

มาตรฐานผลิตภัณฑ์อุตสาหกรรม

THAI INDUSTRIAL STANDARD

มอก. 771— 2550

ECE Regulation No.28

01 series of amendments

อุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์

**AUDIBLE WARNING DEVICES AND OF MOTOR VEHICLES WITH
REGARD TO THEIR AUDIBL SIGNALS**

สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

กระทรวงอุตสาหกรรม

ICS 43.040.20

ISBN 978-974-292-510-9

มาตรฐานผลิตภัณฑ์อุตสาหกรรม อุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์

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สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
กระทรวงอุตสาหกรรม ถนนพระรามที่ 6 กรุงเทพฯ 10400
โทรศัพท์ 0 2202 3300

ประกาศในราชกิจจานุเบกษา ฉบับประกาศและงานทั่วไป เล่ม 124 ตอนพิเศษ 191 ง
วันที่ 7 ธันวาคม พุทธศักราช 2550

มาตรฐานผลิตภัณฑ์อุตสาหกรรมอุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์นี้ ได้ประกาศครั้งแรกเป็นมาตรฐานผลิตภัณฑ์อุตสาหกรรม เตรไฟฟ้าสำหรับรถยนต์และรถจักรยานยนต์ มาตรฐานเลขที่ มอก. 771-2531 ในราชกิจจานุเบกษา เล่ม 105 ตอนที่ 123 วันที่ 28 กรกฎาคม พุทธศักราช 2531 ต่อมาพิจารณาเห็นสมควรแก้ไขปรับปรุงสาระสำคัญของมาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้ เพื่อให้สอดคล้องตามมาตรฐานระหว่างประเทศที่เป็นที่ยอมรับในปัจจุบัน จึงได้แก้ไขปรับปรุงโดยยกเลิกมาตรฐานเดิม และกำหนดมาตรฐานนี้ขึ้นใหม่

มาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้กำหนดขึ้นโดยรับ Economic Commission for Europe (ECE) Regulation No.28 UNIFORM PROVISIONS CONCERNING THE APPROVAL OF AUDIBLE WARNING DEVICES AND OF MOTOR VEHICLES WITH REGARD TO THEIR AUDIBLE SIGNALS ดังต่อไปนี้

1. Regulation No. 28 to be annexed to the Agreement
2. Regulation No.28 to be annexed to the Agreement Amendment 1
01 series of amendments
3. Regulation No. 28 Corrigendum 2
Incorporating:
Supplement 2 to this Regulation in its original version (00)
Corrigendum 1 to Supplement 2 to 00 referred to in the depositary notification
4. Regulation No. 28 Amendment 3
Supplement 3 to the original version of the Regulation

มาใช้ในระดับเหมือนกันทุกประการ (identical) เฉพาะสาระสำคัญทางวิชาการ ซึ่งแสดงถึงข้อกำหนดคุณลักษณะสำหรับข้อกำหนดด้านการรับรองหรือการดำเนินการต่าง ๆ ที่เกี่ยวข้อง ให้เป็นไปตามพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรมโดยสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรมจะประกาศกำหนดหลักเกณฑ์การรับรองต่อไป

คณะกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรมได้พิจารณามาตรฐานนี้แล้ว เห็นสมควรเสนอรัฐมนตรีประกาศตาม มาตรา 15 แห่งพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. 2511



ประกาศกระทรวงอุตสาหกรรม

ฉบับที่ 3780 (พ.ศ. 2550)

ออกตามความในพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม

พ.ศ. 2511

เรื่อง ยกเลิกมาตรฐานผลิตภัณฑ์อุตสาหกรรม
เตาไฟฟ้าสำหรับรถยนต์และรถจักรยานยนต์
และกำหนดมาตรฐานผลิตภัณฑ์อุตสาหกรรม
อุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์

โดยเป็นการสมควรปรับปรุงมาตรฐานผลิตภัณฑ์อุตสาหกรรม เตาไฟฟ้าสำหรับรถยนต์และรถจักรยานยนต์
มาตรฐานเลขที่ มอก.771-2531

อาศัยอำนาจตามความในมาตรา 15 แห่งพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. 2511
รัฐมนตรีว่าการกระทรวงอุตสาหกรรมออกประกาศยกเลิกประกาศกระทรวงอุตสาหกรรมฉบับที่ 1358 (พ.ศ. 2531)
ออกตามความในพระราชบัญญัติมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ.2511 เรื่อง กำหนดมาตรฐานผลิตภัณฑ์
อุตสาหกรรม เตาไฟฟ้าสำหรับรถยนต์และรถจักรยานยนต์ ลงวันที่ 11 กรกฎาคม พ.ศ.2531 และออกประกาศกำหนด
มาตรฐานผลิตภัณฑ์อุตสาหกรรม อุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์ มาตรฐานเลขที่ มอก. 771-2550
ขึ้นใหม่ ดังมีรายละเอียดต่อท้ายประกาศนี้

ทั้งนี้ ให้มีผลเมื่อพ้นกำหนด 120 วัน นับแต่วันถัดจากวันที่ประกาศในราชกิจจานุเบกษา เป็นต้นไป

ประกาศ ณ วันที่ 14 กันยายน พ.ศ. 2550

โสมิต ปันเปียมรัชฎ์

รัฐมนตรีว่าการกระทรวงอุตสาหกรรม

มาตรฐานผลิตภัณฑ์อุตสาหกรรม อุปกรณ์สัญญาณเสียงเตือนสำหรับยานยนต์

ขอบข่าย

มาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้ครอบคลุมเฉพาะข้อกำหนดคุณลักษณะ ของ

1. อุปกรณ์สัญญาณเสียงเตือน (audible warning devices (AWD)), 1/ ที่ทำงานด้วยไฟฟ้ากระแสดตรง หรือไฟฟ้ากระแสสลับ หรืออากาศอัด ที่ติดตั้งกับยานยนต์ประเภทมีล้อน้อยกว่า 4 ล้อ (ประเภท L3 ถึง L5) รถยนต์นั่ง (M) และรถบรรทุก (N) ไม่รวมรถจักรยานเสริมเครื่องยนต์ (ประเภท L1 และ L2) 2/
2. สัญญาณเสียง 3/ สำหรับประเภทยานยนต์ที่ระบุข้างต้น

บทนิยาม

ความหมายของคำที่ใช้ในมาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้ ให้เป็นไปตาม ECE Regulation No. 28

ข้อกำหนด

ข้อกำหนดคุณลักษณะ ในมาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้ ให้เป็นไปตาม ECE Regulation No. 28 ข้อ 6.

การทดสอบ

การทดสอบและการหาค่าต่าง ๆ ในมาตรฐานผลิตภัณฑ์อุตสาหกรรมนี้ ให้เป็นไปตาม ECE Regulation No. 28 ANNEX ที่เกี่ยวข้อง

1/ อุปกรณ์สัญญาณเสียงเตือนแบบมีหลายหน่วยจ่ายเสียง ที่ใช้พลังงานจากแหล่งเดียวกันถือว่าเป็น AWD

2/ ตามที่กำหนดใน(R.E.3)(TRANS/SC1/WP29/78)

3/ อุปกรณ์สัญญาณเสียงเตือนที่มีหลายหน่วยจ่ายเสียง ซึ่งทั้งหมดทำงานจากตัวควบคุมเดียวกัน ถือว่าเป็นระบบสัญญาณเสียงเตือน

မန. 771—2550

ECE Regulation No.28

01 series of amendments

Regulation No. 28

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF
AUDIBLE WARNING DEVICES AND OF MOTOR VEHICLES WITH REGARD
TO THEIR AUDIBLE SIGNALS

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Regulation No. 28

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF AUDIBLE WARNING DEVICES AND OF
MOTOR VEHICLES WITH REGARD TO THEIR AUDIBLE SIGNALS

3. SCOPE

This Regulation applies to:

- I. audible warning devices, operated by direct current or compressed air, which are intended for fitting to motor vehicles with the exception of motor cycles,
- II the audible signals of motor vehicles, with the exception of motor cycles.

* * *

I. AUDIBLE WARNING DEVICES

2. DEFINITIONS

For the purposes of this Regulation, audible warning devices of different "types" shall be understood to mean devices essentially different from one another with respect to such matters as:

- 2.1. trade name or mark;
- 2.2. principles of operation;
- 2.3. outer shape of case;
- 2.4. shape and dimensions of diaphragm;
- 2.5. shape or kind of sound outlet;
- 2.6. rated sound frequency;
- 2.7. rated supply voltage;
- 2.8. for devices supplied directly from an external compressed air source, rated operating pressure.

3. APPLICATION FOR APPROVAL

The application for approval of a type of audible warning device shall be submitted by the holder of the trade name or mark or by his duly accredited representative.

- 3.2. It shall be accompanied by the following documents, in triplicate, giving the following particulars:
 - 3.2.1. a description of the type of audible warning device, paying particular attention to the points mentioned in paragraph 2;
 - 3.2.2. a drawing showing, inter alia, the warning device in cross section;

- 3.2.3. a list of the components used in manufacture, duly identified, with an indication of the materials used;
- 3.2.4. detailed drawings of all the components used in manufacture. The drawings shall show the place provided for the approval number in relation to the circle of the approval mark.
- 3.3. In addition, the application for approval shall be accompanied by two samples of the type of warning device.

4. MARKINGS

- 4.1. The 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.
- 4.2. 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.

5. APPROVAL

- 5.1. If the samples submitted for approval conform to the provisions of paragraphs 6. and 7. below, approval for this type of warning device shall be granted.
- 5.2. Each type approved shall be assigned an approval number. The same Contracting Party shall not assign this number to another type of audible warning device.
- 5.3. The same approval number may be assigned to types of warning device differing only with respect to rated voltage, rated frequency or, for the devices mentioned in paragraph 2.8. above, rated operating pressure.
- 5.4. Notice of approval or refusal of approval 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 annex 1 to the Regulation, 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.
- 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:

- 5.5.1. a circle containing the letter "E" followed by the distinguishing number of the country granting approval; 1/
- 5.5.2. an approval number.
- 5.6. The approval mark must be clearly legible and indelible.
- 5.7. Annex 3, Section 1, to this Regulation gives an example of the arrangement of the approval mark.

6. SPECIFICATIONS

6.1. General specifications

- 6.1.1. The audible warning device shall emit a continuous and uniform sound; its acoustic spectrum shall not vary substantially during its operation.
- 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.

6.2 Measurement of the sound level

- 6.2.1. The warning device shall be tested in an anechoic chamber or at an open site. 2/ Background noise and wind noise must be at least 10 dB (A) below the sound to be measured. The microphone of the measuring instrument shall be placed in the direction where the subjective sound level is greatest;

1/ 1 for the Federal Republic of Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for Czechoslovakia, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg; subsequent figures shall be assigned to other countries in the order in which they ratify or accede the Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, and the figures thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

2/ The site may take the form, for instance, of an open space of 50 metres radius, the central part of which must be practically horizontal over a radius of at least 20 metres, the surface being of concrete, asphalt or a similar material, which must not be covered with powdery snow, tall weeds, or loose soil or cinders. The measurements shall be made on a clear day. No-one other than the observer reading the instrument shall remain near the audible warning device or the microphone, since the presence of spectators may affect the readings of the instrument to a considerable extent, if they are near the audible warning device or the microphone. Any peak which appears to be unrelated to the general sound level shall be disregarded in the reading.

the distance between the diaphragm of the microphone and the sound outlet of the device shall be 2 metres, the microphone and the warning device being placed at a height of 1.20 m from the ground.

- 6.2.2. The measurements shall be made on the basis of weighting curve A of the IEC (International Electro technical Commission) standards, using sonometers which conform to the type described in IEC publication No. 179, first edition, 1965.
- 6.2.3. The device shall be supplied with current, as appropriate, at one of the test voltages of 6.5, 13 or 26 volts measured at the terminal of the electric power source and corresponding respectively to rated voltages of 6, 12 and 24 volts.
- 6.2.4. If a rectified current source is used for the test, the alternating component of the voltage measured at its terminals, when the warning devices are in operation, shall not be more than 0.1 volt, peak to peak.
- 6.2.5. The resistance of the connecting leads, including terminals and contacts, shall be:
- 0.05 ohm for a rated voltage of 6 volts,
 - 0.10 ohm for a rated voltage of 12 volts,
 - 0.20 ohm for a rated voltage of 24 volts.
- 6.2.6. 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 reflexions on the sides of the support and its own vibrations have no appreciable effect on the measuring results.
- 6.2.7. Under the conditions set forth above, the sound-pressure level weighted in accordance with curve A shall be at least 105 dB (A) and not greater than 118 dB (A).
- 6.2.8. 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 20 ± 5 °C. This provision is applicable, inter alia, to pneumatic or electro-pneumatic warning devices.
- 6.2.9. 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.

6.3. Endurance test

- 6.3.1. The warning device shall be supplied with current at the rated voltage and with the connecting lead resistances specified in paragraphs 6.2.3. to 6.2.5. above, and operated 50,000 times, each time for one second followed by an interval of four seconds. During the test, the device shall be ventilated by an air current having a speed of approximately 10 m/sec.
- 6.3.2. 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.
- 6.3.3. The ambient temperature in the testing room shall be between +15 and +30 °C.
- 6.3.4. If, after the device has been operated 25,000 times, the sound-level characteristics are no longer the same as before the test, the device may be adjusted. After being operated 50,000 times, and after further adjustment if necessary, the warning device must pass the test described in paragraph 6.2. above.
- 6.3.5. 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.

6.4. Sound spectrum

- 6.4.1. The spectrum of the sound emitted by the device, measured at a distance of 2 m in accordance with the conditions specified in paragraph 6.2.1., must show, in the 1,800-3,550 Hz frequency band, a sound-pressure level higher than that of any frequency component above 3,550 Hz and in any case not less than 105 dB (A).
- 6.4.2. The requirements indicated above must be met by a warning device which has been submitted to the test described in paragraph 6.3. above and which is supplied with current at voltages between 115 percent and 95 per cent of its rated voltage.
- 6.4.3. The resistance of the connecting leads, including terminals and contacts, shall be as specified in paragraph 6.2.5.
- 6.4.4. The warning device under test and the microphone shall be placed at the same height and the microphone shall be placed in the direction where the subjective sound level is greatest, forward of the warning device.
- 6.4.5. The warning device shall be mounted rigidly, by means of the equipment indicated by the manufacturer, on a support whose mass is at most ten times that of the device under test and not less than 30 kg. In addition, arrangements must be made to ensure that reflexions on the sides of the support and its own vibrations have no appreciable effect on the measuring results.
- 6.4.6. The test shall be made in an anechoic chamber.

7. MODIFICATION OF THE TYPE OF AUDIBLE WARNING DEVICE

- 7.1. Any modification of the type of audible warning device shall be notified to the administrative department which granted approval to the type of audible warning device. This department may then:
- 7.1.1. either take the view that the modifications made are not likely to have any appreciable adverse effect;
- 7.1.2. or call for a new report from the technical service responsible for the tests.
- 7.2. Notice of 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.

8. CONFORMITY OF PRODUCTION

- 8.1 Every audible warning device bearing an approval mark pursuant to this Regulation shall conform to the type approved and satisfy the requirements of paragraph 6.
- 8.2. In order to check the conformity required by paragraph 8.1. above, a sample bearing the approval mark pursuant to this Regulation shall be taken from the production run.

9. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

- 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".

10. PRODUCTION DISCONTINUED

If the holder of an approval granted pursuant to this Regulation discontinues the production of the type of audible warning device 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. AUDIBLE SIGNALS OF MOTOR VEHICLES

11. DEFINITIONS

For the purpose of this Regulation,

- 11.1. "Approval of the motor vehicle" shall be understood to mean approval of vehicle type with regard to its audible signal;
- 11.2. "Vehicle type" 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 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.

12. APPLICATION FOR APPROVAL

- 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) that may be mounted on the vehicle;
 - 12.2.3. Drawings indicating the position on the vehicle of the warning device(s) 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.

13. APPROVAL

- 13.1. If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of paragraphs 14. and 15. below, approval for this vehicle type shall be granted.
- 13.2. Each type approved shall be assigned an approval number. The same Contracting Party shall not assign this number to another vehicle type.

- 13.3. Notice of approval or of refusal of approval 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 annex 2 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.
- 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 containing the letter "E" followed by the distinguishing number of the country granting approval, 1/
- 13.4.2. the number of this Regulation placed to the right of the circle referred to in paragraph 13.4.1.
- 13.5. If the vehicle conforms to a vehicle type approved, under another (other) Regulation(s) annexed to the Agreement, in the same country as that which has granted the approval under this Regulation, the symbol referred to in paragraph 13.4. need not be repeated; in this case, the additional numbers and symbols of all the Regulations under which approval has been granted in the country which granted the approval under this Regulation shall be set out in vertical columns to the right of the symbol referred to in paragraph 13.4.
- 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.
14. SPECIFICATIONS
- The vehicle shall comply with the following specifications:
- 14.1. The audible warning device fitted on the vehicle shall be of a type approved under this Regulation;
- 14.2. The sound pressure level of the device fitted on the vehicle shall be measured at a distance of 7 m in front of the vehicle, the latter being placed on an open site 2/, on ground as smooth as possible, and with its engine stopped;

1/ See paragraph 5.5.1., footnote 1/.

2/ See paragraph 6.2.1., footnote 2/.

- 14.3. Background noise and wind noise must be at least 10 dB (A) below the sound to be measured;
- 14.4. The test voltage shall be as specified in paragraph 6.2.3. of the Regulation;
- 14.5. The measurements shall be made on the basis of weighting curve A of the IEC (International Electro technical Commission) standards;
- 14.6. The maximum sound-pressure level shall be sought within the range of 0.5 and 1.5 m above the ground;
- 14.7. The microphone of the measuring instrument shall be placed approximately in the mean longitudinal plane of the vehicle;
- 14.8. The maximum value observed must not be less than 93 dB (A).

- 15. MODIFICATIONS OF VEHICLE TYPE
 - 15.1. Any modification of the vehicle type shall be notified to the administrative department which granted approval to the vehicle type. This department 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. Notice of 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.

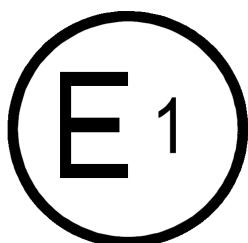
- 16. CONFORMITY OF PRODUCTION
 - 16.1. Every vehicle bearing an approval mark pursuant to this Regulation shall conform to the vehicle type approved and satisfy the requirements of paragraph 14. above.
 - 16.2. In order to check the conformity required by paragraph 16.1. above, a vehicle bearing the approval mark pursuant to this Regulation shall be taken from the production run.

- 17. PENALTIES FOR NON-CONFORMITY OF PRODUCTION
 - 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 form bearing at the end in large letters the statement, signed and dated: "APPROVAL WITHDRAWN".
18. NAMES AND ADDRESSES OF THE TECHNICAL SERVICES CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS
- 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.
-

Rev.1/Add.27
Annex 1

(Maximum format: A 4(210 x 297 mm))



Name of the Administration

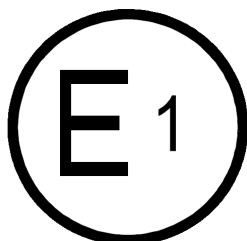
Communication concerning the approval (or refusal or withdrawal of approval) of a type of audible warning device for motor vehicles, pursuant to Regulation No.28

- Approval No.
1. Trade name or mark
 2. Type (electro-pneumatic, electro-magnetic with resonator disc, electromagnetic horn, etc .)
 3. Manufacturer's name and address
 4. If applicable, name and address of manufacturer's representative
 5. Brief description of warning devices
 6. Supply voltage(s) volts */
 7. Rated operating voltage(s) kg/cm² */
 8. Rated frequency (or frequencies) Hz */
 9. Geometrical characteristics (internal length and diameter) of connecting line between compressor or control and the audible warning device
 10. Submitted for approval on
 11. Technical service responsible for conducting approval tests
 12. Date of report issued by that service
 13. Number of report issued by that service
 14. Approval granted/refused */
 15. Place
 16. Date
 17. Signature
 18. The following documents bearing the approval number shown above are annexed to this communication:
 - ... drawings, diagrams and plans of the warning device;
 - ... photographs.

*/ Strike out whatever does not apply.

Annex 2

(Maximum format: A 4(210 x 297 mm))



Name of the Administration

Communication concerning the approval (or refusal or withdrawal of approval) of a vehicle type with regard to its audible signals pursuant to Regulation No.28

Approval No.

1. Trade name or mark of the vehicle
2. Vehicle type
3. Manufacturer's name and address
4. If applicable, name and address of manufacturer's representative .
.
5. Type(s) of warning device(s) */
6. Sound level values:
7. Submitted for approval on
8. Technical service responsible for approval tests
9. Date of report issued by that service
10. Number of report issued by that service
11. Approval granted/refused **/
12. Place
13. Date
14. Signature
15. The following documents are annexed to this communication:

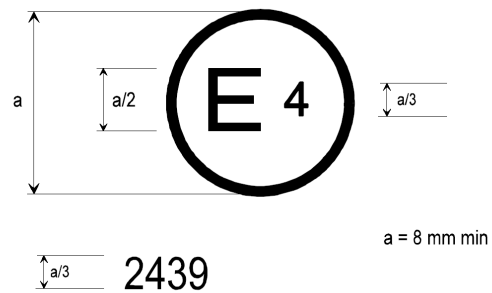
- ... drawings of the mountings of the warning device(s),
- ... drawings and diagrams giving the mounting positions and characteristics of the parts of the structure on which the devices are fitted.
- ... over-all views of the front of the vehicle and of the compartment in which the device is situated and description of the component materials.

*/ Indicate the approval numbers.
**/ Strike out what does not apply.

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Annex 3
page 1

Annex 3

I. ARRANGEMENT OF THE APPROVAL MARK OF THE AUDIBLE
WARNING DEVICE



The above approval mark, affixed to an audible warning device, indicates that this audible warning device has been approved in the Netherlands (E 4), with the number 2439.

Note

The approval number must be placed close to the circle and must be in a position either above or below the letter "E" or to the left or the right of the letter "E". The digits of the approval number must be on the same side of the letter "E" and face the same way. The competent authorities shall avoid using Roman numerals for approval, in order to prevent any confusion with other symbols.

မန. 771—2550

ECE Regulation No.28

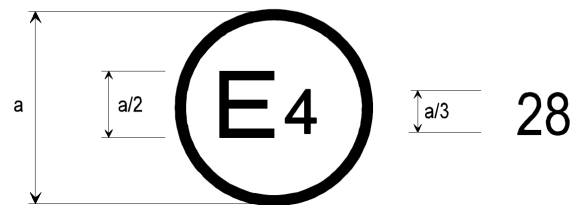
01 series of amendments

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 Annex 3
 page 3

II. ARRANGEMENT OF THE APPROVAL MARK OF A VEHICLE WITH REGARD
 TO ITS AUDIBLE SIGNALS

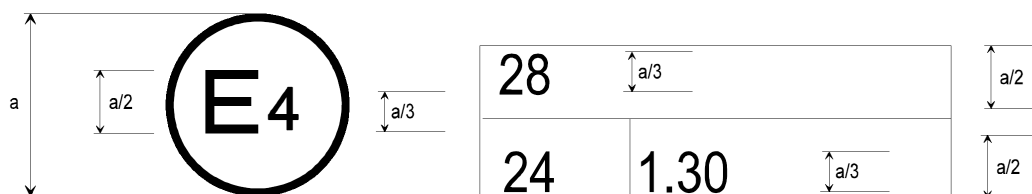
Model A



$a = 8 \text{ mm min}$

The above approval mark affixed to a vehicle indicates that, pursuant
 to Regulation No. 28, this vehicle type has been approved in the Netherlands
 (E 4), with regard to its audible signals.

Model B



$a = 8 \text{ mm min}$

The above approval mark affixed to a vehicle indicates that, pursuant
 to Regulations Nos. 28 and 24, this vehicle type has been approved in the
 Netherlands (E 4), with regard to its audible signals and to emissions of
 pollutants by the Diesel engine. In the case of the latter Regulation, the
 corrected value of the absorption factor is 1.30 m^{-1} .

မန. 771—2550

ECE Regulation No.28

01 series of amendments

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Contents

ANNEXES, amend to read:

"Annex 1 - Communication concerning the approval (or refusal or withdrawal of approval or production definitely discontinued) of a type of audible warning device for motor vehicles pursuant to Regulation No. 28

Annex 2 - Communication concerning the approval (or refusal or withdrawal of approval or production definitely discontinued) of a vehicle type with regard to its audible signals pursuant to Regulation No. 28

."

Paragraph 1, read:

"I. audible warning devices */ ..."

"II. the audible signals **/ ..."

Add the following foot-notes:

*/ A device consisting of several sound outlets activated by a single power unit shall be regarded as an audible warning device.

**/ An audible warning device consisting of several units, each emitting a sound signal and operated simultaneously by the actuation of a single control shall be regarded as an audible warning system."

Paragraph 2.4. , read:

"2.4. Shape and dimensions of diaphragm(s);"

Paragraph 2.5, read:

"2.5. Shape or kind of sound outlet(s);"

Paragraph 2.6, read:

"2.6. Rated sound frequency or frequencies;"

Paragraph 5.2., amend to read:

"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."

Paragraph 5.3., read:

"5.3. ..., rated frequency or frequencies or...."

Paragraph 5.5.1., foot-note amend to read:

"1/ 1 for the Federal Republic of Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for Czechoslovakia, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 for the German Democratic Republic, 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland and 21 for Portugal. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify the Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, or in which they accede to that Agreement, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement."

Paragraph 6.2., read:

"6.2. Measurement of the sound characteristics"

Paragraph 6.2.1., read:

"6.2.1. The warning device should, preferably, be tested in an anechoic environment. Alternatively, it may be tested in a semi-anechoic chamber or in an open space. 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.

The ambient noise level shall be at least 10 dB lower than the sound pressure level to be measured.

The device to be tested and the microphone shall be placed at the same height. This height shall be between 1.15 and 1.25 m. The axis of maximum sensitivity of the microphone shall coincide with the direction of the maximum sound level of the device.

The microphone shall be so placed that its diaphragm is at a distance of 2 ± 0.01 m from the plane of the sound outlet of the device. 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."

Paragraph 6.2.2., read:

"6.2.2. The measurements of the sound pressure levels shall be made with a class 1 precision sound level metre conforming to the specifications of IEC Publication No. 651, first edition (1979). 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. 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 IEC Publication No. 225, first edition (1966) 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."

Paragraph 6.2.5., read:

"6.2.5. The resistance of the connecting leads, including terminals and contacts, shall be as close as possible to: ... "

Paragraph 6.2.7., read:

"6.2.7. In the conditions set out above, the A-weighted sound pressure level shall be not less than 105 dB (A) and not more than 118 dB (A).

In addition, the total 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 105 dB."

Paragraph 6.2.8. (new), read:

"6.2.8. The specifications indicated above shall also be met by a device subjected to the endurance test referred to in paragraph 6.3 below, with the supply voltage varying between 115 per cent and 95 per cent of its rated voltage."

Paragraphs 6.2.8 and 6.2.9, re-number as 6.2.9 and 6.2.10 respectively.

Paragraph 6.2.11 (new), read:

"6.2.11. In the case of multiple-tone devices in which each sound-emitting unit is capable of functioning independently, the minimum values specified above shall be obtained when each of the constituent units is operated separately. The maximum value of the over-all sound level shall not be exceeded when all the constituent units are operated simultaneously."

Paragraphs 6.4 to 6.4.6: delete.

Paragraph 13.2, amend to read:

"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."

Paragraph 14.1, read:

"14.1. The audible warning device(s) (or system) ..."

Paragraph 14.4, re-number as 14.2.

Paragraph 14.3 (former 14.5), read:

"14.3. The sound pressure measurements shall be made in the conditions specified in paragraph 6.2.2 of this Regulation."

Paragraph 14.4 (former 14.2), read:

"14.4. The A-weighted sound pressure level emitted by the device(s) ..."

Paragraph 14.7, re-number as 14.5.

Paragraph 14.6 (former 14.3), read:

"14.6. The sound pressure level of the background noise and wind noise ..."

Paragraph 14.6, re-number as 14.7.

Paragraph 14.8, read:

"14.8. The maximum sound pressure level observed shall be not less than 93 dB (A) and not more than 112 dB (A)."

Annex 1

Title, amend to read:

"Communication concerning the approval (or refusal or withdrawal of approval or production definitely discontinued) of a type of audible warning device for motor vehicles pursuant to Regulation No. 28"

Item 2, add at the end:

"indicating whether it is a single-tone or multiple-tone warning device."

Annex 2

Title, amend to read:

"Communication concerning the approval (or refusal or withdrawal of approval or production definitely discontinued) of a vehicle type with regard to its audible signals pursuant to Regulation No. 28"

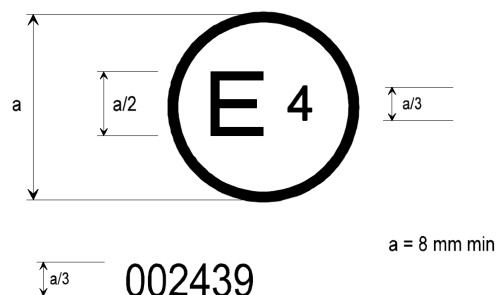
Annex 3

I. ARRANGEMENT OF THE APPROVAL MARK OF THE AUDIBLE WARNING DEVICE

Replace existing text by the following:

"I. ARRANGEMENT OF THE APPROVAL MARK OF THE AUDIBLE
WARNING DEVICE

(see paragraph 5.5. of this Regulation)



The above approval mark affixed to an audible warning device shows that this audible warning device has been approved in the Netherlands (E 4) under approval number 002439. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 28 in its original form.

Note

The approval number must be placed close to the circle and must be in a position either above or below the letter "E" or to left or right of that letter. The digits of the approval number must be on the same side of the letter "E" and face in the same direction. The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols."

II. ARRANGEMENT OF THE APPROVAL MARK OF A VEHICLE WITH REGARD TO ITS
AUDIBLE SIGNALS

Title, amend to read:

"II. ARRANGEMENT OF THE APPROVAL MARK OF A VEHICLE WITH REGARD
TO ITS AUDIBLE SIGNALS
(see paragraph 13.4 of this Regulation)"

Paragraph 1, amend to read:

"1. SCOPE

This Regulation applies to:

- 1.1. audible warning devices (AWD), 1/ supplied with direct or alternating current or compressed air, which are intended for fitting to motor vehicles of categories L3 to 5, M and N, excluding mopeds (categories L1 and L2) 2/
- 1.2. the audible signals 3/ of motor vehicles listed in 1.1.

1/ An AWD consisting of several sound outlets activated by a single power unit shall be regarded as an AWD.

2/ As defined in the Consolidated Resolution (R.E.3) (TRANS/SC1/WP29/78).

3/ An AWD consisting of several units, each emitting a sound signal and operated simultaneously by the actuation of a single control shall be regarded as an audible warning system."

Paragraph 2, amend to read:

"...audible warning devices (AWD) of ..."

Add a new paragraph 2.3 to read:

"2.3. type of electrical supply (direct or alternating current);"

and renumber existing paragraphs.

Add a new paragraph 2.10 to read:

"2.10. The AWD is principally intended for:

2.10.1. motor cycles of a power less than or equal to 7 kW (class I)

2.10.2. vehicles of categories M and N and motor cycles of a power greater than 7 kW (class II)"

Add a new paragraph 3.4 to read:

"3.4. The competent authority shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted."

Paragraph 5.3, amend to read:

"... rated voltage, rated frequency or frequencies ... "

Paragraph 5.4, amend to read:

"Notice of approval or refusal or extension or withdrawal of approval or production definitely discontinued of a type ..."

Add a new paragraph 5.5.3 to read:

"5.5.3. an additional symbol in the form of a figure in Roman numerals, showing the class to which the AWD belongs."

Paragraph 5.6, amend to read:

"The approval mark and the additional symbol must be clearly legible and indelible."

Add to paragraph 6.1.1:

"For warning devices supplied with alternating current, this requirement shall apply only at constant generator speed, within the range specified in paragraph 6.2.3.2."

Paragraph 6.2.3, amend to read:

- "6.2.3. The AWD shall be supplied with current, as appropriate, at the following voltages:
- 6.2.3.1. in the case of AWDs supplied with direct current, at one of the test voltages of 6.5, 13 or 26 volts measured at the terminal of the electric power source and corresponding respectively to rated voltages of 6, 12 or 24 volts;
 - 6.2.3.2. in the case of AWDs supplied with alternating current, the current shall be supplied by an electric generator of the type normally used with this type of AWD. The acoustic characteristics of the AWD 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 6.3 shall be carried out at a speed indicated by the manufacturer of the equipment and selected from the above range."

Paragraph 6.2.4, amend to read:

"If a rectified current source is used for the test of an AWD supplied with direct current, ... "

Paragraph 6.2.5, amend to read:

"For AWDs supplied with direct current, the resistance ... "

Paragraph 6.2.7, amend to read:

"6.2.7. 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 AWDs intended principally for motor cycles with a power less than or equal to 7 kW;
- (b) 118 dB(A) for AWDs intended principally for vehicles of categories M and N, and motor cycles with a power greater than 7 kW.

6.2.7.1. 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 AWDs intended principally for motor cycles with a power less than or equal to 7 kW;
- (b) 105 dB(A) for AWDs intended principally for vehicles of categories M and N, and motor cycles with a power greater than 7 kW.

6.2.7.2. AWDs meeting the sound characteristics mentioned in (b) may be used on the vehicles mentioned in (a)."

Paragraph 6.2.8, amend to read:

"... with the supply voltage varying between 115% and 95% of its rated voltage for AWDs supplied with direct current or, for AWDs supplied with alternating current, between 50% and 100% of the maximum speed of the generator indicated by the manufacturer for continuous operation."

Paragraph 6.3.1, amend to read:

"6.3.1. The AWD shall be supplied with current at the rated voltage and with the connecting lead resistances specified in paragraphs 6.2.3.to 6.2.5. above, and operated, respectively:

10,000 times for AWDs intended principally for motor cycles with a power less than or equal to 7 kW

50,000 times for AWDs 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 shall be ventilated by an air current having a speed of approximately 10 m/sec."

Paragraph 6.3.4, amend to read:

"6.3.4. If, after the AWD has been operated for half the number of times prescribed, the sound-level characteristics are no longer the same as before the test, the AWD may be adjusted. After being operated the prescribed number of times, and after further adjustment if necessary, the AWD must pass the test described in paragraph 6.2. above."

Paragraph 7, amend title to read:

"... AND EXTENSION OF APPROVAL"

Add a new paragraph 7.3 to read:

"7.3. The competent authority issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension."

Paragraph 8, amend to read:

"8. CONFORMITY OF PRODUCTION

8.1. Every AWD approved to this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraph 6 above.

8.2. In order to verify that the requirements of paragraph 8.1. are met, suitable controls of the production shall be carried out.

8.3. The holder of the approval shall in particular:

8.3.1. ensure existence of procedures for the effective control of the quality of products,

8.3.2. have access to the control equipment necessary for checking the conformity to each approved type,

8.3.3. ensure that data of test results are recorded and that annexed documents shall remain available for a period to be determined in accordance with the administrative service,

8.3.4. analyse the results of each type of test, in order to verify and ensure the stability of the product characteristics making allowance for variation of an industrial production,

- 8.3.5. ensure that for every type of AWD sufficient checks are carried out so as to ensure that all AWDs in production comply with the specifications given for the AWD submitted for type approval,
- 8.3.6. ensure that any sampling of samples or test pieces giving evidence of non-conformity with the type of test considered shall give rise to another sampling and another test. All the necessary steps shall be taken to re-establish the conformity of the corresponding production.
- 8.4. The competent authority which has granted type-approval may at any time verify the conformity control methods applicable to each production unit.
- 8.4.1. In every inspection, the test books and production survey records shall be presented to the visiting inspector.
- 8.4.2. The inspector may take samples at random which will be tested in the manufacturer's laboratory. The minimum number of samples may be determined according to the results of the manufacturer's own verification.
- 8.4.3. When the quality level appears unsatisfactory or when it seems necessary to verify the validity of the tests carried out in application of paragraph 8.4.2., the inspector shall select samples to be sent to the technical service which has conducted the type approval tests.
- 8.4.4. The competent authority may carry out any test prescribed in this Regulation.
- 8.4.5. The normal frequency of inspections authorized by the competent authority shall be one per year. In the case where negative results are recorded during one of these visits, the competent authority shall ensure that all necessary steps are taken to re-establish the conformity of production as rapidly as possible."

Paragraph 13.3, amend to read:

"... or extension or withdrawal of approval or production definitely discontinued of a vehicle type pursuant to this Regulation ..."

Add new paragraph 13.9 to read:

- "13.9. The competent authority shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted."

Paragraph 14.1, add a new sentence to read:

"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."

Paragraph 14.4, amend to read:

"... on ground as smooth as possible and, in the case of devices supplied with direct current, with its engine stopped."

Paragraph 14.8, amend to read:

"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."

Amend title of paragraph 15 to read:

"MODIFICATIONS OF VEHICLE TYPE AND EXTENSION OF APPROVAL"

Add a new paragraph 15.3 to read:

"15.3. The competent authority issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension."

Paragraph 16, amend to read:

"16. CONFORMITY OF PRODUCTION

16.1. Every vehicle approved pursuant to this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set out in paragraph 14 above.

16.2. In order to verify that the requirements of paragraph 16.1. above are met, appropriate checks on production shall be carried out.

16.3. The holder of the approval shall in particular:

16.3.1. ensure existence of procedures for effective control of the quality of the vehicles as regards all aspects relevant to compliance with the requirements set out in paragraph 14 above,

- 16.3.2 ensure that for every type of vehicle sufficient checks are carried out regarding the number and type of AWD, so as to ensure that all vehicles in production comply with the specifications given of the vehicle submitted for type approval,
- 16.3.3. ensure that, if the checks carried out pursuant to paragraph 16.3.2. above give evidence of non-conformity of one or more vehicles with the requirements set out in paragraph 14 above, all necessary steps are taken to restore conformity of the corresponding production.
- 16.4. The competent authority which granted type-approval may at any time verify the conformity control methods applied for each production unit. The authority may also carry out any random checks on serially-manufactured vehicles in respect to the requirements set out in paragraph 14 above.
- 16.5. Where unsatisfactory results are found during verifications and checks pursuant to paragraph 16.4. above, the competent authority shall ensure that all necessary steps are taken to restore conformity of production as rapidly as possible."

Annex 1 and Annex 2:

Under "Communication concerning" insert "extension of approval."

Add: "Extension No." on line with "Approval No."

and amend last paragraph to read:

"A list of documents contained in the approval file transmitted to the administrative service which has granted approval is annexed to this communication."

Annex 3:

Insert above symbol: "I"

and amend text to read: "... this AWD of Class I has ..."

Paragraph 5.5.1., footnote 1/, amend to read:

"1/ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 for Ireland, 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30 (vacant), 31 for Bosnia and Herzegovina, 32 for Latvia, 33 (vacant), 34 for Bulgaria, 35-36 (vacant), 37 for Turkey, 38-39 (vacant), 40 for The former Yugoslav Republic of Macedonia, 41 (vacant), 42 for the European Community (Approvals are granted by its Member States using their respective ECE symbol), 43 for Japan, 44 (vacant), 45 for Australia, 46 for Ukraine and 47 for South Africa. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement."

Paragraph 6.2.3.1., amend to read:

"6.2.3.1. in the case of AWDs supplied with direct current, at a voltage measured at the terminal of the electric power source of 13/12 of the rated voltage".

Paragraph 6.2.5., amend to read:

"6.2.5. For AWDs 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 volts."

Paragraph 8., amend to read:

"8. CONFORMITY OF PRODUCTION

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:

- 8.1. AWD 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.
- 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."

Paragraph 16., amend to read:

"16.1. CONFORMITY OF PRODUCTION

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 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."

Annex 1, item 7, correct to read:

"7. Rated operating pressure(s)kg/cm²."
