



Economic and Social Council

Distr.: General
9 October 2020

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Noise

Seventy-second session

Geneva, 8–9 September 2020 (online)

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

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I. Attendance

1. The Working Party on Noise and Tyres (GRBP) held its seventy-second virtual session from 8 to 9 September 2020 in Geneva.¹ 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.29/690/Rev.1): Canada, China, Finland, France, Germany, Hungary, India, Italy, Japan, Netherlands, Norway, Republic of Korea, Russian Federation, San Marino, South Africa, Spain, Sweden, Switzerland, Turkey, 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: Bureau International Permanent des Associations de Vendeurs et Rechapeurs de pneumatiques (BIPAVÉR), 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) and International Organization of Motor Vehicle Manufacturers (OICA).

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRBP/2020/7, Informal documents GRBP-72-01 and GRBP-72-03

2. GRBP considered and adopted the agenda (ECE/TRANS/WP.29/GRBP/2020/7, as amended by GRBP-72-01). GRBP noted the running order proposed by the Chair (GRBP-72-03). The list of informal documents is contained in Annex I. The list of GRBP informal groups is reproduced in Annex XI.

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

Documentation: ECE/TRANS/WP.29/GRBP/2020/9, ECE/TRANS/WP.29/GRBP/2020/18, Informal documents GRBP-72-05, GRBP-72-13 and GRBP-72-14

3. GRBP considered a proposal for a new series of amendments to UN Regulation No. 41 which was submitted by the Informal Working Group on Additional Sound Emission Provisions (IWG ASEP) (ECE/TRANS/WP.29/GRBP/2020/9). The experts of the European Commission and Germany proposed new dates for the transitional provisions in paragraph 12 (GRBP-72-05). GRBP adopted the proposal as amended by Annex II and requested the secretariat to submit it to WP.29 and the Administrative Committee (AC.1) for consideration and vote at their March 2021 sessions as a draft 05 series of amendments to UN Regulation No. 41.

4. Referring to Article 12, paragraph 4 of the 1958 Agreement, the expert from EC proposed a modification to the transitional provision on the possibility of granting type approvals according to the preceding series of amendments (GRBP-72-14). GRBP was informed that the expert of EC had transmitted a similar modification to amendment proposals to other UN Regulations under different agenda items (see paras. 5, 22 and 23 below). GRBP noted that this issue relates to the WP.29 Guidelines on Transitional provisions (ECE/TRANS/WP.29/1044/Rev.2) and invited the expert of EC to bring it to WP.29 for consideration. GRBP also agreed to revert to this issue at its next session, if necessary.

5. The expert from IMMA proposed aligning UN Regulation No. 41 with standard ISO 10844:2014 (ECE/TRANS/WP.29/GRBP/2020/18). GRBP adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their

¹ GRBP experts participated remotely. Simultaneous interpretation was available into the official UNECE languages.

March 2021 sessions as a draft Supplement 8 to the 04 series of amendments and as part of the new draft 05 series of amendments to UN Regulation No. 41 (see para. 4 above). The expert of EC reiterated his view on the transitional provision about granting type approvals according to preceding series of amendments (GRBP-72-13).

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

Documentation: ECE/TRANS/WP.29/GRBP/2020/10, Informal documents GRBP-72-11, GRBP-72-16, GRBP-72-17 and GRBP-72-25

6. On behalf of IWG ASEP, the expert from Germany reported on their activities (GRBP-72-16) and proposed modifications to the Terms of Reference (ToR) (ECE/TRANS/WP.29/GRBP/2020/10 and GRBP-72-17). GRBP adopted the revised ToR as laid down in Annex III.

7. The expert from Norway, in his capacity as Chair, Informal Working Group on Measurement Uncertainties (IWG MU), reported on the progress of IWG MU (GRBP-72-11) and proposed revised ToR (GRBP-72-10). GRBP adopted the revised ToR of IWG MU as laid down in Annex IV.

8. The expert of EC informed GRBP about progress of the study on the sound level limits of M- and N-category vehicles (GRBP-72-25). The expert from Japan thanked EC for sharing this information and pointed out that his country was also conducting a similar study.

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

9. GRBP decided to extend the mandate of IWG on Quiet Road Transport Vehicles for the Global Technical Regulation (GTR) until December 2021.

VI. Tyres (agenda item 5)

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

Documentation: ECE/TRANS/WP.29/GRBP/2020/12, ECE/TRANS/WP.29/GRBP/2020/21, Informal documents GRBP-72-07, GRBP-72-22 and GRBP-72-24

10. The expert from the European Tyre and Rim Technical Organization (ETRTO) introduced a proposal for amendments that allows for tyre marking methods other than moulding (ECE/TRANS/WP.29/GRBP/2020/12). GRBP adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a draft Supplement 23 to the 02 series of amendments to UN Regulation No. 30.

11. The expert from France proposed a new definition of "radial tyre" (ECE/TRANS/WP.29/GRBP/2020/21 and GRBP-72-22), which was amended by the expert from EC (GRBP-72-24). The expert from Japan held the view that the proposal was not sufficiently clear. The expert of ETRTO pointed out that his organization would need technical justification to support the proposal. The Chair invited all experts concerned to internally re-discuss the proposal and to submit an updated document to the next session.

12. The expert from ETRTO recalled the recent adoption of Amendment No. 2 to UN GTR No. 16 (Tyres) and proposed to elaborate a roadmap for transposing of its provisions into appropriate UN Regulations (GRBP-72-07). GRBP thanked ETRTO for the initiative and agreed to revert to this issue at the next session.

B. UN Regulation No. 54 (Tyres for commercial vehicles and their trailers)

Documentation: ECE/TRANS/WP.29/GRBP/2020/13, Informal documents GRBP-72-27 and GRBP-72-30

13. GRBP considered a proposal for amendments that had been submitted by the expert from ETRTO (ECE/TRANS/WP.29/GRBP/2020/13, GRBP-72-27 and GRBP-72-30). GRBP adopted the proposal, as amended by Annex V, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a draft Supplement 24 to the original series of amendments to UN Regulation No. 54.

C. UN Regulation No. 75 (Tyres for L-category vehicles)

Documentation: ECE/TRANS/WP.29/GRBP/2020/14, Informal documents GRBP-71-07-Rev.1 and GRBP-72-28

14. The expert from ETRTO proposed several modifications (ECE/TRANS/WP.29/GRBP/2020/14, GRBP-71-07-Rev.1 and GRBP-72-28). GRBP adopted the proposal, as amended by Annex VI, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a draft Supplement 19 to the original series of amendments to UN Regulation No. 75.

D. UN Regulation No. 106 (Tyres for agricultural vehicles and their trailers)

Documentation: ECE/TRANS/WP.29/GRBP/2020/15, Informal document GRBP-72-08

15. GRBP considered a proposal for amendments that had been submitted by the expert from ETRTO (ECE/TRANS/WP.29/GRBP/2020/15 and GRBP-72-08). GRBP adopted the proposal, as amended by Annex VII, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a draft Supplement 19 to the original series of amendments to UN Regulation No. 106.

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

Documentation: ECE/TRANS/WP.29/GRBP/2020/11, ECE/TRANS/WP.29/GRBP/2020/16, ECE/TRANS/WP.29/GRBP/2020/17, Informal documents GRBP-72-02, GRBP-72-06, GRBP-72-15, GRBP-72-23, GRBP-72-26-Rev.1 and GRBP-72-29

16. The expert from ETRTO introduced an amendment proposal with the aim to improve the reproducibility of the test method from standard ISO 23671 (ECE/TRANS/WP.29/GRBP/2020/16). Following concerns of the experts from Germany and Spain about paragraph 4.1.2.1. of Annex 5, part A, the expert from ETRTO proposed a modification to this paragraph (GRBP-72-29). GRBP adopted the proposal, as amended by Annex VIII, and requested the secretariat to submit it to WP.29 for consideration and vote at their March 2021 sessions as a draft Supplement 13 to the 02 series of amendments to UN Regulation No. 117.

17. The expert from ETRTO proposed further amendments with a view to modifying the word "moulded" in tyre marking methods and replacing the Standard Reference Test Tyre SRTT14 by SRTT16 (ECE/TRANS/WP.29/GRBP/2020/17). GRBP adopted the proposal, subject to deletion of paragraph 9.1., and requested the secretariat to submit it to WP.29 and for consideration and vote at their March 2021 sessions as part of draft Supplement 13 to the 02 series of amendments to UN Regulation No. 117.

18. On behalf of IWG for Wet Grip on Worn Tyres (WGWT), the expert of ETRTO reported on their progress (GRBP-72-06) and introduced amendments to the IWG Terms of Reference (ECE/TRANS/WP.29/GRBP/2020/11). The expert of EC proposed to extend the IWG scope to C2 and C3 tyres (GRBP-72-02). The expert from ETRTO commented on this proposal (GRBP-72-26-Rev.1). Following a discussion, GRBP was not in a position to reach a consensus on the EC proposal and decided to come back to revision of ToR at the next session. Meanwhile, GRBP agreed to request WP.29 to extend the mandate of IWG WGWT until September 2021.

19. GRBP was informed about the progress of the Task Force on Studded Tyres (TF ST) and of the group of interested experts (GOIE) on snow tyres provisions (GRBP-72-15 and GRBP-72-23, respectively).

F. UN Regulation No. 124 (Replacement wheels for passenger cars)

Documentation: ECE/TRANS/WP.29/GRBP/2020/8, Informal document GRBP-72-04

20. The expert from the Russian Federation proposed aligning the criteria on the total loss of inflation pressure within one minute in Annex 8, paragraph 3 and in paragraph 5 (c) (ECE/TRANS/WP.29/GRBP/2020/8). GRBP adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as draft Supplement 2 to the original series of amendments to UN Regulation No. 124.

21. The expert from Germany proposed amendments with a view to adapting UN Regulation No. 124 to the current requirements for type approvals (GRBP-72-04). GRBP invited him to submit an official document for consideration at the next session.

G. UN Regulation No. 141 (Tyre pressure monitoring system)

Documentation: ECE/TRANS/WP.29/GRBP/2020/20, Informal documents GRBP-72-19-Rev.2, GRBP-72-20 and GRBP-72-21

22. GRBP took note of the activities of the Task Force on Tyre Pressure Monitoring System and on Tyre Installation (TF TPMSTI) (GRBP-72-21) and addressed its proposal for a new series of amendments (ECE/TRANS/WP.29/GRBP/2020/20, GRBP-72-19-Rev.2, GRBP-72-20). GRBP adopted the proposal, as amended by Annex IX, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a new 01 series of amendments to UN Regulation No. 141. During the adoption, the expert of EC recalled his intention to seek WP.29 guidance on the transitional provision about granting type approvals according to preceding series of amendments (see para. 4 above).

H. UN Regulation No. 142 (Tyre installation)

Documentation: ECE/TRANS/WP.29/GRBP/2020/19, Informal document GRBP-72-18

23. On behalf of TF TPMSTI, the expert from EC presented a proposal for a new series of amendments (ECE/TRANS/WP.29/GRBP/2020/19, GRBP-72-18). GRBP adopted the proposal, as amended by Annex X, and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their March 2021 sessions as a new 01 series of amendments to UN Regulation No. 141. During the adoption, the expert of EC recalled his intention to seek WP.29 guidance on the transitional provision about granting type approvals according to the preceding series of amendments (see para. 4 above).

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

Documentation: Informal document GRBP-72-09

24. On behalf of the Task Force on Reverse Warning (TF RW), the expert from Japan reported on the progress of TF RW (GRBP-72-09).

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

25. GRBP agreed to postpone consideration of this item to the next session.

IX. Proposal for amendments to the Consolidated Resolution on the Construction of Vehicles (agenda item 8)

26. No issues were considered under this item.

X. Development of the International Whole Vehicle Type Approval system (agenda item 9)

27. GRBP agreed to postpone consideration of this item to the next session.

XI. Highlights of the recent sessions of the World Forum for Harmonization of Vehicle Regulations (agenda item 10)

28. GRBP agreed to postpone consideration of this item to the next session.

XII. Exchange of views on the future work of the Working Party on Noise and Tyres (agenda item 11)

Documentation: Informal document GRBP-72-12

29. The Chair presented a revised list of priorities and recurrent items (GRBP-72-12). GRBP noted that the list would be updated and reported to WP.29.

XIII. Other business (agenda item 12)

Documentation: Informal document GRBP-71-13-Rev.3

30. The expert from France presented an updated 2020 schedule of meetings that was of interest to GRBP experts (GRBP-71-13-Rev.3).

XIV. Provisional agenda for the next session (agenda item 13)

31. For its seventy-third session, scheduled to be held in Geneva from 26 to 29 January 2021, 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 3 November 2020, twelve weeks prior to the session. With regard to informal documents, the Chair requested GRBP experts to submit them at least one week prior to the session.

XV. Election of officers (agenda item 14)

32. In compliance with Rule 37 of the Rules of Procedure (TRANS/WP.29/690/Rev.1), GRBP called for the election of officers. The representatives of the Contracting Parties,

present and voting, elected unanimously Mr. Serge Ficheux (France) as Chair and Mr. Andrei Bocharov (Russian Federation) as Vice-Chair for the sessions of GRBP scheduled for the year 2021.

Annex I

List of informal documents (GRBP-72-...) 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	EC	5 (e)	E	Proposal for amendments to the Terms of Reference of IWG WGWT	(d)
3-Rev.1	Chair	1	E	Running order	(a)
4	Germany	5 (f)	E	Proposal for amendments to UN Regulation No. 124	(b)
5	(EC and Germany)	2	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/9	(d)
6	IWG WGWT	5 (e)	E	Status report	(a)
7	ETRTO	5	E	Tyre industry proposal for a GTR transposition roadmap	(c)
8	ETRTO	5 (d)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/15	(d)
9	TF RWS	6	E	Status report	(a)
10	IWG MU	3	E	Revised Terms of Reference	(d)
11	IWG MU	3	E	Status report	(a)
12	Chair	11	E	GRBP priorities	(c)
13	EC	2	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/18	(c)
14	EC	2	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/9	(c)
15	TF ST	5	E	Status report	(a)
16-Rev.1	IWG ASEP	3	E	Status report	(a)
17	IWG ASEP	2	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/10	(d)
18	TF TPMSTI	5 (h)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/19	(d)
19-Rev.2	TF TPMSTI	5 (g)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/20	(d)
20	TF TPMSTI	5 (g)	E	TPMS testing: validation of the proposed amendments to UN Regulation No. 141	(a)
21	TF TPMSTI	5(g), 5(h)	E	Status report	(a)
22	France	5 (a)	E	Radial definition proposal	(b)
23	GOIE	5 (e)	E	Status report	(a)
24	EC	5 (a)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/21	(b)
25	EC	3	E	Study on sound level limits of M- and N-category vehicles	(a)
26-Rev.1	ETRTO	5 (e)	E	Comments on GRBP-72-02	
27	ETRTO	5 (b)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/13	(d)
28	ETRTO	5 (c)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/14	(d)

<i>Symbol</i>	<i>Transmitted by</i>	<i>Agenda item</i>	<i>Language</i>	<i>Title</i>	<i>Follow-up</i>
29	ETRTO	5 (e)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/16	(d)
30	ETRTO	5 (b)	E	Proposal for amendments to ECE/TRANS/WP.29/GRBP/2020/13	(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 ECE/TRANS/WP.29/GRBP/2020/9 (based on GRBP-72-05)

Paragraphs 12.2.-12.4., amend to read:

- "12.2. As from 1 September 2023, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September 2023.**
- 12.3. Until 1 September 2024, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September 2023.**
- 12.4. As from 1 September 2024, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation."**

Annex III

Revised Terms of Reference of the Informal Working Group on Additional Sound Emission Provisions (based on ECE/TRANS/WP.29/GRBP/2020/10 and GRBP-72-17)

A. Introduction

1. Within the informal group for the future work of GRBP and during the sixty-second, sixty-third and sixty-fourth sessions of GRBP, several concerns about ASEP were presented:
 - New test methods would be necessary in UN Regulation No. 51 for serial hybrid vehicles that were excluded from ASEP until 30 June 2019.
 - ASEP as part of type approval (not as a manufacturer declaration).
 - ASEP as an important element of a “toolbox” (Annexes 3 and 7, periodic technical inspections, manipulations, after-market silencers, better conditions for road checks, etc.) deemed to tackle elements of real-world sound emissions, to be revised preliminary to future legislative initiatives modifying type approval sound limits.
 - More general technical review in cooperation with ISO (improvement of methods).
 - IWG ASEP started in 2016 and cannot finish in 2020 due to Covid-19. Thus, the work of the group is extended to at least the seventy-fifth session of GRBP in January 2022.
2. This proposal establishes the Terms of Reference of a new IWG ASEP (for UN Regulations Nos. 41 and 51 under the 1958 Agreement).
3. The aim of the group is to propose improvements to these Regulations.

B. Objective of Informal Working Group on Additional Sound Emission Provisions

4. The scope and objective are based on Informal document GRB-64-16.
5. The scope shall initially cover M₁, N₁ and L₃ categories.
6. As primary objectives, until now IWG ASEP has done:
 - Interpretation of paragraph 6.2.3. in the 03 series of amendments to UN Regulation No. 51,
 - Incorporation of ASEP for type approval in UN Regulation No. 41.
 - Supplements 3 to 6 to the 03 series of amendments to UN Regulation No. 51.The work is not finished on:
 - Data collections for all driving conditions of existing vehicles of categories M₁, N₁ and L₃.
 - Correlation of data with existing or new models.
 - Revision and improvement of the test procedure for automatic transmission in non-locked transmission condition.
 - Proposal of a test procedure for hybrid vehicles, low power-to-mass ratio (PMR) vehicles and new technologies of vehicles.
 - Proposal of a simplified test procedure and/or alternative test (such as in-door testing) to save time and to enable direct application of ASEP during type approval which delivers a good real driving characteristic during measurements.

7. In addition, IWG ASEP might also propose a general principle for revision of ASEP regarding:
 - Consideration of scope and target to elaborate on sound behaviours that are subject to criticism.
 - Improve the effectiveness of the method regarding off-cycle tests, etc.
 - Field of application.
 - Control range (method to be more representative for urban driving behaviour).
 - Consider harmonization with ASEP in the second step of UN Regulation No. 41.
8. IWG ASEP shall report to GRBP.

C. Rules of Procedure

9. IWG ASEP shall be open to all participants of GRBP. However, it is recommended that a maximum of two technical experts per country and organization participate in IWG.
10. A drafting group for preparing the documents of IWG ASEP is established with a maximum number of 10 participants to enable face-to-face meetings. Under the COVID-19 situation, the proposals will be circulated between the members of the drafting group.
11. Meetings other than the drafting group's meetings are organized in that way that others ASEP experts can participate in the meeting virtually.
12. IWG shall be chaired by Germany/China and co-chaired by Japan. OICA shall act as Secretary.
13. The working language shall be English.
14. All documents and/or proposals shall be submitted to the Secretary of IWG in a suitable electronic format at least one week before a scheduled meeting.
15. An agenda and the latest draft document shall be circulated to all members of IWG in advance of all scheduled IWG ASEP meetings.
16. All IWG documentation shall be made available on the dedicated UNECE website.

D. Timeline

17. The aim of IWG is to present working documents for consideration at the GRBP sessions and a detailed elaborated work plan and timeline. IWG will present progress reports, including already achieved further results, and comprehensive proposals by:
 - for motorcycles: September 2020, and at the latest by January 2021.
 - for vehicles of categories M₁ and N₁: September 2021 and at the latest by January 2022.

Annex IV

Revised Terms of Reference of the Informal Working Group on Measurement Uncertainties (based on GRBP-72-10)

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 MU shall develop and propose harmonized measures for evaluating systematic and random errors based on the International Organization of Standardisation (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 MU shall develop harmonized technical requirements for these UN Regulations with consideration of their test procedures.
5. IWG MU 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 MU 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-third session of GRBP in January 2021: draft reference documents and an informal document with amendments to UN Regulations Nos. 51 and 117.

- For consideration and adoption at the seventy-fourth session of GRBP in September 2021: official documents with amendments to UN Regulations Nos. 51 and 117.
- For consideration at the seventy-fourth session of GRBP in September 2021: an informal document with general guidelines on how to improve the test procedures in other UN Regulations under the auspices of GRBP in order to reduce measurement uncertainties.
- For consideration and adoption at the seventy-fifth session of January 2022: an official document with general guidelines on how to improve the test procedures in other UN Regulations in order to reduce measurement uncertainties.

Annex V

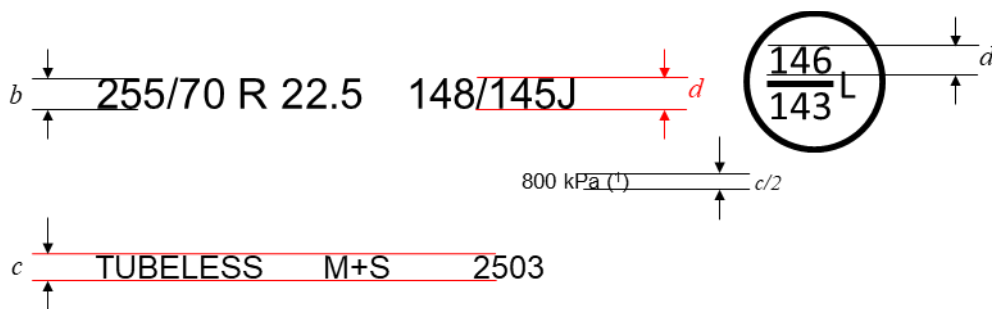
Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/13 (based on GRBP-72-27 and GRBP-72-30)

Paragraph 2.6.2., amend to read:

"2.6.2. "Radial" or "radial-ply" describes a tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centreline of the tread, the carcass being stabilized by an essentially inextensible circumferential belt;"

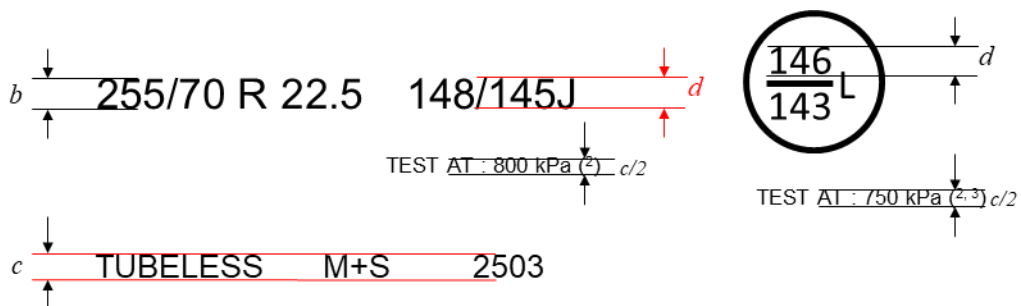
Annex 3, Figure, amend to read:

"Example 1:



(1) PSI marking instead of kPa is allowed for tyres first type approved before 1 January 2018. The kPa marking may be preceded by "TEST AT : " or, alternatively, by "TEST INFL : " or the symbol "@".

Example 2:



(2) "TEST AT : " may be replaced by "TEST INFL : " or the symbol "@ " or be omitted.

(3) The indication of a second inflation pressure for the additional service description is optional. If there is no indication, the same test inflation applies to both load/speed combinations.

Annex VI

Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/14 (based on GRBP-72-28)

Paragraph 2.5.3., delete the reference to footnote 1 **and amend to read:**

2.5.3. "Radial" or "*radial-ply*" describes a tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centreline of the tread, the carcass being stabilized by an essentially inextensible circumferential belt.[‡]

Footnote 1, delete:

[‡]Applicable also to Regulation No. 54

Insert a new paragraph ~~2.38.39.~~ to read:

"~~2.38.39.~~ "Service description" means the association of the load index with a speed category symbol (for example, 72H);"

Annex VII

Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/15 (based on GRBP-72-08)

Paragraph 2.18.13., amend to read:

“2.18.13. The letters ‘LS’ after the nominal rim diameter marking in case of **log-skidder** tyres for forestry machines²

...

² This marking shall only be mandatory for tyre types approved to this Regulation after the entry into force of Supplement 18 to the Regulation.”

Annex VIII

Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/16 (based on GRBP-72-29)

Paragraph 4.1.2.1., amend to read:

"4.1.2.1. Vehicle

Any commercialized passenger car, preferably not older than 5 years, type approved pursuant to UN Regulation No. 13-H with regards to its braking system, which is fitted with an anti-lock system (ABS), shall be considered as suitable for the purpose of the test provided that ~~Age of the car shall be less than 5 years and its~~ the mechanical conditions of the passenger car ~~shall be according to~~ meet the car manufacturer's recommendations with ~~no~~ and no warning alert from ABS (e.g. warning lights) is displayed.

Permitted modifications on the passenger car are as follows:

- (a) Those allowing the number of tyre sizes that can be mounted on the vehicle to be increased;
- (b) Those permitting automatic activation of the braking device to be installed;
- (c) **Those permitting the vehicle to be guided or accelerated externally.**

Any other modification **of the vehicle and specifically** of the braking system is prohibited."

Annex IX

Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/20 (based on GRBP-72-19-Rev.2)

Paragraph 2.13., amend to read:

- “2.13. “Cumulative driving time” means {the total time elapsed
where the vehicle of category M₁ up to a maximum mass of 3,500 kg or N₁ is driven at speeds equal to or higher than 40 km/h and further deducted by 120 seconds for each event where the vehicle speed drops below 40 km/h
or
where the vehicle of other categories than M₁ up to a maximum mass of 3,500 kg and N₁ is driven at speeds equal to or higher than 30 ~~25~~ km/h and further deducted by 120 seconds for each event where the vehicle speed drops below 30 ~~25~~ km/h}.”

Paragraph 5.1.1.1., amend to read:

- “5.1.1.1. A Tyre Pressure Refill System (TPRS) shall be deemed to be equivalent to a Tyre Pressure Monitoring System (TPMS) when the test criteria of Annex 4 are met. In this case TPMS is not ~~requested~~ **required** to be installed.”

Paragraph 5.1.1.2., amend to read:

- “5.1.1.2. A Central Tyre Inflation System (CTIS) shall be deemed to be equivalent to a Tyre Pressure Monitoring System (TPMS) when the test criteria of Annex 4 are met. In this case TPMS is not ~~requested~~ **required** to be installed.”

Paragraph 5.1.2. (a) and 5.1.2. (b), amend to read:

- “5.1.2. The effectiveness of the tyre pressure monitoring system fitted on a vehicle shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by fulfilling the technical requirements and respecting the transitional provisions of Regulation No. 10 by applying:
- (a) The {03} series of amendments for vehicles without a coupling system for charging the Rechargeable Electric Energy Storage System (traction batteries);
 - (b) The {~~06 04~~-series} of amendments for vehicles with a coupling system for charging the Rechargeable Electric Energy Storage System (traction batteries)”

Paragraph 5.1.3., amend to read:

- “5.1.3.
For vehicles of categories M₂, M₃, N₂, N₃, O₃ and O₄, the system shall operate from a speed of {30 ~~25~~ km/h or below}, up to the vehicle's maximum design speed.”

Paragraph 5.1.6., amend to read:

- “5.1.6. ...
... does not detect a minimum pressure as defined in paragraphs 5.2.4- and 5.3. after executing ...
... does not detect if the pressure is above a minimum pressure as defined in paragraphs 5.2.4- and 5.3. after executing ...
...”

Paragraph 5.2.2., amend to read:

- “5.2.2. For vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁, fitted with tyres of the tyre class C2, the TPMS shall illuminate the warning signal described in paragraph 5.5. within **ten** minutes of cumulative driving time after the in service operating pressure in one of the vehicle's tyres has been reduced by **20** per cent or it is at a minimum pressure of {220} kPa, whichever is higher.”

Paragraph 5.2.3., amend to read:

- “5.2.3. For vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄, fitted with tyres of the tyre class C2 or C3, the TPMS shall illuminate the warning signal described in paragraph 5.5. within not more than {ten} minutes of cumulative driving time after the in service operating pressure in one of the vehicle's tyres has been reduced by {20twenty} per cent.”

Paragraph 5.3.2., amend to read:

- “5.3.2. For vehicle category of category M₁ up to a maximum mass of 3,500kg and N₁, fitted with tyres of the tyre class C2, the TPMS shall illuminate the warning signal described in 5.5. within not more than 60 minutes of cumulative driving time after the in service operating pressure in any of the vehicle's tyres has been reduced by {20twenty} per cent or it is at a minimum pressure of {220} kPa, whichever is higher.”

Paragraph 5.3.3., amend to read:

- “5.3.3. For vehicle categories M₂, M₃, N₂ and N₃, fitted with tyres of the tyre class C2 or C3, the TPMS shall illuminate the warning signal ~~and for categories O₃ and O₄, fitted with tyres of the tyre class C2 or C3, the TPMS shall transmit an appropriate warning signal described in 5.5.~~ within not more than 60 minutes of cumulative driving time after the in-service operating pressure in any of the vehicle's rolling tyres in contact with the ground has been reduced by {20twenty} per cent.”

Insert a new paragraph 5.3.4., to read:

- “**5.3.4. For vehicle of categories O₃ and O₄, fitted with tyres of the tyre class C2 or C3, the TPMS shall transmit an appropriate warning signal described in 5.5 within not more than 60 minutes of cumulative driving time after the in-service operating pressure in any of the vehicle's rolling tyres in contact with the ground has been reduced by 20 per cent.**”

Paragraph 5.3.4. (former), renumber to 5.3.5.

Paragraph 5.5.2., amend to read:

- “5.5.2. In the case of a vehicle of category N₂ or N₃ towing at least one vehicle of category O₃ or O₄, the optical warning signal referred to in 5.5.1. must indicate whether any warning relates to the **individual** towing or to the towed vehicle(s).”

Paragraph 5.5.5., amend to read:

- “5.5.5. For vehicles of category O₃ and O₄, the optical warning signal referred to in 5.5.1 must be displayed to the driver of the towing vehicle of category N₂ or N₃, as specified in paragraph 5.5.4.”

Paragraph 5.6., amend to read:

- {5.6. Communications interface between towing and towed vehicles
- 5.6.1. In the case of a vehicle of category N₂ or N₃ towing at least one vehicle of category O₃ or O₄, the communications interface between these vehicles can be ~~realised~~ **achieved** via wired or wireless equipment, provided that the TPMS equipment in the towing vehicle and in the towed vehicle(s) are compatible.

5.6.1.1. Wired equipment can be based on the braking electric control line which conforms to ISO 11992-1 and be a point-to-point type.

Different wired specifications may be used, provided that the TPMS equipment in the towing vehicle and in the towed vehicle(s) are compatible.

5.6.1.2. In the case of a wireless equipment, the communication link must be an open standard specification. Provision must be made to ensure that the wireless link is set up between the physically connected vehicles (as opposed to other vehicles in the vicinity), and that information shared over this link is secure against outside interference.

5.6.1.3. In the case of a point-to-point link between a towing vehicle ECU and a towed vehicle ECU, there shall be an open standard specification to allow a TPMS ECU, which does not constitute part of the point-to-point link, to connect, communicate and operate via the towed vehicle ECU which constitutes part of the point-to-point link, i.e. standardised gatewaying.”

Paragraph 12.2., amend to read:

“12.2. As from {6 July 2022}, for vehicle types of category M₁ and as from {6 July 2024} for vehicle types of other categories than M₁, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after {6 July 2022}.”

Paragraph 12.3., amend to read:

“12.3. Until {6 July 2022}, for vehicle types of category M₁ and until {6 July 2024} for vehicle types of other categories than M₁, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before {6 July 2022}.”

Paragraph 12.4., amend to read:

“12.4. As from {6 July 2022}, for vehicle types of category M₁ and as from {6 July 2024} for vehicle types of other categories than M₁, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation.”

Paragraph 12.7., amend to read:

“12.7. {Contracting Parties applying this Regulation shall not refuse to grant type approvals according to any preceding series of amendments to this Regulation or extensions thereof.}”

Annex 1,

Paragraph 9.1., amend to read:

“9.1.
~~Forth~~ **Fourth** axle:
 Fifth axle:
 Sixth axle:
 {etc.}”

Annex 3,

Paragraph 1.5.1., amend to read:

“1.5.1. Test weight.
 The vehicle may be tested at any condition of load, the distribution of the mass among the axles being that stated by the vehicle manufacturer without exceeding any of the maximum permissible mass for each axle.
 However, in the case where there is no possibility to set or reset the system, the vehicle shall be unladen. **For vehicles of category M₁ up to a maximum**

mass of 3,500 kg, M₂, M₃, N₁, N₂, and N₃ ~~There~~ **there** may be, in addition to the driver, a second person on the front seat (**if fitted**) who is responsible for noting the results of the tests. ~~The load condition shall not be modified during the test.~~

The load condition shall not be modified during the test.”

Paragraph 1.5.2., amend to read:

“1.5.2. Vehicle speed.

...

{The TPMS shall be calibrated and tested for vehicles of categories M₂, M₃, N₂, N₃, O₃ and O₄:

- (c) In a speed range from {3025} km/h and {90} km/h (or the vehicle's maximum design speed if it is less than {90} km/h) for the puncture test to verify the requirements of paragraph 5.2. to this Regulation; and
- (d) In a speed range from {3025} km/h and {90} km/h (or the vehicle's maximum design speed if it is less than {90} km/h) for the diffusion test to verify the requirements of paragraph 5.3 to this Regulation and for the malfunction test to verify the requirements of paragraph 5.4. to this Regulation.}

...”

Paragraph 1.5.6., amend to read:

“1.5.6. Tyres.

The vehicle shall be tested with the tyres installed on the vehicle according to the vehicle manufacturer's recommendation. However, the spare tyre may be utilised for testing TPMS malfunction.

~~Tyres of tyre class C1 shall be warmed up according to the procedure in paragraph 2.6.2.1. of this Annex.—~~

{Tyres of tyre class C2 and C3 shall be warmed up according to the following procedure:

- ~~Warm up the tyre during 2 hours according to UN Regulation No. 117.~~
- ~~The ambient temperature should be higher than 0° C.~~
- ~~The chosen vehicle speed range should be between 25 and 90 km/h.~~
- ~~The average speed should be around 45 km/h.~~
- ~~The vehicle should be run with an axle load between 60% and 90%.}~~

Insert a new paragraph 1.5.7. to read:

“1.5.7. **Lift axle(s)**

If the vehicle is equipped with lift axle(s), the lift axle(s) shall be fully lowered such that the tyres shall have contact with the ground during testing.”

Paragraph 2., amend to read:

“2. Test procedure

The test shall be performed at a test speed within the range in accordance with paragraph ~~4.2.1.5.2.~~ **1.5.2.** to this annex, at least once ...”

Paragraph 2.1., amend to read:

“2.1. Before inflating the vehicle's tyres, leave the vehicle stationary outside at ambient temperature with the engine off shaded from direct sunlight and not exposed to wind or other heating or chilling influences for at least one hour **for**

vehicles of category M₁ and N₁ and at least 4 hours for vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄. Inflate the vehicle's tyres to the vehicle manufacturer's recommended cold inflation pressure (P_{rec}), in accordance with the vehicle manufacturer's recommendation for the speed and load conditions, and tyre positions. All pressure measurements shall be carried out using the same test equipment."

Paragraph 2.4., amend to read:

"2.4. Learning/ **Tyre warming** phase.

Paragraph 2.4.1., amend to read:

"2.4.1. **For vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁, drive the vehicle for a minimum of 20 minutes within the speed range in paragraph 1.5.2. to this annex, and with an average speed of 80 km/h (± 10 km/h). It is allowed to be outside the speed range for a maximum cumulative time of two minutes during this phase.**

For vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄, drive the vehicle for a minimum of 120 minutes within the speed range in paragraph 1.5.2. to this annex, and with an average speed of 57 km/h (± 10 km/h). It is allowed to be outside the speed range for a maximum cumulative time of two minutes during this phase.

~~Drive the vehicle for a minimum of twenty minutes within the speed range in paragraph 1.4.2. to this annex, and with an average speed of eighty km/h (± 10 km/h) for M₁ vehicles of mass up to 3,500 kg and N₁ vehicles, [and fifty-seven km/h (± 10 km/h) for M₂, M₃, N₂, N₃, O₃ and O₄ vehicles]. It is allowed to be outside the speed range for a maximum cumulative time of two minutes during the learning phase."~~

Paragraph 2.5.1., amend to read:

"2.5.1. Procedure for the puncture test to verify the requirements of paragraph 5.2. to this Regulation.

Following the requirements specified in 5.1.5, deflate one of the vehicle's tyres within five minutes of measuring the warm pressure as described in paragraph 2.4.3. above, until it is at P_{warm} - 20 per cent, or it is at a minimum pressure

of 150 kPa for **vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁**, fitted with tyres of tyre class C1

or

of {220} kPa for **vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁**, fitted with tyres of tyre class C2,

whichever is higher, namely P_{test} . Following a stabilisation period of between two and five minutes the pressure P_{test} shall be rechecked and adjusted if necessary."

Paragraph 2.5.2., amend to read:

"2.5.2. Procedure for the diffusion test to verify the requirements of paragraph 5.3. to this Regulation.

For vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁, fitted with tyres of tyre class C1 deflate ~~Deflate~~ all tyres within five minutes of measuring the warm pressure as described in paragraph 2.4.3. above, until the deflated tyres are at P_{warm} - 20 per cent plus a further deflation of 7 kPa, namely P_{test} **or it is at a minimum pressure of 150 kPa**. Following a stabilisation period of between two and five minutes the pressure P_{test} shall be rechecked and adjusted if necessary.

For vehicles of category M₁ up to a maximum mass of 3,500 kg and N₁, fitted with tyres of tyre class C2 deflate all tyres within five minutes of measuring the warm pressure as described in paragraph 2.4.3. above, until the deflated tyres are at P_{warm} - 20 per cent plus a further deflation of 7 kPa, namely P_{test} or it is at a minimum pressure of 220 kPa. Following a stabilisation period of between two and five minutes the pressure P_{test} shall be rechecked and adjusted if necessary.

For vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄ deflate all tyres within 15 minutes of measuring the warm pressure as described in paragraph 2.4.3. above, until the deflated tyres are at P_{warm} - 20 per cent plus a further deflation of 7 kPa, namely P_{test}. Following a stabilisation period of between 5 and 10 minutes the pressure P_{test} shall be rechecked and adjusted if necessary.

Paragraph 2.7.2., amend to read:

“2.7.2. For vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄

If the low tyre pressure tell-tale illuminated during the procedure in paragraph 2.6. above, deactivate the ignition locking system to the "Off" or "Lock" position. After a five minutes period, reactivate the vehicle's ignition locking system to the "On" ("Run") position. The tell-tale must illuminate within {ten minutes} and remain illuminated as long as the ignition locking system is in the "On" ("Run") position.”

Paragraph 3.6., amend to read:

“3.6. For vehicles of category M₂, M₃, N₂, N₃, O₃ and O₄

If the TPMS malfunction indicator is illuminated or illuminates during the procedure in paragraphs 3.1. to 3.3. above, deactivate the ignition locking system to the "Off" or "Lock" position. After five minutes, reactivate the vehicle's ignition locking system to the "On" ("Run") position. The TPMS malfunction indicator shall again signal a malfunction within {ten minutes} and remain illuminated as long as the ignition locking system is in the "On" ("Run") position.”

Annex 4,

Paragraph 1.3.2., amend to read:

“1.3.2.

In case of vehicles of category ~~Θ3~~ O₃ and ~~Θ4~~ O₄, electric and pneumatic supply shall be provided.”

Paragraph 2.3., amend to read:

“2.3. ...

Within 2 ~~min~~ ...

Within 8 ~~min~~ ...”

Annex 5, delete.

Annex X

Adopted amendments to ECE/TRANS/WP.29/GRBP/2020/19 (based on GRBP-72-18)

Paragraph 2.10., amend to read:

“2.10. “*Extended mobility tyre*” means a tyre as defined in UN Regulation No. ~~30-64~~”

Paragraph 10.2., amend to read:

“10.2. As from {6 July 2022}, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after {6 July 2022}.”

Paragraph 10.3., amend to read:

“10.3. Until {6 July 2022}, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before {6 July 2022}.”

Paragraph 10.4., amend to read:

“10.4. As from {6 July 2022}, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation.”

Paragraph 10.7., amend to read:

“10.7. {Contracting Parties applying this Regulation shall not refuse to grant type approvals according to any preceding series of amendments to this Regulation or extensions thereof.}”

Annex XI

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>
Quiet Road Transport Vehicles (QRTV) for GTR	Mr. Ezana Wondimneh (USA) Tel: +1 202 366 21 17 Email: Ezana.wondimneh@dot.gov Mr. Ichiro Sakamoto (Japan) Tel:+81 422 41 66 18 Fax:+81 422 76 86 04 Email: i-saka@ntsel.go.jp	Mr. Andreas Vosinis (Directorate General Growth, European Commission) Tel:+ 32 2 2992116 Email: andreas.vosinis@ec.europa.eu	December 2021
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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	January 2022