to this Regulation
  - 3.7. Electro-magnetic compatibility
    - 3.7.1. Documentation demonstrating compliance with Regulation No. 10 as required by paragraph 5.1.1.4. of this Regulation

## Annex 19

### Appendix 12

#### Vehicle (motor vehicle) stability function test report

Test Report No.: .....

- 1. Identification:
  - 1.1. Manufacturer of the vehicle stability function (name and address)

- 1.2. Applicant (if different from the manufacturer)
- 1.3. Systems
  - 1.3.1. System variants
  - 1.3.2. System options
    - 1.3.2.1. Control functions
- 2. System(s) and installations:
  - 2.1. Anti-lock braking configurations
  - 2.2. Vehicle applications
    - 2.2.1. Vehicle category (e.g. N<sub>2</sub>, N<sub>3</sub>, etc.)
    - 2.2.2. Character of the vehicle
    - 2.2.3. Vehicle configuration(s) (e.g. 4x2, 6x2, etc.)
    - 2.2.4. End of line programming
  - 2.3. System identification
  - 2.4. Functional description
    - 2.4.1. Directional control
    - 2.4.2. Roll-over control
    - 2.4.3. Low speed operation
    - 2.4.4. Off-road mode
    - 2.4.5. Drive train options
  - 2.5. Components
  - 2.6. Trailer detection and functionality
  - 2.7. Intervention warning
  - 2.8. Failure warning
  - 2.9. Stop lamp illumination
- 3.0. Assessed vehicle variables:
  - 3.1. General
  - 3.2. Brake system type
  - 3.3. Brake type
  - 3.4. Centre of gravity
  - 3.5. Management of the engine or other source(s) of motive power
  - 3.6. Gearbox type
  - 3.7. Installation configurations
  - 3.8. Lift axles
  - 3.9. Effect of load variations
    - 3.9.1. Roll-over control
    - 3.9.2. Directional control



- 
- 3.10. **Steering ratio**
  - 3.11. **Additional steering or steered axles**
  - 3.12. **Suspension**
  - 3.13. **Track width**
  - 3.14. **Yaw rate and lateral acceleration sensor(s)**
  - 3.15. **Wheelbase**
  - 3.16. **Wheel type, tyre type, tyre size**
  - 4. **Limits of Installation:**
    - 4.1. **Suspension type**
    - 4.2. **Brake type**
    - 4.3. **Location of Components**
      - 4.3.1. **Yaw rate and lateral acceleration sensor(s) position**
      - 4.4. **Anti-lock braking configuration(s)**
      - 4.5. **Additional steered axle**
      - 4.6. **Additional recommendations and limitations**
        - 4.6.1. **Brake system type**
        - 4.6.2. **Management of the engine or other source(s) of motive power**
        - 4.6.3. **Lift axles**
    - 5. **Test data and results:**
      - 5.1. **Test vehicle data (including the specification and functionality of any trailer(s) used during the test(s))**
      - 5.2. **Test surface information**
        - 5.2.1. **High adhesion surface**
        - 5.2.2. **Low adhesion surface**
      - 5.3. **Measurement and data acquisition**
      - 5.4. **Test conditions and procedures**
        - 5.4.1. **Vehicle tests**
          - 5.4.1.1. **Directional control**
          - 5.4.1.2. **Roll-over control**
      - 5.5. **Additional Information**
      - 5.6. **Test results**
        - 5.6.1. **Vehicle tests**
          - 5.6.1.1. **Directional control**
          - 5.6.1.2. **Roll-over control**
      - 5.7. **Assessment in accordance with Annex 18 to this Regulation**
      - 5.8. **Compliance with Regulation No. 10**

6. Attachments <sup>1</sup>:
7. Date of test:
8. This test has been carried out and the results reported in accordance with Annex 19, Part 2 to Regulation No. 13 as last amended by the ..... series of amendments.  
Technical Service <sup>2</sup> conducting the test  
Signature: ..... Date: .....
9. Approval Authority <sup>2</sup>  
Signature: ..... Date: .....

---

<sup>1</sup> System supplier test data in support of the tolerance allowance as specified in paragraphs 1.1.3.2.(s) and 1.1.3.2.(x) of Part 2 to Annex 19 shall be attached.

<sup>2</sup> To be signed by different persons even when the Technical Service and Approval Authority are the same or alternatively, a separate Approval Authority Authorization is issued with the report.

*Annex 21*, amend to read:

## "Annex 21

### **Special requirements for vehicles equipped with a vehicle stability function**

1. General
  - 1.1. This annex defines ... of this Regulation.
  - 1.2. In meeting the requirements of this annex the "other vehicles" as mentioned in paragraphs 2.1.3. and 2.2.3. shall not differ in at least the following essential respects:
    - 1.2.1. the character of the vehicle;
    - 1.2.2. in the case of power-driven vehicles the axle configuration (e.g. 4x2, 6x2, 6x4);
    - 1.2.3. in the case of trailers the number and arrangement of axles;
    - 1.2.4. the front axle steering ratio in the case of power-driven vehicles when the vehicle stability function does not include it as a end-of-line programmable feature or as a self-learning feature;
    - 1.2.5. additional steered axles in the case of power-driven, and steered axles in the case of trailers;
    - 1.2.6. lift axles;
  - ...

2.1.3. The vehicle stability function shall be demonstrated to the Technical Service by dynamic manoeuvres on one vehicle **which has the same vehicle stability function as the vehicle type to be approved.** This may be realized by a comparison of results obtained with the vehicle stability function enabled and disabled for a given load condition. As an alternative to carrying-out dynamic manoeuvres for other vehicles and other load conditions, fitted with the same vehicle stability system, the results from actual vehicle tests or computer simulations may be submitted.

**As an alternative to the above, a test report conforming to Part 2 paragraph 1.1. of Annex 19 may be used.**

The use of the ..... using the selected manoeuvre(s).

...

2.2.3. The vehicle stability function shall be demonstrated to the Technical Service by dynamic manoeuvres on one vehicle **which has the same vehicle stability function as the vehicle type to be approved.** This may be done by a comparison of results obtained with the vehicle stability function enabled and disabled for a given load condition. As an alternative to carrying-out dynamic manoeuvres for other vehicles and other load conditions, fitted with the same vehicle stability system, the results from actual vehicle tests or computer simulations may be submitted.

**As an alternative to the above, a test report conforming to Part 1 paragraph 6 of Annex 19 may be used.**

The use of the ..... using the selected manoeuvre(s).

...

*Annex 21, Appendix 2, paragraph 2.3., amend to read*

"2.3. The simulator shall be deemed to be validated when its output is comparable to the practical test results produced by **the same** vehicle(s) during the manoeuvre(s) **selected** from those defined **in** paragraph 2.1.3. or 2.2.3. of Annex 21, as appropriate.

**The simulator shall only be used with regard to features for which a comparison has been made between real vehicle tests and simulator results. The comparisons shall be carried-out in the laden and unladen condition to show the different conditions of load can be adapted to and to confirm the extreme parameters to be simulated, e.g.:**

- (a) **vehicle with shortest wheelbase and highest centre of gravity;**
- (b) **vehicle with longest wheelbase and highest centre of gravity.**

In the case of the steady state circular test the under-steer gradient shall be the means of making the comparison.

In the case of a dynamic manoeuvre, the relationship of activation and sequence of the vehicle stability function in the simulation and in the practical vehicle test shall be the means of making the comparison."

*Annex 21, Appendix 3*

*Insert new paragraphs 2. to 2.5., to read:*

**"2. Simulation tool**

- 2.1. **Simulation method (general description, taking into account the requirements of paragraph 1.1. of Appendix 2 to Annex 21)**
- 2.2. **Hardware/software in the loop (see paragraph 1.2. of Appendix 2 to Annex 21)**
- 2.3. **Vehicle loading conditions (see paragraph 1.4 of Appendix 2. to Annex 21)**
- 2.4. **Validation (see paragraph 2. of Appendix 2 to Annex 21)**
- 2.5. **Motion variables (see paragraph 2.1. of Appendix 2 to Annex 21)"**

*Paragraph 2. (former).*, renumber as paragraphs 3.

*Paragraph 2.1 (former).*, renumber as paragraphs 3.1. and amend to read:

- "3.1. **Character of vehicle (e.g. truck, tractor for semi-trailer, bus, semi-trailer, centre-axle trailer, full trailer)"**

*Paragraphs 2.2. (former) to 5.*, renumber as paragraphs 3.2. to 6.

### **Draft Corrigendum 1 to Supplement 9 to Regulation No. 13-H**

GRRF-69-27 adopted as follows. The adopted changes to the present text of the regulation are shown in bold characters.

*Paragraphs 2.34.1 and 2.34.2.*, amend to read (with the addition of a new footnote \*):

- 2.34.1. "Category A Brake Assist System" means a system which detects an emergency braking condition based **primarily\*** on the brake pedal force applied by the driver;
- 2.34.2. "Category B Brake Assist System" means a system which detects an emergency braking condition based **primarily\*** on the brake pedal speed applied by the driver;

**\* as declared by the vehicle manufacturer**

*Paragraph 2.34.3.*, should be deleted

*Annex 1*

*Paragraph 22.1.*, amend to read:

"22.1. Category of Brake Assist System **A / B 2**"

*Paragraph 22.1.3.*, should be deleted

*Annex 9, section B*

*Paragraph 1.2.*, amend to read:

- "1.2. General performance characteristics for **category "B" BAS** systems  
When an emergency ..... met."

*Paragraph 2.1.6.*, amend to read:

- "2.1.6 Brake pedal **speed,  $v_p$** , measured at the centre .... the measurement."

*Paragraphs 5. to 5.2.*, should be deleted

*Annex 9, Appendix 4*

*Paragraph 1.2.*, amend to read:

- 1.2. The brake pedal ...(without activating the BAS in the case of **category B systems**) providing .... cycling (Figure 3).

*Paragraph 1.3.*, amend to read:

"1.3. The full deceleration .....2 seconds. Once full deceleration has been achieved, **the brake pedal shall be operated so that the ABS continues fully cycling**. The time of full activation ..... in deceleration (see Figure 3)."

## Annex V

### Draft amendments to Regulation No. 55

Adopted modifications to ECE/TRANS/WP.29/GRRF/2011/4, (GRRF-69-24-Rev.15 as reproduced below) are shown in bold characters (see para. 22 of the report).

*Annex 7*, insert new paragraph 1.2.3., to read:

**"1.2.3. The design of the drawbar including the coupling head for use on O<sub>1</sub> and O<sub>2</sub> centre axle trailers shall be such as to prevent the coupling head from digging into the ground in the event of separation from the main coupling."**

## Annex VI

### Draft amendments to Regulation No. 64

GRRF-69-25 adopted as reproduced below. Changes to Regulation No. 64 are shown in bold characters (see para. 29. of the report).

Amend paragraph 5.1.4.1.1. to read:

"5.1.4.1.1. An 120 km/h maximum speed warning .....

The requirements of this paragraph shall only apply to a type 4 temporary-use spare unit as defined in paragraph 2.10.4. to be supplied for use on an M<sub>1</sub> **and** N<sub>1</sub> category vehicle."

## Annex VII

### **Draft Corrigendum 1 to Revision 2 of Regulation No. 75**

GRRF-69-07 adopted as reproduced below (see para. 33 of the report).

**1. Page 14, paragraph 6.2.1.1.**

*For* paragraph 3.1.12. *read* paragraph 3.1.14.

**2. Page 21, Annex 3, arrangement of tyre markings, subparagraph (d)**

*For* paragraph 3.1.12. *read* paragraph 3.1.14.

**3. Annex 5, Table 1**

*For* Largeur hors tout maximale *read* Maximum overall width

**3. Pages 27 to 33, Annex 5, Tables 2 to 7, column 5, the header**

*For* Section width *read* Maximum overall width

**4. Page 34, Annex 6, paragraph 1., the table**

*For* F à P *read* F to P

*For* F à M *read* F to M



## Annex VIII

### GRRF informal groups

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