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**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations****Working Party on Brakes and Running Gear****Eighty-fourth session**

Geneva, 19-22 September 2017

Item 5 (b) of the provisional agenda

**Motorcycle braking: Regulation No. 78****Proposal for amendments to the 04 series of amendments  
to Regulation No. 78 (Motorcycle braking)****Submitted by the expert from the International Motorcycle  
Manufacturers Association\***

The text reproduced below was prepared by the experts from International Motorcycle Manufacturers Association (IMMA), to amend the Regulation No. 78, in order to introduce activation of stop lamps under more conditions than application of the service brake only, e.g. also by regenerative braking. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

GE.17-11186(E)



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## I. Proposal

Insert a new paragraph 2.31., to read:

"2.31. **"Braking Signal"** means a logic signal indicating when illumination of the stop lamp is required".

Insert a new paragraph 2.32., to read:

"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."

Insert a new paragraph 5.1.16. and its sub-paragraphs., to read:

"5.1.16. For vehicle category L, generation and de-activation of the braking signal to illuminate stop lamp(s) shall only be under the following conditions:

5.1.16.1. Application of any service brake by the rider shall generate a braking signal that will be used to illuminate the stop lamps.

5.1.16.2. Vehicles powered solely by electric powertrain equipped with electric regenerative braking systems as defined in paragraph 2.32. of this regulation, which produces a retarding force upon release of the accelerator control, shall generate the braking signal according to the following provisions:

<i>Vehicle decelerations</i>	<i>Signal generation</i>
$\leq 1.3 \text{ m/s}^2$	The signal may be generated
$> 1.3 \text{ m/s}^2$	The signal shall be generated

5.1.16.3. The method of determining deceleration is the responsibility of the manufacturer as long as the vehicle meets the technical requirements in this section (e.g. a prediction of deceleration from wheel rotation)."

## II. Justification

1. Regulation No. 53 currently allows for the activation of the stop lamp by application of the brakes only. As already presented at a session of the Working Party on Lighting and Light-Signalling (GRE) (see ECE/TRANS/WP29/GRE/2015/42), IMMA is proposing to introduce activation of stop lamps under more conditions than the application of the service brake only, e.g. also by regenerative braking. As noted in the report of seventy-fourth session of GRE, see ECE/TRANS/WP29/GRE/74, para. 30: "the proposal might need to be accompanied by a modification of Regulation No. 78 under GRRF."

2. IMMA has thus prepared also the correspondent proposal for Regulation No. 78, which is herewith being submitted to the September 2017 GRRF session, and is submitting in parallel a revised proposal on Regulation No. 53 to the October 2017 session of GRE.

3. Amendments of the stop lamp installation requirements in Regulation No. 53 lead to amendments of the stop lamp activation criteria in Regulation No. 78, which are proposed here above. The deceleration criteria in para. 5.1.16.2. were taken from the criteria established in Regulation No. 13, para. 5.2.1.30.2., which reads as follows:

- "5.2.1.30. Generation of a braking 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. Requirements for vehicles that utilize electronic signalling to control initial application of the service braking system, and equipped with endurance braking and/or regenerative braking system of category A:

<i>Deceleration by the endurance braking and/or regenerative braking system</i>	
$\leq 1.3 \text{ m/s}^2$	$> 1.3 \text{ m/s}^2$
May generate the signal	Shall generate the signal

4. On para. 5.1.16.5.: IMMA would like to note that, in light of recent discussions, the solution developed for Global Technical Regulation No. 3 is proposed as well herewith for consistency.