Submitted by the expert from Italy

Informal document **GRRF-86-11**
86th GRRF, 12-16 February 2018
Agenda item 5

Revised report on draft Amendment 3 to UN Global Technical Regulation No. 3 (Motorcycle brake systems)

Based on ECE/TRANS/WP.29/GRRF/2017/16

The text reproduced below was prepared by the expert from Italy proposing the draft report related to the proposed amendments to Global Technical Regulation (GTR) No. 3. The amendments to ECE/TRANS/WP.29/GRRF/2017/16 are marked in tracked changes mode.

I. Introduction

1. The objective of Amendment 3 to Global Technical Regulation (GTR) No. 3 on motorcycle braking to technical progress addressing: electromagnetic immunity of ABS-systems, introducing ABS performance requirements for category 3-5 vehicles (three-wheelers), ensuring uniform requirements for equipment such as Electronic Stop Signal System and the means to disable the ABS, if equipped. This amendment aims to reflect the latest state of the art of braking technology and be harmonized with the latest status of Regulation No. 78, improving cost-benefit of braking technologies on all category 3 vehicles through ensuring harmonization.

II. Justification of changes

A. Part B, Electromagnetic immunity of ABS systems, paragraph 3.1.14.

2. With the increasing number and complexity of electronic braking devices, it is important to ensure that the braking performance is not affected by electromagnetic perturbations by verifying the electromagnetic immunity.

3. Contracting Parties to the 1958 Agreement found it necessary to introduce requirements addressing Electro Magnetic Immunity in the Regulation No. 78, adopting ECE/TRANS/WP.29/2016/56, amended by WP29-169-03, by referring to compliance with the technical requirements of Regulation No. 10 on Electromagnetic Compatibility (EMC).

4. In the current GTR amendment proposal, the specificities of self-certification have been considered, by providing reference to national standards or to national regulations, so that Contracting Parties may indicate adherence to national standards or regulations applicable to EMC.

B. Part B, Apply existing Anti-Lock Braking Systems (ABS) requirements to three-wheeled vehicles, paragraph 4.9.1.

5. The number of category 3-4 and 3-5 vehicles has been growing in many markets. If such vehicles were equipped with ABS, without this amendment, there would be no specific requirements for the ABS braking performance in the GTR. To provide clear requirements for this vehicle category, requirements for motorcycles (Category 3-3

Vehicles)[1] are used to provide consistency in system perception and performance. The current proposal aims to ~~apply~~ **extend** to ~~tri-cycles (~~category **3-2, 3-4 and** 3-5 Vehicles~~)~~ the existing Anti-Lock Braking Systems (ABS) requirements for ~~Powered Two Wheelers~~**category 3-1 and 3-3 vehicles** ~~(PTWs)~~. Without this amendment, there would be no specific requirements for the ABS braking performance **these vehicles** in the GTR.

6. The scope extension of the ABS requirements to quadricycles (L_6 and L_7) vehicles[2] as made in the Regulation No. 78 is not transposed into the GTR due to the absence of definitions for this type of vehicles in (S.R.1) the 1998 Agreement.

C. Part B, Emergency Stop Signal, paragraph 2.22. and 3.1.15. to 3.1.15.3.

7. The emergency stop signal is available on many markets for motor vehicles. As motorcycles are used in the same traffic conditions, the option should also be possible on motorcycles. Emergency Stop Signal provisions in GTR No. 3 will ensure that Category 3 Vehicles will show similar behaviour as other road vehicles, harmonizing the activation and deactivation criteria of the Emergency Stop Signal as applied to cars, thereby ensuring consistency with other road vehicles. The proposal also takes into account the provisions for Emergency Stop Signal, as existing in Regulation No. 13-H with modification necessary to account for differences between motor vehicles and motorcycles. The modification adds a minimum deceleration for activation with ABS cycling. This is consistent with deceleration based activation, which also requires a minimum of 2.5m/s^2 and recognizes that independent braking systems typical of motorcycles can have ABS fully cycling on one wheel with no braking on the other wheel.

8. The proposal is introduced to the GTR No. 3 to ensure harmonized market requirements through harmonization with Regulation No. 78, Supplement 3 to the 03 series (ECE/TRANS/WP.29/2016/56, amended by WP29-169-03).

9. The proposed amendment involves only the condition of activating an emergency stop signal, not the lighting requirements. Details on lighting installation shall be addressed, if necessary though national rulemaking. For reference, Supplement 3 to the 03 series amendments to Regulation No. 78 is associated with amendment of Regulation No. 53 (lighting installation) adopted at 168th session of WP.29 (ECE/TRANS/WP.29/2016/22).

D. Part B, Means to disable the ABS function, paragraph 3.1.16.

10. The new paragraph 3.1.16. clarifies the requirements of a means to disable the ABS function, if fitted, (‘ABS Switch’) for vehicles of Category 3. With this amendment, it is ensured that the implementation of an ‘ABS switch’ is clear and uniform across different markets supporting the cost/benefit ratio of the ABS system: i.e., if a vehicle is equipped with a function to disable the ABS, the ABS operation status should be clear when starting, when in motion. In addition, disabling of the ABS function should not be possible inadvertently, positively impacting benefit of safety operation of ABS functionality.

11. The proposal is harmonized with ECE/TRANS/WP.29/2016/114 as amended by WP.29-170-05.

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[1] As defined in the Special Resolution No. 1 concerning the common definitions of vehicle categories, masses and dimensions (S.R.1), document ECE/TRANS/WP.29/1045, Amend 1 and 2, Annex 2 - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

[2] As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6, para. 2 - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html