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### World Forum for Harmonization of Vehicle Regulations

#### Working Party on Brakes and Running Gear

#### Sixty-eighth session

Geneva, 21–23 September 2010

## Report of the Working Party on Brakes and Running Gear on its sixty-eighth session (21–23 September 2010)

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## I. Attendance

1. The Working Party on Brakes and Running Gear (GRRF) held its sixty-eighth session from 21 to 23 September 2010 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, Republic of Korea, Netherlands, Poland, Russian Federation, South Africa, Spain, Sweden, Switzerland, Turkey, 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 Bureau International Permanent des Associations de Vendeurs et Rechapeurs de pneumatiques (BIPAVÉR), 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/2010/18  
ECE/TRANS/WP.29/GRRF/2010/18/Corr.1  
Informal document GRRF-68-01

2. GRRF adopted the agenda ECE/TRANS/WP.29/GRRF/2010/18 and ECE/TRANS/WP.29/GRRF/2010/18/Corr.1 with the addition of the following agenda item:

11. Election of officers

3. GRRF also adopted 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  
Informal documents GRRF-68-14 and GRRF-68-20

4. 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, in particular during the meeting held on 20 September 2010 in conjunction with the proper session of GRRF.

5. The Chairman of the AEBS/LDWS informal group introduced ECE/TRANS/WP.29/GRRF/2010/29 proposing a new regulation on LDWS. He invited the experts to send, for the next session of GRRF, their national marking layout for integration into Annex 3 of the draft Regulation. GRRF agreed to keep as a reference document GRRF-68-14 on the marking layout in France. GRRF agreed that it should be clarified in paragraph 6.2.3.2 that Annex 3 was for testing purposes. At the request from the AEBS/LDWS Chair, GRRF agreed that the reference to Regulation No. 10 in paragraph

5.12. should not be dynamic but clearly specify the series of amendments of Regulation No. 10 that shall apply. GRRF agreed to consider again ECE/TRANS/WP.29/GRRF/2010/29 at its next session together with a supplementary proposal prepared by the expert from the EC taking into account the comments made.

6. The Chairman of the AEBS/LDWS informal group presented GRRF-68-20 on two possible regulatory approaches for AEBS requirements. GRRF confirmed its preference for the inclusion of the new requirements on AEBS in new two stand-alone regulations in order to allow more flexibility for the adoption of these new technologies by the Contracting Parties: GRRF agreed that one Regulation would deal with collision mitigation requirements and the other Regulation would deal with collision avoidance requirements.

7. GRRF agreed that the informal group on AEBS/LDWS would meet in conjunction with the next session of GRRF.

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

##### **A. Emergency Stop Signal (ESS) (agenda item 3(a))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/22

8. The expert from OICA presented ECE/TRANS/WP.29/GRRF/2010/22 on the emergency stop signal and the electric regenerative braking. GRRF adopted the document, not amended, and requested the secretariat to submit it to WP.29 and the Administrative Committee of the 1958 Agreement (AC.1), for consideration at their March 2011 sessions, as part of draft Supplement 7 to the 11 series of amendments to Regulation No. 13 (see also para. 9).

##### **B. Trailer braking (agenda item 3(b))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/11/Rev.1  
Informal documents GRRF-68-04 and GRRF-68-08

9. The expert from CLEPA presented ECE/TRANS/WP.29/GRRF/2010/11/Rev.1, and GRRF-68-08 to extend to trailers with more than three axles the possibility to use the anti-lock braking test report according to Annex 19 to Regulation No. 13. Furthermore, the expert from CLEPA introduced GRRF-68-04 to clarify the term "bogie" in Regulation No. 13. GRRF adopted ECE/TRANS/WP.29/GRRF/2009/11/Rev.1 and GRRF-68-04 reproduced in Annex II to this report, and requested the secretariat to submit them to WP.29 and AC.1, for consideration at their March 2011 sessions, as part of draft Supplement 7 to the 11 series of amendments to Regulation No. 13 (see also para. 8.).

### C. Electronic stability control (agenda item 3(c))

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/23  
 ECE/TRANS/WP.29/GRRF/2010/24  
 Informal documents GRRF-67-21, GRRF-68-02, GRRF-68-06,  
 GRRF-68-10, GRRF-68-16-Rev.2 and GRRF-68-17

10. The experts from CLEPA and OICA presented ECE/TRANS/WP.29/GRRF/2010/23, ECE/TRANS/WP.29/GRRF/2010/24 and GRRF-67-21 proposing align the UNECE braking regulations on Federal Motor Vehicles Safety Standards (FMVSS) No. 126 with regard to the requirements on electronic stability control malfunction tell-tale. The GRRF Chairman recalled that, to amend global technical regulation (gtr) No. 8, a formal request by a Contracting Party should be submitted to the Administrative Committee (AC.3) of the 1998 Agreement. GRRF agreed to put on hold ECE/TRANS/WP.29/GRRF/2010/24 amending Regulation No. 13-H pending the adoption of the formal request to amend gtr No. 8. GRRF considered that ECE/TRANS/WP.29/GRRF/2010/23 amending Regulation No. 13 needed improvement and invited the experts from CLEPA and OICA to prepare a revised proposal for consideration at the February 2011 session of GRRF. GRRF agreed to keep GRRF-67-21 as reference document.

11. The expert from Japan introduced GRRF-68-02 mandating Electronic stability function (EVSC) on N<sub>3</sub> vehicles with four axles. The expert from OICA proposed in GRRF-68-06 to exclude N<sub>3</sub> vehicles with four axles above 25 tonnes because such vehicles were produced in small volume, rendering difficult the development of specific EVSC systems at a reasonable cost. GRRF agreed to consider again this issue, at its next session in February 2011, on the basis of a joint revised proposal from OICA and Japan.

12. The expert from OICA proposed in GRRF-68-16-Rev.2 to allow in Regulation No. 13 the use of the brake malfunction signal to indicate a vehicle stability function failure, pending the adoption of a specific symbol in Regulation No. 121 (Identification of controls, tell-tales and indicators). GRRF adopted GRRF-68-16-Rev.2, as reproduced in Annex II to this report, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their November 2010 sessions, as draft Corrigendum 1 to Supplement 4 to the 11 series of amendments Regulation No. 13. GRRF invited OICA to prepare a further amendment to Regulation No. 13, with adequate transitional provisions, mandating the specific vehicle stability function failure symbol that will be introduced in Regulation No. 121.

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-68-17). GRRF confirmed that, subject to the consent of WP.29, the group should also consider vehicles of categories N<sub>2</sub> and N<sub>3</sub> vehicles in its work. The AMVESC Chairman presented GRRF-68-10 introducing the alternative method into Regulation No. 13. GRRF agreed to reconsider this proposal at its next February 2011 session and requested the secretariat to make GRRF-68-10 available with an official symbol. The AMVESC Chairman announced that a supplement to GRRF-68-10 should be submitted by the group for the February 2011 session of GRRF.

## **D. Clarifications (agenda item 3(d))**

*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  
Informal document GRRF-68-07

14. The expert from India introduced ECE/TRANS/WP.29/GRRF/2010/19 clarifying Regulation No. 13-H with regard to Brake Assist Systems (BAS). GRRF noted a number of comments and agreed to consider again this proposal at its next session.

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. GRRF could not reach final decision over this proposal and agreed to consider again the matter at its next session.

16. The expert from CLEPA presented ECE/TRANS/WP.29/GRRF/2010/26 clarifying the periodic technical inspection requirements on system failures. GRRF noted a number of comments and agreed to resume consideration of this subject on the basis of a revised proposal prepared by the expert from CLEPA.

17. The expert from OICA presented GRRF-68-07 proposing to clarify Supplement 9 to Regulation 13-H with regard to brake assist requirements. GRRF agreed that clarification of the definitions on brake assist systems was necessary but that the wording of GRRF-68-07 needed improvement. GRRF agreed to resume consideration of this subject on the basis of a revised proposal prepared by the expert from OICA.

## **E. Other business (agenda item 3(e))**

*Documentation:* Informal documents GRRF-68-09 and GRRF-68-19

18. The expert from Sweden presented GRRF-68-09 and GRRF-68-19 proposing to amend Regulation No. 13 to cover fully automated coupling systems (FACS). GRRF supported in principal the development of harmonized requirements for FACS and agreed to decide, at its next February 2011 session, whether an informal group on this subject would be necessary. GRRF requested the secretariat to create a specific agenda point on that matter and to keep GRRF-68-09 as a reference document.

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

*Documentation:* Informal documents GRRF-67-27 and GRRF-68-05

19. The experts from CLEPA and OICA presented GRRF-68-05 superseding GRRF-67-27 and proposing to clarify the definition of secondary couplings. GRRF noted a number of comments and agreed to consider again this issue at its next February 2011 session on the basis of a revised proposal prepared by the experts from the Netherlands, CLEPA and OICA.

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

*Documentation:* ECE/TRANS/WP.29/GRRF/2009/23/Rev.2  
ECE/TRANS/WP.29/GRRF/2009/24  
ECE/TRANS/WP.29/GRRF/2009/25  
ECE/TRANS/WP.29/GRRF/2010/20  
ECE/TRANS/WP.29/GRRF/2010/25  
ECE/TRANS/WP.29/GRRF/2010/28  
Informal documents GRRF-68-13 and GRRF-68-18

20. GRRF considered ECE/TRANS/WP.29/GRRF/2009/23/Rev.2 introducing replacement brake discs and drums in the scope of Regulation No. 90, as well as amendments to this proposal in ECE/TRANS/WP.29/GRRF/2010/20 proposed by CLEPA and OICA, and in ECE/TRANS/WP.29/GRRF/2010/25 and GRRF-68-13 proposed by CLEPA. After discussion, GRRF adopted ECE/TRANS/WP.29/GRRF/2009/23/Rev.2, as amended by GRRF-68-18 reproduced in Annex III to this report, and requested the secretariat to submit it to WP.29 and AC.1, for consideration at their March 2011 sessions, as draft 02 series of amendments to Regulation No. 90.

21. GRRF considered ECE/TRANS/WP.29/GRRF/2009/24 and ECE/TRANS/WP.29/GRRF/2009/25 amending respectively Regulations Nos. 13 and 13-H with regard to the identification code of original discs and drums. GRRF adopted ECE/TRANS/WP.29/GRRF/2009/24 and ECE/TRANS/WP.29/GRRF/2009/25, both as amended by Annex II to this report, and requested the secretariat to submit them to WP.29 and AC.1, for consideration at their March 2011 sessions, respectively as draft Supplement 6 to 11 series of amendments of Regulation No. 13 and as draft Supplement 12 to Regulation No. 13-H.

22. The expert from OICA introduced ECE/TRANS/WP.29/GRRF/2010/28 on original replacement brake linings. The secretariat reminded that, the issue whether, for the sale of these parts, an approval was mandatory or a specific marking was enough, was a national matter and could not effectively be dealt within a UNECE type approval Regulation. He suggested that the approach followed for original replacement discs and drums could be used. GRRF agreed to reconsider this issue at its February 2011 session.

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

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

*Documentation:* Informal document GRRF-68-12 and GRRF-68-15

23. GRRF noted that the informal group on the tyre gtr would meet on 24 September 2010 after the GRRF proper session and agreed to refer GRRF-68-12 and GRRF-68-15 from India to the informal group for consideration.

### **B. Regulation No. 64 (Temporary-use spare wheels/tyres) (agenda item 6(b))**

*Documentation:* ECE/TRANS/WP.29/GRRF/2010/27

24. The expert from the United Kingdom introduced ECE/TRANS/WP.29/GRRF/2010/27 proposing to allow N<sub>1</sub> vehicles with a certain type of

temporary spare wheel and tyre. GRRF supported in principle this proposal and noted a number of comments. GRRF agreed to consider again this item at its next session on the basis of a revised proposal prepared by the expert from the United Kingdom.

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

*Documentation:* ECE/TRANS/WP.29/GRB/2010/8  
ECE/TRANS/WP.29/GRB/50  
Informal document GRRF-68-11

25. The expert from EC introduced GRRF-68-11 on the work ongoing within the European Union on the wet grip test procedure used for labelling purposes. He announced that it was the intention of the EC to propose this new test method into Regulation No. 117.

26. The secretariat informed GRRF that the Working Party on Noise (GRB) had adopted, at its September 2010 session, ECE/TRANS/WP.29/GRB/2010/8 correcting the 02 series of amendments to Regulation No. 117. He added that the proposed new informative Annexes 8 and 9 for labelling purposes of rolling resistance had been moved from the text of Regulation No. 117 to the Annex III to the report of the September 2010 session of GRB. (see also ECE/TRANS/WP.29/GRB/50, paras. 20 to 22 and Annex III)

**D. Exchange of information on national and international tyre requirement (agenda item 6(d))**

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

**E. Other business (agenda item 6(e))**

28. GRRF noted that no document had been provided under this agenda item.

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

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

29. The expert from the Russian Federation presented ECE/TRANS/WP.29/2009/135 proposing new draft Rule No. 2. GRRF noted a number of comments and agreed to have a final consideration of the matter at its next session. The GRRF Chairman invited all the experts to prepare their position and to send their comments to the expert from the Russian Federation (Mr. Andrei Bocharov: mail@satrfond.ru).

**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

30. The secretariat introduced ECE/TRANS/WP.29/2009/123 and its corrigenda 1 to 4 consolidating the different amendments to R.E.3. The secretariat informed GRRF that ECE/TRANS/WP.29/2010/145 would consolidate ECE/TRANS/WP.29/2009/123 and its

corrigenda 1 to 4. GRRF noted a number of comments and agreed to have a final consideration of this item at its next session in order to send GRRF position to WP.29, for consideration at its March 2011 session.

## **X. World Forum for Harmonization of Vehicle Regulations (WP.29): Working Parties, informal groups and chairmanship (agenda item 9)**

*Documentation:* Informal document WP29-150-19-Rev.1

31. GRRF noted the list of informal groups in WP.29-150-19-Rev.1.

## **XI. Other business (agenda item 10)**

### **A. Exchange of information on national and international requirements on primary safety (agenda item 10(a))**

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

### **B. Intelligent transport systems (agenda item 10(b))**

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

33. The experts from the OICA introduced GRRF-68-03 commenting WP.29-150-22. The Chairman of the AEBS/LDWS informal group informed GRRF that its group would comment on document WP.29-150-22 at the next session of GRRF. GRRF agreed have a final review of this item at its next session in February 2011.

### **C. Tributes**

34. The GRRF Chairman thanked Mr. Brearley (CLEPA) for his expert and reasoned contribution to GRRF over many years and wished him a healthy, happy and long retirement.

35. The Chairman also shared the sad news that Mr. Neil Bowerman (United Kingdom) passed away after an illness and posthumously thanked him for his excellent contribution to GRRF.

## **XII. Election of officers (agenda item 11)**

*Documentation:* TRANS/WP.29/690 and TRANS/WP.29/690/Amend.1

36. In compliance with Rule 37 of the Rules of Procedure (TRANS/WP.29/690, as amended by Amendment 1), GRRF called the election of officers on Thursday morning. Mr. I. Yarnold (United Kingdom) was unanimously re-elected Chairman of GRRF for the sessions scheduled for the year 2011.

### **XIII. Provisional agenda for the sixty-ninth session**

37. GRRF did not consider the agenda for its sixty-ninth session, scheduled to be held in Geneva from 1 February 2011 (starting at 9.30 a.m.) to 4 February 2011 (concluding at 17.30 p.m.). It was agreed that the Chairman, jointly with the secretariat, would propose a draft agenda. The informal group on AEBS/LDWS will meet on 31 January 2011, from 10.30 a.m. to 6.00 p.m. (time to be confirmed by the Chairman of the informal group). The informal meeting will be held without interpretation. The draft global technical regulation (gtr) on tyres will be considered on 1 February 2011 during the proper session of GRRF. To help experts for travel arrangements, the Chairman advises that braking issues be discussed on 2 and 3 February and that tyre items be discussed on 4 February 2011 providing progress made during the meeting

## Annex I

## List of informal documents considered during the session

## Informal documents of the sixty-eight session of GRRF (GRRF-68-..)

<i>No.</i>	<i>Transmitted by</i>	<i>Title</i>	<i>Follow-up</i>
1	GRRF Chairman	Running order of the provisional agenda	(f)
2	Japan	Proposal for amendment to Regulation No. 13 (Heavy vehicle braking) - Electronic stability control	(e)
3	OICA	OICA secretariat comments to document WP29-150-22 (Guidelines on establishing requirements for high priority warning signals)	(d)
4	CLEPA	Proposal for amendments to Regulation No. 13 (Trailer braking)	(a)
5	CLEPA/OICA	Proposal for amendments to Regulation No. 55 (Mechanical couplings)	(e)
6	OICA	Proposal for amendments to document GRRF-68-02. (Electronic stability control)	(e)
7	CLEPA/OICA	Proposal for clarification of Supplement 9 to Regulation No.13-H (Brakes of M1 and N1 vehicles)	(e)
8	CLEPA	Supporting document for ECE/TRANS /WP.29GRRF/2010/11/Rev1 (Trailer braking)	(f)
9	Sweden	Proposal for amendments to Regulation No. 13 (other business)	(d)
10	(AMESC informal group)	Current status of proposed changes to Regulation No. 13 (Electronic Stability Control)	(c)
11	EC	European Union Activity on tyre wet grip labelling	(f)
12	India	Comments from India on the GTR for Passenger Vehicle Tyres under formulation by the Working Group on Tyres	(f)
13	CLEPA	Proposal for correction to document ECE/TRANS/WP.29/GRRF/2010/25 (Regulation No. 90)	(a)
14	France	Draft amendment to ECE/TRANS/WP.29/GRRF/2010/29 (New Regulation on LDWS)	(d)
15	India	Additional Comments from India on the GTR for Passenger Vehicle Tyres under formulation by the Working Group on Tyres	(f)
16+Rev.1+ Rev.2	OICA	Proposal for a corrigendum to supplement 04 to the 11 series of amendments to Regulation No. 13 (Heavy vehicle braking)	(a)
17	AMEVSC Chairman	Report of GRRF Alternative Method Electronic Vehicle Stability Control (AMEVSC) Informal Working Group	(f)
18	Secretariat	Proposal for amendments to ECE/TRANS/WP.29/GRRF/2009/23/Rev.2 (Regulation No. 90)	(a)
19	Sweden	Supporting document for Informal document No. GRRF-68-09	(f)
20	EC	Regulatory approaches for introducing AEBS	(f)
21	Secretariat	Summary of decisions - 68th session of GRRF	(f)

### Informal documents from the previous sessions of GRRF or other Working Parties

<i>No.</i>	<i>Transmitted by</i>	<i>Title</i>	<i>Follow-up</i>
GRRF-67-21	CLEPA OICA	Proposal for amendments to Regulations Nos. 13, 13-H and gtr No. 8	(d)
GRRF-67-27	OICA	Proposal for amendments to Regulation No. 55	(f)
WP.29-150-19-Rev.1	Secretariat	Working Parties, informal groups and Chairman manship	(f)
WP.29-150-22	Japan and United Kingdom	Guidelines on establishing requirements for high-priority warning signals	(d)

*Notes:*

- (a) Adopted by GRRF with no change and submitted to WP.29 for consideration.
- (b) Adopted by GRRF with changes and submitted 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

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

#### Draft Supplement 6 to the 11 series of amendments to Regulation No. 13

Adopted modifications to ECE/TRANS/WP.29/GRRF/2009/24 (see para. 21 of the report) are shown in bold characters.

*New paragraphs 12.1.9. to 12.1.10.*, amend to read:

- "12.1.9. As from the official date of entry into force of Supplement **6** to the 11 series of amendments of this Regulation, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by Supplement **6** to the 11 series of amendments of this Regulation.
- 12.1.10. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval according to this Regulation as amended by Supplement **5** to the 11 series of amendments of this Regulation."

*New paragraph 12.2.8.*, amend to read :

- "12.2.8. 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 **5** to the 11 series of amendments during the 12 month period which follows the date of entry into force of Supplement **6** to the 11 series of amendments."

#### Draft Supplement 7 to the 11 series of amendments to Regulation No. 13

Informal document GRRF-68-04 adopted as follows (see para. 9 of the report). The modifications to the text of Regulation are shown in bold characters.

*Insert a new paragraph 2.37.*, to read:

- "**2.37. "Axle group" means multiple axles where the axle spread between one axle and its adjacent axle is equal to or less than 2.0 m. Where the axle spread between one axle and its adjacent axle is greater than 2.0 m, each individual axle shall be considered as an independent axle group.**"

*Annex 2, paragraph 15.3.*, amend to read:

- "15.3. Actuation differential (if any) within **axle group**:"

*Annex 10, paragraph 1.3.1.*, footnote 2/ and the reference to footnote 2/ shall be deleted.

*Annex 13, paragraph 3.1.3.*, amend to read:

"3.1.3. Category 3 anti-lock system  
A vehicle..... any individual axle (or **axle group**) which does not ..... force."

*Annex 13, Appendix 2, paragraph 1.4.*, amend to read:

"1.4. For power-driven vehicles equipped with three axles, **any axles that are interconnected by either suspension components and thereby react to weight transfer under braking or driveline may be disregarded in establishing** a k value for the vehicle. 1/"

*Annex 19, paragraph 5.4.1.5.1.*, amend to read:

"5.4.1.5.1. When the axle **or axle group** passes ..... and at 40 km/h."

*Annex 19, Appendix 5, paragraph 2.6.*, amend to read:

"2.6. Recommendations on differential brake input torque (if any) in relation to the ABS configuration and trailer **axle group**."

*Annex 19, Appendix 6, paragraph 4.4.*, amend to read:

"4.4. Differential(s) in brake input torque within the trailer **axle group**:"

*Annex 20, paragraph 3.2.1.2.*, amend to read:

"3.2.1.2. Any difference in the brake input torque between one axle and another within **an axle group** of the "subject trailer" shall not differ from that of the "reference trailer"."

*Annex 20, paragraph 7.2.1.4.*, amend to read:

7.2.1.4.	Differentials in brake input torque within <b>an axle group</b>	Only approved differentials (if any) permitted"
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*Annex 21, paragraph 2.1.1.*, footnote 1/ and references to footnote 1/ shall be deleted.

*Annex 21, paragraph 2.2.1.*, footnote 4/ and references to footnote 4/ shall be deleted.

**Draft Corrigendum 1 to Supplement 4 to the 11 series of amendments  
Regulation No. 13**

GRRF-68-16-Rev.2 adopted as reproduced below (see para. 12 of the report). The modifications to the present text of the Regulation are shown in bold characters.

*Annex 21, paragraph 2.1.5.*, amend to read:

"2.1.5. A vehicle stability function failure or defect shall be detected and indicated to the driver by a yellow optical warning signal.  
  
The warning signal specified in paragraph 5.2.1.29.1.2. of this Regulation **may** be used for this purpose **but shall not be used for interventions as defined in paragraph 2.1.4. of this annex.**  
  
The warning signal shall be constant ...position."

**Draft Supplement 12 to Regulation No. 13-H**

Adopted modifications to ECE/TRANS/WP.29/GRRF/2009/25 are shown in bold characters (see para. 21 of this report).

*New paragraphs 12.5. to 12.7.*, renumber as paragraphs 12.8. to 12.10. and amend to read:

- "12.8.** As from the official date of entry into force of the Supplement **12** to the original version of this Regulation, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by Supplement **12** to the original version of this Regulation.
- 12.9.** 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 **11** to the original version of this Regulation during the 12 month period which follows the date of entry into force of supplement **12** to the original version of this Regulation."
- 12.10.** Contracting Parties applying this Regulation shall not refuse to grant extensions of approval according to this Regulation as amended by Supplement **11** to the original version of this Regulation."

## Annex III

### Draft amendments to Regulation No. 90

Adopted modifications to ECE/TRANS/WP.29/GRRF/2009/23/Rev.2 (GRRF-68-18 as reproduced below) are shown in bold characters (see para. 20 of the report).

*Paragraphs 2.3.1.1. and 2.3.1.2., amend to read:*

- "2.3.1.1. in the case of motor vehicles, **is a brake disc/drum covered by the vehicle braking system type approval according to Regulation No. 13 or 13-H.**
- 2.3.1.2. in the case of trailers,
- (a) **is a brake disc/drum covered by the vehicle braking system type approval according to Regulation No. 13.**
- (b) **is a brake disc/drum which is part of a brake for which the axle manufacturer owns a test report according to Annex 11 of Regulation No. 13.**"

*Paragraphs 2.3.3.2. and 2.3.3.3., amend to read:*

- "2.3.3.2. **"Identical brake disc"**: Is a replacement brake disc which is chemically and physically identical in every respect with the exception of the vehicle manufacturer mark, which is absent, to the original brake disc.
- 2.3.3.3. **"Identical brake drum"**: Is a replacement brake drum which is chemically and physically identical in every respect with the exception of the vehicle manufacturer mark, which is absent, to the original brake drum."

*Paragraph 5.3.2.1., amend to read:*

- "5.3.2.1. **The applicant for approval shall demonstrate to the approval authority that he supplies the brake discs or drums to the vehicle manufacturer as original equipment of the vehicles/axles/brakes mentioned under Annex 1B point 4. In particular, the brake discs or drums shall be produced under the same production and quality assurance systems and conditions as for the original parts pursuant to paragraph 2.3.1.**"

*Paragraph 6.2.1.4., amend to read:*

- "6.2.1.4. each package shall contain fitting instructions in the language of the country where it is sold:"

*Paragraphs 8.4.2.(former) to 8.4.6., renumber as paragraphs 8.4.3. to 8.4.7.*

*Paragraph 12., amend to read:*

- "12.1. As from the official date of entry into force of the 02 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the 02 series of amendments.
- 12.2. **Even** after the date of entry into force of the 02 series of amendments, brake lining assembly and drum brake lining approvals to the 01 series of amendments to the Regulation shall remain valid and Contracting Parties applying the Regulation shall continue to accept them **and shall not refuse to grant extensions of approval to the 01 series of amendments to this Regulation.**"

## Annex IV

### GRRF informal groups

<i>Informal group</i>	<i>Chairperson</i>	<i>Secretary</i>
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