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

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Item 5(a) of the provisional agenda

Motorcycle braking - Regulation No. 78**Proposal for an amendment of Regulation No. 78 (Uniform provisions concerning the approval of vehicles of categories L1, L2, L3, L4 and L5 with regard to braking)****Submitted by the expert from the European Commission***

The text reproduced below was prepared by the experts of the European Commission, aimed at ensuring a consistent approach for all motor-vehicles equipped with anti-lock braking systems, including specific exemptions for certain off-road vehicles as incorporated in UN Regulation No. 13. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), 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.

I. Proposal

Insert new paragraph 5.1.14., to read:

- "5.1.14. Vehicles that are equipped with an antilock brake system may be fitted with a single means (e.g. switch, lever, button, menu option) to temporarily reduce or disable the antilock brake system function, which is only permitted under the following conditions:**
- (a) the vehicle is stationary; and**
 - (b) the temporary reduction or 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 brake system on/off switch and 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 2 seconds; or**
 - (iii) the progression through at least 2 successive steps or levels of actuation of a rotating knob, a touch panel switch or a menu option selector;**
 - (c) if the motorcycle is equipped with a riding mode selector switch feature allowing an "off-road", "all terrain mode" or any other riding mode electronically preparing the vehicle for off-road use, temporarily reduction or disabling of the antilock brake system function shall only be allowed in this particular riding mode; and**
 - (d) 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; and**
 - (e) the temporary reduction or disablement of the antilock brake system function shall be indicated by the activation of symbol B.18 as specified in ISO 2575:2010/Amd1:2011 (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); and**
 - (f) if the antilock brake system is switched-off permanently an anti-lock brake system off-state bit shall be set to 1 and frequently (1 Hz) be stored in non-volatile memory on-board of the vehicle within the active key cycle. Only the last occurring bit state information (0 or 1) before engine stall or power-off may be stored and made available as single bit snapshot information. This binary state information shall be readable through a reading method made available free of charge and within the shortest possible delays by the vehicle manufacturer to the certification authority; and**
 - (g) prohibition of any software and/or hardware defeat device compromising or allowing to circumnavigate one or more of the requirements set out in points (a) to (f); and**

(h) simple and instantaneous re-enablement of a functional stage of the antilock brake system under all operation modes and driving conditions shall be warranted and shall be demonstrated to the satisfaction of the certification authority (e.g. simple press of a button)."

II. Justification

1. Presently, it is not fully clear whether or not an anti-lock braking systems (ABS) switch-off or altering mode is permitted on L-category vehicles or not, whereas it is clearly not allowed on other vehicle categories. This proposal is aimed at ensuring a consistent approach for all motor-vehicles equipped with anti-lock braking systems, including specific exemptions for certain off-road vehicles as incorporated in UN Regulation No. 13.

2. The proposal is not aimed at mandating ABS, however, it enables Contracting Parties that are mandating ABS in their domestic legislation to better safeguard achieving the intended safety objectives by avoiding lack of clarity, with respect to the intentional or possible unintentional full deactivation of the ABS system.

3. It is acknowledged that an activated ABS system fitted to a vehicle designed to ride both on-road and off-road may cause adverse safety effects if activated off-road under certain very specific conditions. To mitigate such possible effects, the vehicle operator may be provided with a switch to deactivate the ABS system or to engage a more sophisticated control mode under the mentioned conditions.

4. Condition (f), availability of an antilock brake system off-state bit is deemed as very important information for post-crash or accident analysis by enforcement authorities. Owing to the fact that de-(activation) of the anti-lock brake system is frequently done through actuation of a momentary (electronic) switch or menu option via a board computer it may not be possible to retrieve whether or not the anti-lock brake system was (de-) activated after the accident happened. The status bit contains "0" if the antilock brake system was switched-on and "1" if the antilock brake system was switched off, one second or less before the accident happened. This bit state history information may continuously be overwritten and only the latest off-state information in the active key cycle, sampled with a rate of 1 second or less before engine stall, engine shut-down or power-off shall remain stored in non-volatile memory on-board of the vehicle. This bit information provides valuable information to the accident analyst in case there are no traces of braking visible on the road surface. At the request of the enforcement authority, who investigates the accident, to the authority who approved the vehicle it shall be possible to get instructions from the vehicle manufacturer in the shortest possible delay and for free, to conveniently read-out the status of the off-state bit information from the bit storage source.