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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Pollution and Energy****Seventy-second session**

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Item 4(a) of the provisional agenda

Heavy duty vehicles - Regulations Nos. 49**(Emissions of compression ignition and positive
ignition (LPG and CNG) engines) and 132****(Retrofit Emissions Control devices (REC))****Proposal for amendments to Regulation No. 49 (Compression
ignition and positive ignition (LPG and CNG) engines)****Submitted by the expert from the International Organization of Motor
Vehicle Manufacturers***

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA) to align the requirements related to measurement equipment linearity verification in Regulation No. 49 to the provisions in Regulation No. 96. It is based on informal document GRPE-71-05 (see report ECE/TRANS/WP.29/GRPE/71, paras. 25-26). The modifications to the current text of Regulation No. 49 are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, 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. Proposals

A. A new Supplement to the 05 series of amendments

Annex 4B, paragraphs 9.2.1. and 9.2.1.1., amend to read:

"9.2.1. Linearity verification

9.2.1.1. Introduction

A linearity verification shall be performed for each measurement system listed in Table 7. At least 10 reference values, or as specified otherwise, shall be introduced to the measurement system, ~~and~~. **For stand-alone pressure and temperature linearity verifications, at least three reference values shall be selected.** †The measured values shall be compared to the reference values by using a least squares linear regression in accordance with equation 11. The maximum limits in Table 7 refer to the maximum values expected during testing."

B. A new Supplement to the 06 series of amendments

Annex 4, paragraphs 9.2.1. and 9.2.1.1., amend to read:

"9.2.1. Linearity verification

9.2.1.1. Introduction

A linearity verification shall be performed for each measurement system listed in Table 7. At least 10 reference values, or as specified otherwise, shall be introduced to the measurement system, ~~and~~. **For stand-alone pressure and temperature linearity verifications, at least three reference values shall be selected.** †The measured values shall be compared to the reference values by using a least squares linear regression in accordance with equation 11 in paragraph 7.8.7.. The maximum limits in Table 7 refer to the maximum values expected during testing."

II. Justification

Alignment with Regulation No. 96 (Uniform provisions concerning the approval of Compression Ignition (C.I.) engines to be installed in agricultural and forestry tractors and in non-road mobile machinery with regard to the emissions of pollutants by the engine), Annex 4B, paragraph 8.1.4.3.(e).
