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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on General Safety Provisions****128th session**

Geneva, 7-11 October 2024

Item 5 of the Provisional Agenda

UN Regulation No. 39 (Speedometer and Odometer)**Proposal for the 02 Series of Amendments to UN Regulation No. 39 (Uniform Provisions concerning the Approval of Vehicles with regard to the Speedometer and Odometer Equipment Including its Installation)****Submitted by the Task Force on UN Regulation No. 39 covering mileage values ***

The text reproduced below was prepared by the Task Force on UN Regulation No. 39 covering mileage values, aiming to amend and extend the existing requirements for odometers to include provisions on: (a) accuracy of the on-board odometer mileage values, (b) anti-tampering of the on-board odometer mileage values and (c) accuracy and anti-tampering of the odometer mileage values displayed to the driver. The proposal is in accordance with the agreement of GRSG endorsed at its 125th session (ECE/TRANS/WP.29/GRSG/104, paragraph 49). The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/78/6 (section 20) table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Table of contents, amend to read:

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Text of the UN Regulation, amend to read:

"1. Scope

This Regulation applies to the approval of vehicles of categories L, M and N.¹

2. Definitions

For the purposes of this Regulation:

- 2.1. "Approval of a vehicle" means the approval of a vehicle type with regard to the speedometer and odometer equipment including its installation.
- 2.2. "Type of vehicle in respect of its speedometer and odometer" means vehicles which do not among themselves display any essential differences, where those differences can apply, in particular, to the following:
- 2.2.1. The size designation of the tyres chosen from the range of tyres normally fitted;
- 2.2.2. The overall transmission ratio, including any reduction drives, to the speedometer **and odometer**;
- 2.2.3. The type of speedometer as characterised by:
- 2.2.3.1. The tolerances of the speedometer's measuring mechanism;
- 2.2.3.2. The technical constant of the speedometer;
- 2.2.3.3. The range of speeds displayed.
- 2.2.4. The type of odometer as characterised by:
- 2.2.4.1. The technical constant of **the** odometer;
- 2.2.4.2. The number of numerals.
- 2.3. "Tyres normally fitted" means the type or types of tyre provided by the manufacturer on the vehicle type in question; snow tyres shall not be regarded as tyres normally fitted;
- 2.4. "Normal running pressure" means the cold inflation pressure specified by the vehicle manufacturer increased by 0.2 bar;
- 2.5. "Speedometer" means that part of the speedometer equipment which indicates **the speed of the vehicle** to the driver ~~the speed of his vehicle~~ at any given moment;²
- 2.5.1. "Tolerances of the speedometer's measuring mechanism" shall mean the accuracy of the speedometer instrument itself, expressed as the upper and the lower speed indication limits for a range of speed inputs;
- 2.5.2. "Technical constant of the speedometer" shall mean the relationship between the input revolutions or pulses per minute and a specified displayed speed;
- 2.6. "Odometer" means that part of the odometer equipment which indicates to the driver the total distance ~~recorded~~ **driven** by the vehicle ~~since its entry into service~~.

¹ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.67, para. 2. - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

² ~~This does not include the speed indicating part of a tachograph if this complies with type approval specifications which do not permit an absolute difference between true and indicated speed which is higher than the values resulting from the requirements in paragraph 5.4. below.~~

- 2.6.1. *"Technical constant of the odometer"* means the relationship between the input revolutions or pulses and the distance ~~travelled~~ **driven** by the vehicle.
- 2.6.2. *"Total distance indicated"* means the distance as displayed by the odometer.
- 2.6.3. *"True distance travelled"* means the true distance driven by the vehicle for the purpose of the test under Annex 4.
- 2.6.4. *"Total distance value"* means any mileage value stored on-board the vehicle related to the total distance driven by the vehicle.
- 2.6.5. *"Tachograph or Recording equipment"* means the equipment intended for installation in road vehicles to display, record, print, store and output data related to the movement of such vehicles. The data recorded includes the effective distance travelled, calibration data of the vehicle and events and faults log.
- The recording equipment consists of a vehicle unit and a motion sensor.
- The vehicle unit communicates with the motion sensor in a secure way.
- 2.6.5.1. *"Vehicle unit"* means the recording equipment excluding the motion sensor and the cables connecting the motion sensor.
- 2.6.5.2. *"Motion sensor"* means a part of the recording equipment providing a signal representative of vehicle speed and/or distance travelled.
- 2.6.6. *"Tachograph Replacement Unit (TRU)"* means a device that simulates the functions of a tachograph or recording equipment which are necessary to operate for vehicles that are not required to be equipped with a tachograph according to national legislation.
- 2.6.7. *"Purely mechanical odometer"* means odometer equipment in which the technical constant of the odometer is decided by input and output gear combinations in the transmission mechanically, and no electrical correction is applied.
- 2.7. *"Unladen vehicle"* means the vehicle in running order, complete with fuel, coolant, lubricant, tools and a spare wheel (if provided as standard equipment by the vehicle manufacturer), carrying a driver weighing 75 kg, but no driver's mate, optional accessories or load.
- 2.8. *"Tampering"* means any activity aiming at inaccurate recording or misrepresenting of mileage values being stored and/or displayed.

3. Application for Approval

- 3.1. The application for approval of a vehicle type with regard to the speedometer and odometer equipment including its installation shall be submitted by the vehicle manufacturer or by ~~his~~ **the vehicle manufacturer's** duly accredited representative **to the Type Approval Authority of the Contracting Party according to the provisions of Schedule 3 of the 1958 Agreement.**
- 3.2. It shall be accompanied by the following documents ~~in triplicate and by the following particulars~~ **(a model of the information document is given in Annex 5):**
- 3.2.1. A description of the vehicle type with regard to the items mentioned in paragraphs 2.2., 2.3., 2.4., 2.5. and 2.6. above; the vehicle type shall be specified.
- 3.3. An unladen vehicle representative of the vehicle type to be approved shall be submitted to the technical service conducting approval tests.

- 3.4. The Type Approval Authority shall verify the existence of satisfactory arrangements for ensuring effective control of the conformity of production before type approval is granted.

4. Approval

- 4.1. If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of the Regulation in respect of the speedometer and odometer equipment including its installation, approval of that vehicle type shall be granted.
- 4.2. ~~An approval number shall be assigned to each type approved. The first two digits shall be the highest number of the series of amendments incorporated in the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another vehicle type subject to the provisions of paragraph 6. of this Regulation. An approval number shall be assigned to each approved type in accordance with Schedule 4 of the Agreement (E/ECE/TRANS/505/Rev.3).~~
- 4.3. Notice of approval or of refusal **or of extension or withdrawal of approval or of production definitively discontinued** ~~of approval~~ of a vehicle type pursuant to this Regulation shall be communicated to the Parties to the Agreement which apply this Regulation by means of a form conforming to the model in Annex 1 to this Regulation and of diagrams **of the installation**, supplied by the applicant for approval, ~~of the installation in a format not larger than A4 (210 x 297 mm) or folded to that format, and on an appropriate scale.~~
- 4.4. To every vehicle conforming to a vehicle type approved under this Regulation there shall be affixed in a conspicuous and easily accessible position, specified on the approval form, an international approval mark consisting of:
- 4.4.1. A circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval;³
- 4.4.2. The number of this Regulation, followed by the letter "R", a dash and the approval number to the right of the circle described in paragraph 4.4.1.
- 4.5. 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 4.4.1. need not be repeated; in such a case the additional numbers and 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 4.4.1.
- 4.6. The approval mark shall be clearly legible and shall be indelible.
- 4.7. The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.
- 4.8. Annex 2 to this Regulation gives examples of arrangements of approval marks.

5. Specifications

- 5.1. An onboard speedometer and odometer complying with the requirements of this Regulation shall be fitted to the vehicle to be approved. **[If more than one onboard speedometer or odometer is fitted to the vehicle, all these**

³ The distinguishing numbers of the Contracting Parties to the 1958 Agreement are reproduced in Annex 3 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev. 67, Annex 3 - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

speedometers and odometers shall comply with all the requirements of this Regulation. Additional graduations and numerical values are not permitted.]

[Tachographs or Recording equipment, or Tachograph Replacement Units are not considered to be an on-board speedometer or odometer for the purpose of this paragraph.]

5.2. Speedometer

The display of the speedometer shall be located within the direct field of view of the driver and must be clearly legible both day and night. The range of speeds displayed must be sufficiently wide to include the maximum speed of this type of vehicle as stated by the manufacturer.

- 5.2.1. In the case of speedometers intended for vehicles of Categories M, N, and L₃, L₄, L₅, and L₇ the graduation shall be 1, 2, 5 or 10 km/h. The numerical values of the speed shall be indicated on the display as follows: when the highest value on the display does not exceed 200 km/h, speed values shall be indicated at intervals not exceeding 20 km/h. When the maximum value on the display exceeds 200 km/h, then the speed values shall be indicated at intervals not exceeding 30 km/h. The indicated numerical speed value intervals need not be uniform.

If a setting makes it possible for the driver to choose between the speed in km/h and mph (miles per hour), then the speed may be displayed only in either km/h or mph at any one time. The corresponding unit shall permanently be displayed.

- 5.2.2. In the case of vehicles of Categories M, N, and L₃, L₄, L₅, and L₇ manufactured for sale in any country where imperial units are used, the speedometer shall also be marked in miles per hour (mph); the graduations shall be of 1, 2, 5 or 10 mph.

The speed may be displayed either in km/h or mph at any one time provided that a setting makes it possible for the driver to choose between the speed in km/h and mph, in that case the corresponding unit shall permanently be displayed.

The numerical values of the speed shall be indicated on the display at intervals not exceeding 20 mph and commencing at 10 or 20 mph. The indicated numerical speed value intervals need not be uniform.

- 5.2.3. In the case of speedometers intended for vehicles of categories L₁ (mopeds), L₂, and L₆, the display readings shall not exceed 80 km/h. The graduation shall be 1, 2, 5 or 10 km/h and the marked numerical values of the speed indicated shall not exceed 10 km/h. The indicated numerical speed value intervals need not be uniform.

- 5.2.4. In the case of vehicles of categories L₁, L₂ and L₆ manufactured for sale in any country where imperial units are used, the speedometer shall also be marked in mph; the graduation shall be of 1, 2, 5 or 10 mph. The numerical values of the speed shall be indicated on the display at intervals not exceeding 10 mph and starting at 10 or 20 mph. The indicated numerical speed value intervals need not be uniform. If a setting makes it possible for the driver to choose between the speed in km/h and mph, then the speed may be displayed only in km/h or mph at one time at any one time. The corresponding unit shall permanently be displayed.

- 5.3. The accuracy of the speedometer equipment shall be tested in accordance with the following procedure:

- 5.3.1. The tyres shall be one of the types normally fitted to the vehicle as defined in paragraph 2.3. of this Regulation. A test shall be carried out for each type of speedometer intended to be fitted by the manufacturer.

- 5.3.2. The test shall be carried out with the vehicle at its unladen weight. An additional weight can be carried for purposes of measurement. The weight of the vehicle and its distribution between the axles shall be indicated in the approval communication (see Annex 1, item 7.);
- 5.3.3. The reference temperature at the speedometer shall be 23 ± 5 °C, **if relevant for the test to the discretion of the Technical Service responsible for carrying out the test;**
- 5.3.4. During each test the pressure of the tyres shall be the normal running pressure as defined in paragraph 2.4.;
- 5.3.5. The vehicle is tested at the following speeds:

<i>Maximum design speed (V_{max}) of the vehicle specified by the vehicle manufacturer (km/h)</i>	<i>Test speed (V_i) (km/h)</i>
V _{max} ≤ 45	80 % of V _{max}
45 < V _{max} ≤ 100	40 km/h and 80 % V _{max} (if the resulting speed is ≥ 55 km/h)
100 < V _{max} ≤ 150	40 km/h, 80 km/h and 80 % V _{max} (if the resulting speed is ≥ 100 km/h)
150 < V _{max}	40 km/h, 80 km/h and 120 km/h

- 5.3.6. The test instrumentation used for measuring the true vehicle speed shall be accurate to ± 0.5 per cent;
- 5.3.6.1. The surface of a test track when used shall be flat ~~and dry~~, and provide sufficient adhesion;
- 5.3.6.2. If a roller dynamometer is used for the test, the diameter of the roller should be at least 0.4 m;
- 5.4. The speed indicated shall not be less than the true speed of the vehicle. At the test speeds specified in paragraph 5.3.5. above, there shall be the following relationship between the speed displayed (V₁) and the true speed (V₂).

$$0 \leq (V_1 - V_2) \leq 0.1 V_2 + 4 \text{ km/h}$$

5.5. **Odometer Equipment**

The display of the odometer shall be visible or accessible to the driver. The odometer shall display at least an integer number composed of a minimum of 6 numerals for the vehicles of categories M and N, and at least an integer number composed of a minimum of 5 numerals for the vehicles of category L. Nevertheless, the Type Approval Authorities may also accept an integer number composed of at least 5 numerals for the vehicles of categories M and N if the intended use of the vehicle justifies it.

- 5.5.1. In the case of vehicles manufactured for sale in any country where imperial units are used, the odometer shall be marked in miles.
- 5.5.2. The odometer shall display the distance in the unit corresponding to that of the predominant speedometer scale. If a setting makes it possible for the driver to select the odometer display distance in km or miles independently of the speedometer, the odometer shall identify the unit used.

5.6. **Odometer Equipment – Accuracy**

Paragraphs 5.7. to 5.9. and 5.11. to 5.12. do not apply to vehicles fitted with purely mechanical odometers.

Paragraphs 5.9. and 5.11. to 5.12. do not apply to L category vehicles.

For vehicles equipped with a tachograph or recording equipment, or where a tachograph replacement unit is the only source of measuring mileage, the requirements of paragraphs 5.7. to 5.9. and 5.12. are considered to be met, if the security and accuracy of the recording equipment are at least equivalent to the requirements of this UN Regulation.

- 5.7. The accuracy of the odometer equipment shall be tested in accordance with the test procedure prescribed in Annex 4.
- 5.8. The total distance indicated shall not deviate by more than [± 5.0 / ± 4.0 / ± 2.5] per cent from the true distance travelled as determined in paragraph 5.7.
- 5.9. When total distance values are provided by the serial data port on the standardised data link connector, as specified in paragraph 6.5.3 of Appendix 1 of Annex C5 to UN Regulation No. 154 or as specified in paragraph 4.7.3. of Annex 9B to UN Regulation No. 49, these values shall not deviate from the (rounded) total distance indicated.
- 5.10. **Odometer – General**
- Total distance values and the total distance indicated shall have a resolution better than or equal to 1 km or 1 mile, as appropriate.
- 5.11. [In the case of an electrically detectable failure preventing the requirements of this Regulation from being met, a malfunction indication shall be provided to the driver, if not already covered by other failure warnings and/or other failure conditions.]
- 5.11.1. [The malfunction indication shall be active when the malfunction occurs and shall remain active as long as the malfunction persists. It may be temporarily cancelled, but shall be repeated each time the ignition or the vehicle master control switch is activated.]
- 5.11.2. At the time of type approval, the means of indicating malfunction chosen by the manufacturer shall be confidentially outlined.
- 5.12. **Odometer – Anti-Tampering and Security Management**
- The total distance indicated and total distance values shall be protected against manipulation. This shall be demonstrated by fulfilling the relevant technical requirements of the original or any later series of amendments of UN Regulation No. 155. This shall be deemed to be complied with when:
- (a) [the manufacturer’s management system encompassing cyber security is complying with the [relevant] requirements of UN Regulation No. 155, the original or any later series of amendments, with regard to total distance indicated and total distance values]
- and
- (b) proportionate mitigations are implemented, including, or equivalent to, mitigation 7 referred to in Annex 5, Part B, Table B5 of UN Regulation No. 155.

6. Modifications of the Vehicle Type

- 6.1. Every modification of the vehicle type shall be communicated to the Type Approval Authority which approved the vehicle type. The Authority may then either:
- 6.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the vehicle still meets the requirements; or

- 6.1.2. Require a further test report from the Technical Service responsible for conducting the tests.
- 6.2. Notice of confirmation or refusal of approval, accompanied by particulars of the modifications, shall be communicated by the procedure specified in paragraph 4.3. above to the Parties to the Agreement applying this Regulation.

7. Conformity of Production

- 7.1. The conformity of production procedures shall comply with those set out in the Agreement, Schedule 1 (E/ECE/TRANS/505/Rev.3), with the following requirements:
- 7.2. Every vehicle approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements of the relevant part(s) of this Regulation.
- 7.3. For each type of vehicle sufficient checks are carried out regarding the speedometer equipment and its installation; in particular, for each type of vehicle at least the test prescribed in Annex 3 to this Regulation shall be carried out.
- 7.4. 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.
- 7.5. Where unsatisfactory results are found during verifications and checks pursuant to paragraph 7.4. above, the competent authority shall ensure that all necessary steps are taken to restore conformity of production as rapidly as possible.

8. Penalties for Non-Conformity of Production

- 8.1. The approval granted for a vehicle type pursuant to this Regulation may be withdrawn if the requirement laid down in paragraph 7.1. above is not met or if the vehicles have failed to pass the checks prescribed in paragraph 7. above.
- 8.2. If a Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in Annex 1 to this Regulation.

9. Names and Addresses of Technical Services Responsible for Conducting Approval Tests and of Type Approval Authorities

The Contracting Parties to the Agreement applying this Regulation shall communicate to the secretariat of the United Nations 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.

10. Transitional Provisions

- 10.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 01 series of amendments.

- 10.2. As from 1 September 2017, Contracting Parties applying this Regulation shall grant new type approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 01 series of amendments.
- 10.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of type approvals for existing types which have been granted according to the preceding series of amendments to this Regulation.
- 10.4. After the date of entry into force of the 01 series of amendments to this Regulation, Contracting Parties applying this Regulation shall continue to accept type approvals granted according to the preceding series of amendments to the Regulation.
- 10.5. As from the official date of entry into force of the 02 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 02 series of amendments.**
- 10.6. As from 1 September [2027], Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September [2027].**
- 10.7. Until 1 September [2028], Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September [2027].**
- 10.8. As from 1 September [2028], Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation.**

Annex 1

Communication

(Maximum format: A4 (210 x 297 mm))



Issued by: Name of administration:

.....

- Concerning:²
- Approval granted
 - Approval extended
 - Approval refused
 - Approval withdrawn
 - Production definitively discontinued

of a vehicle type with regard to the speedometer and odometer equipment including its installation pursuant to Regulation No. 39.

Approval No. Extension 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 the manufacturer's representative:

5. Description of the speedometer equipment:
- ~~5.1. Details of tyres normally fitted:~~
- ~~5.2. Details of tyres fitted during the test:~~
- 5.31. Ratio of speedometer equipment:
6. Description of the odometer equipment:
- 6.1. Ratio of odometer equipment:**
- 6.2. Purely mechanical odometer: yes/no**
7. Tyres:
- 7.1. Details of tyres normally fitted:**
- 7.2. Details of tyres fitted during the test:**

¹ Distinguishing number of the country which has granted, extended, refused or withdrawn approval (see approval provisions in the Regulation).

² Strike out what does not apply.

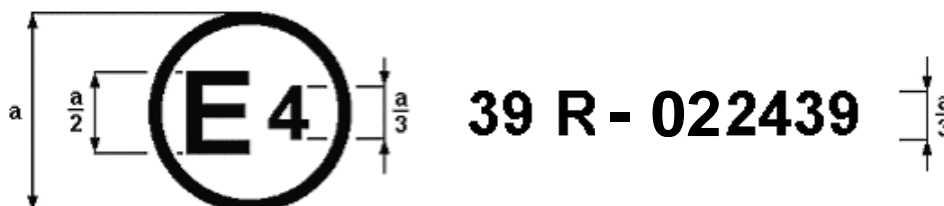
- 78. Mass of vehicle as tested and its distribution between the axles:
.....
- 89. Variants:
- 910. Vehicle submitted for approval on:
- 1011. Technical Service responsible for conducting approval tests:
- 1112. Date of report issued by that Service:
- 1213. Number of report issued by that Service:
- 1314. Approval granted/refused/extended/withdrawn²
- 1415. Position of approval mark on the vehicle:
- 1516. Place:
- 1617. Date:
- 1718. Signature:

Annex 2

Arrangements of Approval Marks

Model A

(see paragraph 4.4. of this Regulation)

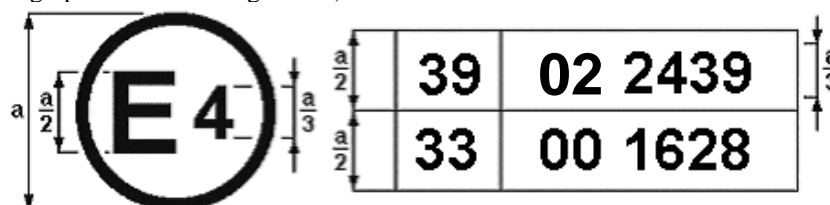


$a = 8 \text{ mm min.}$

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4), pursuant to Regulation No. 39. The approval number indicates that the approval was granted in accordance with the requirements of UN Regulation No. 39 incorporating the ~~01~~02 series of amendments.

Model B

(see paragraph 4.5. of this Regulation)



$a = 8 \text{ mm min.}$

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. 39 and 33.¹ The approval numbers indicate that, at the dates when the respective approvals were granted, UN Regulation No. 39 incorporated the ~~01~~02 series of amendments and Regulation No. 33 was still in its original form.

¹ The second number is given merely as an example.

Annex 3

Test of Speedometer Accuracy for Conformity of Production

1. Test conditions

The test conditions shall be as set out in paragraphs 5.3.1. to 5.3.6. of this Regulation.

2. Requirements

The production shall be deemed to conform to this Regulation if the following relationship between the speed indicated on the display of the speedometer (V_1) and the actual speed (V_2) is observed:

In the case of vehicles of categories M and N:

$$0 \leq (V_1 - V_2) \leq 0.1 V_2 + 6 \text{ km/h};$$

In the case of vehicles of categories L₃, L₄ and L₅:

$$0 \leq (V_1 - V_2) \leq 0.1 V_2 + 8 \text{ km/h};$$

In the case of vehicles of categories L₁ and L₂:

$$0 \leq (V_1 - V_2) \leq 0.1 V_2 + 4 \text{ km/h}.$$

Annex 4

Test of Accuracy of Odometer Equipment

0. The accuracy of the odometer equipment referred to in paragraph 5.7. of this Regulation shall be determined in accordance with this Annex. in the case of odometers using both metric and imperial units, the test may be carried out using either metric or imperial units, with the agreement of the Technical Service.

With the agreement of the Technical Service and the Type Approval Authority, alternative test procedures may be used to determine the accuracy of the odometer equipment, provided that they ensure at least the same level of test accuracy.

1. Test Procedure
- 1.1. The accuracy of the odometer equipment shall be tested in accordance with the following procedure:
- 1.1.1. The tyres shall be one of the types normally fitted to the vehicle as defined in paragraph 2.3. of this Regulation.
- 1.1.2. The test shall be carried out with the vehicle at its unladen weight. An additional weight can be carried for purposes of measurement. The weight of the vehicle and its distribution between the axles shall be indicated in the approval communication (see Annex 1, item 7.).
- 1.1.3. The reference temperature at the odometer shall be 23 ± 5 °C, if relevant for the test to the discretion of the Technical Service responsible for carrying out the test.
- 1.1.4. During each test, the pressure of the tyres shall be the normal running pressure as defined in paragraph 2.4.
- 1.1.5. The test instrumentation used for measuring the true distance travelled shall be accurate to ± 0.5 per cent.
- 1.1.5.1. The surface of a test track when used shall be flat and provide sufficient adhesion.
- 1.1.5.2. If a roller dynamometer is used for the test, the diameter of the roller should be at least 0.4 m.
- 1.1.6. The vehicle is tested at a speed which may vary between 0 and 100 km/h. The test speed (fixed speed or range) is selected in agreement with the Technical Service responsible for carrying out the test, based upon the vehicle characteristics and the suitability of the road under the conditions given (test track shape, other traffic on track, curves, etc.).
- 1.1.7. The vehicle is driven until the odometer switches to the next integer. At this point, the instrumentation is set to 0 m. This may be done in stationary position.
- 1.1.8. The vehicle is driven for a minimum of 10 kilometres or 7 miles as indicated on the odometer and the true value is read from the instrumentation at the point where the odometer switches to the corresponding integer.

2.0. Test results**2.1. The accuracy shall be calculated as follows for vehicles using km:**

$$\text{Accuracy (per cent)} = \frac{(\text{TDi} - \text{TDi0}) * 1,000 - \text{TDt}}{\text{TDt}} * 100$$

where:

TDt: true distance travelled (m)

TDi0: total distance indicated at the start of the test (km), according to paragraph 1.1.7.

TDi: total distance indicated at the end of the test (km).

For vehicles using imperial units, the formula is adjusted accordingly.

Example:

- odometer switches from 3,529 km to 3,530 km; the instrumentation is set to 0 m.

- odometer switches from 3,539 km to 3,540 km; the instrumentation reads 10,260 m.

$$\begin{aligned} \text{- Accuracy (per cent)} &= \frac{(3,540 - 3,530) * 1,000 - 10,260}{10,260} * 100 \\ &= -2.5 \text{ per cent} \end{aligned}$$

Annex 5

Information Document

- 0. General
 - 0.1. Make (trade name of manufacturer):
 - 0.2. Type and general commercial description(s):
 - 0.3. Means of identification of type, if marked on the vehicle:
 - 0.3.1. Location of that marking:
 - 0.4. Category of vehicle:
 - 0.5. Name and address of manufacturer:
 - 0.8. Address(es) of assembly plant(s):
- 1. General Construction Characteristics of the Vehicle
 - 1.1. Photographs and/or drawings of a representative vehicle
 - 2. Masses and Dimensions (in kg and mm)
 - 2.6. Mass of the vehicle in running order (max. and min. for each variant):
 - 2.6.1. Distribution of this mass among the axles and, in the case of a semi-trailer or centre axle trailer, load on the coupling point (max. and min):
 - 4. Transmission
 - 4.2. Type (mechanical, hydraulic, electric, etc.): ²
 - 4.5. Gearbox ²
 - 4.5.3. Method of control:
 - 4.6. Gear ratios ²

<i>Gear</i>	<i>Internal gearbox ratios (ratios of engine to gearbox output shaft revolutions)</i>	<i>Final drive ratio(s) (ratio of gearbox output shaft to driven wheel revolutions)</i>	<i>Total gear ratios</i>
Maximum for CVT*			
1			
2			
3			
...			
Minimum for CVT*			
Reverse			

* Continuously variable transmission.

- 4.7. Maximum vehicle speed (in km/h):
- 4.8. Speedometer and odometer
 - Speedometer:
 - 4.8.1. Method of operation and description of drive mechanism:

² Provide only if relevant for speedometer and/or odometer equipment

- 4.8.2. Instrument constant:
- 4.8.3. Tolerance of the measuring mechanism (pursuant to paragraph 2.2.3.):
- 4.8.4. Overall transmission ratio (pursuant to paragraph 2.2.2.) or equivalent data:
- 4.8.5. Diagram of the speedometer scale or other forms of display:
Odometer:
- 4.8.6. The technical constant of the odometer (pursuant to paragraph 2.2.4.):
- 4.8.7. The number of numerals:
- 4.8.8. Purely mechanical odometer (pursuant to paragraph 2.6.7.): yes/no
- 4.9. Description of Tachograph or Recording equipment (pursuant to paragraph 2.6.5.) or Tachograph Replacement Unit (pursuant to paragraph 2.6.6.) (if fitted):
- 6. Suspension
 - 6.6 Tyres and Wheels
 - 6.6.2. Upper and lower limit of rolling radii
 - 6.6.2.1. axle 1:
 - 6.6.2.2. axle 2:
 - 6.6.2.3. axle 3:
 - 6.6.2.4. axle 4:
etc.
 - 6.6.3. Tyre pressures as recommended by the vehicle manufacturer (in kPa):"

II. Justification

A. Excerpt from the Terms of Reference of the Task Force

1. In accordance with the agreement of GRSG endorsed at its 125th session (ECE/TRANS/WP.29/GRSG/104, paragraph 49), a Task Force (TF) was established to develop a draft regulatory proposal with regard to the odometer equipment in respect of mileage values processing. In particular, the TF would develop uniform provisions on:

- (a) accuracy of the on-board odometer mileage values in vehicles and a maximum tolerance and type-approval test procedure accordingly;
- (b) security management and anti-tampering, to prevent and/or detect, to the greatest extent possible, manipulation of the on-board odometer mileage values in vehicles;
- (c) accuracy, security management and anti-tampering of the odometer mileage values displayed to the driver.

(...) When developing the regulatory proposal(s), TF should take into account existing technology, data and research. Furthermore, it should consider pre-existing standards as well as national and international legislation covering the same scope.

See also report of the Working Party on General Safety Provisions on its 126th session, (ECE/TRANS/WP.29/GRSG/105 paragraph 16 and Annex V).

B. General

2. Footnote 1, 3, paragraphs 2.2.2., 2.2.4.1., 2.6., 3.1., 3.2., annexes 1 and 2: (Editorial) amendments in line with the new provisions and for reasons of consistency.

3. Paragraphs 2.5. and 3.1. (first sentence): Editorial amendment for gender-neutral language.

4. Paragraph 2.5., footnote 2: Deleted as it was found not relevant anymore considering all new amendments.

5. Paragraph 2.6.: Amended to a more appropriate wording considering that odometers are fitted to a wide range of vehicles including vehicles build in multi-stages for which the entry into service not necessarily relates to the distance travelled by the vehicle or chassis. Newly introduced definitions to define and distinguish the mileage values as regards:(a) paragraph 2.6.2. for the distance as displayed by the odometer; (b) paragraph 2.6.3. for the real distance driven by the vehicle (related to the type-approval test procedure of annex 4); and (c) paragraph 2.6.4. for any mileage value stored anywhere on-board the vehicle.

6. Paragraphs 2.6.5., 2.6.6., and 5.6. and annex 5 4.9.: It had been identified that vehicles fitted with equipment like, for example, tachographs, often measure and store the mileage with a high level of accuracy and security. Therefore, the requirements of the relevant paragraphs can be deemed to be already met in case the equipment is used as unique source to measure the mileage and when it is shown that this equipment is at least of the same level of stringency as those of this UN Regulation. A description of the equipment shall be included in the information document by the manufacturer.

7. Paragraphs 2.6.7. and 5.6. and Annexes 1, 1.6.2. and 5, 4.8.8.: It had been identified that vehicles fitted with “purely mechanical odometer” can technically not comply with the level of accuracy and security introduced by this UN Regulation. It is also expected that only a very small number of vehicles may be equipped with mechanical odometers. Therefore, the TF considered it appropriate to introduce an exemption with the relevant accuracy and security requirements for vehicles equipped with purely mechanical odometer equipment. This needs to be indicated on the type-approval certificate and information document so that it is clear when it concerns an odometer for which this exemption applies.

8. Paragraph 2.8.: A definition on “tampering” is introduced and kept generic to ensure that the intention of tampering, for the purpose of this Regulation, is covered and particular situations not excluded.
9. Paragraphs 3 and 4: Updated according to Revision 3 of the 1958 Agreement.
10. Paragraphs 5.3.3. and 5.3.6.: Editorial correction of an old typo. Also, when discussing the odometer accuracy test procedure, it was agreed that the temperature generally does not affect speedometer and odometer performances of modern equipment. Therefore, the temperature should not be an obstacle to the type-approval test, if it is not relevant. This has now been clarified and is left to the discretion of the Technical Service responsible for conducting the test.
11. Paragraph 5.3.6.1.: The reference to "dry" has been deleted as it was felt that "provide sufficient adhesion" was sufficient.
12. Paragraph 5.10.: This paragraph clarifies the required resolution for the mileage values.
13. Paragraph 5.11.: A malfunction indication to the driver in case of defective odometer equipment is included. For reasons of feasibility and proportionality, this is limited to electrically detectable failures and the indication may be covered by other failure warnings or conditions. The TF agreed in principle, but will consider improved wording.
14. Paragraphs 10.5. to 10.8.: Transitional provisions are introduced. The actual years remain in square brackets for further consideration. Industry considers that, the introduction of the malfunction indicator is particularly relevant for deciding on the appropriate introduction dates.
15. Annex 1: Updated in line with the new provisions. Point 6.2. added to identify if the odometer is approved with accuracy and CS measures.
16. Annex 2: updated to the 02 series of amendments.
17. Annex 5: an information document template applicable to speedometers and odometers is introduced.

C. Accuracy

18. Paragraphs 5.7. and 5.8.: These paragraphs specify the actual requirements on accuracy. Paragraph 5.8. lays down the tolerance value for the allowed deviation of the mileage value as displayed by the odometer with the true distance driven by the vehicle during the Annex 4 type-approval test procedure. The actual required tolerance value (± 2.5 , 4.0 or 5.0 per cent or other) is still under consideration.
19. The TF considered SAE J2976 from May 2022 recommending ± 2.5 per cent based on tyre tolerances, positions from Contracting Parties generally requesting ± 2.5 per cent and the position of OICA as explained in document TF-R39MV-06-04 recommending ± 5 per cent.
20. The required tolerance value is within the scope of type-approval as established by the type-approval procedure described in Annex 4 and does not relate to real-life situations, e.g. actual vehicles on the road.
21. Paragraph 5.9.: Multiple mileage values are often stored in different places (Electronic Control Units) in the vehicle. In case they can be retrieved through the serial data port on the standardised data link connector, they shall be consistent with the rounded mileage value displayed by the odometer.

22. Annex 4 describes the type-approval procedure for establishing odometer accuracy. It is drafted as a simple and effective procedure which can be performed on a test track or roller dynamometer chassis and can potentially be combined with the speedometer testing. Annex 4 allows that alternative test procedures may be used (in agreement with the Technical Service and Type Approval Authority) provided it ensures at least the same level of testing accuracy. Tests had been performed to confirm the feasibility of the described procedure and small improvements made based on the testing experience, document TF-R39MV-07-03.

D. Anti-Tampering and Security Management

23. Paragraph 5.12. Mileage values must be protected against tampering. This can be deemed to be complied with when the manufacturer's cyber security management system complies with the relevant requirements of UN Regulation No. 155, and when the vehicle type complies with the relevant technical requirements of that Regulation. The provisions allow for alternatives for vehicles not certified in accordance with UN Regulation No. 155, and contracting parties not applying it.

24. With help of cyber security experts, a proper language was drafted to make this applicable in the most appropriate way for the purpose of mileage values processing.

25. The TF principally agreed but considers an improved wording for (a).

E. Paragraph 5.1

26. This proposal incorporates Informal document GRSG-127-06 as decided at the 127th session of GRSG, 15 – 19 April 2024 (ECE/TRANS/WP.29/GRSG/106, paragraphs 23 and 24: "GRSG agreed to resume discussion on this subject based on a new proposal submitted by TF, incorporating the comments and GRSG-127-06").

27. TF discussed whether GRSG-127-06 could conflict the proposed requirements currently being drafted. It was identified that the proposal aims add addressing additional speedometers and odometers which does not concern equipment like tachographs. It is now under consideration to clarify that this equipment is not considered being an on-board speedometer or odometer for the purpose of this paragraph.
