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Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Pollution and Energy

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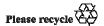Item 4 of the provisional agenda
Worldwide harmonized Motorcycle emission Test Cycle

Proposal for draft Corrigendum 2 to global technical regulation No. 2 in its original version

Submitted by the expert from Germany *

The text reproduced below was prepared by the expert from Germany to improve the current text of the global technical regulation (gtr) No. 2 on the Worldwide harmonized Motorcycle emission Test Cycle (WMTC). This updated document takes into account the subsequent comments received from the members of the World Forum for Harmonization of Vehicle Regulations (WP.29), the Working Party on Pollution and Energy (GRPE) and the informal group on WMTC. This document is based on document ECE/TRANS/WP.29/GRPE/2009/2. Modifications to the current text of the gtr 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 2006–2010 (ECE/TRANS/166/Add.1, 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

Paragraph 6.5.5.2.1.1., correct to read:

"6.5.5.2.1.1. Step 1 – Calculation of shift speeds

Upshift speeds ......

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Equation 6-8:

$$v_{i \to i+1} = \left[(0.5753 \times e^{(-1.9 \times \frac{P_n}{m_k + 75})}) \times (s - n_{idle}) + n_{idle} \right] \times \frac{1}{ndv_{i-1}}, i = 3 \text{ to ng - 1}$$

The results of shift speeds shall be mathematically rounded to the first place of the decimal point."

Paragraph 6.5.5.2.1.3., subparagraphs (b) and (c), correct to read:

"6.5.5.2.1.3. (b) No upshifts or downshifts by more than 1 gear, except from gear 2 to neutral during decelerations down to stop. **Example:**

4 4 4 4 3 3 3 1 1 1 1 will be replaced by 4 4 4 4 3 3 3 2 1 1 1

(c) Upshifts or downshifts for up to 4 seconds are replaced by the gear before, if the gears before and after are identical. **Examples:**

2 3 3 3 2 will be replaced by 2 2 2 2 2, and

4 3 3 3 3 4 will be replaced by 4 4 4 4 4 4

In the cases of consecutive circumstances, the gear used longer takes over. Example:

2 2 2 3 3 3 2 2 2 2 3 3 3 will be replaced by 2 2 2 2 2 2 2 2 2 2 3 3 3

If used for the same time, dominate a series of succeeding gears with a series of preceding gears. Example:

2 2 2 3 3 3 2 2 2 3 3 3 will be replaced 2 2 2 2 2 2 2 2 2 3 3 3"

II. Justification

1.   The above proposals relate to additions, corrections and modifications to the gearshift prescriptions in the gtr on WMTC:

(a) rationalization of up- and downshift speed equations,

(b) unification of phase indicators throughout all cycle modules (to achieve overall consistency),

(c) clear differentiation between and reduction of mandatory and optional gearshift rules that respectively either have to be observed or can be applied.

2.   These amendments to the gtr prescriptions in the gtr also allow the Excel calculation program that is foreseen as an aid, to be simplified (avoiding programming complications resulting in differences between the Excel output and the application of the equations and rules in the gtr).

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