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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Noise****Sixty-ninth session**

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Item 4 (a) of the provisional agenda

UN Regulation No. 51 (Noise of M and N categories of vehicles): Development**Proposal for Supplement 6 to the 03 series of amendments to
UN Regulation No. 51 (Noise of M and N categories of
vehicles)****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) with the aim to introduce transitional provisions for Supplements 4 and 5 to the 03 series of amendments to UN Regulation No. 51 (in line with the transitional provisions of Supplement 3), to correct a reference and to clarify the requirements for stationary sound. The proposed amendments are based on draft Supplement 5 to the 03 series of amendments to UN Regulation No. 51, which was adopted by the Working Party on Noise at its sixty-eighth session (ECE/TRANS/WP.29/GRB/2018/10). The modifications are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21/Add.1, Cluster 3), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Insert a new paragraph 11.12. to read:

"11.12. Until May 1, 2020 Supplement 6 does not apply to existing approvals, originally granted prior to the date of entry into force of Supplement 6."

Annex 3, paragraph 3.2.5.3., amend to read:

"3.2.5.3. Measuring of noise in proximity to the exhaust (see appendix of Annex 3, Figure **3a** ~~2~~)"

Annex 3, paragraph 3.2.5.3.2.1., amend to read:

"3.2.5.3.2.1. Target engine speed

The target engine speed is defined as:

- (a) 75 per cent of the rated engine speed S for vehicles with a rated engine speed $\leq 5,000 \text{ min}^{-1}$;
- (b) 3.750 min^{-1} for vehicles with a rated engine speed above 5.000 min^{-1} and below $7,500 \text{ min}^{-1}$;
- (c) 50 per cent of the rated engine speed S for vehicles with a rated engine speed $\geq 7,500 \text{ min}^{-1}$.

If the vehicle cannot reach the engine speed as stated above, the target engine speed shall be 5 per cent below the maximum possible engine speed for that stationary test.

For vehicles for which the engine speed is a fixed value, (for example, but not limited to, series hybrids) either above or below the target engine speed and cannot be adjusted by the accelerator, the test shall be carried out at the fixed engine speed."

Annex 3, paragraph 3.2.6., amend to read:

"3.2.6. Results

At least three measurements for each test position (**outlet**) shall be made. The maximum A-weighted sound pressure level indicated during each of the three measurements shall be recorded. The first three valid consecutive measurement results, within 2 dB(A), allowing for the deletion of non-valid results (see paragraph 2.1. except the specifications of the test site), shall be used for the determination of the final result for the given measurement position.

The result for a given outlet is the arithmetic average of the three valid measurements, mathematically rounded to the nearest integer value (e.g. 72.5 shall be noted as to 73 while 72.4 shall be noted as to 72).

For vehicles equipped with multiple exhaust outlets, the reported sound pressure level shall be for the outlet having the highest average sound pressure level.

For vehicles equipped with a multi-mode exhaust system and a manual exhaust mode control the reported sound pressure level shall be for the mode having the highest average sound pressure level.

~~The maximum sound level, for all measurement positions, and of the three measurement results, constitutes the final result."~~

II. Justification

Main body, paragraph 11.12.

1. Because of Revision 3 of the 1958 Agreement in combination with the transitional provisions of Supplement 3, it is necessary to introduce also transitional provisions for Supplement 6. This Supplement 6 specifies the same application date as in Supplement 3.

Annex 3, paragraph.3.2.5.3.

2. The reference to the figure has been corrected.

Annex 3, paragraph 3.2.5.3.2.1.

3. Every vehicle with an internal combustion engine which can operate when the vehicle is stationary must have a valid test mode for stationary noise. Some vehicles cannot reach the target engine speed due to the technology of the vehicles, for example range extended electric vehicles (EV) or hybrid electric vehicles (HEV), where the engine operates as an electric generator. For this kind of vehicles, the specification has been added to enable the proper stationary state.

Annex 3, paragraph.3.2.6.

4. The measurement result of an individual outlet and the reporting result for multiple outlets and modes have been clarified. A revised text for calculating of the final result and treatment of the results have been added for the sake of aligning with the general practices of sound measurement and average results, as provided in UN Regulation No. 51 for tests in motion, and with the stationary test provisions of other UN Regulations such as Nos. 9 and 41 or ISO standards.
