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## Economic Commission for Europe

### Inland Transport Committee

### World Forum for Harmonization of Vehicle Regulations

#### 187th session

Geneva, 21-24 June 2022

Item 17.2 of the provisional agenda

#### Progress on the development of new UN GTRs and of amendments to established UN GTRs:

UN GTR No. 3 (Motorcycle braking)

## Request for authorisation to develop Amendment 4 to UN GTR No. 3 (Motorcycle braking)

### Revision 1

#### Submitted by the representative of Italy\*

The text reproduced below was submitted by the representative of Italy with the aim to adapt UN Global Technical Regulation (GTR) No. 3 to technical and standardization progress, introducing provisions for the generation of the stop lamp signal and to enable the use of the new American Society for Testing and Materials (ASTM) Standard Reference Test Tyre F2493 for the measurement of the Peak Braking Coefficient (PBC). This amendment aims to keep the global harmonization of motorcycle braking requirements in UN GTR No. 3 and the most recent version of UN Regulation No. 78. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Executive Committee of the 1998 Agreement (AC.3) for consideration.

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\* 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.

## **Authorisation to develop Amendment 4 to UN GTR No. 3 (Motorcycle braking)**

### **A. Objective**

1. The objective of this proposal is to develop, in the framework of the 1998 Agreement, an amendment to UN GTR No. 3 on motorcycle braking to adapt UN GTR No. 3 to technical and standardization progress, introducing provisions for the generation of the stop lamp signal and updating the references to American Society for Testing and Materials (ASTM) standards to enable the use of the new ASTM Standard Reference Test Tyre F2493 for the measurement of the Peak Braking Coefficient (PBC). This amendment aims to keep the global harmonization of motorcycle braking requirements in UN GTR No. 3 and the most recent version of UN Regulation No. 78. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Executive Committee of the 1998 Agreement (AC.3) for consideration.

### **B. Background**

2. UN GTR No. 3 contains the most advanced requirements for motorcycle brake systems. The implementation of UN GTR No. 3 is widely extended across the world and, in conjunction with UN Regulation No. 78, it provides a global framework to guarantee a safe motorcycle braking performance. It is therefore essential to keep UN GTR No. 3 continuously updated in terms of technological progress and standardization developments, as well as harmonized with UN Regulation No. 78.

3. This proposal aims to introduce two elements into UN GTR No. 3:

- Requirements for the generation of the stop lamp signal;
- Additional reference to the new ASTM standard reference test tyre F2493.

4. The requirements for the activation of the stop lamp under regenerative braking for electric vehicles were introduced in UN Regulation No. 78 in January 2020, by means of Supplement 1 to the 04 series of amendments (ECE/TRANS/WP.29/2019/46). The deceleration thresholds for generating the braking signal were aligned with those in UN Regulation No. 13-H for passenger cars. This ensures a consistent stop lamp activation criteria across different vehicle categories, which avoids confusing road users driving behind a decelerating vehicle, regardless of its vehicle category.

5. In December 2020, the Working Party on Automated/Autonomous and Connected Vehicles (GRVA) adopted a proposal by the International Organization of Motor Vehicle Manufacturers (OICA) and European Association of Automotive Suppliers (CLEPA) modifying the provisions for the generation of a braking signal to illuminate stop lamps in UN Regulation No. 13-H (ECE/TRANS/WP.29/GRVA/2020/31), to ensure that the stop lamp illumination reflects the intention to decelerate, independently from the type of propulsion. For that purpose, the requirement to deactivate the stop lamp signal when deceleration falls below  $0.7 \text{ m/s}^2$  under regenerative braking was removed. Subsequently, GRVA adopted in October 2021 a proposal by International Motorcycle Manufacturers Association (ECE/TRANS/WP.29/GRVA/2021/26 as amended by GRVA-11-22) to realign the deceleration thresholds in UN Regulation No. 78 accordingly. This amendment to UN GTR No. 3 shall reflect the latest deceleration thresholds.

6. UN GTR No. 3 currently requires to use ASTM standard reference test tyre (SRTT) E1136 when determining the Peak Braking Coefficient (PBC) of the test surface according to ASTM Method E1337. At the seventy-first session of the Working Party on Noise and Tyres (GRBP) in January 2020, the European Tyre and Rim Technical Organisation (ETRTO) reported that the sales of ASTM SRTT E1136 would be discontinued approximately by the end of 2021, to be replaced by the new ASTM SRTT F2493. ASTM Method E1337 had been updated accordingly in 2019 to introduce the new ASTM SRTT

F2493 and correlation equations to convert PBC values from SRTT F2493 into SRTT E1136 and vice-versa (see informal document GRBP-71-06).

7. It is necessary to introduce in UN GTR No. 3 a reference to the new ASTM SRTT F2493 and the conversion equation contained in ASTM standard E1337, while keeping the existing PBC provisions unchanged, in line with the latest amendment to UN Regulation No. 78 adopted by GRVA in October 2021 (ECE/TRANS/WP.29/GRVA/2021/27).

### III. Subject of amendment

8. The amendment to UN GTR No. 3 shall include:
- (a) Amendment of the Statement of technical rationale and justification;
  - (b) Amendment of the Text of the global technical regulation;
  - (c) Technical Report.

### IV. Organization of process and timeline

9. The proposal will be drafted by the experts from Italy with the support of the International Motorcycle Manufacturers Association (IMMA) and in cooperation with all interested GRVA experts to ensure maximum of support to the final proposal. Specific meetings of interested experts are not yet planned but may be organized, if necessary.

10. The proposed action plan:
- (a) October 2021: Introduction of the proposal for amending GTR No. 3 (informal document) at the eleventh GRVA session;
  - (b) January 2022: Consideration of the revised proposal for amending GTR No. 3 (informal document) at the twelfth GRVA session;
  - (c) May 2022: Informal proposal for amending GTR No. 3 for discussion at the thirteenth GRVA session;
  - (d) June 2022: Formal request to develop Amendment 4 to UN GTR No. 3 to AC.3;
  - (e) September 2022: Formal proposal for amending GTR No. 3 for adoption at the fourteenth GRVA session and technical report;
  - (f) March 2023: Adoption of the proposal and technical report by AC.3, if all remaining issues had been solved.
11. The work progress will be reported to AC.3 at its June 2022, November 2022 and March 2023 sessions.
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