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Item 4.8.5 of the provisional agenda

1958 Agreement:

Consideration of draft amendments to existing

UN Regulations submitted by GRBP

Proposal for Supplement 4 to the 05 series of amendments to UN Regulation No. 41 (Noise emissions of motorcycles)

Submitted by the Working Party on Noise and Tyres*

The text reproduced below was adopted by the Working Party on Noise and Tyres (GRBP) at its eighty-first session (ECE/TRANS/WP.29/GRBP/79, paras. 4 and 5). It is based on ECE/TRANS/WP.29/GRBP/2025/4 as amended GRBP-81-03 and ECE/TRANS/WP.29/GRBP/2025/7 as amended by GRBP-81-29. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their June 2025 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), 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.



Paragraph 6.3.1., amend to read:

- “6.3.1. The motorcycle manufacturer shall not use any device, procedure or software which would modify any noise related functional parameters of the vehicle for the purpose of passing the tests within this Regulation and which would result in increased noise emissions during typical on-road operation in the RD-ASEP control range of Annex 7 paragraph 2.5, compared to during testing according to the provisions of this Regulation.

Insert a new paragraph 8.4., to read:

- “8.4. If due to substantially different barometric pressure, humidity, temperature or rider mass, the reference acceleration $a_{wot,ref}$ defined in paragraph 1.3.3.1.2. of Annex 3 cannot be reached with the same gear in conformity of production as in type approval tests, the gear selection requirement of paragraph 1.3.3.1.3.1. of Annex 3 shall prevail and the conformity of production tests can be performed using an acceleration different from $a_{wot,ref}$.”

Annex 1, item 18, amend to read:

- “18. Additional sound emission provisions:

18.1.	RD-ASEP operating conditions	Reference Point (a)	Reference Point (b)	additional operating condition 1	additional operating condition 2	additional operating condition 3
				gear i $i = 1$ to n (number of gears)		
18.1.1.	Selected gear number					
18.1.2.	Approach condition to line AA' (acceleration, deceleration or constant speed)	n.a.	n.a.			
18.1.3.	Throttle control position (%)	n.a.	n.a.			
18.1.4.	Vehicle speeds	-	-	-	-	-
18.1.4.1.	Vehicle speed at the beginning of the period of acceleration (average of 3 runs) (km/h)			n.a.	n.a.	n.a.
18.1.4.2.	Pre-acceleration length (m)			n.a.	n.a.	n.a.
18.1.4.3.	Vehicle speed $v_{AA'}$ (average of 3 runs for Reference Points (a) and (b)) (km/h)					
18.1.4.4.	Vehicle speed $v_{PP'}$ (average of 3 runs for Reference Points (a) and (b)) (km/h)					
18.1.4.5.	Vehicle speed $v_{BB'}$ (average of 3 runs for Reference Points (a) and (b)) (km/h)					
18.1.5.	Engine speeds	-	-	-	-	-
18.1.5.1.	Engine speed $n_{AA'}$ (average of 3 runs for Reference Points (a) and (b)) (km/h)					
18.1.5.2.	Engine speed $n_{PP'}$ (average of 3 runs for Reference Points (a) and (b)) (km/h)					
18.1.5.3.	Engine speed $n_{BB'}$ (average of 3 runs for Reference Points (a) and (b)) (min^{-1})					
18.1.6.	Wide open throttle test result L_{wot} for Reference Points (a) and (b) (dB(A))			n.a.	n.a.	n.a.
18.1.7.	max. sound pressure level L_{ASEP} of the additional operating conditions	n.a.	n.a.			
18.1.8.	RD-ASEP limit'					

Note: The columns for the additional operating conditions 1, 2 and 3 in the table above, need to be repeated for each gear that needs to be tested."

Annex 3, insert a new paragraph 1.3.3.1.3. to read:

"1.3.3.1.3. If the vehicle has user selectable software programs or modes, the test shall be conducted in a mode which does not restrict the vehicle's power performance and which produces the highest $L_{wot(i)}$. Manufacturer documentation is provided to the technical service responsible for conducting approval tests. Based on this documentation, the technical service selects the software program or mode to be tested."

Annex 7,

Paragraph 2.5., amend to read:

"2.5. ASEP control range
The requirements of this annex apply to any vehicle operation with the following restrictions:

- (a) $v_{AA'}$ shall be at least 10 km/h
- (b) $v_{BB'}$ shall not exceed 80 km/h for vehicles with $PMR \leq 150$
 $v_{BB'}$ shall not exceed 100 km/h for vehicles with $PMR > 150$
- (c) $n_{AA'}$ shall be at least $0,1 * (S - n_{idle}) + n_{idle}$
- (d) $n_{BB'}$ shall not exceed $0,8 \times S$

The values for the RD-ASEP control range shall be seen as absolute values and shall not be increased or lowered by addition or subtraction of the tolerance as indicated in paragraph 2.8. of this Annex."

Paragraph 2.6., amend to read:

"2.6. RD-ASEP limits

The maximum noise level recorded during the passage of the motorcycle through the test track shall not exceed:

$$L_{wot(i)} + (1 * (n_{PP'} - n_{wot(i)}) / 1,000) + 3 \quad \text{for } n_{PP'} < n_{wot(i)} \text{ and}$$

$$L_{wot(i)} + (5 * (n_{PP'} - n_{wot(i)}) / 1,000) + 3 \quad \text{for } n_{PP'} \geq n_{wot(i)}$$

Where $L_{wot(i)}$ and $n_{PP'}$ have the same meaning as in Paragraph 1. of Annex 3 and $n_{wot(i)}$ refers to the corresponding engine speed when the front of the vehicle passes the Line PP'.

If the tests according to Annex 3 of this UN Regulation and the RD-ASEP tests are performed with the same vehicle in immediate sequence, the values for $L_{wot(i)}$ and $n_{wot(i)}$ from the Annex 3 test may be used, if agreed by the type approval authority. Otherwise, when compliance with these limits is checked, values for $L_{wot(i)}$ and $n_{wot(i)}$ shall be newly determined by measurements as defined in Paragraph 1. of Annex 3, however using the same gear (i), the same user selectable drive mode and the same pre-acceleration distance as during type approval."

Insert a new paragraph 2.8. to read:

"2.8. Tolerances

For tests according to paragraphs 3.2.2. (b) and 3.3. of this Annex, a tolerance of +/- 5km/h shall apply, while still respecting the boundaries of the RD-ASEP control range defined in paragraph 2.5 of this Annex.

Examples for paragraph 3.2.2. (b) of this Annex:

- requested $v_{BB'}=95$ km/h → valid $v_{BB'}=90-100$ km/h
- requested $v_{BB'}=100$ km/h → valid $v_{BB'}=95-100$ km/h

Examples for paragraph 3.3. of this Annex:

- requested $v_{\text{test}}=10$ km/h \rightarrow valid $v_{AA'}=10-15$ km/h
- requested $v_{\text{test}}=15$ km/h \rightarrow valid $v_{AA'}=10-20$ km/h
- requested $v_{\text{test}}=75$ km/h \rightarrow valid $v_{AA'}=70-80$ km/h
- requested $v_{\text{test}}=95$ km/h \rightarrow valid $v_{AA'}=90-100$ km/h
- requested $v_{\text{test}}=100$ km/h \rightarrow valid $v_{AA'}=95-100$ km/h”

Paragraph 3.1., amend to read:

“3.1. General

The Type Approval Authority as well as the technical service shall request tests to check the compliance of the motorcycle with the requirements of paragraph 2. of this Annex. To avoid undue workload, testing is restricted to the reference points defined in paragraph 3.2. of this Annex and the additional operating conditions as defined in paragraph 3.3. of this Annex.

For vehicles with manual transmissions, the total number of operating conditions to be tested according to paragraph 3.3. of this Annex is defined by the number of gears of the vehicle multiplied by 3, and reduced by the number of operating conditions which were applied for tests according to paragraph 3.2 of this Annex and for the determination of L_{urb} according to Annex 3.

For vehicles with variable gear ratios or automatic transmission with non-lockable gear ratios the total number of operating conditions to be tested according to paragraph 3.3. of this Annex is defined as 6, and reduced by the number of operating conditions which were applied for tests according to paragraph 3.2 of this Annex and for the determination of L_{urb} according to Annex 3.

Notwithstanding the above, a minimum of 3 operating conditions shall be tested according to paragraph 3.3. of this Annex.

Paragraph 3.3.1., amend to read:

“3.3.1. Test procedure

The vehicle shall approach the line AA' at constant speed or in acceleration or deceleration, according to the throttle operation which may be requested by the technical service responsible for conducting approval tests in agreement with the type approval authorities.

The approach velocity shall be chosen as such that the vehicle reaches a prescribed test speed v_{test} when its front passes the line AA'.

When the front of the vehicle passes the line AA' the throttle control shall be adjusted as rapidly as possible to a position (partial throttle, wide open throttle or maintain present throttle control position) defined by the technical service responsible for conducting approval tests and shall be kept in this position until the rear of the vehicle passes line BB'.

When the rear of the vehicle passes line BB' the throttle control shall be shifted to the idle position as rapidly as possible.

The throttle position between lines AA' and BB' shall not result in a deceleration of the vehicle. A deceleration is present when:

- $v_{PP'} < v_{AA'} - 5\text{km/h}$, or
- $v_{BB'} < v_{AA'} - 5\text{km/h}$, or
- $v_{BB'} < v_{PP'} - 5\text{km/h}$.”

Paragraph 3.3.2., amend to read:

“3.3.2. Test speed, gear and mode selection and throttle operation

The conditions of this paragraph shall be defined by the technical service responsible for conducting the approval tests.

To assist defining these conditions, manufacturer documentation is provided to the technical service responsible for conducting approval tests. The technical service responsible for conducting approval tests can request pre-testing of the vehicle.

The test speed v_{test} may be any speed within the RD-ASEP control range as defined in paragraph 2.5. of this Annex. The vehicle may be tested in any of the available gears, including the 1st gear.

Within the total number of additional operating conditions defined in paragraph 3.1 of this Annex, the vehicle may be tested in any of the available user selectable software programs or modes.

The throttle operation shall be in accordance with paragraph 3.3.1. of this Annex.

The throttle operation before line AA' and between lines AA' and BB' shall be defined and described in a way that it can be performed by a skilled rider who has made himself familiar with the riding characteristics of the test vehicle and that the correct execution can be assessed by observation without the necessity of technical equipment on the vehicle or at the test site other than the equipment which is required for the tests according to Annex 3.

If the requested operating conditions lead to a riding condition which may not be expected to occur when the vehicle is operated in real traffic (for example, front wheel lift up, apparent wheel spin, chain slap, engine lugging), that test run shall be discarded and a test run with different operating conditions shall be performed.”
