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Working Party on Brakes and Running Gear (GRRF)
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agenda item 1.1.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 13
(Braking)

Transmitted by the Expert from the Russian Federation

Note: The text reproduced below was prepared by the expert from the Russian
Federation in order to improve the text of the Regulation. It is based on the
text of a document distributed without a symbol (informal document No. 22)
during the forty-ninth session of GRRF (TRANS/WP.29/GRRF/49, para. 17).

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Note: This document is distributed to the Experts on Brakes and Running Gear
only.

A.   PROPOSAL

Annex 8,

Paragraph 2.1., amend to read:

"2.1.   A spring brake system may be used as secondary brake system, if all the prescriptions specified in paragraph 5.1.2.2. of general specifications are met. A spring brake system shall not be used as a service braking ....."

Paragraph 2.3., amend to read:

".... In any case during the re-charging of the braking system from the zero pressure, the spring brakes must not start to release ... of the laden vehicle (according to annex 4, para. 2.), using the service braking system control. Similarly, once applied, the spring brakes must not release fully unless there is .... of the laden vehicle (according to annex 4, para. 2.4.) by application ......"

Paragraph 3.2., amend to read:

"3.2.   Pneumatic release device must be designed according to the requirements of paragraph 2.3. of this annex. For that purpose, the separate control unit, which is independent of parking (emergency) braking system control unit, must actuate pneumatic release device. If the operation of the auxiliary ...."

Annex 13, Appendix 2,

Paragraph 2.2.1., amend the symbol Z_{Cmax} to read Z_{Cmaxi} in the $F_{i\,dyn}$ formulas for front and rear axles.

Paragraph 2.3.1., amend the symbol Z_C to read $Z_{C\,max}$ in the $F_{R\,dyn}$ formula.

Paragraph 2.3.2., amend the symbol Z_C to read Z_{CAL} in the $F_{R\,dyn}$ formula.

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B.   JUSTIFICATION

Re. annex 8, para. 2.1.

It is necessary to establish officially a possibility of the spring compression chamber to be used as an emergency system transmission unit, especially as such construction is often used in motor vehicles. Furthermore, it is necessary to determine the conditions of such use, i.e. fulfilment of paragraph 5.1.2.2., that shall provide fully controlled emergency system operation. It is also important as many vehicles' manufacturers use the spring brake systems as the emergency brake system without providing sufficient pressure control that does not allow deceleration control.

Re. annex 8, para. 2.3.

Phrases "brakes must not release" and "release must not occur" applied in paragraph 2.3. are polysemantic and vague. That is why it is not clear what was meant: the beginning or the ending of the process. Furthermore, it is

preferable to add references to proper paragraphs in annex 4, because first is meant the emergency braking performance and second – the residual braking performance.

Re. annex 8, para. 3.2.

Paragraph 2.3. does not envisage a possibility of the spring compression chamber release, pressure in receivers in lower then prescribed level, but paragraph 3. envisages a possibility of the spring compression chamber release by the pneumatic system of a vehicle. In case of application of double section brake valve, which allows actuation of the parking system and the release system by the same control unit, those two paragraphs are in conflict. Such systems are often used in buses. It is necessary to control the parking (auxiliary) system and the release system by the different independent control units to eliminate mentioned conflict.

Re. annex 13 – appendix 2

The calculation of the values of the maximum braking forces (F_{bRmax} and F_{bRAL}) and corresponding normal reaction values (F_{idyn} and F_{Rdyn}) in paragraphs 2.2.1., 2.3.1., 2.3.2. must be carried out with corresponding braking coefficient values (Z_{Cmaxi} in paragraph 2.2.1., Z_{Cmax} in paragraph 2.3.1., Z_{CAL} in paragraph 2.3.2.).

The applications of the different symbols of the braking coefficients for the calculation of the values of the maximum braking forces and corresponding normal reaction values causes the vagueness and contradicts the physical sense.

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