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Working Party on Noise

Seventy-first session

Geneva, 28–31 January 2020

Report of the Working Party on Noise on its seventy-first session

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I. Attendance

1. The Working Party on Noise and Tyres (GRBP) held its seventy-first session from 28 to 31 January 2020 in Geneva. The meeting was chaired by Mr. S. Ficheux (France). Experts from the following countries participated in the work following Rule 1(a) of the Rules of Procedure of the World Forum for Harmonization of Vehicle Regulations (WP.29) (TRANS/WP.29/710/Rev.1): Finland, France, Germany, Hungary, India, Italy, Japan, Netherlands, Norway, Poland, Republic of Korea, Russian Federation, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland and United States of America. An expert from the European Commission (EC) participated. Experts from the following non-governmental organizations also participated: Association of European Wheel Manufacturers (EUWA), Bureau International Permanent des Associations de Vendeurs et Rechapeurs de pneumatiques (BIPAVER), International Motor Vehicle Inspection Committee (CITA), European Association of Automotive Suppliers (CLEPA), European Tyre and Rim Technical Organization (ETRTO), Motorcycle Manufacturers Association (IMMA), International Organization for Standardization (ISO), Imported Tyre Manufacturers Association (ITMA), International Organization of Motor Vehicle Manufacturers (OICA) and US Tire Manufacturers Association.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRBP/2020/1, Informal documents GRBP-71-01 and GRBP-71-02-Rev.1

2. GRBP considered and adopted the agenda (ECE/TRANS/WP.29/GRBP/2020/1, as amended by GRBP-71-01). GRBP noted the running order proposed by the Chair (GRBP-71-02-Rev.1). The list of informal documents is contained in Annex I. The list of GRBP informal groups is reproduced in Annex VIII.

III. UN Regulation No. 41 (Noise emissions of motorcycles) (agenda item 2)

Documentation: ECE/TRANS/WP.29/GRBP/2019/24, ECE/TRANS/WP.29/GRBP/2019/25/Rev.1, Informal documents GRBP-71-09, GRBP-71-10, GRBP-71-18-Rev.2

3. The expert from IMMA presented a revised proposal which aims to minimize a proliferation of approval numbers (ECE/TRANS/WP.29/GRBP/2019/25/Rev.1 and GRBP-71-18-Rev.2). Following an in-depth discussion, GRBP adopted the proposal, as laid down in Annex II. GRBP requested the secretariat to submit it to WP.29 and the Administrative Committee (AC.1) for consideration and vote at their June 2020 sessions as a draft Supplement 8 to the 04 series of amendments to UN Regulation No. 41, together with ECE/TRANS/WP.29/GRBP/2019/24 adopted at the previous session.

4. The expert from IMMA proposed to clarify the specifications of the test site in Annex 4, following the end of the transitional period in paragraph 12.9. (GRBP-71-09). The experts from Germany, ISO and OICA raised questions on the purpose of the proposal. GRBP invited IMMA to discuss the issue with these experts and to prepare a revised proposal for the next session.

5. The expert from IMMA proposed to modify the microphone position for measuring stationary noise in the case of several exhaust outlets (GRBP-71-10). GRBP adopted the proposal, as contained in Annex III, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as part of a draft Supplement 8 to the 04 series of amendments to UN Regulation No. 41.

IV. UN Regulation No. 51 (Noise of M and N categories of vehicles) (agenda item 3)

Documentation: Informal documents GRBP-71-04, GRBP-71-05, GRBP-71-11, GRBP-71-17, GRBP-71-19-Rev.1, GRBP-71-21, GRBP-71-24, GRBP-71-25, GRBP-71-31-Rev.1

6. On behalf of the Informal Working Group on Additional Sound Emission Provisions (IWG ASEP), the expert from Germany reported on the IWG ASEP activities (GRBP-71-25). He also introduced in detail the future revision of ASEP in UN Regulation No. 51, based on the concept of real driving and sound expectation model (GRBP-71-24).

7. The expert from IMMA pointed out the differences in applying the concept of real driving between UN Regulation Nos. 41 and 51 (GRBP-71-19-Rev.1) and introduced draft revised ASEP provisions in UN Regulation No. 41 (GRBP-71-17). The Chair invited IMMA to continue working on this proposal in the framework of IWG ASEP with the aim to submit a formal document to the next session of GRBP.

8. The expert of EC informed GRBP about a study on the sound level limits of M- and N-category vehicles which had started in December 2019 and was expected to be completed by June 2021 (GRBP-71-11). The aim of the study was to propose improved sound level limits for next phases of Regulation No. 540/2014 of the European Union in the coming years. The experts from Germany, ETRTO and OICA encouraged the study contractor to follow a holistic approach and to take into account various factors that contribute to sound emissions. GRBP invited those experts to send their comments to the contractor and requested the expert of EC to regularly inform GRBP about the study progress. The expert from Japan pointed out that his country would launch soon a similar study and that the recommendations of both studies should be harmonized internationally.

9. The expert from OICA reported on the progress of the Task Force on Measurement Uncertainties (TF MU) (GRBP-71-04) and presented a strategy on how to handle measurement uncertainties in UN Regulations (GRBP-71-21). GRBP noted that the suggested approach could first apply to UN Regulations Nos. 51 and 117 and, at a later stage, to other UN Regulations as well.

10. Given the importance of this topic, GRBP decided to convert TF MU into an Informal Working Group on Measurement Uncertainties (IWG MU) and approved its Terms of Reference (GRBP-71-05, GRBP-71-31-Rev.1), as laid down in Annex IV. GRBP noted that IWG MU would be chaired by Norway, while OICA would act as secretary.

V. UN Regulation No. 138 (Quiet road transport vehicles) (agenda item 4)

Documentation: Informal document GRBP-71-28-Rev.1

11. The expert from Poland proposed to allow surfaces other than ISO 10844 for measurements in standstill condition (GRBP-71-28-Rev.1). GRBP adopted the proposal, as contained in Annex V, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as a draft Supplement 2 to the 01 series of amendments to UN Regulation No. 138.

VI. Tyres (agenda item 5)

A. UN Regulation No. 30 (Tyres for passenger cars and their trailers)

Documentation: ECE/TRANS/WP.29/GRBP/2020/3, Informal documents GRBP-71-07, GRBP-71-08, GRBP-71-30

12. The expert from ETRTO introduced a new Supplement to UN Regulation No. 30 and an accompanying transitional provision (paragraph 11.4.) that would delay for three months the mandatory application of the Supplement (ECE/TRANS/WP.29/GRBP/2020/3). In particular, he proposed excluding tyres with radial and run flat structure from the dimensional requirements after the load speed endurance test (GRBP-71-07). Various experts commented on the proposal and suggested modifications (GRBP-71-30). Finally, GRBP adopted the proposal, as contained in Annex VI, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as Supplement 22 to the 02 series of amendments to UN Regulation No. 30.

13. GRBP noted that the adopted transitional provision 11.4. does not contradict the WP.29 Guidelines for regulatory procedures and transitional provisions in UN Regulations (ECE/TRANS/WP.29/1044/Rev.2). At the same time, several GRBP experts expressed concerns about the rationale given by ETRTO for this provision which was the delays in issuance by the United Nations Office for Legal Affairs (OLA) of depository notifications about the entry into force of amendments to UN Regulations. GRBP was of the view that this is a general problem that affects all UN Regulations and other WP.29 Working Parties as well. Therefore, GRBP requested the Chair to raise this issue at the next session of the Administrative Committee for Coordination of Work (AC.2).

14. The expert from ETRTO proposed amending the tyre marking method in the UN Regulations (GRBP-71-08). Following a brief discussion, the Chair invited ETRTO to submit an official document to the next session.

B. UN Regulation No. 108 (Retreaded tyres for passenger cars and their trailers)

Documentation: ECE/TRANS/WP.29/GRBP/2019/16

15. GRBP reverted to the postponed proposal on retreaded tyres to be tested and marked with the three-mountain-peak snow-flake (3PMSF) symbol, which was submitted by the experts of BIPAVÉR. GRBP adopted the document and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as Supplement 5 to UN Regulation No. 108.

C. UN Regulation No. 109 (Retreaded tyres for commercial vehicles and their trailers)

Documentation: ECE/TRANS/WP.29/GRBP/2020/4,
ECE/TRANS/WP.29/GRBP/2020/5

16. The expert of BIPAVÉR proposed to restore several sentences which had been deleted by mistake in documents ECE/TRANS/WP.29/GRRF/2016/40 and ECE/TRANS/WP.29/2017/9 (ECE/TRANS/WP.29/GRBP/2020/4). GRBP adopted the correction and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as Supplement 10 to UN Regulation No. 109.

17. The expert from BIPAVÉR presented a proposal that aligns the provisions for retreaded tyres marked with the three-peak-mountain snow-flake (3PMSF) symbol with the previously adopted amendment proposals to UN Regulation No. 117 (ECE/TRANS/WP.29/GRBP/2020/5). GRBP adopted the document and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions as part of Supplement 10 to UN Regulation No. 109.

D. UN Regulation No. 117 (Tyre rolling resistance, rolling noise and wet grip)

Documentation: ECE/TRANS/WP.29/GRBP/2019/14,
ECE/TRANS/WP.29/GRVA/2020/6, Informal documents GRBP-71-06, GRBP-71-20, GRBP-71-23, GRBP-71-26, GRBP-71-29

18. The expert from ETRTO reported that, in 2020-2021, the American Society for Testing and Materials (ASTM) would be phasing out the Standard Reference Test Tyre SRTT14 (ASTM E1136) which was referenced in UN Regulations Nos. 108 and 117 (GRBP-71-06). Therefore, these references would need to be replaced by SRTT16 (ASTM F2493) tyre, and the test procedure should be amended accordingly. The Chair invited ETRTO to submit an official document with draft amendments to UN Regulation No. 117 for consideration at the next session. The expert from BIPAVER volunteered to cooperate with ETRTO with the aim to prepare similar amendments to UN Regulation No. 108.

19. On behalf of the Group Of Interested Experts on snow tyre provisions (GOIE), the expert from Germany reported on their progress (GRBP-71-20). In particular, he proposed establishing a new task force on studded tyres with the objective to draft a new UN Regulation on the approval of studded tyres regarding their snow performance. GRBP endorsed this proposal and noted that the duties of the Chair and Secretary of the task force would be performed by the experts from Finland and ETRTO, respectively.

20. With additional explanations of GOIE (GRBP-71-26), GRBP resumed discussion on the new class of special use tyres intended for use under severe snow conditions (ECE/TRANS/WP.29/GRBP/2019/14). GRBP noted that the proposed new class would provide for better road safety characteristics under severe snow conditions, but with a small increase in the rolling noise. The experts from Germany, Netherlands and Russian Federation supported the proposal. The expert from EC was not in position to agree to the proposal, due to the envisaged higher noise limits which would require modifications of European Union legislation. GRBP decided to revert to this issue at the next session.

21. The expert from Japan introduced an amendment which addressed unique light trucks available on the Japanese market (ECE/TRANS/WP.29/GRVA/2020/6). The expert of ETRTO proposed a slight modification (GRBP-71-29). GRBP adopted the proposal, as contained in Annex VII, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2020 sessions Supplement 12 to the 02 series of amendments to UN Regulation No. 117.

22. The expert from France, Chair of the IWG on Wet Grip Performance of Tyres in a Worn State (IWG WGWT), reported on their progress (GRBP-71-23). She pointed out that the IWG WGWT objectives were to present an informal document to the seventy-second session of GRBP in September 2020 and to submit a formal paper to the seventy-third session of GRBP in January 2021.

VII. Draft UN Regulation on reversing alarm (agenda item 6)

Documentation: Informal document GRBP-71-27-Rev.1

23. On behalf of the Task Force on Reverse Warning (TF RW), the expert from Japan reported on the progress of TF RW (GRBP-71-27-Rev.1) and on the ongoing cooperation with the Working Party on General Safety (GRSG), thanks to the expert from Switzerland in his capacity as GRBP Ambassador to GRSG. GRBP noted that the next meeting of TF RW would be convened in Brussels from 25 to 27 May 2020.

VIII. Exchange of information on national and international requirements on noise levels (agenda item 7)

24. The expert from the United States of America reported that, in December 2019, the National Highway Safety Administration (NHTSA) had issued an advance notice of

proposed rulemaking¹ in which it had sought comments on matters related to the existing strength test, the bead unseating resistance test, and the tyre endurance test. In addition, NHTSA had sought comments on the current use and relevance of some tyre marking regulations and other matters related to new tyre technologies. The deadline for comments was set on 18 February 2020.

IX. Influence of road surface on tyre rolling sound emissions (agenda item 8)

Documentation: ECE/TRANS/WP.29/GRBP/2019/2

25. GRBP noted that WP.29, at its November 2019 session, had agreed to the GRBP conclusions on the Draft Resolution on Road Surface Labelling (ECE/TRANS/WP.29/1149, paras. 43 and 44).

X. Proposal for amendments to the Consolidated Resolution on the Construction of Vehicles (agenda item 9)

26. No issues were considered under this item.

XI. Development of the International Whole Vehicle Type Approval system (agenda item 10)

Documentation: Informal document GRBP-71-03

27. GRBP noted that, in November 2019, AC.1 had adopted Supplements to the 00 and 01 series amendments, as well as the new 02 series of amendments to UN Regulation No. 0 (International Whole Vehicle Type Approval).

28. GRBP was informed about the progress of the electronic Database for the Exchange of Type Approval documentation (DETA) (GRBP-71-03). GRBP agreed to consider, at its next session, whether the Unique Identifier (UI) may replace the traditional E markings in the UN Regulations under the auspices of GRBP.

XII. Highlights of the recent sessions of the World Forum for Harmonization of Vehicle Regulations (agenda item 11)

Documentation: Informal document GRBP-71-14

29. The secretariat reported on the highlights of the November 2019 session of WP.29 (GRBP-71-14). GRBP took note of this information.

XIII. Exchange of views on the future work of the Working Party on Noise and Tyres (agenda item 12)

Documentation: Informal document GRBP-71-22-Rev.1

30. The Chair introduced an updated list of priorities and recurrent items (GRBP-71-22-Rev.1). GRBP noted that AC.2, at its next meeting in March 2020, would consider such lists prepared by various Working Parties (GRs) with the aim to prepare the WP.29 programme of work for 2020.

¹ www.federalregister.gov/documents/2019/12/19/2019-27209/federal-motor-vehicle-safety-standards-tires

XIV. Other business (agenda item 13)

Documentation: Informal documents GRBP-71-12, GRBP-71-13-Rev.1, GRBP-71-15, GRBP-71-16

31. The expert from EC presented a set of amendments to UN Regulation No. 141 (Tyre Pressure Monitoring System (TPMS)) with the aim to extend its scope, for the purpose of implementing the TPMS requirements in Regulation 2019/2144 of the European Union (GRBP-71-15). Several GRBP experts expressed concerns about the tight schedule in the European Union Regulation and the volume of the proposed amendments. To speed up the work, GRBP decided to establish a task force under the leadership of the expert from EC. All GRBP experts were invited to send him their comments on GRBP-71-15.

32. Similarly, the expert from EC introduced draft amendments to UN Regulation No. 142 (Installation of tyres) aimed at extending its scope, for the purpose of implementing the tyre installation requirements in Regulation 2019/2144 of the European Union (GRBP-71-16). GRBP requested the newly established task force (see para. 31) to consider this document as well.

33. The expert from France proposed to add a reference to UN Regulation No. 141 (TPMS) to the communication form in Annex II to UN Regulation No. 142 (GRBP-71-12). GRBP supported the proposal and invited the expert from France to prepare an official document for the next session. In this context, the expert from the Russian Federation recalled the pending editorial amendments to UN Regulation No. 142 that had been agreed on by the former Working Party on Braking and Running Gear (GRRF) (ECE/TRANS/WP.29/GRRF/2016/43).

34. The expert from France presented a draft 2020 schedule of meetings that was of interest to GRBP experts (GRBP-71-13-Rev.1). GRBP welcomed this document as a useful planning tool and invited its IWGs and TFs to provide updates to the expert from France, with the aim to issue a revised schedule on the GRBP website.

XV. Provisional agenda for the next session (agenda item 14)

35. For its seventy-third session, scheduled to be held in Geneva from 7 (p.m.) to 9 September 2020, GRBP decided to keep the same structure for the provisional agenda. GRBP noted that the deadline for the submission of official documents to the secretariat would be 15 June 2020, twelve weeks prior to the session.

Annex I

List of informal documents (GRBP-71-...) distributed during the session

<i>Symbol</i>	<i>Transmitted by</i>	<i>Agenda item</i>	<i>Language</i>	<i>Title</i>	<i>Follow-up</i>
1	Secretariat	1	E	Updated provisional agenda for the seventy-first session	(a)
2-Rev.1	Chair	1	E	Running order	(a)
3	IWG DETA	13	E	Status of DETA	(a)
4	TF MU	3	E	Status report	(a)
5	TF MU	3	E	Guidelines for the Task Force on Measurement Uncertainties	(a)
6	ETRTO	5 (d)	E	Standard Reference Test Tyre replacement	(b)
7	ETRTO	5 (a)	E	Study on the dimensional requirements for tyres after the load speed endurance test	(d)
8	ETRTO	5 (a)	E	Proposal for amending tyre marking method in UN Regulations	(b)
9	IMMA	2	E	Proposal for amendments to the 04 series of amendments to UN Regulation No. 41	(b)
10	IMMA	2	E	Proposal for amendments to the 04 series of amendments to UN Regulation No. 41	(d)
11	EC	3	E	Study on sound level limits of M- and N-category vehicles	(c)
12	France	13	E	Proposal for amendments to the original version of UN Regulation No. 142	(b)
13	Chair	13	E	2020 schedule of meetings of interest to GRBP experts	(c)
14	Secretariat	11	E	General information and WP.29 highlights	(a)
15	EC	13	E	Proposal for amendment to UN Regulation No. 141	(c)
16	EC	13	E	Proposal for amendment to UN Regulation No. 142	(c)
17	IMMA	2	E	Proposal for a new series of amendments to UN Regulation No. 41	(b)
18-Rev.2	IMMA	2	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2019/25/Rev.1	(d)
19-Rev.1	IMMA	2	E	Revision of ASEP in UN Regulation No. 41	(a)
20	GOIE	5 (d)	E	Status report	(a)
21	TF MU	3	E	Strategic approach to handle uncertainties in UN Regulations	(c)
22-Rev.1	Chair	12	E	GRBP priorities and recurrent items	(c)
23	IWG WGWT	5	E	Status report	(a)
24	IWG ASEP	3	E	Revision of ASEP: future concept of real driving	
25	IWG ASEP	3	E	Status report	(a)
26	GOIE	5 (d)	E	Justification for ECE/TRANS/WP.29/GRBP/2019/14	(c)
27-Rev.1	TF RWS	6	E	Status report	(a)

<i>Symbol</i>	<i>Transmitted by</i>	<i>Agenda item</i>	<i>Language</i>	<i>Title</i>	<i>Follow-up</i>
28- Rev.1	Poland	4	E	Proposal for Supplement 2 to the 01 series of amendments to UN Regulation No. 138	(d)
29	ETRTO	5 (d)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/6	(d)
30	ETRTO	5 (a)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/3	(d)
31- Rev.1	TF MU	3	E	Draft Terms of Reference for the Informal Working Group on Measurement Uncertainties (IWG MU)	(d)

Notes:

- (a) Consideration completed or superseded.
- (b) Continue consideration at the next session with an official symbol.
- (c) Continue consideration at the next session as an informal document.
- (d) Adopted and to be submitted to WP.29.

Annex II

Adopted amendments to UN Regulation No. 41 (based on ECE/TRANS/WP.29/GRBP/2019/25/Rev.1 and GRBP-71-18-Rev.2)

Paragraph 2., amend to read:

- “2. ...
- 2.1. *"Approval of a motorcycle"* means the approval of a motorcycle type with regard to noise;
- 2.2. *"Type of motorcycle as regards its sound level ~~and exhaust system~~"* means motorcycles which do not differ in such essential respects as the following:
- 2.2.1. The type of engine (two-stroke or four-stroke, reciprocating piston engine or rotary-piston engine, number and capacity of cylinders **or rotors**, number and type of carburettors or injection systems, arrangement of valves, rated maximum net power and corresponding engine speed). For rotary-piston engines the cubic capacity should be taken to be double of the volume of the chamber;
- 2.2.2. Transmission system, in particular the number and ratios of the gears **and the overall gear ratio taking into account the rear wheel circumference.**
- 2.2.3. ~~Number, type, arrangement of exhaust or silencing systems.~~ **Configurations and arrangements of exhaust or silencing systems.**
- 2.3. *"Exhaust or silencing system"* means a complete set of components necessary to limit the noise caused by a motorcycle engine and its exhaust.
- 2.3.1. *"Original exhaust or silencing system"* means a system of a type fitted to the vehicle at the time of type approval or extension of type approval. It may also be the vehicle manufacturer's replacement part.
- 2.3.2. *"Non-Original **Replacement** Exhaust or Silencing System (NORESS)"* means a system of a type other than that fitted to the vehicle at the time of type approval or extension of type approval.
- 2.4. *"Exhaust or silencing systems of differing ~~types~~ configurations"* means systems which are fundamentally different in one of the following ways:
- 2.4.1. Systems comprising components bearing different factory or trademarks;
- 2.4.2. Systems comprising any component made of materials of different characteristics or comprising components which are of a different shape or size;
- 2.4.3. Systems in which the operating principles of at least one component are different;
- 2.4.4. Systems comprising components in different combinations.
- 2.5. ..."

Paragraph 3. "Application for approval", amend to read:

- “3. ...
- ...
- 3.3. **Respective documents mentioned in paragraph 3.2 above shall be prepared for each exhaust or silencing system configuration, if multiple configurations are applicable to the motorcycle type to be approved.**
- 3.34. At the request of the technical service responsible for conducting approval tests **in agreement with the type approval authorities**, the motorcycle

manufacturer shall, in addition, submit a sample of the exhaust or silencing system(s).

- 3.45. ~~A~~ **All motorcycle(s) representative of the ~~motor-cycle~~ same type with all possible exhaust or silencing system configurations** to be approved shall be submitted to the technical service responsible for conducting approval tests **in agreement with the type approval authorities.**

3.56. ..."

Paragraph 5., amend to read:

"5. APPROVAL

5.1. If the motorcycle type submitted for approval pursuant to this Regulation meets the requirements of paragraphs 6. and 7. below, approval of that motorcycle type shall be granted.

5.2.1. An approval number shall be assigned to each type approved. Its first two digits indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number ~~to the same motorcycle type equipped with another type of exhaust or silencing system, or~~ to another motorcycle type.

5.2.2. **Multiple exhaust or silencing system configurations shall be explicitly listed under the same Aapproval of a Ttype of motorcycle with their respective test results.** ~~or tested by worst case criteria, as established between the Type Approval Authority and the manufacturer.~~

5.3. Notice of approval or of refusal of approval of a motorcycle type pursuant to this Regulation shall be communicated to the Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in Annex 1 to this Regulation and of drawings of the exhaust or silencing system, supplied by the applicant for approval in a format not exceeding A4 (210 × 297mm) or folded to that format and on an appropriate scale.

5.4. **The respective information for multiple exhaust or silencing system configurations mentioned in paragraph 5.2.2. above shall be provided for in Annex 1 to this Regulation. "**

Paragraph paras. 5.4. to 5.8. (former) renumber from 5.5. to 5.9. respectively.

Annex 3, paragraph 1.3.2.1., amend to read:

"1.3.2.1. General conditions

~~The vehicle shall be supplied as specified by the vehicle manufacturer.~~
The vehicle(s) tested shall be representative of vehicles to be put on the market under the vehicle type to be approved and selected by the manufacturer in agreement with the Type Approval Authority, to comply with the requirements of this Regulation.

Before the measurements are started, the vehicle shall be brought to its normal operating conditions.

If the motorcycle is fitted with fans with an automatic actuating mechanism, this system shall not be interfered with during the sound measurements. For motorcycles having more than one driven wheel, only the drive provided for normal road operation may be used."

Annex III

Adopted amendments to UN Regulation No. 41 (based on GRBP-71-10)

Annex 3, paragraph 2.4.1., amend to read:

2.4.1 Positioning of the microphone (see Appendix 2)

The microphone shall be located at a distance of 0.5 ± 0.01 m from the reference point of the exhaust pipe defined in Figure 1 and at an angle of $45 \pm 5^\circ$ to the vertical plane containing the flow axis of the pipe termination. The microphone shall be at the height of the reference point, but not less than 0.2 m from the ground surface. The reference axis of the microphone shall lie in a plane parallel to the ground surface and shall be directed towards the reference point on the exhaust outlet.

The reference point shall be the highest point satisfying the following conditions:

- (a) The reference point shall be at the end of the exhaust pipe,
- (b) The reference point shall be on the vertical plane containing the exhaust outlet centre and the flow axis of the exhaust pipe termination.

If two microphone positions are possible, the location furthest laterally from the vehicle longitudinal centreline shall be used.

If the flow axis of the exhaust outlet pipe is at $90^\circ \pm 5^\circ$ to the vehicle longitudinal centreline, the microphone shall be located at the point that is the furthest from the engine.

If a vehicle has two or more exhaust outlets spaced less than **or equal to 0.3 m** apart and connected to a single silencer, only one measurement shall be made. The microphone shall be located relative to the outlet **furthest from the vehicle's longitudinal centreline**, or, when such outlet does not exist, to the outlet that is highest above the ground. **The 0.3 m measurement is to be made along a single plane perpendicular to the flow axis of the exhaust gases.**

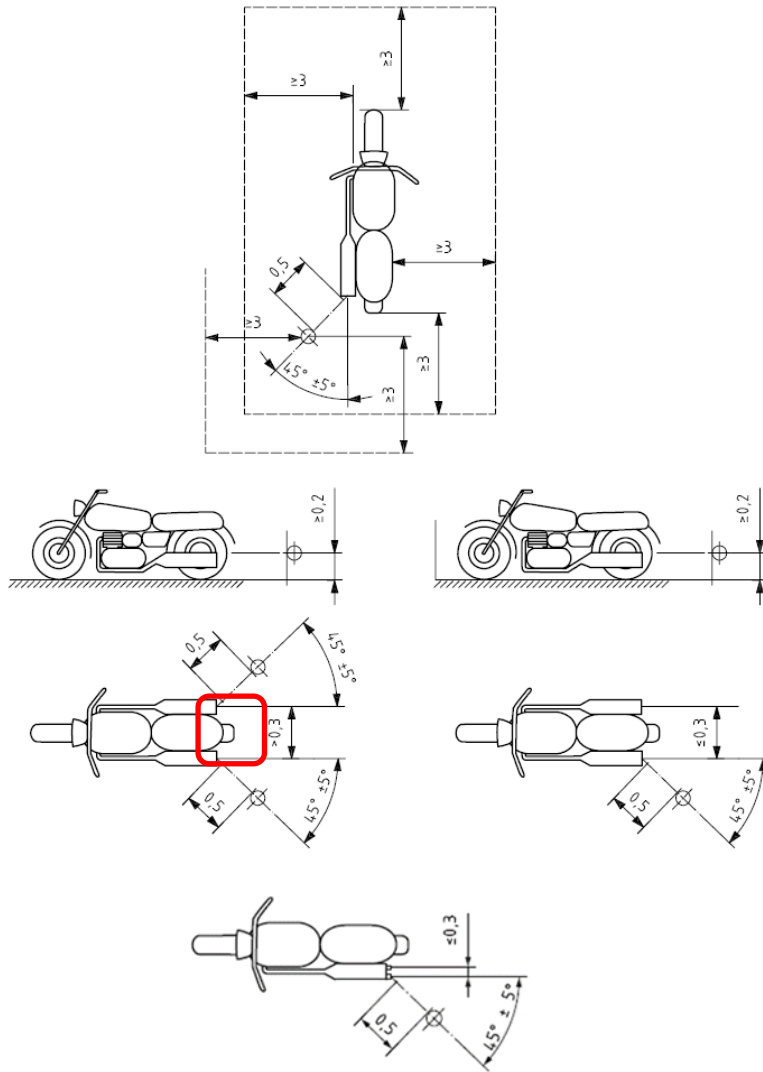
If a vehicle has two or more exhaust outlets spaced less than or equal to 0.3 m apart and connected to separate silencers, only one measurement shall be made. The microphone shall be located relative to the outlet furthest from the vehicle's longitudinal centreline, or, when such outlet does not exist, to the outlet that is highest above the ground.

For vehicles having an exhaust provided with outlets spaced more than 0.3 m apart, one measurement is made for each outlet as if it were the only one, and the highest sound pressure level shall be noted. For the purpose of roadside checking, the reference point may be moved to the outer side of the body.

Annex 3 – Appendix 2, amend to read:

"Positioning of the microphones for the stationary noise test:

Dimensions in metres, unless otherwise indicated



"

Annex IV

Terms of Reference of the Informal Working Group on Measurement Uncertainties

A. Introduction

1. In line with ECE/TRANS/WP.29/GRB/68, para. 8, this document establishes the Terms of Reference of the Informal Working Group on Measurement Uncertainties (IWG MU).
2. The aim of IWG MU is to propose harmonized measures for evaluating systematic and random errors in order to improve the test procedures in at least UN Regulations Nos. 51 and 117 (for rolling sound emissions only) by reducing measurement uncertainties.

B. Objectives

3. IWG shall develop and propose harmonized measures for evaluating systematic and random errors based on the ISO Guide to the expression of uncertainty in measurement (GUM 98-3).
4. The scope and purpose of IWG MU shall cover at least UN Regulation Nos. 51 and 117. IWG shall develop harmonized technical requirements for these UN Regulations with consideration of their test procedures.
5. IWG shall, where appropriate, develop a practice guide for compensation and/or correction factors.
6. A general approach shall then be made in such a way that it would be possible to use it for improving the test procedures in other UN Regulations. This approach could be either documented in the Consolidated Resolution on the Construction of Vehicles (R.E.3) or as a reference document.
7. IWG MU shall report to GRBP.

C. Rules of Procedure

8. IWG is open to all participants of GRBP. However, it is recommended that a maximum of two technical experts per country and organization participate in IWG. IWG will be chaired by Norway. OICA shall act as Secretary.
9. The working language shall be English.
10. All documents and/or proposals shall be submitted to the Secretary in a suitable electronic format at least one week before the session.
11. An agenda and the latest draft documents shall be circulated to the members of IWG in advance of all scheduled meetings.
12. All IWG documents shall be made available on a dedicated ECE website.
13. Decisions of IWG MU shall be reached by consensus. When consensus cannot be reached, the IWG Chair shall present the different points of view to GRBP and seek guidance as appropriate.

D. Timeline

14. The aim of IWG MU is to present:

- For the seventy-second session of GRBP in September 2020: draft reference documents and an informal document with amendments to UN Regulations Nos. 51 and 117.
- For consideration and adoption at the seventy-third session of GRBP in January 2021: official documents with amendments to UN Regulations Nos. 51 and 117.
- For consideration at the seventy-third session of GRBP in January 2021: an informal document with recommendations on how to improve the test procedures in other UN Regulations under the auspices of GRBP by reducing measurement uncertainties.
- For consideration and adoption at the seventy-fourth session of GRBP in September 2021: an official document with recommendations on how to improve the test procedures in other UN Regulations under the auspices of GRBP by reducing measurement uncertainties.

Annex V

Adopted amendments to UN Regulation No. 138 (based on GRBP-71-28-Rev.1)

Annex 3, paragraph 2.1.2., amend to read:

“2.1.2. Outdoor testing

The test site shall be substantially level. **For the measurement of vehicles in motion, the** ~~The~~ test track construction and surface shall meet the requirements of ISO 10844:2014. **For the measurement of vehicles at a standstill, the test area shall be either:**

- (a) **ISO 10844:2014; or**
- (b) **other dense asphalt; or**
- (c) **dense concrete.**

Within a radius of 50 m around the centre of the track, the space shall be free of large reflecting objects such as fences, rocks, bridges or buildings. The test track and the surface of the site shall be dry and free from absorbing materials such as powdery snow, or loose debris.

In the vicinity of the microphones, there shall be no obstacle that could influence the acoustic field and no person shall remain between the microphone and the noise source. The meter observer shall be positioned so as not to influence the meter reading. Microphones shall be located as specified in Figures 1 of the Appendix to this annex.”

Annex VI

Adopted amendments to UN Regulation No. 30 (based on ECE/TRANS/WP.29/GRBP/2020/3 and GRBP-71-30)

Paragraph 2.9.2., amend to read:

"2.9.2. **"Bias-belted"** describes a tyre structure of diagonal (bias-ply) type in which the carcass is the ply cords that extend to the beads are laid at alternate angles of substantially less than 90° to the centre line of the tread, the structure being restricted by a belt comprising two or more layers of substantially inextensible cord material laid at alternate angles close to those of the carcass;"

Paragraph 3.1.15. renumber to 3.1.14.

Paragraph 4.1.10., amend to read:

"4.1.10. The ply-rating number of diagonal (bias-ply) tyres, **except for T-type temporary use spare tyres;**"

Paragraph 6.2.3., amend to read:

"6.2.3. **Except for tyres with radial structure or run flat tyres, the** The outer diameter of the tyre, measured six hours after the load/speed performance test as specified in paragraph 2. of Annex 7, must not differ by more than ± 3.5 per cent from the outer diameter as measured before the test."

Paragraph 6.1.4.2.1., amend to read:

"6.1.4.2.1. in diagonal (bias-ply) **and bias-belted** tyres: 6 per cent;"

Insert a new paragraph 11.4. to read:

"11.4. **Until 3 months after the date of entry into force of Supplement 22 to the 02 series of amendments to this Regulation, Contracting Parties applying this Regulation may continue to grant and/or extend type approvals according to the 02 series of amendments to this Regulation, without taking into account the provisions of Supplement 22 to the 02 series of amendments to this Regulation.**"

Annex 7, paragraph 3.2., amend to read:

"3.2. Carry out the procedure as detailed in paragraphs 1.2. to 1.5. above with a test room temperature at ~~38 °C ± 3 °C~~ **38 °C ± 3 °C** in relation to conditioning the tyre-and-wheel assembly as detailed in paragraph 1.4. The temperature sensor shall be at a distance not less than 0.15 m and not more than 1.00 m from the tyre sidewall."

Annex VII

Adopted amendments to UN Regulation No. 117 (based on ECE/TRANS/WP.29/GRBP/2020/6 and GRBP-71-29)

Annex 3, paragraph 2.5.1., amend to read:

“2.5.1. General

Four identical tyres shall be fitted on the test vehicle. In the case of **C3** tyres with a load capacity index in excess of 121 and without any dual fitting indication, two of these tyres of the same type and range shall be fitted to the rear axle of the test vehicle; the front axle shall be fitted with tyres of size suitable for the axle load and planed down to the minimum depth in order to minimize the influence of tyre/road contact noise while maintaining a sufficient level of safety.

In the case of C2 tyres with a load capacity index lower or equal to 121, with a section width wider than 200 mm, an aspect ratio lower than 55, a rim diameter code lower than 15 and without any dual fitting indication, two of these tyres of the same type and range shall be fitted to the rear axle of the test vehicle; the front axle shall be fitted with tyres of a size suitable for the axle load and planed down to the minimum depth in order to minimize the influence of tyre/road contact noise while maintaining a sufficient level of safety.

~~Winter tyres that in certain Contracting Parties may be equipped with studs intended to enhance friction shall be tested without this equipment.~~ Tyres with special fitting requirements shall be tested in accordance with these requirements (e.g. rotation direction). The tyres shall have full tread depth before being run-in.

Tyres are to be tested on rims permitted by the tyre manufacturer.”

Annex VIII

GRBP informal groups

<i>Informal group</i>	<i>Chair(s) and Co-Chair(s)</i>	<i>Secretary</i>	<i>Expiry date of the mandate</i>
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Wet Grip performance for Tyres in Worn state (WGWT)	Mrs. Elodie Collot (France) Phone: +33 171 80 17 43 Fax: + 33 1 71 80 17 17 Email: elodie.collot@utacceram.com Mr. Andreas Vosinis (Directorate General Growth, European Commission) Tel:+ 32 2 299 21 16 Email: andreas.vosinis@ec.europa.eu	Mr. Nicolas de Mahieu (ETRTO) Phone: +32 23 44 40 59 Email: info@etrto.org	September 2020
Measurement Uncertainties (IWG MU)	Mr. Truls Berge (Norway) Tel: + 47 905 72 026 Email: truls.berge@sintef.no	Mr. Manfred Klopotek von Glowczewski Tel: +46 8 553 82158 Fax: +46 8 553 85604 Email: manfred.klopotek@scania.com	September 2021