

## **Proposal for Amendment 3 to global technical regulation No. 3 (Motorcycle braking)**

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

The text reproduced below was submitted by the representative of Italy with the support of IMMA, with the aim to adapt the global technical regulation (GTR) No. 3 to technical progress, addressing among others: ensuring 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 harmonise the GTR with recent amendments made to UN Regulation No. 78. It is submitted to the 83rd session of GRRF. The proposals are based on the recent Supplement 3 to the 03 series (ECE/TRANS/WP.29/2016/56) as adopted at June 169<sup>th</sup> session of WP.29 and 04 series of amendments (ECE/TRANS/WP.29/2016/114) to UN Regulation, slightly amended.

### **I. Proposal**

*Insert a new paragraph 2.22., to read:*

"2.22. "Emergency braking signal" means logic signal indicating emergency braking specified in paragraphs 3.1.15 to 3.1.15.2. of this regulation."

*Insert a new paragraph 3.1.14., to read:*

"3.1.14. The effectiveness of the braking systems, including the anti-lock system, shall not be adversely affected by magnetic or electrical fields.

This shall be demonstrated by fulfilling the technical requirements in national standards or regulations, if applicable."

*Insert new paragraphs 3.1.15. to 3.1.15.2., to read:*

"3.1.15. If a vehicle is equipped with the means to indicate emergency braking, activation and de-activation of the emergency braking signal shall only be generated by the application of any service braking system when the following conditions are fulfilled:

3.1.15.1. The signal shall not be activated when the vehicle deceleration is below 6 m/s<sup>2</sup> but it may be generated at any deceleration at or above this value, the actual value being defined by the vehicle manufacturer.

The signal shall be de-activated at the latest when the deceleration has fallen below 2.5 m/s<sup>2</sup>.

3.1.15.2. The following conditions may also be used:

(a) The signal may be generated from a prediction of the vehicle deceleration resulting from the braking demand respecting the activation and de-activation thresholds defined in paragraph 3.1.15.1. above;

Or

(b) The signal may be activated at a speed above 50 km/h when the antilock system is fully cycling (as defined in paragraph 4.9.1.) and deceleration is at least 2.5m/s<sup>2</sup>. The deceleration may be generated from the prediction described in point (a). The signal shall be deactivated when the antilock system is no longer fully cycling."

*Insert a new paragraph 3.1.16., to read:*

- "3.1.16 If a means to deactivate the antilock brake system is installed it shall meet the following provisions:
- (a) Disabling of the antilock brake system function shall only be allowed when the vehicle is stationary.
  - (b) The disablement of the antilock brake system function shall be the result of a deliberate action by the rider according to one of the following methods:
    - (i) Simultaneous actuation of the antilock braking system on/off switch at the front, rear or combined brake system actuator (brake lever or pedal); or
    - (ii) The actuation of the antilock brake system on/off switch for a minimum of two seconds; or
    - (iii) The progression through at least two successive steps or levels of actuation of a rotating knob, a touch panel or a menu option selector.
  - (c) The antilock brake system function shall be automatically activated after each start-up of the vehicle, except for restarts after unintentional stalling of the engine.
  - (d) The disablement of the antilock brake system function shall be indicated by the activation of symbol B.18 as specified in ISO 2575:2010 (ISO 7000-2623) or any other equivalent unequivocal indication of the disabled antilock brake system state. Alternatively, the warning lamp referred to in paragraph 3.1.13. shall be continuously activated (i.e. lit or flashing).
  - (e) Instantaneous re-enablement of a functional stage which complies with anti-lock brake system requirements under all operation modes shall be possible (e.g. simple press of a button). "

*Paragraph 4.9.1., amend to read:*

- "4.9. ABS tests
- 4.9.1. General:
- (a) The tests are only applicable to the ABS if fitted on vehicle categories ~~3-1 and 3-3~~ ...
  - (b) The tests are to confirm the performance of brake systems equipped with ABS and their performance in the event of ABS electrical failure....
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## II. Justification

1. One of the main purposes of UN GTR No. 3 is to reduce the injuries and fatalities associated with motorcycle accidents by addressing the braking performance of motorcycles as a means of improving road safety. The proposals aim to harmonise the recent Supplement 3 to the 03 series the recent amendment to UN Regulation No. 78 as adopted at June 169<sup>th</sup> session of WP.29 and the proposal for the 04 series of amendments as adopted during the 170<sup>th</sup> session of WP.29.

2. The emergency braking signal is available on the market for motor vehicles. As motorcycles are used in the same traffic conditions, the option should also be possible on motorcycles. The paragraphs 2.2.2 and 3.1.15 to 3.1.15.2. aim to introduce the installation of Emergency Stop Signal on motorcycles. This proposed amendment to the GTR involves only the condition of activating an emergency stop signal, not the lighting requirements. When of equipping Emergency Stop Signal on category 3 vehicles, the amendment will ensure similar behaviour as other road vehicles by harmonising the activation and

deactivation criteria of the Emergency Stop Signal as applied to cars. The proposal is harmonised with UN Regulation No. 78, Supplement 3 to the 03 series (ECE/TRANS/WP.29/GRRF/2016/23), slightly amended.

3. The paragraph 3.1.14 includes Electromagnetic Compatibility requirements for ABS. With the increasing number and complexity of electronic braking devices it is important to ensure the braking performance is not affected by ensuring electromagnetic immunity. This amendment was based on discussion of ECE/TRANS/WP.29/2016/56, amended by WP29-169-03e at 80<sup>th</sup> GRRF session as reproduced in Annex IV of the report of that session. The specificities of self-certification have been considered, by providing the option for Contracting Parties to this GTR, to refer to national standards or to national regulations, in the case EMC-regulations if applicable in their national or regional situation.

4. The new paragraphs 3.1.16 to 3.1.16.5 clarify, if fitted, the requirements of a means to disable the ABS function ('ABS Switch') in certain conditions for Category 3 vehicles. With this amendment, it is ensured that the implementation of an 'ABS switch' is clear and uniform across different markets: 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, deactivation of the ABS function should not be possible inadvertently. Reference is made to ECE/TRANS/WP.29/GRRF/2015/41, adopted at the 82nd session of GRRF with minor editorial corrections (WP29-170-06e).

5. The amendment to paragraph 4.9.1 aims to apply to tri-cycles (category 3-5 Vehicles) the existing Anti-Lock Braking Systems (ABS) requirements for Powered Two Wheelers (PTWs). Without this amendment, there would be no specific requirements for the ABS braking performance for those vehicles equipped with ABS. The proposed amendment is harmonised with ECE/TRANS/WP.29/GRRF/2015/42.

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