



Economic and Social Council

Distr.: General
23 December 2021

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

186th session

Geneva, 8-11 March 2022

Item 4.7.2 of the provisional agenda

1958 Agreement:

Consideration of draft amendments to existing

UN Regulations submitted by GRVA

Proposal for Supplement 1 to the 05 series of amendments to UN Regulation No. 78 (Motorcycle braking)

Submitted by the Working Party on Automated/Autonomous and Connected Vehicles *

The text reproduced below was adopted by the Working Party on Automated/Autonomous and Connected Vehicles (GRVA) at its eleventh session (see ECE/TRANS/WP.29/GRVA/11, para. 99). It is based on ECE/TRANS/WP.29/GRVA/2021/26 as amended by Annex V of the session report and ECE/TRANS/WP.29/GRVA/2021/27. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their March 2022 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (part V sect. 20) para 20.76), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



Paragraphs 2.31. to 2.32., renumber to read:

- "2.31. "Braking Signal" means a logic signal indicating when illumination of the stop lamp is required or allowed as specified in paragraph 5.1.17. of this Regulation.
- 2.32. "Electric Regenerative Braking System" means a braking system which, during deceleration, provides for the conversion of vehicle kinetic energy into electrical energy and is not part of the service braking system.
- 2.33. "Disable the antilock brake system" means to put the system into a state where it will no longer fulfil the technical requirements in paragraph 9 of Annex 3 to this Regulation."

Paragraph 5.1.17.2., amend to read:

- "5.1.17.2. In addition, in case of vehicles equipped with electric regenerative braking systems, which produces a retarding force upon release of the accelerator control, the braking signal shall be generated also according to the following provisions ⁴:

Vehicle deceleration by regenerative braking	Signal generation
$\leq 1.3 \text{ m/s}^2$	The signal may be generated
$> 1.3 \text{ m/s}^2$	The signal shall be generated

An appropriate measure (e.g. switch-of-hysteresis, averaging, time delay) shall be implemented in order to avoid fast changes of the signal resulting in flickering of the stop lamps.

⁴ At the time of type approval, compliance with this requirement shall be confirmed by the vehicle manufacturer."

Insert new paragraph 5.1.17.3., to read:

- "5.1.17.3. Once generated, the signal shall be kept as long as a deceleration demand by the electric regenerative braking persists. However, the signal may be suppressed at standstill.

The signal shall not be generated when retardation is solely produced by the natural braking effect of the engine, air-/rolling resistance and/or road slope."

Annex 3, paragraph 1.1.3., amend to read:

- "1.1.3. Measurement of PBC:

The PBC is measured as determined by the Type Approval Authority using either:

- (a) An ASTM International (ASTM) E1136-19-standard reference test tyre, in accordance with ASTM Method E1337-19, at a speed of 40 mph; or
- (b) An ASTM International (ASTM) F2493-20 standard reference test tyre, in accordance with ASTM Method E1337-19, at a speed of 40 mph¹; or
- (c) The method specified in the Appendix 1 to this annex.

¹ In this case, the obtained PBC shall be converted into the equivalent value corresponding to ASTM E1136-19 standard reference test tyre, according to the correlation equation described in ASTM E1337-19."