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World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Brakes and Running Gear (GRRF)
(Fifty-seventh session, 31 January-4 February 2005,
agenda item 1.1.)

PROPOSAL FOR DRAFT SUPPLEMENT 10 TO THE 09 SERIES OF
AMENDMENTS TO REGULATION No. 13
(Braking)

Transmitted by the experts from Germany

Note: This document is distributed according to the request of GRRF (TRANS/WP.29/GRRF/56,
para. 7). It is based on informal document No. GRRF-56-21.

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

A. PROPOSAL

Insert new paragraphs 5.2.1.30. to 5.2.1.30.6., with the corresponding footnotes, to read:

- "5.2.1.30. Generation of a 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. Signal generation applicable to Endurance Braking systems.
- 5.2.1.30.2.1. It is permitted to generate the signal in conjunction with the operation of an endurance braking system but except when the retardation is generated by the engine braking alone.**
- 5.2.1.30.2.2. Activation of the endurance braking system by the driver shall generate the signal mentioned above for max. 4 sec \pm 1.**
- 5.2.1.30.3. Activation of the service braking system by "automatically commanded braking" shall generate the signal mentioned above. However, when the retardation generated is less than 0.7 m/s^2 at a vehicle speed greater than 50 km/h the signal may be suppressed. */
- 5.2.1.30.4. Activation of part of the service braking system by "selective braking" shall not generate the signal mentioned above. **/
- 5.2.1.30.5. In the case of vehicles equipped with an electric control line the signal shall be generated by the motor vehicle when a message "illuminate stop lamps" is received via the electric control line from the trailer. ***/
- 5.2.1.30.6. Electric regenerative braking systems, which produce a retarding force upon release of the throttle pedal, shall not generate a signal mentioned above."

Insert new paragraphs 5.2.2.21. to 5.2.2.21.2., with the corresponding footnotes, to read:

- "5.2.2.21. Activation of the service braking system.
- 5.2.2.21.1 In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall be transmitted by the trailer via the electric control line when the trailer braking system is activated during "automatically commanded braking" initiated by the trailer. However, when the retardation generated is less than 0.7 m/s^2 at a vehicle speed greater than 50 km/h the signal may be suppressed. **/
***/
- 5.2.2.21.2. In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall not be transmitted by the trailer via the electrical control line during "selective braking" initiated by the trailer. */ ***/
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- */ During a "selective braking" event, the function may change to "automatically commanded braking".
- **/ At the time of type approval, compliance with this requirement shall be confirmed by the vehicle manufacturer.
- ***/ This requirement shall not apply until the Standard ISO 11992 has been amended to include a message "illuminate stop lamps".

B. JUSTIFICATION

The proposal in TRANS/WP.29/2004/38 did not reach the agreement of the "Committee for Adaptation to Technical Progress" (CATP) of the European Commission.

Germany, Finland, Portugal and Sweden were against the proposal.

The reason for the disagreement was the provisions provided for Endurance Braking systems.

With the proposal in TRANS/WP29/2004/38, it is possible that the brake lights remain switched on for constant driving, for example a long downhill. Under such conditions, it is not possible to warn the following traffic when a dangerous situation arrives.

The proposal above has the advantage that the driver running behind a vehicle would be warned when the driver of the followed vehicle intends to decelerate with the endurance brake.

If, in a first phase, a strong deceleration is necessary, the driver will use the service brake. It can be assumed that in 4 seconds, the following traffic would become sufficiently attentive of the danger.

As the endurance braking system is not used to stop vehicles, its use for longer than 4 seconds serves only to assist in keeping a constant speed. In this driving condition, no stop lamp illumination is necessary. If, in this phase, a dangerous situation occurs and the activation of the service brake becomes necessary, the following driver will be warned again by the illumination of the stop lamps.

Apart the higher road safety, the realization of this solution is substantially simple.

The conventional braking systems have the only capability to illuminate the stop lamp by triggering a signal, by a contact switch on the pedal, by a pressure sensitive switch in the pneumatic or hydraulic system, or by setting a relay, when a device (e.g. retarder) is switched on. An adaptation with a time relay is easy.

Direct deceleration measurement is possible using the ABS-sensor signals, but to evaluate and transmit these signals in order to activate the illumination of the stop lamps, special calculation equipment and transmission data buses are necessary on board of the vehicle. This is not the case of conventional vehicles, but only the more sophisticated, new vehicles equipped with electronic braking systems and data bus architecture on board.
