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Working Party on Brakes and Running Gear (GRRF)
(Fifty-ninth session, 30 January – 3 February 2006,
agenda item 6.5.)

PROPOSAL FOR AMENDMENTS TO REGULATION No. 13

(Braking)

Transmitted by the expert from
the International Organization of Motor Vehicle Manufacturers (OICA)

Note: The text reproduced below was prepared by the expert from OICA on behalf of the joint GRE/GRRF expert group on emergency stop signal (ESS) in order to insert into Regulation No. 13 new provisions for emergency braking. It is based on a document without a symbol (GRRF-58-13) distributed during the fifty-eighth GRRF session (TRANS/WP.29/GRRF/58, para. 43), as amended by the informal group on ESS.

The modifications to the current text of the Regulation are marked in **bold** characters.

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

A. PROPOSAL

Insert new paragraphs 2.32. and 2.33., to read:

"2.32. **Braking signal**: logic signal indicating brake activation as specified in paragraph 5.2.1.30.

2.33. **Emergency braking signal**: logic signal indicating emergency braking as specified in paragraph 5.2.1.31."

Paragraph 5.2.1.30. (see TRANS/WP.29/2004/38), amend to read:

"5.2.1.30. Generation of a **braking** signal to illuminate stop lamps."

Insert new paragraphs 5.2.1.31. to 5.2.1.31.2.(b), to read:

"5.2.1.31. When a vehicle is equipped with the means to indicate emergency braking, the emergency braking signal shall be activated and de-activated according to the specifications below:

5.2.1.31.1. The signal shall be activated by the application of the service braking system as follows:

	Shall be activated at
M1 and N1	7 m/s ² <u>1/</u>
M2, M3, N2 and N3	5 m/s ² <u>1/</u>

The signal shall be de-activated for all vehicles when the deceleration is below 2.5m/s².

5.2.1.31.2. The following conditions may also be used:

(a) The signal may be activated by the application of the service braking system in such a manner that it would produce, in an unladen condition and engine disconnected, under the test conditions of Type-0 as described in Annex 4, a deceleration of:

	Shall be activated at:
M1 and N1	7 m/s ² <u>1/</u>
M2, M3, N2 and N3	5 m/s ² <u>1/</u>

The signal shall be de-activated for all vehicles when the deceleration is below 2.5 m/s².

(b) The signal may be activated when:
- the service braking system is applied and;

- the antilock system is full cycling (as defined in paragraph 2. of Annex 13) and;
- the initial speed is above 50 km/h."

Insert a new footnote 1/, to read:

"1/ When measuring the deceleration, a tolerance of $\pm 1.25 \text{ m/s}^2$ will be applied."

B. JUSTIFICATION

GRRF-55 adopted the proposal of informal document No. GRRF-55-2 as reproduced in Annex 2 of the official report (TRANS/WP.29/GRRF/55). This basic amendment can be described as a first step to introduce a requirement for advanced warning systems.

The purpose of the present amendment is to define a signal to be used in order to trigger the activation of the visual "Emergency Stop Signal" described in Regulation No. 48 (see TRANS/WP.29/GRE/2005/2) in the case of emergency braking situations. It will ensure that all vehicles equipped to signal an emergency braking operate in a consistent manner. The proposal reflects the outcomes of the GRE/GRRF informal group meeting of May 2005 concerning the modifications of Regulation No. 13 as well as the subsequent informal meeting of experts, held during the fifty-eighth session of GRRF.

The above criteria have been selected in a way to avoid too frequent activations and to get consistency within the traffic by adapting the deceleration limits to the performance of the different vehicle categories. The speed and time criteria will be defined in Regulation No. 48 (installation of lighting and light-signalling devices) because they are related to optical signalization as commented by WP.29.

When a vehicle is equipped with the means to indicate emergency braking, only the activation criterion of paragraph 5.2.1.31.1. (real deceleration) is mandatory. Activation criteria of the paragraphs 5.2.1.31.2. and 5.2.1.31.3. are optional. This permits the non-EBS vehicles (low cost) to also indicate emergency braking. [Trailers are out of purpose of this proposal and have to be treated separately.]

Paragraph 5.2.1.30.

Once the above proposal is adopted, with the addition of a new definition of "braking signal" in paragraph 2.32., paragraph 5.2.1.30. as inserted by the draft Supplement 11 to Regulation No. 13.09 (document TRANS/WP.29/2004/38) should be redrafted in order to keep the text consistent.

Paragraph 5.2.1.31.1.

The criterion of actual deceleration may be easily verified during type-0 test. The proposal to define different deceleration levels for M1/N1 and other categories is due to the fact:

- that the limit of braking system performance will produce different decelerations depending on the mass and category of vehicle;
- that a lower limit on passenger cars would provoke too frequent activation.

De-activation criteria are chosen in a manner that they offer a deceleration threshold sufficiently different to the activation criteria.

Paragraph 5.2.1.31.2.(a)

Type-0 test is easy to verify by technical services. To simplify the testing of the activation monitoring, a test in unladen situation is sufficient.

Paragraph 5.2.1.31.2.(b)

The condition is that service braking is applied and the antilock system is fully cycling. "Fully cycling" would eliminate sporadic activation when e.g. crossing railways.
