

## Proposal to amend document ECE/TRANS/WP.29/GRVA/2024/26:

### “Proposal for amendments to UN Regulation No. 13-H (Braking of passenger cars).”

**Red font** is used to distinguish changes proposed by this informal document from those changes proposed in GRVA/2024/26.

#### I. Amendments

*Amend new paragraph 2.26. to read:*

2.26. "~~Wheel~~ **Brake demand value**" means the demand value for the braking force of a single wheel, or an axle, **brake** being electrically actuated.

*Amend new paragraph 2.34. to read:*

2.34. “**Electrical Transmission Braking System**” (ETBS) means a braking system ~~of a power-driven vehicle~~ where the service braking force, and transmission, depend exclusively on the use, controlled by the driver, of energy provided from electrical storage devices.

*Amend Paragraph 5.1.4.4.1.1. to read:*

5.1.4.4.1.1. It shall be possible ~~on the vehicle~~ to evaluate the relationship between the brake demand value(s) ~~(e.g. as a percent value, voltage, brake pedal force or stroke)~~ and the measured braking force on a roller brake tester. ~~The brake demand value(s) shall be displayed on the vehicle and easily readable from the driver's seat during the roller brake test (e.g., using a menu system, automatic demand, etc.).~~ The vehicle manufacturer shall describe ~~the method by which this can be realized, and make this information available freely by e.g. handbook, electronic data record etc.~~ how to display those values and make this information available according to paragraph 5.2.4.4.1. above.

*Amend Paragraph 5.2.4.4.1. to read:*

5.2.4.4.1. After any single transmission failure it shall still be possible after eight full actuations of the service braking system control, to achieve, at the ninth application, at least the performance prescribed for the secondary braking system ~~or, where secondary performance requiring the use of stored energy is achieved by a separate control, it shall still be possible after eight full actuations to achieve, at the ninth application, the secondary performance prescribed in paragraph 2.3. of Annex 3. of this Regulation.~~ Each full actuation shall be as specified in Annex 4 Part B paragraph 1.2.3.3.

*Amend Paragraph 5.2.14.1. to read:*

5.2.14.1. Any vehicle fitted with a service brake actuated from an energy ~~reservoir~~ **reserve** shall, where the prescribed secondary braking performance cannot be obtained by means of this braking system without the use of the stored energy, be provided with a warning device, in addition to **an indication of the available energy** (e.g. a pressure gauge) where fitted, giving an optical or, **except for an electrical transmission braking system**, an acoustic signal **at the latest** when the stored energy **(or the state of an electrical storage device, as relevant)** in any part of the system, falls to a ~~level~~ **value** at which without re-charging of the ~~reservoir~~ **reserve** and irrespective of the load conditions of the vehicle:

(a) For braking systems other than an electrical transmission braking system, it is possible to apply the service brake control a fifth time after four full-stroke actuations and obtain the prescribed secondary braking performance;

(b) For electrical transmission braking systems, the prescribed service brake performance cannot be achieved, or it is still possible to apply the service brake control a fifth time after four full\*/ actuations and obtain at least the secondary braking performance, whichever occurs first,

without faults in the service brake transmission and with the brakes adjusted as closely as possible.

This warning device shall be directly and permanently connected to the circuit. The red warning signal specified in paragraph 5.2.1.29.1.1. shall be used as the optical warning signal. When the engine is running, or during a run cycle (e.g., in case of a vehicle propelled by an electric motor), under normal operating conditions and there are no faults in the braking system, as is the case in approval tests for this type, the warning device shall give no signal except during the time required for charging the energy reserve(s) after each new engine start/run cycle, as relevant.

Footnote: \*/ A full actuation means the actuation of the control in accordance with Annex 7, Part D, paragraph 1.2.3.3 for a duration of 8.0 seconds or for a time T as described in that paragraph.

***Amend Paragraph 5.2.14.1.2. to read:***

5.2.14.1.2. In addition, for vehicles equipped with an electrical transmission braking system, there shall be an acoustic signal that is activated no later than 60 seconds after the activation of the red warning signal required by paragraph 5.2.14.1. (b) or **following on** the first application of the service brake control after activation of that red warning signal, whichever occurs first.

Vehicles which rely for their propulsion on energy from an electrical storage device or devices, shall be deemed to comply with this requirement if the energy to the traction motor(s) is stopped before the energy in the electrical storage device(s) has fallen to a level at which the red warning signal is activated.

***Renumber new paragraphs,***

**5.2.24.16. as 5.2.24.15.2.**

**5.2.1.24.17 as 5.2.24.16., and**

**5.2.1.24.17.1. as 5.2.24.16.1.**

***Annex 6, Appendix 2***

***Amend new paragraph 1.1.3., to read:***

1.1.3. A number of tests at increments of line pressure/**wheel brake demand value** shall be carried out to determine the maximum ...

## II. **Justification**

**Paragraph 2.26.**

This definition is principally of importance to the provisions for PTI where the interest may be associated with an individual wheel or an individual axle. To avoid interpretation difficulties, defining the meaning of “brake demand value” is more appropriate.

**Paragraph 2.34.**

The inclusion of a reference to “power-driven vehicle” in a definition implies that the definition imposes a requirement or constraint. This is not appropriate. In addition, as Regulation 13-H is only concerned with power-driven vehicles, there is no need to include such a qualification within the body of the regulation.

**Paragraph 5.1.4.4.1.1**

It is recognised that some Contracting Parties may use brake reference values as part of their roadworthiness inspection. The intention has been to provide for electrical transmission braking systems to be assessed in the same way as compressed air braking systems today. This revision to the proposal requires the brake demand values to be displayed on the vehicle when it is subject to a roller brake test so that the respective brake forces can be assessed. The display may be initiated automatically (e.g. recognition the vehicle is on a roller brake tester) or on the manual demand of the operator. The method by which the display is activated has to be described and be readily available.

**Paragraph 5.2.4.4.1.**

This paragraph mirrors paragraph 5.2.1.5.4.1. in document GRVA/2024/25, however, unlike for heavy vehicle braking, passenger cars are required to provide secondary brake performance using the service brake control. A reference to the use of a separate control has no meaning in R13-H.

**Paragraph 5.2.14.1.**

This paragraph allows the manufacturer a choice of using an optical or an audible signal to alert the driver to a fault within the braking system that compromises service brake performance. However, for electric transmission braking systems the use of the audible device has been prescribed for use in the “Low Energy Emergency Function” (para. 5.2.1.24.[17] – now para. 5.2.1.14.16.). It is therefore necessary to require that, for electrical transmission braking systems, only an optical signal can be used for the purpose of 5.2.14.1. The choice remains for other types of braking system.

**Paragraph 5.2.14.1.2.**

By referring to “... or following the first application of the service brake control ...” it was not clear whether this meant when the control is actuated or at some time after that actuation. Replacing the word “following”, with “on”, makes clear that the signal is required when the control is actuated.

**Paragraphs, 5.2.24.16., 5.2.1.24.17, and 5.2.1.24.17.1.**

The provisions of 5.2.24.16. are intended to be associated with the use by auxiliary equipment of energy from the transmission and should therefore be a sub-paragraph to 5.2.24.15.2.

Subsequent renumbering of the following two paragraphs corrects the numbering sequence.

**Annex 6, Appendix 2****Paragraph 1.1.3.,**

The amendment to paragraph 2.26. has removed the reference to “Wheel brake demand value” from the definition in favour of “Brake demand value”. This subsequent amendment aligns with the revised definition.