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World Forum for Harmonization of Vehicle Regulations**Working Party on Noise****Sixty-sixth session**

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Item 4 (b) of the provisional agenda

Regulation No. 51 (Noise of M and N categories of vehicles):**Additional sound emission provisions****Proposal for Supplement 3 to the 03 series of amendments to
Regulation No. 51****Submitted by the Informal Working Group on Additional Sound
Emission Provisions***

The text reproduced below was prepared by the Informal Working Group (IWG) on Additional Sound Emission Provisions (ASEP) to update and revise the 03 series of amendments to Regulation No. 51. The proposed amendments to the current Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the program of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.2), 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.

GE.17-09957(E)



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I. Proposal

Paragraph 1., amend to read:

"1. ...

The specifications in this Regulation are intended to reproduce the sound levels which are generated by vehicles during normal driving in urban traffic.

This Regulation provides as well additional sound emission provisions for vehicles of categories M₁ and N₁ referring to driving conditions with extreme accelerations in an extended speed range representative for urban and suburban traffic."

Paragraph 2.24. , table, amend to read:

Symbol	Unit	Annex	Paragraph	Explanation
...
BB'	-	Annex 3	3.1.1	Line perpendicular to vehicle travel which is 10 m behind line PP' indicates end of zone in which to record sound pressure level during test
...

Paragraph 6.2.3., amend to read:

"6.2.3. ...

Any electric sound enhancement system for the purpose of the exterior sound emission shall be operational during the type-approval test."

Annex 3,

Paragraph 3.1.2.1. , amend to read:

"3.1.2.1. ...

The path of the centreline of the vehicle shall follow line CC' as closely as possible throughout the entire test, from the approach to line AA' until the rear of the vehicle passes line BB' + 20 m. ..."

Paragraph 3.1.2.1.5. , amend to read:

"3.1.2.1.5. ...

...The accelerator shall then be released as rapidly as possible. **The measurement shall end, when the rear of the vehicle passes line BB' + 20 m as defined in 3.1.2.1...."**

Annex 7,

Paragraph 3.1. , amend to read:

"3.1. Determination of the anchor point

The anchor point is the same for each gear ratio κ falling under the control range according to paragraph 2.3. The parameters for the anchor point are taken from the acceleration test of Annex 3 as follows:

In the case the test has been carried out with two gear ratios:

L_{anchor} is the higher sound pressure level of $L_{\text{wot},(i)}$ of left and right side of gear ratio i ;

n_{anchor} is the average of $n_{\text{BB},\text{wot},i}$ of the 4 runs of gear ratio i reported from Annex 3;

In the case the test has been carried out in a single gear:

L_{anchor} is the higher sound pressure level of L_{wot} of left and right side of gear ratio selected for the test;

n_{anchor} is the average of $n_{\text{BB},\text{wot}}$ of the 4 runs of gear ratio selected for the test reported from Annex 3;"

II. Justification

Paragraph 1.

1. The scope should be design neutral and reflect the driving situations covered by this Regulation.

Paragraph 6.2.3.

2. This sentence aims to highlight that ASEP apply to vehicles and its electric sound enhancement system such as the Audible Vehicle Alert System (AVAS) and silencers equipped with an active cancelled system.

Paragraph 2.24. and Annex 3, paragraphs 3.1.2.1. and 3.1.2.1.5.

3. This provision extends the testing condition to include the "backfire" assessment. The measurement shall end when the rear of the vehicle has passed line DD'. This will help to assess "backfire" properly with modern test systems.

Annex 7, paragraph 3.1.

4. The original wording would allow using a gear ratio as anchor point that might have been excluded from the type approval test in Annex 3. This can be the case, if the acceleration in gear ratio i is higher than 2 m/s^2 .

5. It shall be ensured, that the anchor point is based on a gear ratio, which has been used for the sound assessment in Annex 3 and is covered by the limits applicable to the test result of Annex 3.

6. The original wording is correct for all double gear tests as specified in paragraph 3.1.2.1.4. and its subparagraphs.

7. In case of a single gear test the suggested additional specification is needed.