

Transmitted by the expert from India

Informal Document No. GRB-62-18  
(62<sup>nd</sup> GRB, 1–3 September 2015,  
agenda item 2)

**COMMENTS ON PROPOSAL FROM RUSSIA FOR MODIFYING UN R 28. (ECE-TRANS-WP 29-GRB-2015-07e)**

Legend:

- Existing text of R28 in this font
- **Addition by proposed by Russia**
- ~~Deletion proposed by Russia from existing text~~
- ***Addition suggested in these comments***
- ~~***Deletion suggested in these comments***~~

The changes in the administrative procedures, marking etc. have not been studied.

Correctness of cross references to clauses in various places have not been thoroughly cross checked, since some numbers of some of these reference clauses may change in due course

S.No	Clause No.	Proposed Change	India's Proposal	Justification
1.	All	The abbreviation AWD for “Audible Warning Devices” to be retained.	Need not be incorporated	Use of abbreviations is an accepted procedure in regulations. It is also required to distinguish the system of audible signals from a QRTV. If the use of abbreviation “AWD” used for “All Wheel Drive”, is creating confusion, another suitable abbreviation can be used.
2.	1.	This Regulation applies to:		No change
3.	1.1.	<del>audible warning devices (AWD)</del> <b>audible warning devices</b> , <sup>#</sup> supplied with direct or alternating current or compressed air, which are intended for fitting to motor vehicles of categories L <sub>3</sub> to 5L <sub>5</sub> , M, <del>and</del> N, <b>[and T]</b> , excluding mopeds (categories L <sub>1</sub> and L <sub>2</sub> <sup>1</sup> ) <sup>2/</sup> ;	<del>audible warning devices (AWD)</del> audible warning devices, <sup>#</sup> supplied with direct or alternating current or compressed air, which are intended for fitting to motor vehicles of categories L <sub>3</sub> to 5L <sub>5</sub> , M, <del>and</del> <b>and</b> N, [and T], excluding mopeds (categories L <sub>1</sub> and L <sub>2</sub> <sup>2</sup> ) <sup>2/</sup> ;	1. Correction to change the numbers of the categories to subscript acceptable. 2. Deletion of reference to foot notes 1 and 2 are acceptable . 3. Footnote 1 to be retained.
4.	1.2.	<del>audible signals</del> <sup>3/</sup> of motor vehicles listed in 1.1. <b>with regard to their audible warning signals</b>		Acceptable, since editorial. Deletion of reference to foot note 3 is acceptable.
5.	1.	<b>Audible warning devices</b>		

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6	2.	Definitions		
7	2.1. added	<p><i>This clause is intended also to cover the requirements spelt out in foot note 1</i></p> <p><b>"audible warning device" means a device consisting of one or several sound emission outlets that are excited by a single power source, emitting an acoustic signal which is intended to give warning of the presence of a vehicle in a dangerous road traffic situation;</b></p>	<p><i>"audible warning device" <sup>(1)</sup> means a device consisting of one or several sound emission outlets that are excited by a single power source, emitting an acoustic signal which is intended to give an audible warning</i> <del>of the presence of a vehicle in a dangerous road traffic situation;</del></p>	<p>It is necessary to retain foot note 1 and give a cross reference here to carry over the current requirements.</p> <p>Editorial correction</p> <p>warning is not necessarily only for a presence of vehicle in a dangerous road condition, but includes others (e.g. a pedestrian) in a dangerous condition.</p>
8	2.2 added	<p><b>"audible warning system" means several audible warning devices operating simultaneously by the actuation of a single control, where each device emits sound signal in the same or different tones;</b></p>		<p>There are 3 conditions that are being attempted to be clarified by incorporating these definitions:</p> <ol style="list-style-type: none"> <li>1. A single horn fitted on the vehicle</li> <li>2. More than one horn, using the same energy source and operated by a single control.</li> <li>3. More than one horn, operated by same or different energy source, but operated by more than one independent control.</li> </ol> <p>In all the above cases, these can be multiple tones.</p> <p>The technical requirements for 1 and 2 above are same, except that in the case of sl. No.2, the component approval can be done on the system instead of each device.</p>
9	2.3. added	<p><b>"multiple-tone audible warning system" means several audible warning devices capable of functioning independently and each emitting a sound signal consisting of different tones;</b></p>	<p><del>"multiple-tone audible warning system" means several audible warning devices capable of functioning independently and each emitting a sound signal consisting of different tones;</del></p>	<p>The additional requirements for case 3 are clearly specified in clause no. 6.3.11 of GRB-2015-07e.</p> <p>Hence it is felt that there is no need for definition for <b>"multiple-tone audible warning system"</b></p>

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10	2.4. (Replac ing text of 2)	" <i>type of audible warning device (system)</i> " means devices (systems) not differing essentially from each other with respect to such matters as:		
11	2.4.1.	trade name or mark, <b>commercial description</b> ;	trade name or mark, <del>commercial</del> <del>description</del> ;	Commercial description has no technical impact and hence need not be included in the type definition
12	2.4.2. (replacing existing 2.10)	<b>principal designation</b> :	<i>The AWD is principally intended for</i>	The existing expression conveys the meaning more clearly and proposal is to retain the current wording
13	2.4.2.1.	for motor cycles of a power less than or equal to 7 kW (class I);		
14	2.4.2.2.	for vehicles of categories M, N [and T] and motor cycles of a power greater than 7 kW (class II);		
15	2.4.3.	principles of operation;		
16	2.4.4.	<b>devices or systems with electrical supply</b> :	Acceptable	For better clarity
17	2.4.4.1.	type of electrical supply (direct or alternating current);		
18	2.4.4.2.	shape and dimensions of diaphragm(s);		
19	2.4.4.3.	rated supply voltage;		
20	2.4.5.	devices or systems supplied directly from an external compressed air source:		
21	2.4.5.1.	rated operating pressure;		
22	2.4.6.	outer shape of a case;		
23	2.4.7.	shape or kind of sound outlet(s);		

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24	2.4.8.	rated sound frequency or frequencies;		
25	2.4.9.	<b>shape and dimensions of rigid connections for audible warning system.</b>	<del>shape and dimensions of rigid connections for audible warning system.</del>	Not Required, as a modification in rigid connections need not require a new Type Approval.
26	3.	<b>Application for approval</b>		
27	3.1.	The application for approval of a type of audible warning device ( <b>system</b> ) shall be submitted by the holder of the trade name or mark <b>its manufacturer</b> or by his duly accredited representative.	The application for approval of a type of audible warning device (system) shall be submitted by <b>the holder of the trade name or mark its manufacturer</b> or by his duly accredited representative.	The type definition calls for the trade mark as the principle criteria. Hence the applicant should also be the manufacturer
28	3.2.	It shall be accompanied by the following documents, [in triplicate], giving the following particulars:		
29	3.2.1.	a description of the type of audible warning device ( <b>system</b> ), paying particular attention to the points mentioned in paragraph 2.2;		
30	3.2.2.	<b>drawings showing the place provided for the approval number in relation to the circle of the approval mark and the location and the appearance of trade name or mark of the manufacturer of the warning device (system);</b>	drawings showing the place provided for the approval number in relation to the circle of the approval mark and the location and the appearance of trade name or <b>identification</b> mark of the manufacturer of the warning device (system);	For better clarity
31	3.2.3.	a list of the components used in <del>manufacture</del> <b>production</b> , duly identified, with an indication of the materials used;		

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32	3.2.4.	<del>detailed</del> drawings:		
33	3.2.4.1.	<b>of the warning device in cross section;</b>		
34	3.2.4.2.	<b>of all the components used in manufacture production.</b>	Significance of this change not understood	
35	3.2.4.3.	The drawings shall show the place provided for the approval number in relation to the circle of the approval mark.		
36	3.3.	In addition, the application for approval shall be accompanied by two samples of the type of warning device.		
37	3.4.	The <del>competent authority</del> <b>Type Approval Authority</b> shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.	The <i>competent authority</i> <del>Type Approval Authority</del> shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.	The existing language permits verification by Technical Services. With the proposed change, verification by the Technical Services will not be permitted.
38	4.	<b>Markings</b>		
39	4.1.	The <del>samples of the audible warning devices submitted for approval shall bear the manufacturer's trade name or mark; this mark must be clearly legible and indelible.</del> <b>Audible warning devices and each component of audible warning system excluding mounting accessories, shall bear:</b>	Audible warning devices <del>and each component audible warning system excluding mounting accessories,</del> <i>in case it consists of several components each emitting an acoustic signal</i> shall bear:	The marking is required only on Sound emitting parts..

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40	4.1.1.	The trade name or mark of the manufacturer of the system or its components;	The trade name or <i>identification</i> mark of the manufacturer of the <del>system or its components</del> ;	FOR BETTER CLARITY
41	4.1.2.	The approval mark according to paragraph 5.5.	<del>The approval mark according to paragraph 5.5.</del>	May be deleted since it is a duplication of para 4.2
42	4.2.	<del>Each sample shall have a space of adequate dimensions for the approval mark; this space shall be indicated in the drawing referred to in paragraph 3.2.2. The approval mark shall be shown on the audible warning device according to paragraph 5.5.</del>	The approval mark shall be shown on the audible warning device according to paragraph 5.5. <i>Each sample shall have a space of adequate dimensions for the approval mark; this space shall be indicated in the drawing referred to in paragraph 3.2.2.</i>	The existing 4.2 needs to be retained to prove that it is feasible to provide the approval mark
43	4.3.	All markings shall be clearly legible and indelible.	Acceptable	
44	5.	Approval		
45	5.1.	If the two samples submitted for approval conform to the provisions of paragraphs 6. and <del>7.</del> below, approval for this type of warning device ( <b>system</b> ) shall be granted.		

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46	5.2.	An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall 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 this number to another type of audible warning device.		
47	5.3.	The same approval number may be assigned to types of warning device ( <b>system</b> ) differing only with respect to rated voltage, rated frequency or frequencies or for the devices mentioned in paragraph <del>2.8.</del> <b>2.4.5.</b> above, rated operating pressure.		
48	5.4.	<del>Notice of</del> <b>Communication on</b> approval or refusal or extension or withdrawal of approval or production definitely discontinued of a type of warning device pursuant to this Regulation shall be communicated to the Parties to the Agreement applying this Regulation by means of a form conforming to the model in <del>a</del> <b>Annex 1</b> to the Regulation, <del>and of drawings of the audible warning device (supplied by the applicant for approval) with maximum format A.4 (210 x 297 mm) or folded to this format and on the scale 1:1.</del>	This amendment is not acceptable and the current wording is to be retained.	Proposed amendment is not acceptable as it is necessary to have the approved drawings also along the approval papers
49	5.5.	On every audible warning device which conforms to a type approved under this Regulation, there shall be affixed conspicuously, in an easily accessible place indicated on the approval form, an international approval mark comprising:		



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50	5.5.1.	a circle containing the letter "E" followed by the distinguishing number of the country granting approval; <sup>4/3</sup>		
51	5.5.2.	an approval number;		
52	5.5.3.	an additional symbol in the form of a figure in Roman numerals, showing the class to which the <b>AWD audible warning device (system)</b> belongs		
53	5.6.	<del>The approval mark and the additional symbol must be clearly legible and indelible.</del>	Acceptable as it is proposed to be covered by 4.3.	
54	<del>5.7.5.6.</del>	Annex 3, <del>Section 1</del> , to this Regulation gives an example of the arrangement of the approval mark.	Annex 3, <b>Section 1</b> , to this Regulation gives an example of the arrangement of the approval mark.	Section I to be retained, as Section II refers to marking on the vehicle
55	5.7.	<b>The Type Approval Authority or its duly accredited technical service shall verify the arrangements of the marks for ensuring effective control of the conformity of production before type approval is granted.</b>		
56	6.	<b>Specifications</b>		
57	6.1.	General specifications		
58	6.1.1.	The audible warning device shall emit a continuous and uniform sound; its acoustic spectrum shall not vary substantially during its operation. For warning devices supplied with alternating current, this requirement shall apply only at constant generator speed, within the range specified in paragraph <del>2.3.2.6.3.3.2.</del>		
59		<b>The type approval tests shall be carried out on two samples of each type submitted by the manufacturer for approval; both the samples shall be subjected to all the tests and must conform to the technical specifications laid down.</b>		

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60	6.1.2.	The warning device shall have acoustic characteristics (spectral distribution of the acoustic energy, sound pressure level) and mechanical characteristics such that it passes, in the order indicated, the following tests <b>according to paragraphs 6.3. and 6.4.</b>		
61	6.2.	<b>Measuring instruments</b>		
62	6.2.2.	<del>The measurements of the sound pressure levels shall be made with a class 1 precision sound level meter conforming to the specifications of IEC Publication No. 651, first edition (1979).</del>		
63		<del>All measurements shall be made using the time constant "F". The measurement of the over all sound pressure level shall be made using the weighting curve A.</del>		
64		<b>The apparatus used for measuring the sound level shall be a precision sound-level meter or equivalent measurement system meeting the requirements of class 1 instruments (including the recommended windscreen, if used). These requirements are described in "IEC 61672-1:2002: Precision sound level meters", second edition, of the International Electrotechnical Commission (IEC).</b>		
65		<b>Measurements shall be carried out using the "fast" response of the acoustic measurement instrument and the "A" weighting curve also described in IEC 61672-1:2002. When using a system that includes a periodic monitoring of the A-weighted sound pressure level, a reading should be made at a time interval not greater than 30 ms.</b>	Measurements shall be carried out using the <i>time weighting "F"</i> <del>fast</del> response of the acoustic measurement instrument and the "A" weighting curve also described in "IEC 61672-1:2002". When using a system that includes a periodic monitoring of the A-weighted sound pressure level, a reading should be made at a time interval not greater than 30 ms.	Inline with other standards i.e. R41.

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66		The spectrum of the sound emitted shall be measured according to the Fourier transform of the acoustic signal. Alternatively, one-third octave filters conforming to the specifications of <del>IEC Publication No. 225, first edition (1966)</del> <b>IEC "61260-1:2014 Electroacoustics - Octave-band and fractional-octave-band filter"</b> may be used: in this case, the sound pressure level in the mid-band frequency 2,500 Hz shall be determined by adding the quadratic means of the sound pressures in the one-third mid-band frequencies 2,000, 2,500 and 3,150 Hz. In every case, only the Fourier transform method shall be regarded as a reference method."		
67		<b>The instruments shall be maintained and calibrated in accordance with the instructions of the instrument manufacturer</b>		
68	6.2.1.	<b>Acoustic measurements</b>		
69	6.2.2.	<b>Calibration of the entire Acoustic Measurement System for a Measurement Session</b>		
70		<b>At the beginning and at the end of every measurement session the entire measurement system shall be checked by means of a sound calibrator that fulfils the requirements for sound calibrators of at least precision Class 1 according to IEC 60942:2003. Without any further adjustment the difference between the readings of two consecutive checks shall be less than or equal to 0.5 dB.</b>		
71		<b>If this value is exceeded, the results of the measurements obtained after the previous satisfactory check shall be discarded.</b>		
72	6.2.3.	<b>Compliance with requirements</b>		
73		<b>Compliance of the acoustic measurement instrumentation shall be verified by the existence of a valid certificate of compliance. These certificates shall be deemed to be valid if certification of compliance with the standards was conducted within the previous 12-month period for the sound calibration device and within the previous 24-month period for the instrumentation system. All compliance testing shall be conducted by a laboratory, which is authorized to perform calibrations traceable to the appropriate standards.</b>		
74	6.2.4.	<b>Instrumentation for other measurements</b>		
75		<b>The voltage shall be measured with instrumentation having an accuracy of <math>[\pm 0.05]</math> V or better.</b>		
76		<b>The resistance shall be measured with instrumentation having an accuracy of <math>[\pm 0.01]</math> <math>\Omega</math> [Ohm] or better.</b>		
77		<b>The distance shall be measured with instrumentation having an accuracy of <math>[\pm 5]</math> mm or better.</b>		
78		<b>The time shall be measured with instrumentation having an accuracy of <math>[\pm 0.02]</math> s or better.</b>		

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		The meteorological instrumentation used to monitor the environmental conditions during the test shall include the following devices, which meet at least the following accuracy:		
	(a)	Temperature measuring device, [ $\pm 1^\circ$ ] C;		
	(b)	Wind speed-measuring device, [ $\pm 1.0$ ] m/s;	Wind speed measurement is not specified in the document. Becomes applicable only in case of open field measurement. The effect of wind of even 1m/s second will be large. Need to be discussed in IGRB	
	(c)	Barometric pressure measuring device, [ $\pm 5$ ] hPa;		
	(d)	A relative humidity measuring device, [ $\pm 5$ ] per cent."		
79	6.2.6.3.	Measurement of the sound characteristics.		
80	6.2.1. 6.3.1.	The warning device should, preferably, be tested in an anechoic <del>environment</del> <b>chamber</b> . Alternatively, it may be tested in a semi-anechoic chamber or in an open space <sup>4</sup> . In this case, precautions shall be taken to avoid reflections from the ground within the measuring area (for instance by erecting a set of absorbing screens). Compliance with the spherical divergence to a limit of 1 dB within a hemisphere of not less than 5 m radius, up to the maximum frequency to be measured, especially in the measuring direction and at the height of the apparatus and the microphone, shall be checked.	Acceptable	Better clarity
		The ambient noise level shall be at least 10 dB lower than the sound pressure level to be measured.		

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81	6.3.2.	The device to be tested and the microphone shall be placed at the same height. This height shall be <del>between 1.15 and 1.25</del> <b>1.20 ± 0.05</b> m. The axis of maximum sensitivity of the microphone shall coincide with the direction of the maximum sound level of the device.	Acceptable	No change in the meaning
		The microphone shall be so placed that its diaphragm is at a distance of <del>2.00 ± 0.01</del> <b>2.00 ± 0.05</b> m from the plane of the sound outlet of the device. <b>The microphone must be positioned facing the front surface emitting sound of the warning device in the direction in which the maximum sound level can be measured. See figure in Annex 4.</b>	The microphone shall be so placed that its diaphragm is at a distance of <del>2.00 ± 0.01</del> <del>0.05 m</del> <b>± 0.01</b> from the plane of the sound outlet of the device. The microphone must be positioned facing the front surface emitting sound of the warning device in the direction in which the maximum sound level can be measured. See figure in Annex 4.	No problems were encountered with the current tolerances, relaxing of the limit is not necessary.

		In the case of devices with several outlets, the distance shall be determined in relation to the plane of the nearest outlet to the microphone.		
82	<del>6.2.6.</del> <b>6.3.3.</b>	The warning device shall be mounted rigidly, by means of the equipment indicated by the manufacturer, on a support whose mass is at least ten times that of the warning device under test and not less than 30 kg. In addition, arrangements must be made to ensure that <del>reflexions</del> <b>reflections</b> on the sides of the support and its own vibrations have no appreciable effect on the measuring results.	Acceptable	Editorial.
83	<del>6.2.3.</del> <b>6.3.4.</b>	The <del>AWD</del> <b>audible warning device</b> shall be supplied with current, as appropriate, at the following voltages:		
84	<del>6.2.3.16.3.</del> <b>4.1.</b>	in the case of <del>AWDs</del> <b>audible warning devices</b> supplied with direct current, at a voltage measured at the terminal of the electric power source of 13/12 of the rated voltage.		
85	<del>6.2.3.26.3.</del> <b>4.2.</b>	in the case of <del>AWDs</del> <b>audible warning devices</b> supplied with alternating current, the current shall be supplied by an electric generator of the type normally used with this type of <del>AWD</del> <b>audible warning device</b> . The acoustic characteristics of the <del>AWD</del> <b>audible warning device</b> shall be recorded for electric generator speeds corresponding to 50%, 75% and 100% of the maximum speed indicated by the manufacturer of the generator for continuous operation. During this test, no other electrical load shall be imposed on the electric generator. The endurance test described in paragraph <del>6.3</del> <b>6.4.</b> shall be carried out at a speed indicated by the manufacturer of the equipment and selected from the above range."		

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86	<del>6.2.4.</del> <b>6.3.5</b>	If a rectified current source is used for the test of an <del>AWD</del> <b>audible warning device</b> supplied with direct current, the alternating component of the voltage measured at its terminals, when the warning devices are in operation, shall not be more than 0.1 <del>V<sub>rms</sub></del> , peak to peak.		
87	<del>6.2.5.</del> <b>6.3.6.</b>	For <del>AWDs</del> <b>audible warning devices</b> supplied with direct current, the resistance of the connecting leads, expressed in ohms, including terminals and contacts, shall be as close as possible to (0,10/12) x rated voltage in volt.		
88	<del>6.2.7.</del> <b>6.3.7.</b>	Under the conditions set forth above, the sound-pressure level weighted in accordance with curve A shall not exceed the following values:		
	(a)	115 dB(A) for <del>AWDs</del> <b>audible warning devices</b> intended principally for motor cycles with a power less than or equal to 7 kW;		
	(b)	118 dB(A) for <del>AWDs</del> <b>audible warning devices</b> intended principally for vehicles of categories M, <del>and N, T</del> and motor cycles with a power greater than 7 kW.		
89	<del>6.2.7.1.</del> <del>6.3.</del> <b>7.1.</b>	In addition, the sound-pressure level in the frequency band 1,800 to 3,550 Hz shall be greater than that of any component of a frequency above 3,550 Hz and in any event equal to or greater than:		
	(a)	95 dB(A) for <del>AWDs</del> <b>audible warning devices</b> intended principally for motor cycles with a power less than or equal to 7 kW;		
	(b)	105 dB(A) for <del>AWDs</del> <b>audible warning devices</b> intended principally for vehicles of categories M, <del>and N, T</del> and motor cycles with a power greater than 7 kW.		
90	<del>6.2.7.2.</del> <del>6.3.</del> <b>7.2.</b>	<del>AWDs</del> <b>Audible warning devices</b> meeting the sound characteristics mentioned in (b) may be used on the vehicles mentioned in (a).		

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91	<del>6.2.8.</del> 6.3.8.	The specifications indicated above shall also be met by a device subjected to the endurance test referred to in paragraph <del>6.3</del> 6.4. below, with the supply voltage varying between 115% and 95% of its rated voltage for <del>AWDs</del> <b>audible warning devices</b> supplied with direct current or, for <del>AWDs</del> <b>audible warning devices</b> supplied with alternating current, between 50% and 100% of the maximum speed of the generator indicated by the manufacturer for continuous operation.		
92	<del>6.2.9.</del> 6.3.9.	The time lapse between the moment when the device is actuated and the moment when the sound reaches the minimum value prescribed in paragraph 6.2.7. above shall not exceed 0.2 second measured at an ambient temperature of <b>20 + 5/</b> °C. This provision is applicable, <del>inter alia</del> <b>inter alia</b> , to pneumatic or electro-pneumatic warning devices.	Change not understood regarding the change in "inter alia	
93	<del>6.2.10.</del> 6.3.10.	Pneumatic or electro-pneumatic warning devices shall, when operating under the power supply conditions established for the devices by the manufacturers, satisfy the same acoustic requirements as are prescribed for electrically operated audible warning devices.		
94	<del>6.2.11.</del> 6.3.11.	In the case of <del>multiple tone devices</del> <b>audible warning system or multiple-tone audible warning system</b> in which each sound-emitting unit is capable of functioning independently, the minimum values of <b>sound level</b> specified above shall be obtained when each of the constituent units is operated separately. The maximum value of the <del>overall</del> sound level shall not be exceeded when all the constituent units are operated simultaneously.	In the case of <b>multiple-tone devices audible warning-system or multiple-tone audible warning-system in which each sound-emitting unit is capable of functioning independently</b> , the minimum values <del>of sound level</del> specified above shall be obtained when each of the constituent units is operated separately. The maximum value of the <b>overall</b> sound level shall not be exceeded when all the constituent units are operated simultaneously.	The original text may be retained, as consequential to suggestion regarding definitions.



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95	6.3.12.	To confirm the rated frequency (or frequencies) of audible warning device(s) the tests to measure this parameter using a spectrum analyzer with a frequency resolution of at least 1 Hz shall be conducted. The measured frequency of the warning devices may differ from the rated no more than 10%.		
96	<del>6.3.</del> 6.4.	<b>Endurance test</b>		
97	<del>6.3.1.</del> 6.4.1.	The AWD <b>audible warning device</b> shall be supplied with current at the rated voltage and with the connecting lead resistances specified in paragraphs <del>6.2.3.6.3.4.</del> to <del>6.2.5.6.3.6.</del> above, and operated respectively:		
		10,000 times for AWDs <b>audible warning devices</b> intended principally for motor cycles with a power less than or equal to 7 kW		
		50,000 times for AWDs <b>audible warning devices</b> intended principally for vehicles of categories M and N and motor cycles with a power greater than 7 kW, each time for one second followed by an interval of four seconds. During the test, the AWD <b>audible warning device</b> shall be ventilated by an air current having a speed of approximately 10 m/see.		
98	<del>6.3.2.</del> 6.4.2.	If the test is made in an anechoic chamber, the chamber shall be large enough to ensure normal dispersal of the heat released by the warning device during the test.		
99	<del>6.3.3.</del> 6.4.3.	The ambient temperature in the testing room shall be <del>between +15 and +30/</del> <b>20 ± 10 °C.</b>	The ambient temperature in the testing room shall be <del>23±7</del> <b>22.5±7.5. 20 ± 10 °C.</b>	The current range of ambient temperature should be retained.

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100	<del>6.3.4.</del> 6.4.4.	If, after the <del>AWD</del> <b>audible warning device</b> has been operated for half the number of times prescribed, the sound-level characteristics are no longer the same as before the test, the <del>AWD</del> - <b>audible warning device</b> may be adjusted. After being operated the prescribed number of times, and after further adjustment if necessary, the <del>AWD</del> <b>audible warning device</b> must pass the test described in paragraph <del>6.2.</del> <b>6.3.</b> above.		
101	<del>6.3.4.</del> 6.4.5.	For warning devices of the electro-pneumatic type, the device may be lubricated with the oil recommended by the manufacturer after every 10,000 times of operation.		
102	7.	Modification <b>and extension of approval</b> of the type of the audible warning device <del>and extension of approval</del>		
103	7.1.	<del>Any</del> <b>Every</b> modification of the type of audible warning device shall be notified to the <del>administrative department</del> <b>Type Approval Authority</b> which granted approval to the type of audible warning device. This <del>department</del> <b>Type Approval Authority</b> may then:		
104	7.1.1.	either take the view that the modifications made are not likely to have any appreciable adverse effect;		
105	7.1.2.	or call for a new report from the <del>Technical</del> <b>Service</b> responsible for the tests.		
106	7.2.	<del>Notice of</del> <b>Communication on</b> confirmation of the approval, with particulars of the modifications, or of refusal of approval shall be communicated to the Parties to the Agreement applying this Regulation, in accordance with the procedure indicated in paragraph 5.4. above.		
107	7.3.	The <del>competent authority</del> <b>Type Approval Authority</b> issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension.		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
108	8.	<b>Conformity of production</b>		
		The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324- E/ECE/TRANS/505/Rev.2) with the following requirements:		
109	8.1.	<del>AWD</del> <b>Audible warning device (system)</b> approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraph 6. above.		
119	8.2.	The authority which has granted type approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be once every two years.		
120	9.	<b>Penalties for non-conformity of production</b>		
	9.1.	The approval granted to a type of audible warning device pursuant to this Regulation may be withdrawn if the conditions set forth in paragraph 8.1. are not complied with or if the audible warning device fails to pass the checks referred to in paragraph 8.2. above.		
	9.2.	Should a Party to the Agreement applying this Regulation withdraw an approval which it has previously granted, it shall forthwith notify the other Contracting Parties applying this Regulation by means of a copy of the approval form bearing at the end in large letters the statement, signed and dated: "APPROVAL WITHDRAWN".		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
121	10.	<b>Production definitively discontinued</b>		
		If the holder of an approval granted pursuant to this Regulation discontinues the production of the type of audible warning device(s) approved, he shall inform the authority which granted the approval. Upon receipt of the communication, this authority shall inform the other Parties to the Agreement applying this Regulation by means of a copy of the approval form bearing at the end in large letters the statement, signed and dated: "PRODUCTION DISCONTINUED".		
	II.	<b>Audible warning signals of motor vehicles</b>		
122	11.	<b>Definitions</b>		
		For the purpose of this Regulation,		
	11.1.	"Approval of the motor vehicle" " <b>Approval of the motor vehicle</b> " shall be understood to mean approval of a vehicle type with regard to its audible signal;		
	11.2.	" <del>Vehicle type</del> " " <b>Vehicle type</b> " shall be understood to mean vehicles not essentially different from another with respect to such matters as:		
	11.2.1.	the number and type(s) of warning devices ( <b>systems</b> ) fitted on the vehicle;		
	11.2.2.	the mountings used to fit the warning devices to the vehicle;		
	11.2.3.	the position of the warning devices on the vehicle;		
	11.2.4.	the rigidity of the parts of the structure on which the warning device(s) is (are) mounted;		
	11.2.5.	the shape and materials of the bodywork at the front of the vehicle which might affect the level of the sound emitted by the warning device(s) and have a masking effect.		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
123	<b>12.</b>	<b>Application for approval</b>		
	12.1.	The application for approval of a vehicle type with regard to its audible signals shall be submitted by the vehicle manufacturer or by his duly accredited representative;		
	12.2.	It shall be accompanied by the following documents in triplicate giving the following particulars:		
	12.2.1.	a description of the vehicle type with regard to the items mentioned in paragraph 11.2. above;		
	12.2.2.	a list of the components required to identify the warning device(s) <b>(system)</b> that may be mounted on the vehicle;		
	12.2.3.	Drawings indicating the position of the warning device <b>system(s)</b> on the vehicle and of its (their) mountings.		
	12.3.	A vehicle representative of the vehicle type to be approved shall be submitted to the technical service responsible for the approval tests.		
124	<b>13.</b>	<b>Approval</b>		
	13.1.	If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of paragraphs 14. <del>and 15.</del> below, approval for this vehicle type shall be granted.		
	13.2.	An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall 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 this number to another vehicle type.		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
	13.3.	<del>Notice of <b>Communication on</b> approval or extension or withdrawal of approval or production definitely discontinued of a vehicle type pursuant to this Regulation shall be communicated to the Parties to the Agreement applying this Regulation by means of a form conforming to the model in <b>Annex 2</b> to the Regulation, and of drawings (supplied by the applicant for approval) with maximum format A.4 (210 x 297 mm), or folded to this format, and on an appropriate scale.</del>		
	13.4.	On every vehicle which conforms to a vehicle type approved under this Regulation there shall be affixed conspicuously, in an easily accessible place indicated on the approval form, an international approval mark comprising:		
	13.4.1.	A circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval <sup>5</sup> ;		
	13.4.2.	The number of this Regulation, <b>followed by the letter "R", a dash and the approval number</b> placed to the right of the circle prescribed in paragraph 13.4.1.		
	13.5.	<b>If the vehicle conforms to a vehicle type approved, under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 13.4.2. need not be repeated; in such a case the regulation and approval numbers and the additional symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 13.4..</b>		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
	13.6.	The approval mark must be clearly legible and indelible.		
	13.7.	The approval mark shall be placed near the plate bearing the characteristics of the vehicle and may also be affixed to this plate.		
	13.8.	Annex 3, Section II, to this Regulation gives an example of the arrangement of the approval mark.		
	13.9.	The <del>competent authority</del> <b>Type Approval Authority</b> shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.	The <i>competent authority</i> <del>Type Approval Authority</del> shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.	

S.No	Clause No.	Proposed Change	India's Proposal	Justification
125	14.	Specifications		
	14.1.	General specifications		
	14.1.1.	The vehicle and its audible warning device(s) (system) shall be so designed, constructed and assembled as to enable the vehicle, in normal use, despite the vibration to which it may be subjected, to comply with the provisions of this Regulation.	<del>The vehicle and its audible warning device(s) (system) shall be so designed, constructed and assembled as to enable the vehicle, in normal use, despite the vibration to which it may be subjected, to comply with the provisions of this Regulation.</del>	These are general requirements, But being vague in nature it becomes impossible for authorities to verify. Hence they may be deleted.
	14.1.2.	The audible warning device(s) (system(s)) shall be so designed, constructed and assembled as to be able to reasonably resist the corrosive phenomena to which it is exposed with regards to the conditions of use of the vehicle, including regional climate differences.	<del>The audible warning device(s) (system(s)) shall be so designed, constructed and assembled as to be able to reasonably resist the corrosive phenomena to which it is exposed with regards to the conditions of use of the vehicle, including regional climate differences.</del>	
	14.2.	Specifications regarding sound levels		
	14.2.1.	The sound made by the audible warning device(s) fitted to the vehicle type submitted for approval shall be measured by the methods described in Annex 3 in paragraph 14.3 of this Regulation;		
	14.8.	Measured under the conditions specified in paragraphs 14.2. to 14.7., the maximum sound pressure level (14.7.) of the audible signal tested shall be at least:		
	(a)	equal to 83 dB(A) and not more than 112 dB(A) for the signals of motor cycles of a power less than or equal to 7 kW;		
	(b)	equal to 93 dB(A) and at most 112 dB(A) for the signals of vehicles of categories M and N 1/ and motor cycles of a power greater than 7 kW."		
	14.8.14.2.	Measured under the conditions specified in paragraphs 14.2. to 14.7. 14.3., the maximum sound-pressure level (14.7.) of the audible warning signal tested shall be at least:		
	(a)	equal to 83 dB (A) and not more than 112 dB (A) for the signals of motor cycles of a power less than or equal to 7 kW;		



S.No	Clause No.	Proposed Change	India's Proposal	Justification
	(b)	equal to 87 dB (A) and at most 112 dB (A) for the signals of vehicles of categories M, <del>and</del> N, <b>[and T]</b> and motor cycles of a power greater than 7 kW."		
	<b>14.2.3.</b>	The values measured in accordance with the provisions of paragraph 14.3 shall be entered in the test report and a communication corresponding to the model shown in Annex 2.		
	14.3.	<b>Methods of measurement on stationary vehicle</b>		
	<b>14.3.1.</b>	The vehicle shall comply with the following specifications:		
	<del>14.1.</del> <b>14.3.1.1.</b>	The audible warning device(s) <b>(system(s))</b> fitted on the vehicle shall be of a type approved under this Regulation <b>(part I)</b> ;		
	<del>14.1.1.</del>	Audible warning devices of Class II approved under this Regulation in its original form, and therefore not bearing the symbol II in their approval mark, may continue to be fitted to vehicle types submitted for approval pursuant to this Regulation.		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
	<del>14.2.</del> <b>14.3.1.2.</b>	The test voltage shall be as specified in paragraph <del>6.2.3.</del> <b>6.3.4.</b> of the Regulation;	<p>These clauses should be retained as per current R28, incorporating the supplement approved in last GRB.</p> <p>The change in test procedure has following effects.</p> <ol style="list-style-type: none"> <li>1. Since the minimum sound value is considered as the test result, it will be lower than the current measured value.</li> <li>2. Data collected from 29 vehicles including L and M category vehicles (see Annex A), indicate that the reduction in the sound level varies from 2 to 14 dB.</li> <li>3. In order to meet the requirement with the proposed test procedure, it will be necessary to increase the sound from horn, leading higher sound level at maximum level.</li> <li>4. This method of measuring horn sound at 3 fixed heights has the following concerns: <ol style="list-style-type: none"> <li>a. Depending on the vehicle configuration and components fitted in front of horn, the sound level would be different at different heights.</li> <li>b. If the obstructions exist in front of the horn at any of the proposed heights, the sound level will be low.</li> </ol> </li> </ol>	See Annex A
		<b>In case of devices supplied with direct current, the test voltage shall be supplied by either:</b>		
	<b>(a)</b>	<b>the vehicle battery only; or</b>		
	<b>(b)</b>	<b>the vehicle battery with the vehicle engine warmed-up and at idle; or</b>		
	<b>(c)</b>	<b>with an external power source supply connected to the audible warning device (system) terminal(s);</b>		
	<del>14.3.</del> <b>14.3.2.</b>	The sound pressure level and other measurements shall be made according to the conditions specified in paragraph 6.2. of this Regulation.		
	<del>14.4.</del> <b>14.3.3.</b>	The A-weighted sound pressure level emitted by the device(s) fitted on the vehicle shall be measured at a distance of <b>7.00 ± 0.10</b> m in front of the vehicle ( <b>Annex 4</b> ), the latter being placed on an open site <sup>6</sup> , on ground as smooth as possible. <del>and, in case of devices supplied with direct current, with its engine stopped. The test voltage as specified in paragraph 6.2.3</del> <b>6.3.4.</b> , shall be supplied by:		
	<b>(a)</b>	<del>the vehicle battery only; or</del>		
	<b>(b)</b>	<del>the vehicle battery with the vehicle engine warmed-up and at idle; or</del>		
	<b>(c)</b>	<del>with an external power source supply connected to the AWD</del> <b>audible warning device (system) terminal(s);</b>		
	<del>14.5.</del>	The microphone of the measuring instrument shall be placed		

14.3.4.		approximately ( $\pm 0.10$ m) in the mean longitudinal plane of the vehicle;	<p>c. It is required to know the logic for deciding these fixed height location.</p> <p>It is felt that, unless there is data to establish that the existing method is not satisfactory, the existing test procedure may be retained.</p>		
14.6.	14.3.5.	Background noise and wind noise must be at least 10 dB (A) below the sound to be measured;			
14.7.	14.3.6.	<p><del>The maximum sound pressure level shall be sought within the range of 0.5 and 1.5 m above the ground;</del> The A-weighted sound pressure level measurement is carried out at three points at the height of (<math>0.5 \pm 0.10</math>) m, (<math>1.0 \pm 0.10</math>) m, (<math>1.5 \pm 0.10</math>) m. In each point three measurements shall be performed. The arithmetic average of all measurements at each point shall be rounded to the nearest whole number. The final result shall be the minimum value amongst the three arithmetic averages.</p>			

S.No	Clause No.	Proposed Change	India's Proposal	Justification
126	15.	<b>Modification and extension of approval of the type of the audible warning device and extension of approval</b>		
	15.1.	Every modification of the vehicle type shall be notified to the administrative department Type Approval Authority which granted approval to the vehicle type. This department Type Approval Authority may then:		
	15.1.1.	either take the view that the modifications made are not likely to have any appreciable adverse effect and that in any case the vehicle still meets the requirements; or		
	15.1.2.	call for a new report from the Technical Service responsible for the tests.		
	15.2.	<del>Notice of</del> <b>Communication on</b> confirmation of approval with particulars of the modifications, or of refusal of approval shall be communicated to the Parties to the Agreement applying this Regulation, in accordance with the procedure indicated in paragraph 13.3. above.		
	15.3.	The <del>competent authority</del> <b>Type Approval Authority</b> issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension.		
127	16.	<b>Conformity of production</b>		
		The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2) with the following requirements:		
	16.1.	A vehicle approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraph 14. above.		
	16.2.	The <del>authority</del> <b>Type Approval Authority</b> which has granted type approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be once every two years.		
128	17.	<b>Penalties for non-conformity of production</b>		
	17.1.	The approval granted to a vehicle type pursuant to this Regulation may be withdrawn if the conditions set forth in paragraph 16.1. above are not complied with, or if the vehicle fails to pass the checks referred to in paragraph 16.2. above.		
	17.2.	Should a Party to the Agreement applying this Regulation withdraw an approval which it has previously granted, it shall forthwith notify the other Contracting Parties applying this Regulation by means of a copy of the approval from bearing at the end in large letters the statement, signed and dated: "APPROVAL WITHDRAWN".		

S.No	Clause No.	Proposed Change	India's Proposal	Justification
129	18.	Production definitively discontinued		
	18.1.	If the holder of the approval completely ceases to manufacture a vehicle type approved in accordance with this Regulation, he shall so inform the authority which granted the approval. Upon receiving the relevant communication that authority shall inform thereof the other Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in Annex 2 to this Regulation.		
130	18. 19.	Names and addresses of Technical Services		
		responsible for conducting approval tests and of		
		Type Approval Authorities		
		<del>The Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for approval tests and of the administrative departments which grant approval and to which forms certifying approval or refusal or withdrawal of approval, issued in other countries, are to be sent.</del>		
		The Contracting Parties to the 1958 Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Type Approval Authorities which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.		

### Annex A

