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1958 Agreement – Consideration of draft amendments to existing Regulations submitted by GRRF

Proposal for Supplement 7 to the 11 series of amendments to Regulation No. 13 (Heavy vehicles braking)

Submitted by the Working Party on Brakes and Running Gear*

The text reproduced below was adopted by the Working Party on Brakes and Running Gear (GRRF) at its sixty-eighth session to improve the wording of the prescriptions for regenerative braking and to extend to trailers with more than three axles the use of the anti-lock braking test report produced according to Annex 19. It is based on ECE/TRANS/WP.29/GRRF/2010/22, not amended, and ECE/TRANS/WP.29/GRRF/2010/11/Rev.1, as amended by GRRF-68-04 reproduced in Annex II of the report (ECE/TRANS/WP.29/GRRF/68, paras. 8 and 9). It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration.

* In accordance with the programme of work of the Inland Transport Committee for 2006–2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

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."

Paragraphs 5.2.1.30. to 5.2.1.30.2., amend to read:

- "5.2.1.30. Generation of a braking signal to illuminate stop lamps
- 5.2.1.30.1. Activation of the service braking system by the driver shall generate a signal that will be used to illuminate the stop lamps.
- 5.2.1.30.2. Requirements for vehicles that utilize electronic signalling to control initial application of the service braking system, and equipped with endurance braking and/or regenerative braking system of Category A:

Deceleration by the endurance braking and/or regenerative braking system	
$\leq 1.3 \text{ m/s}^2$	$> 1.3 \text{ m/s}^2$
May generate the signal	Shall generate the signal

"

Paragraphs 5.2.1.30.2.1, should be deleted.

Paragraphs 5.2.1.30.2.2. and 5.2.1.30.2.3., renumber as paragraphs 5.2.1.30.3. and 5.2.1.30.4. and amend to read:

- "5.2.1.30.3. In the case of vehicles equipped with a braking system of a specification different to that defined in paragraph 5.2.1.30.2. above, the operation of the endurance braking system and/or regenerative braking system of Category A may generate the signal irrespective of the deceleration produced.
- 5.2.1.30.4. The signal shall not be generated when retardation is produced by the natural braking effect of the engine alone."

Paragraphs 5.2.1.30.3.(former) to 5.2.1.30.5 (former)., renumber as paragraphs 5.2.1.30.5. to 5.2.1.30.7.

Paragraph 5.2.1.30.6. (former), should be deleted.

Insert new paragraphs 12.2.9. and 12.2.10., to read:

- "12.2.9. As from the official date of entry into force of the Supplement 7 to the 11 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the Supplement 7 to the 11 series of amendments.
- 12.2.10. As from 36 months after the date of entry into force of the Supplement 7 to the 11 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the Supplement 7 to the 11 series of amendments."

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 passesand 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 an axle group	Only approved differentials (if any) permitted"
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"

Annex 20, insert new paragraphs 7.4 to 7.4.8.5., to read:

"7.4. Trailers with more than 3 axles may utilize the Annex 19 ABS test report provided the following conditions are fulfilled:

7.4.1. Irrespective of trailer type at least one third of the axles in an axle group shall have all wheels directly controlled, with the wheels on the remaining axles being indirectly controlled. ¹

7.4.2. Utilization of Adhesion: The minimum utilization of adhesion specified within paragraph 6.2. of Annex 13 to this Regulation is deemed to be achieved when following conditions are fulfilled:

¹ When the number of axle(s) in an axle group is divided by 3 and the resulting number is less than 1, at least one axle shall be directly controlled. When the number of axles in the axle group is divided by 3 and the resulting number is not a whole number, a further axle shall be directly controlled in addition to the number of axles indicated by the whole number value.

- 7.4.2.1. The relationship of the number of wheels directly or indirectly controlled by one or more pressure modulators and the location of the directly controlled wheels within the axle group shall correspond to those defined within paragraph 2.2. of the Information Document referred to in paragraph 5.2. of Annex 19 to this Regulation;
- 7.4.2.2. The utilization of adhesion of the installed configuration is shown in the Test Report as meeting the requirements of paragraph 6.2. of Annex 13 to this Regulation.
- 7.4.3. Energy Consumption: The number of equivalent static brake applications defined within paragraph 2.5. of the Test Report may be used in conjunction with the verification procedure of paragraph 7.3. of Annex 20 to this Regulation . Alternatively the test procedure specified within paragraph 6.1. of Annex 13 to this Regulation may be used;
- 7.4.4. Low speed performance: Additional verification is not required;
- 7.4.5. High speed performance: Additional verification is not required;
- 7.4.6. Category A Performance: The split friction requirements specified within paragraph 6.3.2. of Annex 13 to this Regulation are deemed to be fulfilled when the number of wheels which are subject to independent left/right control is equal to or greater than the number of wheels controlled using "select low" axle control;
- 7.4.7. Surface transition performance: Additional verification not required;
- 7.4.8. Installation limitations: in all cases the following limitations shall apply:
 - 7.4.8.1. Any installation limitations defined within paragraphs 2.1. to 2.7. of the Information Document referred to in paragraph 5.2. of Annex 19 to this Regulation shall apply;
 - 7.4.8.2. Only products identified and referenced in the Information Document and Test Report may be installed;
 - 7.4.8.3. The maximum delivery volume controlled by each pressure modulator shall not exceed the volume specified within paragraph 3.3. of the Information Document;
 - 7.4.8.4. An axle with directly controlled wheels may only be lifted when any axle which is indirectly controlled from this direct controlled axle is lifted in parallel;
 - 7.4.8.5. All other installation limitations specified within paragraph 4. of the Test Report shall apply."

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