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**COUNCIL REGULATION (EEC) No 3821/85  
of 20 December 1985  
on recording equipment in road transport**

(OJ L 370, 31.12.1985, p. 8)

Amended by:

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► <u>M1</u> Commission Regulation (EEC) No 3314/90 of 16 November 1990	L 318	20	17.11.1990
► <u>M2</u> Council Regulation (EEC) No 3572/90 of 4 December 1990	L 353	12	17.12.1990



**COUNCIL REGULATION (EEC) No 3821/85**  
**of 20 December 1985**  
**on recording equipment in road transport**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 75 thereof,

Having regard to the proposal from the Commission <sup>(1)</sup>,

Having regard to the opinion of the European Parliament <sup>(2)</sup>,

Having regard to the opinion of the Economic and Social Committee <sup>(3)</sup>,

Whereas Regulation (EEC) No 1463/70 <sup>(4)</sup> as last amended by Regulation (EEC) No 2828/77 <sup>(5)</sup> introduced recording equipment in road transport;

Whereas, taking into account the amendments set out hereinafter, in order to clarify matters, all the relevant provisions should be brought together in a single text, and in consequence thereof, Regulation (EEC) No 1463/70 of the Council should be repealed; whereas, however, the exemptions set out in Article 3 (1) for certain passenger services should be maintained in force for a certain time;

Whereas the use of recording equipment that may indicate the periods of time referred to in Regulation (EEC) No 3820/85 on the harmonization of certain social legislation relating to road transport <sup>(6)</sup> is intended to ensure effective checking on that social legislation;

Whereas the obligation to use such recording equipment can be imposed only for vehicles registered in Member States; whereas furthermore certain of such vehicles may, without giving rise to difficulty, be excluded from the scope of this Regulation;

Whereas the Member States should be entitled, with the Commission's authorization, to grant certain vehicles exemptions from the provisions of the Regulation in exceptional circumstances; whereas, in urgent cases, it should be possible to grant these exemptions for a limited time without prior authorization from the Commission;

Whereas, in order to ensure effective checking, the equipment must be reliable in operation, easy to use and designed in such a way as to minimize any possibility of fraudulent use; whereas to this end recording equipment should in particular be capable of providing, on separate sheets for each driver and in a sufficiently precise and easily readable form, recorded details of the various periods of time;

Whereas automatic recording of other details of a vehicle's journey, such as speed and distance covered, will contribute significantly to road safety and will encourage sensible driving of the vehicle; whereas, consequently, it appears appropriate to provide for the equipment also to record those details;

Whereas it is necessary to set Community construction and installation standards for recording equipment and to provide for an EEC approval procedure, in order to avoid throughout the territory of the Member States any impediment to the registration of vehicles fitted with such recording equipment, to their entry into service or use, or to such equipment being used;

Whereas, in the event of differences of opinion between Member States concerning cases of EEC type approval, the Commission should be

<sup>(1)</sup> OJ No C 100, 12. 4. 1984, p. 3, and OJ No C 223, 3. 9. 1985, p. 5.

<sup>(2)</sup> OJ No C 122, 20. 5. 1985, p. 168.

<sup>(3)</sup> OJ No C 104, 25. 4. 1985, p. 4, and OJ No C 303, 25. 11. 1985, p. 29.

<sup>(4)</sup> OJ No L 164, 27. 7. 1970, p. 1.

<sup>(5)</sup> OJ No L 334, 24. 12. 1977, p. 11.

<sup>(6)</sup> See page 1 of this Official Journal.

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empowered to take a decision on a dispute within six months if the States concerned have been unable to reach a settlement;

Whereas it would be helpful in implementing this Regulation and preventing abuses to issue drivers who so request with a copy of their record sheets;

Whereas, in order to achieve the aims hereinbefore mentioned of keeping a check on work and rest periods, it is necessary that employers and drivers be responsible for seeing that the equipment functions correctly and that they perform with due care the operations prescribed;

Whereas the provisions governing the number of record sheets that a driver must keep with him must be amended following the replacement of the flexible week by a fixed week;

Whereas technical progress necessitates rapid adaptation of the technical specifications set out in the Annexes to this Regulation; whereas, in order to facilitate the implementation of the measures necessary for this purpose, provision should be made for a procedure establishing close cooperation between the Member States and the Commission within an Advisory Committee;

Whereas Member States should exchange the available information on breaches established;

Whereas, in order to ensure that recording equipment functions reliably and correctly, it is advisable to lay down uniform requirements for the periodic checks and inspections to which the equipment is to be subject after installation,

HAS ADOPTED THIS REGULATION:

**CHAPTER I****Principles and scope***Article 1*

Recording equipment within the meaning of this Regulation shall, as regards construction, installation, use and testing, comply with the requirements of this Regulation and of Annexes I and II thereto, which shall form an integral part of this Regulation.

*Article 2*

For the purposes of this Regulation the definitions set out in Article 1 of Regulation (EEC) No 3820/85 shall apply.

*Article 3*

1. Recording equipment shall be installed and used in vehicles registered in a Member State which are used for the carriage of passengers or goods by road, except the vehicles referred to in Articles 4 and 14 (1) of Regulation (EEC) No 3820/85.
2. Member States may exempt vehicles mentioned in Article 13 (1) of Regulation (EEC) No 3820/85 from application of this Regulation. Member States shall inform the Commission of any exemption granted under this paragraph.
3. Member States may, after authorization by the Commission, exempt from application of this Regulation vehicles used for the transport operations referred to in Article 13 (2) of Regulation (EEC) No 3820/85. In urgent cases they may grant a temporary exemption for a period not exceeding 30 days, which shall be notified immediately to the Commission. The Commission shall notify the other Member States of any exemption granted pursuant to this paragraph.
4. In the case of national transport operations, Member States may require the installation and use of recording equipment in accordance with this Regulation in any of the vehicles for which its installation and use are not required by paragraph 1.



## CHAPTER II

**Type approval***Article 4*

Applications for EEC approval of a type of recording equipment or of a model record sheet shall be submitted, accompanied by the appropriate specifications, by the manufacturer or his agent to a Member State. No application in respect of any one type of recording equipment or of any one model record sheet may be submitted to more than one Member State.

*Article 5*

A Member State shall grant EEC approval to any type of recording equipment or to any model record sheet which conforms to the requirements laid down in Annex I to this Regulation, provided the Member State is in a position to check that production models conform to the approved prototype.

Any modifications or additions to an approved model must receive additional EEC type approval from the Member State which granted the original EEC type approval.

*Article 6*

Member States shall issue to the applicant an EEC approval mark, which shall conform to the model shown in Annex II, for each type of recording equipment or model record sheet which they approve pursuant to Article 5.

*Article 7*

The competent authorities of the Member State to which the application for type approval has been submitted shall, in respect of each type of recording equipment or model record sheet which they approve or refuse to approve, either send within one month to the authorities of the other Member States a copy of the approval certificate accompanied by copies of the relevant specifications, or, if such is the case, notify those authorities that approval has been refused; in cases of refusal they shall communicate the reasons for their decision.

*Article 8*

1. If a Member State which has granted EEC type approval as provided for in Article 5 finds that certain recording equipment or record sheets bearing the EEC type approval mark which it has issued do not conform to the prototype which it has approved, it shall take the necessary measures to ensure that production models conform to the approved prototype. The measures taken may, if necessary, extend to withdrawal of EEC type approval.

2. A Member State which has granted EEC type approval shall withdraw such approval if the recording equipment or record sheet which has been approved is not in conformity with this Regulation or its Annexes or displays in use any general defect which makes it unsuitable for the purpose for which it is intended.

3. If a Member State which has granted EEC type approval is notified by another Member State of one of the cases referred to in paragraphs 1 and 2, it shall also, after consulting the latter Member State, take the steps laid down in those paragraphs, subject to paragraph 5.

4. A Member State which ascertains that one of the cases referred to in paragraph 2 has arisen may forbid until further notice the placing on the market and putting into service of the recording equipment or record sheets. The same applies in the cases mentioned in paragraph 1 with respect to recording equipment or record sheets which have been exempted from EEC initial verification, if the manufacturer, after due warning, does not bring the equipment into line with the approved model or with the requirements of this Regulation.

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In any event, the competent authorities of the Member States shall notify one another and the Commission, within one month, of any withdrawal of EEC type approval or of any other measures taken pursuant to paragraphs 1, 2 and 3 and shall specify the reasons for such action.

5. If a Member State which has granted an EEC type approval disputes the existence of any of the cases specified in paragraphs 1 or 2 notified to it, the Member States concerned shall endeavour to settle the dispute and the Commission shall be kept informed.

If talks between the Member States have not resulted in agreement within four months of the date of the notification referred to in paragraph 3 above, the Commission, after consulting experts from all Member States and having considered all the relevant factors, e.g. economic and technical factors, shall within six months adopt a decision which shall be communicated to the Member States concerned and at the same time to the other Member States. The Commission shall lay down in each instance the time limit for implementation of its decision.

*Article 9*

1. An applicant for EEC type approval of a model record sheet shall state on his application the type or types of recording equipment on which the sheet in question is designed to be used and shall provide suitable equipment of such type or types for the purpose of testing the sheet.

2. The competent authorities of each Member State shall indicate on the approval certificate for the model record sheet the type or types of recording equipment on which that model sheet may be used.

*Article 10*

No Member State may refuse to register any vehicle fitted with recording equipment, or prohibit the entry into service or use of such vehicle for any reason connected with the fact that the vehicle is fitted with such equipment, if the equipment bears the EEC approval mark referred to in Article 6 and the installation plaque referred to in Article 12.

*Article 11*

All decisions pursuant to this Regulation refusing or withdrawing approval of a type of recording equipment or model record sheet shall specify in detail the reasons on which they are based. A decision shall be communicated to the party concerned, who shall at the same time be informed of the remedies available to him under the laws of the Member States and of the time-limits for the exercise of such remedies.

## CHAPTER III

**Installation and inspection***Article 12*

1. Recording equipment may be installed or repaired only by fitters or workshops approved by the competent authorities of Member States for that purpose after the latter, should they so desire, have heard the views of the manufacturers concerned.

2. The approved fitter or workshop shall place a special mark on the seals which it affixes. The competent authorities of each Member State shall maintain a register of the marks used.

3. The competent authorities of the Member States shall send each other their lists of approved fitters or workshops and also copies of the marks used.

4. For the purpose of certifying that installation of recording equipment took place in accordance with the requirements of this Regulation an installation plaque affixed as provided in Annex I shall be used.

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## CHAPTER IV

**Use of equipment***Article 13*

The employer and drivers shall be responsible for seeing that the equipment functions correctly.

*Article 14*

1. The employer shall issue a sufficient number of record sheets to drivers, bearing in mind the fact that these sheets are personal in character, the length of the period of service and the possible obligation to replace sheets which are damaged, or have been taken by an authorized inspecting officer. The employer shall issue to drivers only sheets of an approved model suitable for use in the equipment installed in the vehicle.

2. The undertaking shall keep the record sheets in good order for at least a year after their use and shall give copies to the drivers concerned who request them. The sheets shall be produced or handed over at the request of any authorized inspecting officer.

*Article 15*

1. Drivers shall not use dirty or damaged record sheets. The sheets shall be adequately protected on this account.

In case of damage to a sheet bearing recordings, drivers shall attach the damaged sheet to the spare sheet used to replace it.


2. Drivers shall use the record sheets every day on which they are driving, starting from the moment they take over the vehicle. The record sheet shall not be withdrawn before the end of the daily working period unless its withdrawal is otherwise authorized. No record sheet may be used to cover a period longer than that for which it is intended.


When, as a result of being away from the vehicle, a driver is unable to use the equipment fitted to the vehicle, the periods of time indicated in paragraph 3, second indent (b), (c) and (d) below shall be entered on the sheet, either manually, by automatic recording or other means, legibly and without dirtying the sheet.


Drivers shall amend the record sheets as necessary should there be more than one driver on board the vehicle, so that the information referred to in Chapter II (1) to (3) of Annex I is recorded on the record sheet of the driver who is actually driving.

3. Drivers shall:

- ensure that the time recorded on the sheet agrees with the official time in the country of registration of the vehicle,
- operate the switch mechanisms enabling the following periods of time to be recorded separately and distinctly:

(a) under the sign  : driving time;

(b) under the sign  : all other periods of work;

(c) under the sign  : other periods of availability, namely:

- waiting time, i.e. the period during which drivers need remain at their posts only for the purpose of answering any calls to start or resume driving or to carry out other work,
- time spent beside the driver while the vehicle is in motion,
- time spent on a bunk while the vehicle is in motion;

(d) under the sign  : breaks in work and daily rest periods.

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4. Each Member State may permit all the periods referred to in paragraph 3, second indent (b) and (c) to be recorded under the sign  on the record sheets used on vehicles registered in its territory.

5. Each crew member shall enter the following information on his record sheet:

- (a) on beginning to use the sheet — his surname and first name;
- (b) the date and place where use of the sheet begins and the date and place where such use ends;
- (c) the registration number of each vehicle to which he is assigned, both at the start of the first journey recorded on the sheet and then, in the event of a change of vehicle, during use of the sheet;
- (d) the odometer reading:
  - at the start of the first journey recorded on the sheet,
  - at the end of the last journey recorded on the sheet,
  - in the event of a change of vehicle during a working day (reading on the vehicle to which he was assigned and reading on the vehicle to which he is to be assigned);
- (e) the time of any change of vehicle.

6. The equipment shall be so designed that it is possible for an authorized inspecting officer, if necessary after opening the equipment, to read the recordings relating to the nine hours preceding the time of the check without permanently deforming, damaging or soiling the sheet.

The equipment shall, furthermore, be so designed that it is possible, without opening the case, to verify that recordings are being made.

7. Whenever requested by an authorized inspecting officer to do so, the driver must be able to produce record sheets for the current week, and in any case for the last day of the previous week on which he drove.

#### *Article 16*

1. In the event of breakdown or faulty operation of the equipment, the employer shall have it repaired by an approved fitter or workshop, as soon as circumstances permit.

If the vehicle is unable to return to the premises within a period of one week calculated from the day of the breakdown or of the discovery of defective operation, the repair shall be carried out *en route*.

Measures taken by Member States pursuant to Article 19 may give the competent authorities power to prohibit the use of the vehicle in cases where breakdown or faulty operation has not been put right as provided in the foregoing subparagraphs.

2. While the equipment is unserviceable or operating defectively, drivers shall mark on the record sheet or sheets, or on a temporary sheet to be attached to the record sheet, all information for the various periods of time which is not recorded correctly by the equipment.

#### CHAPTER V

#### **Final provisions**

#### *Article 17*

The amendments necessary to adapt the Annexes to technical progress shall be adopted in accordance with the procedure laid down in Article 18.

#### *Article 18*

1. A Committee for the adaptation of this Regulation to technical progress (hereinafter called ‘the Committee’) is hereby set up; it shall consist of representatives of the Member States, and a representative of the Commission shall be chairman.

2. The Committee shall adopt its own rules of procedure.

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3. Where the procedure laid down in this Article is to be followed, the matter shall be referred to the Committee by the chairman, either on his own initiative or at the request of the representative of a Member State.
4. The Commission representative shall submit to the Committee a draft of the measures to be taken. The Committee shall give its opinion on that draft within a time limit set by the chairman having regard to the urgency of the matter. Opinions shall be delivered by a qualified majority in accordance with Article 148 (2) of the Treaty. The chairman shall not vote.
5. (a) The Commission shall adopt the envisaged measures where they are in accordance with the opinion of the Committee.
  - (b) Where the measures envisaged are not in accordance with the opinion of the Committee or if no opinion is delivered, the Commission shall without delay submit to the Council a proposal on the measures to be taken. The Council shall act by a qualified majority.
  - (c) If the Council has not acted within three months of the proposal being submitted to it, the proposed measures shall be adopted by the Commission.

*Article 19*

1. Member States shall, in good time and after consulting the Commission, adopt such laws, regulations or administrative provisions as may be necessary for the implementation of this Regulation.

Such measures shall cover, *inter alia*, the reorganization of, procedure for, and means of carrying out, checks on compliance and the penalties to be imposed in case of breach.

2. Member States shall assist each other in applying this Regulation and in checking compliance therewith.

3. Within the framework of this mutual assistance the competent authorities of the Member States shall regularly send one another all available information concerning:

- breaches of this Regulation committed by non-residents and any penalties imposed for such breaches,
- penalties imposed by a Member State on its residents for such breaches committed in other Member States.

*Article 20*

Regulation (EEC) No 1463/70 shall be repealed.

However, Article 3 (1) of the said Regulation shall, until 31 December 1989, continue to apply to vehicles and drivers employed in regular international passenger services in so far as the vehicles used for such services are not fitted with recording equipment used as prescribed in this Regulation.

**▼M2***Article 20a*

This Regulation shall not apply until 1 January 1991 to vehicles registered in the territory of the former German Democratic Republic before that date.

This Regulation shall not apply until 1 January 1993 to such vehicles where they are engaged only in national transport operations in the territory of the Federal Republic of Germany. However, this Regulation shall apply as from its entry into force to vehicles engaged in the carriage of dangerous goods.



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*Article 21*

This Regulation shall enter into force on 29 September 1986.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

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## ANNEX I

**REQUIREMENTS FOR CONSTRUCTION, TESTING, INSTALLATION AND INSPECTION**

## I. DEFINITIONS

In this Annex:

**(a) Recording equipment means:**

equipment intended for installation in road vehicles to show and record automatically or semi-automatically details of the movement of those vehicles and of certain working periods of their drivers;

**(b) Record sheet means:**

a sheet designed to accept and retain recorded data, to be placed in the recording equipment and on which the marking devices of the latter inscribe a continuous record of the information to be recorded;

**(c) The constant of the recording equipment means:**

the numerical characteristic giving the value of the input signal required to show and record a distance travelled of one kilometre; this constant must be expressed either in revolutions per kilometre ( $k = \dots \text{ rev/km}$ ), or in impulses per kilometre ( $k = \dots \text{ imp/km}$ );

**(d) Characteristic coefficient of the means:**

the numerical characteristic giving the value of the output signal emitted by the part of the vehicle linking it with the recording equipment (gearbox output shaft or axle) while the vehicle travels a distance of one measured kilometre under normal test conditions (see Chapter VI, point 4 of this Annex). The characteristic coefficient is expressed either in revolutions per kilometre ( $w = \dots \text{ rev/km}$ ) or in impulses per kilometre ( $w = \dots \text{ imp/km}$ );

**(e) Effective circumference of wheel tyres means:**

the average of the distances travelled by the several wheels moving the vehicle (driving wheels) in the course of one complete rotation. The measurement of these distances must be made under normal test conditions (see Chapter VI, point 4 of this Annex) and is expressed in the form:  $l = \dots \text{ mm}$ .

## II. GENERAL CHARACTERISTICS AND FUNCTIONS OF RECORDING EQUIPMENT

The equipment must be able to record the following:

1. distance travelled by the vehicle;
2. speed of the vehicle;
3. driving time;
4. other periods of work or of availability;
5. breaks from work and daily rest periods;
6. opening of the case containing the record sheet;

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7. for electronic recording equipment which is equipment operating by signals transmitted electrically from the distance and speed sensor, any interruption exceeding 100 milliseconds in the power supply of the recording equipment (except lighting), in the power supply of the distance and speed sensor and any interruption in the signal lead to the distance and speed sensor.

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For vehicles used by two drivers the equipment must be capable of recording simultaneously but distinctly and on two separate sheets details of the periods listed under 3, 4 and 5.

## III. CONSTRUCTION REQUIREMENTS FOR RECORDING EQUIPMENT

**(a) General points**

1. *Recording equipment shall include the following:*
  - 1.1. Visual instruments showing:
    - distance travelled (distance recorder),
    - speed (speedometer),

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— time (clock).

## 1.2. Recording instruments comprising:

- a recorder of the distance travelled,
- a speed recorder,
- one or more time recorders satisfying the requirements laid down in Chapter III (c) 4.

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## 1.3. A means of marking showing on the record sheet individually:

- each opening of the case containing that sheet,
- for electronic recording equipment, as defined in point 7 of Chapter II, any interruption exceeding 100 milliseconds in the power supply of the recording equipment (except lighting), not later than at switching-on the power supply again,
- for electronic recording equipment, as defined in point 7 of Chapter II, any interruption exceeding 100 milliseconds in the power supply of the distance and speed sensor and any interruption in the signal lead to the distance and speed sensor.

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2. Any inclusion in the equipment of devices additional to those listed above must not interfere with the proper operation of the mandatory devices or with the reading of them.

The equipment must be submitted for approval complete with any such additional devices.

3. *Materials*

- 3.1. All the constituent parts of the recording equipment must be made of materials with sufficient stability and mechanical strength and stable electrical and magnetic characteristics.
- 3.2. Any modification in a constituent part of the equipment or in the nature of the materials used for its manufacture must, before being applied in manufacture, be submitted for approval to the authority which granted type-approval for the equipment.

4. *Measurement of distance travelled*

The distances travelled may be measured and recorded either:

- so as to include both forward and reverse movement, or
- so as to include only forward movement.

Any recording of reversing movements must on no account affect the clarity and accuracy of the other recordings.

5. *Measurement of speed*

- 5.1. The range of speed measurement shall be as stated in the type approval certificate.
- 5.2. The natural frequency and the damping of the measuring device must be such that the instruments showing and recording the speed can, within the range of measurement, follow acceleration changes of up to  $2 \text{ m/s}^2$ , within the limits of accepted tolerances.

6. *Measurement of time (clock)*

- 6.1. The control of the mechanism for resetting the clock must be located inside a case containing the record sheet; each opening of that case must be automatically recorded on the record sheet.
- 6.2. If the forward movement mechanism of the record sheet is controlled by the clock, the period during which the latter will run correctly after being fully wound must be greater by at least 10 % than the recording period corresponding to the maximum sheet-load of the equipment.

7. *Lighting and Protection*

- 7.1. The visual instruments of the equipment must be provided with adequate non-dazzling lighting.
- 7.2. For normal conditions of use, all the internal parts of the equipment must be protected against damp and dust. In addition they must be made proof against tampering by means of casings capable of being sealed.

**▼B****(b) Visual instruments**

1. *Distance travelled indicator (distance recorder)*
  - 1.1. The value of the smallest grading on the instrument showing distance travelled must be 0,1 kilometres. Figures showing hectometres must be clearly distinguishable from those showing whole kilometres.
  - 1.2. The figures on the distance recorder must be clearly legible and must have an apparent height of at least 4 mm.
  - 1.3. The distance recorder must be capable of reading up to at least 99 999,9 kilometres.
2. *Speed indicators (speedometer)*
  - 2.1. Within the range of measurement, the speed scale must be uniformly graduated by 1, 2, 5 or 10 kilometres per hour. The value of a speed graduation (space between two successive marks) must not exceed 10 % of the maximum speed shown on the scale.
  - 2.2. The range indicated beyond that measured need not be marked by figures.
  - 2.3. The length of each space on the scale representing a speed difference of 10 kilometres per hour must not be less than 10 millimetres.
  - 2.4. On an indicator with a needle, the distance between the needle and the instrument face must not exceed three millimetres.
3. *Time indicator (clock)*

The time indicator must be visible from outside the equipment and give a clear, plain and unambiguous reading.

**(c) Recording instruments**

1. *General points*
  - 1.1. All equipment, whatever the form of the record sheet (strip or disc) must be provided with a mark enabling the record sheet to be inserted correctly, in such a way as to ensure that the time shown by the clock and the time-marking on the sheet correspond.
  - 1.2. The mechanism moving the record sheet must be such as to ensure that the latter moves without play and can be freely inserted and removed.
  - 1.3. For record sheets in disc form, the forward movement device must be controlled by the clock mechanism. In this case, the rotating movement of the sheet must be continuous and uniform, with a minimum speed of seven millimetres per hour measured at the inner border of the ring marking the edge of the speed recording area.

In equipment of the strip type, where the forward movement device of the sheets is controlled by the clock mechanism the speed of rectilinear forward movement must be at least 10 millimetres per hour.
  - 1.4. Recording of the distance travelled, of the speed of the vehicle and of any opening of the case containing the record sheet or sheets must be automatic.
2. *Recording distance travelled*
  - 2.1. Every kilometre of distance travelled must be represented on the record by a variation of at least one millimetre on the corresponding coordinate.
  - 2.2. Even at speeds reaching the upper limit of the range of measurement, the record of distances must still be clearly legible.
3. *Recording speed*
  - 3.1. Whatever the form of the record sheet, the speed recording stylus must normally move in a straight line and at right angles to the direction of travel of the record sheet.

However, the movement of the stylus may be curvilinear, provided the following conditions are satisfied:

    - the trace drawn by the stylus must be perpendicular to the average circumference (in the case of sheets in disc form) or to the axis (in the case of sheets in strip form) of the area reserved for speed recording,
    - the ratio between the radius of curvature of the trace drawn by the stylus and the width of the area reserved for speed recording must be not less than 2,4 to 1 whatever the form of the record sheet,
    - the markings on the time-scale must cross the recording area in a curve of the same radius as the trace drawn by the stylus. The spaces between

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the markings on the time-scale must represent a period not exceeding one hour.

- 3.2. Each variation in speed of 10 kilometres per hour must be represented on the record by a variation of at least 1,5 millimetres on the corresponding coordinate.

4. *Recording time*

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- 4.1. Recording equipment must be so constructed that the period of driving time is always recorded automatically and that it is possible, through the operation where necessary of a switch device to record separately the other periods of time as indicated in Article 15 (3), second indent (b), (c) and (d) of the Regulation.

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- 4.2. It must be possible, from the characteristics of the traces, their relative positions and if necessary the signs laid down in Article 15 of the Regulation to distinguish clearly between the various periods of time.

The various periods of time should be differentiated from one another on the record by differences in the thickness of the relevant traces, or by any other system of at least equal effectiveness from the point of view of legibility and ease of interpretation of the record.

- 4.3. In the case of vehicles with a crew consisting of more than one driver, the recordings provided for in point 4.1 must be made on two separate sheets, each sheet being allocated to one driver. In this case, the forward movement of the separate sheets must be effected either by a single mechanism or by separate synchronized mechanisms.

**(d) Closing device**

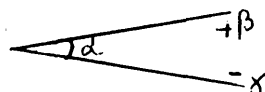
1. The case containing the record sheet or sheets and the control of the mechanism for resetting the clock must be provided with a lock.
2. Each opening of the case containing the record sheet or sheets and the control of the mechanism for resetting the clock must be automatically recorded on the sheet or sheets.

**(e) Markings**

1. The following markings must appear on the instrument face of the equipment:
  - close to the figure shown by the distance recorder, the unit of measurement of distance, indicated by the abbreviation 'km',
  - near the speed scale, the marking 'km/h',
  - the measurement range of the speedometer in the form 'Vmin ... km/h, Vmax ... km/h', This marking is not necessary if it is shown on the descriptive plaque of the equipment.

However, these requirements shall not apply to recording equipment approved before 10 August 1970.

2. The descriptive plaque must be built into the equipment and must show the following markings, which must be visible on the equipment when installed:
  - name and address of the manufacturer of the equipment,
  - manufacturer's number and year of construction,
  - approval mark for the equipment type,
  - the constant of the equipment in the form 'k = ... rev/km' or 'k = ... imp/km',
  - optionally, the range of speed measurement, in the form indicated in point 1,
  - should the sensitivity of the instrument to the angle of inclination be capable of affecting the readings given by the equipment beyond the permitted tolerances, the permissible angle expressed as:



where  $α$  is the angle measured from the horizontal position of the front face (fitted the right way up) of the equipment for which the instrument is calibrated, while  $β$  and  $γ$  represent respectively the maximum

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permissible upward and downward deviations from the angle of calibration  $\alpha$  .

**(f) Maximum tolerances (visual and recording instruments)**

1. On the test bench before installation:
  - (a) distance travelled:
 

1 % more or less than the real distance, where that distance is at least one kilometre;
  - (b) speed:
 

3 km/h more or less than the real speed;
  - (c) time:
 

$\pm$  two minutes per day with a maximum of 10 minutes per seven days in cases where the running period of the clock after rewinding is not less than that period.
2. On installation:
  - (a) distance travelled:
 

2 % more or less than the real distance, where that distance is at least one kilometre;
  - (b) speed:
 

4 km/h more or less than the real speed;
  - (c) time:
 

$\pm$  two minutes per day, or  
 $\pm$  10 minutes per seven days.
3. In use:
  - (a) distance travelled:
 

4 % more or less than the real distance, where that distance is at least one kilometre;
  - (b) speed:
 

6 km/h more or less than the real speed;
  - (c) time:
 

$\pm$  two minutes per day, or  
 $\pm$  10 minutes per seven days.
4. The maximum tolerances set out in points 1, 2 and 3 are valid for temperatures between 0° and 40 °C, temperatures being taken in close proximity to the equipment.
5. Measurement of the maximum tolerances set out in points 2 and 3 shall take place under the conditions laid down in Chapter VI.

## IV. RECORD SHEETS

**(a) General points**

1. The record sheets must be such that they do not impede the normal functioning of the instrument and that the records which they contain are indelible and easily legible and identifiable.
 

The record sheets must retain their dimensions and any records made on them under normal conditions of humidity and temperature.

In addition it must be possible to write on the sheets, without damaging them and without affecting the legibility of the recordings, the information referred to in Article 15 (5) of the Regulation.

Under normal conditions of storage, the recordings must remain clearly legible for at least one year.
2. The minimum recording capacity of the sheets, whatever their form, must be 24 hours.
 

If several discs are linked together to increase the continuous recording capacity which can be achieved without intervention by staff, the links between the various discs must be made in such a way that there are no breaks in or overlapping of recordings at the point of transfer from one disc to another.

**▼B****(b) Recording areas and their graduation**

1. The record sheets shall include the following recording areas:
  - an area exclusively reserved for data relating to speed,
  - an area exclusively reserved for data relating to distance travelled,
  - one or more areas for data relating to driving time, to other periods of work and availability to breaks from work and to rest periods for drivers.
2. The area for recording speed must be scaled off in divisions of 20 kilometres per hour or less. The speed corresponding to each marking on the scale must be shown in figures against that marking. The symbol 'km/h' must be shown at least once within the area. The last marking on the scale must coincide with the upper limit of the range of measurement.
3. The area for recording distance travelled must be set out in such a way that the number of kilometres travelled may be read without difficulty.
4. The area or areas reserved for recording the periods referred to in point 1 must be so marked that it is possible to distinguish clearly between the various periods of time.

**(c) Information to be printed on the record sheets**

Each sheet must bear, in printed form, the following information:

- name and address or trade name of the manufacturer,
- approval mark for the model of the sheet,
- approval mark for the type or types of equipment in which the sheet may be used,
- upper limit of the speed measurement range, printed in kilometres per hour.

By way of minimal additional requirements, each sheet must bear, in printed form a time-scale graduated in such a way that the time may be read directly at intervals of fifteen minutes while each five minute interval may be determined without difficulty.

**(d) Free space for hand written insertions**

A free space must be provided on the sheets such that drivers may as a minimum write in the following details:

- surname and first name of the driver,
- date and place where use of the sheet begins and date and place where such use ends,
- the registration number or numbers of the vehicle or vehicles to which the driver is assigned during the use of the sheet,
- odometer readings from the vehicle or vehicles to which the driver is assigned during the use of the sheet,
- the time at which any change of vehicle takes place.

**V. INSTALLATION OF RECORDING EQUIPMENT**

1. Recording equipment must be positioned in the vehicle in such a way that the driver has a clear view from his seat of speedometer, distance recorder and clock while at the same time all parts of those instruments, including driving parts, are protected against accidental damage.
2. It must be possible to adapt the constant of the recording equipment to the characteristic coefficient of the vehicle by means of a suitable device, to be known as an adaptor.
 

Vehicles with two or more rear axle ratios must be fitted with a switch device whereby these various ratios may be automatically brought into line with the ratio for which the equipment has been adapted to the vehicle.
3. After the equipment has been checked on installation, an installation plaque shall be affixed to the vehicle beside the equipment or in the equipment itself and in such a way as to be clearly visible. After every inspection by an approved fitter or workshop requiring a change in the setting of the installation itself, a new plaque must be affixed in place of the previous one.

The plaque must show at least the following details:

- name, address or trade name of the approved fitter or workshop,
- characteristic coefficient of the vehicle, in the form 'w = ... rev/km' or 'w = ... imp/km',
- effective circumference of the wheel tyres in the form 'l = ... mm',

**▼B**

— the dates on which the characteristic coefficient of the vehicle was determined and the effective measured circumference of the wheel tyres.

4. *Sealing*

The following parts must be sealed:

- (a) the installation plaque, unless it is attached in such a way that it cannot be removed without the markings thereon being destroyed;
- (b) the two ends of the link between the recording equipment proper and the vehicle;
- (c) the adaptor itself and the point of its insertion into the circuit;
- (d) the switch mechanism for vehicles with two or more axle ratios;
- (e) the links joining the adaptor and the switch mechanism to the rest of the equipment;
- (f) the casings required under Chapter III (a) 7.2.

In particular cases, further seals may be required on approval of the equipment type and a note of the positioning of these seals must be made on the approval certificate.

Only the seals mentioned in (b), (c) and (e) may be removed in cases of emergency; for each occasion that these seals are broken a written statement giving the reasons for such action must be prepared and made available to the competent authority.

## VI. CHECKS AND INSPECTIONS

The Member States shall nominate the bodies which shall carry out the checks and inspections.

1. *Certification of new or repaired instruments*

Every individual device, whether new or repaired, shall be certified in respect of its correct operation and the accuracy of its readings and recordings, within the limits laid down in Chapter III (f) 1, by means of sealing in accordance with Chapter V (4) (f).

For this purpose the Member States may stipulate an initial verification, consisting of a check on and confirmation of the conformity of a new or repaired device with the type-approved model and/or with the requirements of the Regulation and its Annexes, or may delegate the power to certify to the manufacturers or to their authorized agents.

2. *Installation*

When being fitted to a vehicle, the equipment and the whole installation must comply with the provisions relating to maximum tolerances laid down in Chapter III (f) 2.

The inspection tests shall be carried out by the approved fitter or workshop on his or its responsibility.

3. *Periodic inspections*

- (a) Periodic inspections of the equipment fitted to vehicles shall take place at least every two years and may be carried out in conjunction with roadworthiness tests of vehicles.

These inspections shall include the following checks:

- that the equipment is working correctly,
- that the equipment carries the type approval mark,
- that the installation plaque is affixed,
- that the seals on the equipment and on the other parts of the installation are intact,
- the actual circumference of the tyres.

- (b) An inspection to ensure compliance with the provision of Chapter III (f) 3 on the maximum tolerances in use shall be carried out at least once every six years, although each Member State may stipulate a shorter interval or such inspection in respect of vehicles registered in its territory. Such inspections must include replacement of the installation plaque.



**▼B**4. *Measurement of errors*

The measurement of errors on installation and during use shall be carried out under the following conditions, which are to be regarded as constituting standard test conditions:

- vehicle unladen, in normal running, order
- tyre pressures in accordance with the manufacturer's instructions,
- tyre wear within the limits allowed by law,
- movement of the vehicle: the vehicle must proceed, driven by its own engine, in a straight line and on a level surface, at a speed of  $50 \pm 5$  km/h; provided that it is of comparable accuracy, the test may also be carried out on an appropriate test bench.

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## ANNEX II

## APPROVAL MARK AND CERTIFICATE

## I. APPROVAL MARK

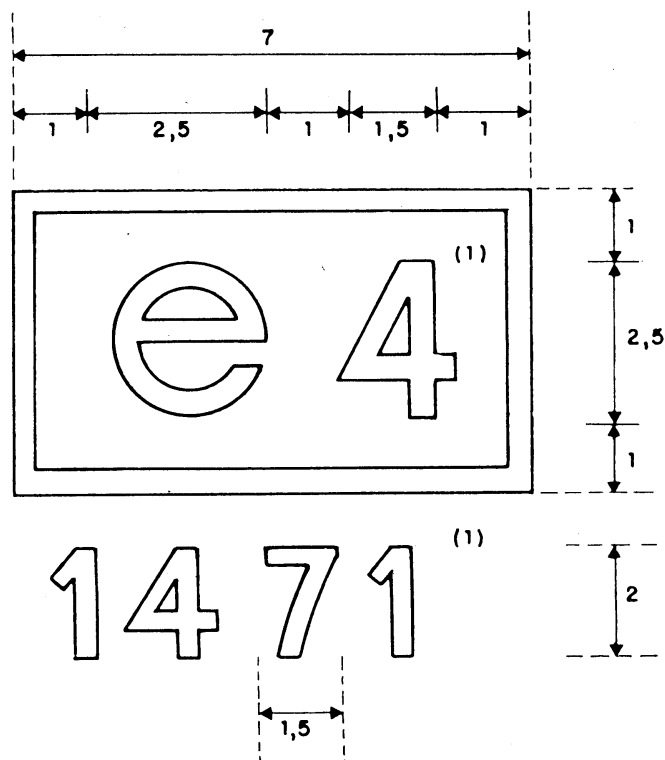
1. The approval mark shall be made up of:

- a rectangle, within which shall be placed the letter 'e' followed by a distinguishing number or letter for the country which has issued the approval in accordance with the following conventional signs:

Belgium	6,
Denmark	18,
Germany	1,
Greece	GR,
Spain	9,
France	2,
Ireland	IRL,
Italy	3,
Luxembourg	13,
Netherlands	4,
Portugal	21,
United Kingdom	11,

and

- an approval number corresponding to the number of the approval certificate drawn up for prototype of the recording equipment or the record sheet, placed at any point within the immediate proximity of this rectangle.
2. The approval mark shall be shown on the descriptive plaque of each set of equipment and on each record sheet. It must be indelible and must always remain clearly legible.
3. The dimensions of the approval mark drawn below are expressed in millimetres, these dimensions being minima. The ratios between the dimensions must be maintained.



(1) These figures are shown for guidance only.

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II. APPROVAL CERTIFICATE

A State having granted approval shall issue the applicant with an approval certificate, the model for which is given below. When informing other Member States of approvals issued or, if the occasion should arise, withdrawn, a Member State shall use copies of that certificate.

APPROVAL CERTIFICATE

Name of competent administration .....

Notification concerning (1):

- approval of a type of recording equipment
- withdrawal of approval of a type of recording equipment
- approval of a model record sheet
- withdrawal of approval of a record sheet

Approval No .....

1. Trade mark or name .....

2. Name of type or model .....

3. Name of manufacturer .....

4. Address of manufacturer .....

5. Submitted for approval on .....

6. Tested at .....

7. Date and number of test report .....

8. Date of approval .....

9. Date of withdrawal of approval .....

10. Type or types of recording equipment in which sheet is designed to be used .....

11. Place .....

12. Date .....

13. Descriptive documents annexed .....

14. Remarks

.....  
(Signature)

(1) Delete items not applicable.