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Item 3 of the provisional agenda

Regulation No. 41 (Noise emissions of motorcycles): Development

Proposal for amendments to the 04 series of amendments to Regulation No. 41

Submitted by the expert from International Motorcycle Manufacturers Association*

The text reproduced below was prepared by the expert from International Motorcycle Manufacturers Association (IMMA) in order to introduce the calculated engine speed for a manual transmission (MT) vehicle and continuously variable transmission (CVT)/automatic transmission (AT) with rocked gear mechanism into UN Regulation No. 41. The modifications to the current text are marked in bold for new and 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

Paragraph 2.13., amend to read:

"2.13. ...

<i>Symbol</i>	<i>Units</i>	<i>Explanation</i>	<i>Reference</i>
...
n	min ⁻¹	measured engine speed	
...

The following indices are used for ~~measured~~ engine speeds "n" and vehicle speeds "v" to indicate the location or rather time of the measurement:

..."

Annex 3, paragraph 1.1.2., amend to read:

"1.1.2. Instrumentation for speed measurements

The rotational speed of the engine shall be measured with an instrument meeting specification limits of at least ± 2 percent or better at the engine speeds required for the measurements being performed. **In case that there are other measurements correlated with the engine speeds, the calculated value is available (e.g. calculation from the vehicle speed measurement).**

..."

Annex 7, paragraph 3.2.3., amend to read:

" 3.2.3. Data processing and reporting

The requirements of paragraph 1.4. of Annex 3 shall be applied.

In addition the engine speed ~~measurements~~ **values** at AA', BB', and PP' in units of min-1 shall be mathematically rounded to the nearest integer for further calculations. For a given test condition the three individual engine speeds shall be averaged arithmetically.

..."

II. Justification

Under the current 04 series of amendments to UN Regulation No. 41, the engine speed should be measured during all tests in Annex 3 and Annex 7 (Additional sound emission provisions - ASEP). However, IMMA has checked and found that there is very little difference between the measured and the calculated engine speed for a MT vehicle (Annex, figure 1). IMMA has also found that this difference has no influence on the test result (Annex, figure 2). Based on these findings, IMMA proposes that the calculated engine speed for a MT vehicle and CVT/AT with rocked gear mechanism be additionally introduced into UN Regulation No. 41.

Annex

Figure 1
 Engine speed (calculation vs. measurement) – Class III MT ASEP

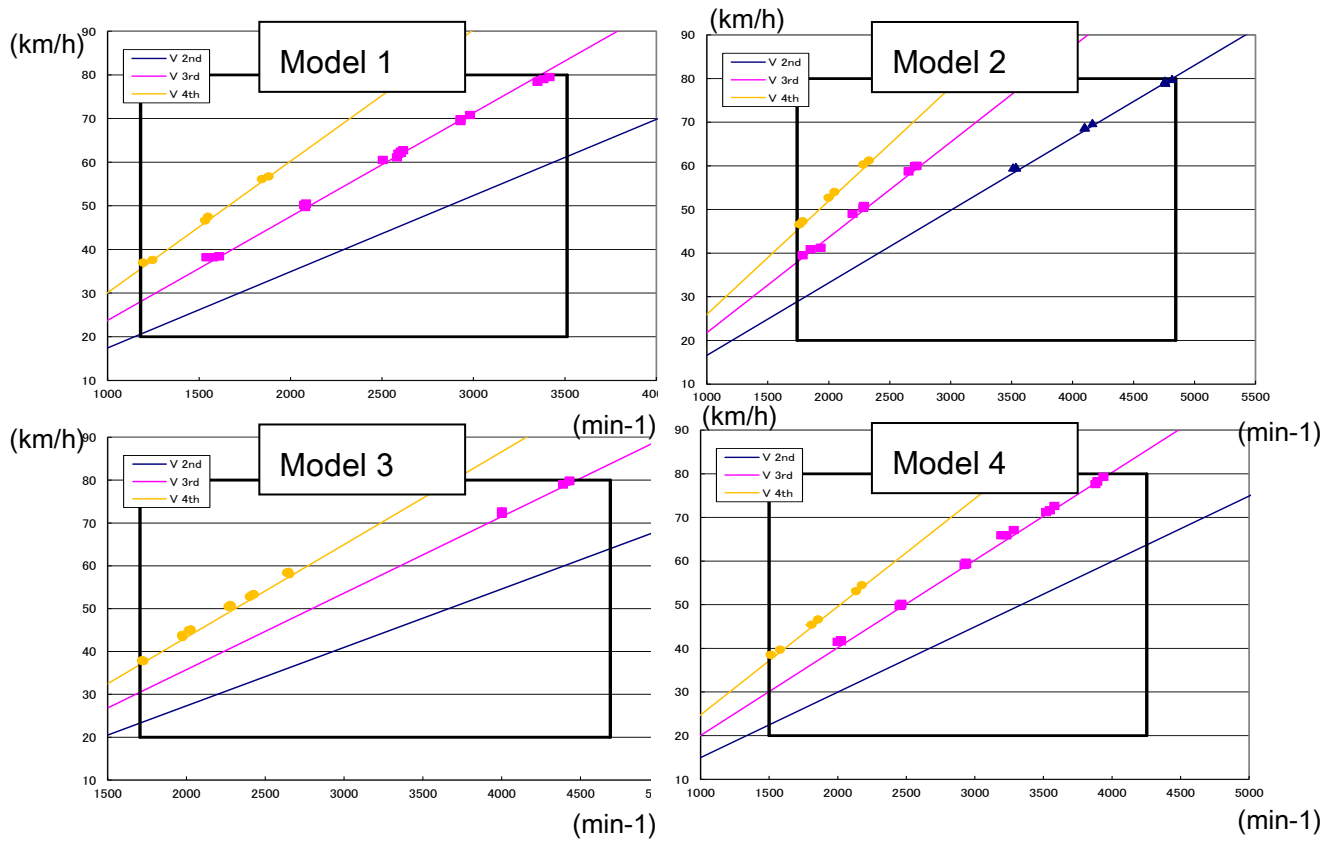
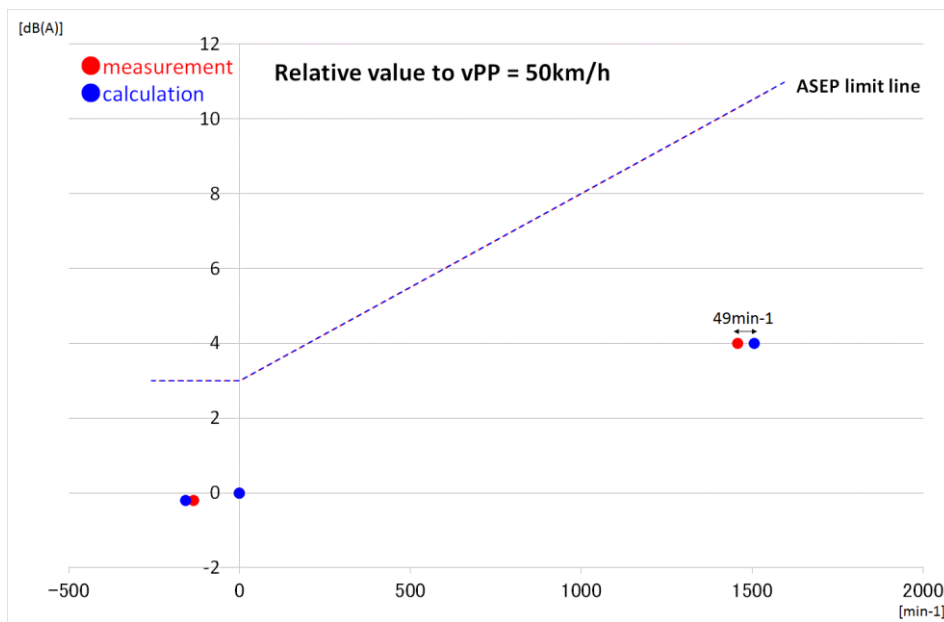
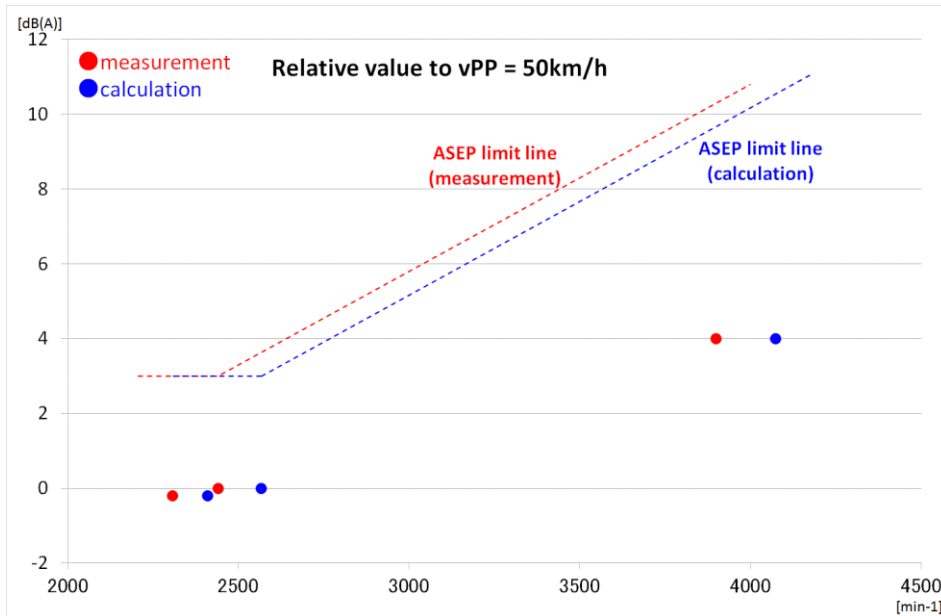


Figure 2
Engine speed (calculation vs. measurement) - Class III MT ASEP

model X



The difference is minor if data points of the measured speed and the calculated speed nearly overlap.