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Item 9(c) of the provisional agenda
UN Global Technical Regulation No. 2

Proposal for an amendment to Global Technical Regulation No. 2

Submitted by the expert from Japan*

The text reproduced below was prepared by the expert from Japan. This document is based on Informal document GRPE-64-05, distributed at the sixty-fourth session of the Working Party on Pollution and Energy (GRPE).

The modifications to the original English text are marked using track changes. The same modifications in the French and Russian versions are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, 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 8.1.1.4.2., amend Equation 8-2 to read:

"8.1.1.4.2. Hydrocarbons

… by means of the following formula:

$$\sout{HC_m = \frac{HC_c \times V \times dHC}{dist \times 10^6}} \quad HC_m = \frac{HC_c \times V \times dHC}{dist \times 10^3}$$ Equation 8-2

…"

Paragraph 8.1.1.4.3., amend Equation 8-4 to read:

"8.1.1.4.3. Carbon monoxide

… by means of the following formula:

$$\sout{CO_m = \frac{CO_c \times V \times dCO}{dist \times 10^6}} \quad CO_m = \frac{CO_c \times V \times dCO}{dist \times 10^3}$$ Equation 8-4

…"

Paragraph 8.1.1.4.4., amend Equation 8-6 to read:

"8.1.1.4.4. Nitrogen oxides

… by means of the following formula:

$$\sout{NO_{x\,m} = \frac{NO_{x\,c} \times K_h \times V \times dNO_2}{dist \times 10^6}}$$

$$NO_{x\,m} = \frac{NO_{x\,c} \times K_h \times V \times dNO_2}{dist \times 10^3}$$ Equation 8-6

…"

Paragraph 8.1.1.4.5., amend Equation 8-10 to read:

"8.1.1.4.5. Carbon dioxide

… by means of the following formula:

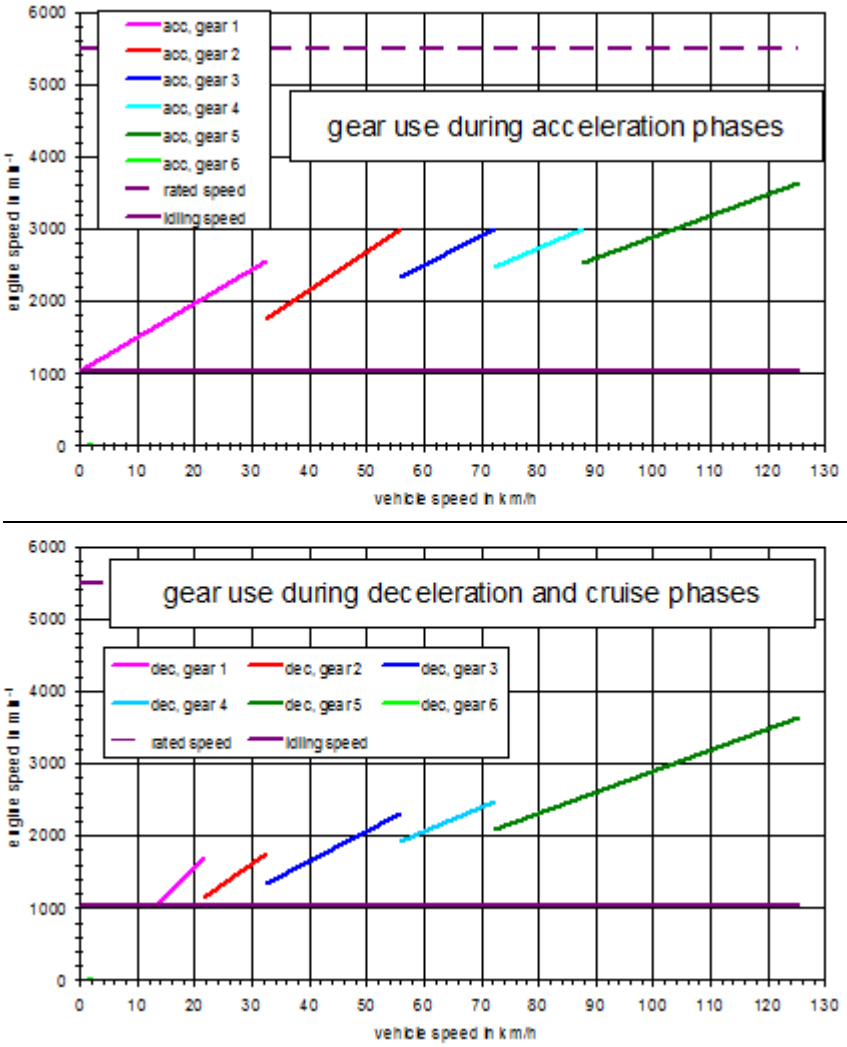
$$\sout{CO_{2m} = \frac{CO_{2c} \times V \times dCO_2}{dist \times 10^2}} \quad CO_{2m} = \frac{CO_{2c} \times V \times dCO_2}{dist} \times 10$$

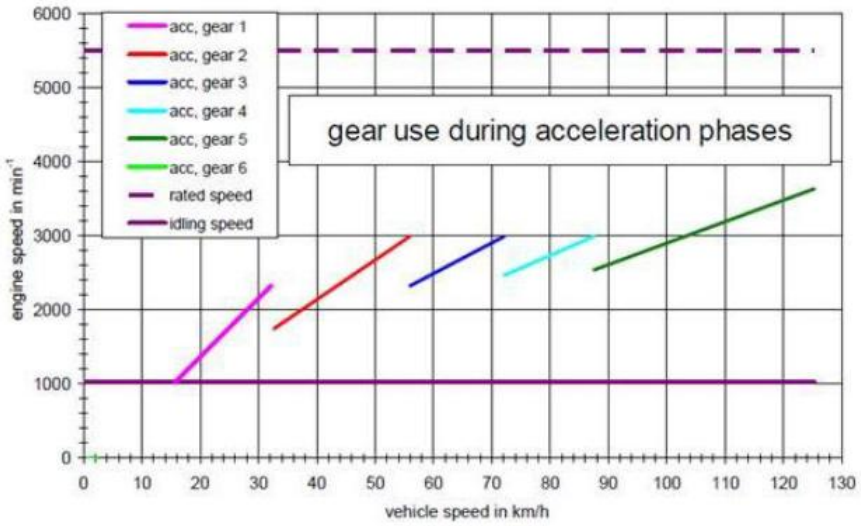
Equation 8-10

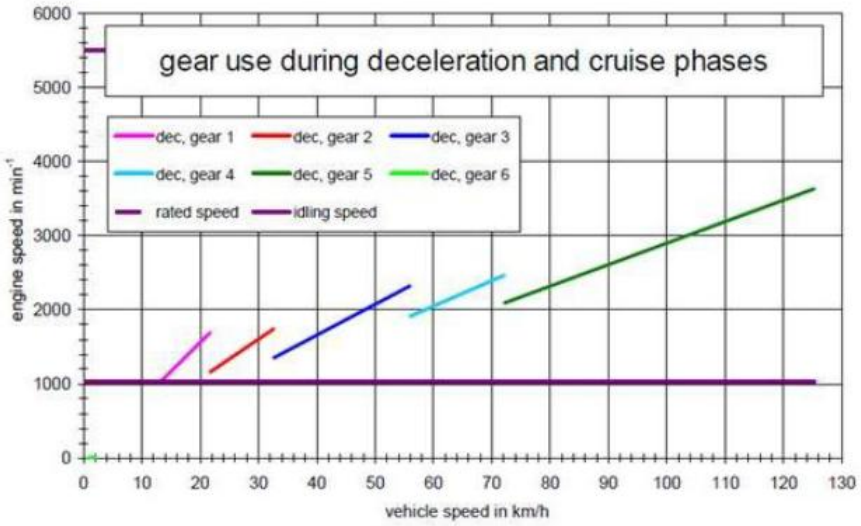
…"

Annex 13, paragraph 1, Figure A13-1, amend to read:

"







"

II. Justification

1. Paragraph 8

The equations 8-2, 8-4, 8-6, and 8-10 need to be corrected in accordance with the unit of each factor in the equation. The calculated pollutants are shown in kg/km, while the V is in m^3 and dHC in kg/m^3, which means the value needs to be multiplied by 10^{-3} (by 10 for CO_2) and the denominator needs to be corrected accordingly.

2. Annex 13, paragraph 1 Figure A13-1

In the upper figure for "gear use during acceleration phases", the acceleration gear 1 starts from zero, which is not correct.