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Item 3(b) of the provisional agenda

Regulation No. 51 (Noise of M and**N categories of vehicles)—New limit values****Proposal for the 03 series of amendments to Regulation
No. 51 (Noise of M and N categories of vehicles)****Submitted by the expert from Japan¹**

The text reproduced below was prepared by the expert from Japan to propose a 03 series of amendments to Regulation No. 51 incorporating new limit values. It is based on informal documents GRB-54-03 and GRB-55-01, distributed during the fifty-fourth and fifty-fifth sessions of the Working Party on Noise (ECE/TRANS/WP.29/GRB/53 para. 7). The modifications to the text of the UN Regulation No. 51 are marked in bold for new or strikethrough for deleted characters.

¹ In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Paragraphs 6.2.2. to 6.2.2.2.3., amend to read:

"6.2.2. **Noise sound** level limits

6.2.2.1. Subject to the provisions of paragraph 6.2.2.2. below, the noise level of vehicle types, as reported by the method described in paragraph 3.1. of Annex 3 to this Regulation **and rounded to the nearest integer**, shall not exceed the following limits:

<i>Vehicle categories</i>		<i>Limit values (dB(A))</i>
6.2.2.1.1.	Vehicles used for the carriage of passengers and capable of having not more than nine seats, including the driver's seat	74
6.2.2.1.1.1.	with PMR not exceeding 120 kW/t	72
6.2.2.1.1.2.	with PMR exceeding 120 kW/t but not exceeding 160kW/t	73
6.2.2.1.1.3.	with PMR exceeding 160 kW/t	75
6.2.2.1.2.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass not exceeding 5 tonnes	---
6.2.2.1.2.1.	with a maximum authorized mass not exceeding 2.5 tonnes	72
6.2.2.1.2.2.	with a maximum authorized mass exceeding 2.5 tonnes but not exceeding 3.5 tonnes	74
6.2.2.1.2.3.	with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 5 tonnes	75
6.2.2.1.3. 6.2.2.1.2.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass of more than 5 3.5 tonnes	---
6.2.2.1.3.1 6.2.2.1.2.1.	with an engine power not exceeding 135 less than 150 kW (ECE)	76 78
6.2.2.1.3.2 6.2.2.1.2.2.	with an engine power exceeding 135 kW (ECE) but not exceeding 250 of 150 kW (ECE) or above	79 80
6.2.2.1.3.3.	with an engine power exceeding 250 kW (ECE)	80
6.2.2.1.4. 6.2.2.1.3.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat; vehicles used for the carriage of goods with a maximum authorized mass not exceeding 3.5 tonnes	---
6.2.2.1.4.1. 6.2.2.1.3.1.	with a maximum authorized mass not exceeding 2.5 2 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass not exceeding 35 kW/t	74 76

Vehicle categories		Limit values (dB(A))
6.2.2.1.4.2.	with a maximum authorized mass not exceeding 2.5 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass exceeding 35 kw/t	72
6.2.2.1.4.3 6.2.2.1.3.2.	with a maximum authorized mass greater than 2.5 2 tonnes but not exceeding 3.5 tonnes	74 77
6.2.2.1.5. 6.2.2.1.4.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 12 tonnes	---
6.2.2.1.5.1. 6.2.2.1.4.1.	with an engine power not exceeding 135 less than 75 kW (ECE)	77
6.2.2.1.5.2. 6.2.2.1.4.2.	with an engine power exceeding 135 of 75 kW (ECE) or above but less than 150 kW (ECE)	78
6.2.2.1.6.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 12 tonnes	---
6.2.2.1.6.1.	with an engine power not exceeding 250 kW (ECE)	80
6.2.2.1.6.2. 6.2.2.1.4.3.	with an engine power exceeding 250 of 150 kW (ECE) or above	82 80

6.2.2.2. However,

6.2.2.2.1. For the vehicle types mentioned in paragraphs 6.2.2.1.1. and ~~6.2.2.1.3.~~ equipped with a compression ignition and direct injection internal combustion engine designed for off-road¹ use with wading depth 500 mm (See Annex 13) and having the ability to climb 30 percent gradient for a solo vehicle and the vehicle types mentioned in paragraphs 6.2.2.1.2 to 6.2.2.1.6 designed for off-road use, the limit values shall can be increased by 1 dB(A);

6.2.2.2.2. For vehicle types mentioned in paragraph 6.2.2.1.3. equipped with an engine having rated engine speed exceeding 4000 rpm ~~designed for off-road¹ use and with a maximum authorized mass above 2 tonnes~~, the limit values shall can be increased by 2 dB(A).:

~~6.2.2.2.2.1. By 1 dB(A) if they are equipped with an engine having a power of less than 150 kW (ECE);~~

~~6.2.2.2.2.2. By 2 dB(A) if they are equipped with an engine having a power of 150 kW (ECE) or above.~~

~~6.2.2.2.3. For vehicle types mentioned in paragraph 6.2.2.1.1. fitted with a gear box having more than four forward gears, equipped with an engine developing a maximum power greater than 140 kW (ECE) and having a maximum power/maximum mass ratio greater than 75 kW/t, the limit values shall be increased by 1 dB(A), if the speed at which the rear of the vehicle passes the line BB¹ in third gear is greater than 61 km/h."~~

¹ As defined in the Consolidated resolution on the Construction of vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.2, para.2.

Insert a new paragraph 6.2.2.3., to read:

"6.2.2.3. The "Stage 2" and "Stage 3" noise level limits of vehicle types, as reported by the method described in paragraph 3.1. of Annex 3 to this Regulation, and entry-into-force dates are prescribed in Annex 14 to this Regulation."

Paragraph 11.1 to 11.2., amend to read:

"11.1. As from the official date of entry into force of the ~~02~~ **03** series of amendments, no Contracting Party applying this Regulation shall refuse to grant **or refuse to accept** type-approvals under this Regulation as amended by the ~~02~~ **03** series of amendments.

11.2 As from ~~1 October 1995~~ **1 January 2016**, Contracting Parties applying this Regulation shall grant UNECE type-approvals only if the vehicle type to be approved meets the requirements of this UNECE Regulation as amended by the ~~02~~ **03** series of amendments."

Paragraph 11.3., shall be deleted

Insert new paragraphs 11.4. to 11.6., to read:

"11.4. Contracting Parties applying this Regulation shall not refuse to grant extensions of type-approvals for existing types which have been granted according to the preceding series of amendments to this Regulation.

11.5. As from 1 January 2018, after the date of entry into force of the 03 series of amendment to this Regulation, Contracting Parties applying this Regulation shall not be obliged to accept, for the purpose of national or regional type-approval, a vehicle type-approved to the preceding series of amendments to this Regulation.

11.6. Notwithstanding the transitional provisions above, Contracting Parties whose application of this Regulation comes into force after the date of entry into force of the most recent series of amendments are not obliged to accept type approvals which were granted in accordance with any of the preceding series of amendments to this Regulation."

Insert a new Annex 11, to read:

"Annex 11

Determination of the wading depth of M₁ vehicles

1. General

The manufacturer shall prove to the satisfaction of the technical service that a vehicle applying for limits according to paragraph 6.2.2.4. fulfils the requirements as indicated below. The requirements are deemed to be fulfilled, when the basic functions of the vehicle are in operating condition throughout and after the test.

2. Test conditions

The vehicle shall cross the basin powered by its own engine. The following conditions for the basin and the test shall be met:

Water quality: Freshwater

Minimum length of basin: 20 m

Minimum in/out – speed: 2 km/h

Minimum passing speed: 5 km/h

Water depth*: > 500 mm

* Water depth shall be reported in Annex 1 "19. Remarks"

Insert a new Annex 12, to read:

"Annex 12

Next noise level limits and entry-into-force dates

1. The "Stage 2" noise level limits of vehicle types, as reported by the method described in paragraph 3.1. of Annex 3 to this Regulation, as well as the entry into force date, are described as follows:

<i>Vehicle categories</i>		<i>Limit values (dB(A))</i>	<i>Entry-into- force dates</i>
1.1.	Vehicles used for the carriage of passengers and capable of having not more than nine seats, including the driver's seat	---	---
1.1.1.	with PMR not exceeding 120 kW/t	70	4 years after the date in paragraph 11.3
1.1.2.	with PMR exceeding 120 kW/t but not exceeding 160kW/t	71	6 years after the date in paragraph 11.3
1.1.3.	with PMR exceeding 160 kW/t	73	4 years after the date in paragraph 11.3
1.2.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass not exceeding 5 tonnes	---	---
1.2.1.	with a maximum authorized mass not exceeding 2.5 tonnes	70	4 years after the date in paragraph 11.3
1.2.2.	with a maximum authorized mass exceeding 2.5 tonnes but not exceeding 3.5 tonnes	72	4 years after the date in paragraph 11.3
1.2.3.	with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 5 tonnes	73	6 years after the date in paragraph 11.3
1.3.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass of more than 5 tonnes	---	---
1.3.1.	with an engine power not exceeding 135 kW (ECE)	74	6 years after the date in paragraph 11.3

1.3.2.	with an engine power exceeding 135 kW (ECE) but not exceeding 250 kW (ECE)	78	6 years after the date in paragraph 11.3
1.3.3.	with an engine power exceeding 250 kW (ECE)	78	6 years after the date in paragraph 11.3
1.4.	vehicles used for the carriage of goods with a maximum authorized mass not exceeding 3.5 tonnes	---	---
1.4.1.	with a maximum authorized mass not exceeding 2.5 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass not exceeding 35 kW/t	72	6 years after the date in paragraph 11.3
1.4.2.	with a maximum authorized mass not exceeding 2.5 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass exceeding 35 kW/t	70	4 years after the date in paragraph 11.3
1.4.3.	with a maximum authorized mass greater than 2.5 tonnes but not exceeding 3.5 tonnes	72	4 years after the date in paragraph 11.3
1.5.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 12 tonnes	---	---
1.5.1.	with an engine power not exceeding 135 kW (ECE)	76	6 years after the date in paragraph 11.3
1.5.2.	with an engine power exceeding 135 kW (ECE)	77	6 years after the date in paragraph 11.3
1.6.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 12 tonnes	---	---
1.6.1.	with an engine power not exceeding 250 kW (ECE)	78	6 years after the date in paragraph 11.3
1.6.2.	with an engine power exceeding 250 kW (ECE)	80	8 years after the date in paragraph 11.3

1.7. However, for the vehicle designed for off-road² use, the limit values can be increased by 2 dB(A) for the vehicle types mentioned in 1.3 and 1.6, and by 1 dB(A) for the vehicle types mentioned in 1.1, 1.2, 1.4 and 1.5.

1.8. Transitional period for first registration of new vehicles is 2 years after entry into force of "Stage 2".

² As defined in the Consolidated resolution on the Construction of vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.2, para.2.

2. The "Stage 3" noise level limits of vehicle types and the entry into force date are described as follows with the condition that limits and entry-into-force dates shall be reviewed and fixed until the entry into force of "Stage 2":

<i>Vehicle categories</i>		<i>Limit values (dB(A))</i>	<i>Entry-into- force dates</i>
2.1.	Vehicles used for the carriage of passengers and capable of having not more than nine seats, including the driver's seat	---	---
2.1.1.	with PMR not exceeding 120 kW/t	68	4 years after the date in 1.1.1. of this Annex
2.1.2.	with PMR exceeding 120 kW/t but not exceeding 160kW/t	70	4 years after the date in 1.1.2. of this Annex
2.1.3.	with PMR exceeding 160 kW/t	72	4 years after the date in 1.1.3. of this Annex
2.2.	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass not exceeding 5 tonnes	---	---
2.2.1.	with a maximum authorized mass not exceeding 2.5 tonnes	69	4 years after the date in 1.2.1. of this Annex
2.2.2.	with a maximum authorized mass exceeding 2.5 tonnes but not exceeding 3.5 tonnes	71	4 years after the date in 1.2.2. of this Annex
2.2.3.	with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 5 tonnes	71	6 years after the date in 1.2.3. of this Annex
2.3	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum authorized mass of more than 5 tonnes	---	---
2.3.1.	with an engine power not exceeding 135 kW (ECE)	73	6 years after the date in 1.3.1. of this Annex

2.3.2.	with an engine power exceeding 135 kW (ECE) but not exceeding 250 kW (ECE)	76	6 years after the date in 1.3.2. of this Annex
2.3.3.	with an engine power exceeding 250 kW (ECE)	76	6 years after the date in 1.3.3. of this Annex
2.4.	vehicles used for the carriage of goods with a maximum authorized mass not exceeding 3.5 tonnes	---	---
2.4.1.	with a maximum authorized mass not exceeding 2.5 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass not exceeding 35 kW/t	70	6 years after the date in 1.4.1. of this Annex
2.4.2.	with a maximum authorized mass not exceeding 2.5 tonnes and with the power-to-mass ratio PMR calculated by using the maximum authorized vehicle mass exceeding 35 kW/t	68	4 years after the date in 1.4.2. of this Annex
2.4.3.	with a maximum authorized mass greater than 2.5 tonnes but not exceeding 3.5 tonnes	71	4 years after the date in 1.4.3. of this Annex
2.5.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 3.5 tonnes but not exceeding 12 tonnes	---	---
2.5.1.	with an engine power not exceeding 135 kW (ECE)	73	6 years after the date in 1.5.1. of this Annex
2.5.2.	with an engine power exceeding 135 kW (ECE)	75	6 years after the date in 1.5.2. of this Annex
2.6.	Vehicles used for the transport of goods with a maximum authorized mass exceeding 12 tonnes	---	---
2.6.1.	with an engine power not exceeding 250 kW (ECE)	76	6 years after the date in 1.6.1. of this Annex
2.6.2.	with an engine power exceeding 250 kW (ECE)	78	6 years after the date in 1.6.2. of this Annex

- 2.7 However, for the vehicle designed for off-road³ use, the limit values can be increased by 2 dB(A) for the vehicle types mentioned in 2.3 and 2.6, and by 1 dB(A) for the vehicle types mentioned in 2.1, 2.2, 2.4 and 2.5."
- 2.8 Transitional period for first registration of new vehicles is 3 years after entry into force of "Stage 3" with the condition that transitional period shall be reviewed and fixed until the entry into force of "Stage 2"."

II. Justification

The above proposal is based on Informal document GRB 54-03 submitted by the expert from Germany and on Informal document GRB 55-01 submitted by the expert from Japan, including limit values with some modification of threshold of subcategories, which could be the basis of a common position.

³ As defined in the Consolidated resolution on the Construction of vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.2, para.2.