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COMMISSION DIRECTIVE

of 25 July 1975

adapting to technical progress Council Directive No 71/320/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers

(75/524/EEC)

(OJ L 236, 8.9.1975, p. 3)

Amended by:

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►**C1** Corrigendum, OJ L 247, 23.9.1975, p. 36 (75/524/EEC)

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COMMISSION DIRECTIVE

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adapting to technical progress Council Directive No 71/320/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers

(75/524/EEC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES

Having regard to the Treaty establishing the European Economic Community;

Having regard to Council Directive No 70/156/EEC [1] of 6 February 1970 on the approximation of the laws of the Member States relating to the type approval of motor vehicles and their trailers, as amended by the Act [2] annexed to the Treaty concerning the accession of the new Member States to the EEC and EAEC signed in Brussels on 22 January 1972, and in particular to Articles 11, 12 and 13 thereof;

Having regard to Council Directive No 71/320/EEC [3] of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers, as amended by the Act [4] annexed to the Treaty concerning the accession of new Member States to the EEC and EAEC signed in Brussels on 22 January 1972, and in particular to Article 5 thereof;

Whereas in Directive No 74/132/EEC [5] of 11 February 1974, the Commission adopted provisions adapting to technical progress the Council Directive of 26 July 1971 mentioned above; whereas these provisions solely relate to braking-pressure distributors and not, therefore, to conditions of compatibility; whereas in order to avoid certain combinations of vehicles (drawing and drawn vehicles) which are not likely to be able to provide every guarantee of safety from the point of view of braking, these provisions should be subject to conditions of compatibility between drawing and drawn vehicles; whereas technical progress now enables provisions on compatibility not only to be adopted but also enables them to be correctly implemented;

Whereas the laying down of provisions on the conditions of compatibility necessitates amendments to the provisions relating to the device which enables the braking pressure to be matched to the load and which are set out in the Annex to Council Directive No 74/132/EEC;

Whereas the provisions relating to wheel anti-locking systems will be adopted at a later date; whereas, until the entry into force of these provisions, it is consequently necessary to subject vehicles of all categories, with the exception of those in categories O_1 and O_2, to the provisions of this Directive, even if they are fitted with wheel anti-locking devices;

Whereas this Directive provides for an earlier date of entry into force of the amended provisions and whereas it is therefore no longer justified to retain the provisions of paragraphs 2 and 3 of Article 2 of Commission Directive No 74/132/EEC;

Whereas the provisions of this Directive are in accordance with the Opinion of the Committee on the Adaptation to Technical Progress of the Directives aimed at the Removal of Technical Barriers to Trade in the Motor-Vehicle Sector,

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(1) OJ No L 42, 23. 2. 1970, p. 1.
(2) OJ No L 73, 27. 3. 1972, pp. 115 and 157.
(3) OJ No L 202, 6. 9. 1971, p. 37.
(4) OJ No L 73, 27. 3. 1972, pp. 118, 119 and 158.
(5) OJ No L 74, 19. 3. 1974, p. 7.

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HAS ADOPTED THIS DIRECTIVE:

Article 1

Paragraphs 2 and 3 of Article 2 of Commission Directive No 74/132/EEC of 11 February 1974 adapting to technical progress the Council Directive of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and of their trailers are rescinded with effect from the date of adoption of this Directive.

Article 2

1. Annexes I, II and IX to Council Directive No 71/320/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to the braking devices of certain categories of motor vehicles and their trailers, as amended by Commission Directive No 74/132/EEC of 11 February 1974, are amended as shown in the Annex to this Directive.

2. Pending the entry into force of special requirements on wheel anti-locking systems, vehicles of categories M_1, M_2, M_3, N_1, N_2, N_3, O_3 and O_4 which are fitted with these systems are submitted to the prescriptions of this Directive.

Article 3

1. With effect from 1 January 1976 no Member State may on grounds relating to the braking devices:

— refuse in respect of a type of vehicle to grant EEC type-approval, to issue the document referred to in the last indent of Article 10 (1) of Council Directive No 70/156/EEC of 6 February 1970, or to grant national type-approval; or

— prohibit the entry into service of vehicles,

if the braking devices of such type of vehicle or of such vehicles comply with the provisions of Council Directive No 71/320/EEC of 26 July 1971, as last amended by this Directive.

2. With effect from 1 October 1976 Member States:

— may no longer issue the document referred to in the last indent of Article 10 (1) of Council Directive No 70/156/EEC of 6 February 1970 in respect of a type of vehicle of which the braking devices do not comply with the provisions of Council Directive No 71/320/EEC of 26 July 1971 as last amended by this Directive;

— may refuse to grant national type-approval in respect of a type of vehicle of which the braking devices do not comply with the provisions of Council Directive No 71/320/EEC of 26 July 1971 as last amended by this Directive.

3. With effect from 1 October 1976 Member States may prohibit the entry into service of vehicles of which the braking devices do not comply with the provisions of Council Directive No 71/320/EEC of 26 July 1971 as last amended by this Directive.

4. The Member States shall adopt and publish the provisions necessary in order to comply with this Directive not later than 1 January 1976 and shall forthwith inform the Commission thereof.

Article 4

This Directive is addressed to the Member States.

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ANNEX

Amendments to the Annexes to Council Directive No 71/320/EEC of 26 July 1971

ANNEX I: **DEFINITIONS, REQUIREMENTS, CONSTRUCTION AND FITTING**

Item 2.2.1.12.2. shall read: The failure of a part of a hydraulic transmission system shall be signalled to the driver by a device comprising a red tell-tale lamp lighting up not later than on actuation of the control. However a device comprising a red tell-tale lamp lighting up when the level of the fluid in its reservoirs falls below the value specified by the manufacturer is admissible. The tell-tale lamp shall be visible even by daylight; the satisfactory condition of the lamp must be easily verifiable by the driver. The failure of a component of the device shall not entail total loss of effectiveness of the braking device in question.

ANNEX II: **BRAKING TEST AND PERFORMANCE OF BRAKING DEVICES**

Item 1.1.3.4. shall read: Without prejudice to the requirements contained in item 1.1.4.2 below, the road shall possess a surface having good adhesion.

After item 1.1.4.1 add item

1.1.4.2. The behaviour of vehicles in categories M_1, M_2, M_3, N_1, N_2, N_3, O_3 and O_4 on a road surface having reduced adhesion shall fulfil the conditions laid down in the Appendix.

Appendix (See 1.1.4.2): **DISTRIBUTION OF BRAKING EFFORT AMONG VEHICLE AXLES**

1. GENERAL REQUIREMENTS

Vehicles of categories M_1, M_2, M_3, N_1, N_2, N_3, O_3 and O_4 shall fulfil the conditions of the present Appendix. If a special device is used, this must operate automatically.

2. SYMBOLS

i = axle index ($i = 1$, front axle; $i = 2$, second axle; etc.)

P_i = normal reaction of road surface on axle i under static conditions

N_i = normal reaction of road surface on axle i under braking

T_i = force exerted by the brakes on axle i under normal braking conditions on the road

f_i = T_i/N_i, adhesion used by axle i ([1])

J = deceleration of vehicle

g = acceleration due to gravity $g = 10\ m/s^2$

z = braking rate of vehicle = J/g ([2])

P = ►**M1** mass ◄ of vehicle

h = height of centre of gravity

E = wheelbase

k = theoretical coefficient of adhesion between tyre and road

K_c = correction factor — semi-trailer laden

K_v = correction factor — semi-trailer unladen

([1]) Adhesion curves used by each axle means curves showing the adhesion used by axle i plotted against the vehicle braking rate under the specified load conditions.

([2]) For semi-trailers, z is the braking force divided by the static ►**M1** mass ◄ on the semi-trailer axle(s).

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TM = sum of braking forces at the periphery of wheels of drawing vehicles for trailers or semi-trailers

PM = total normal static reaction between road surface and wheels of drawing vehicles for trailer or semi-trailer as referred to in items 3.1.4 and 3.1.5 respectively

p_m = pressure at coupling head of service line

TR = sum of braking forces at periphery of all wheels of trailer or semi-trailer

PR = total normal static reaction of road surface on wheels of trailer or semi-trailer

PR_{max} = value of PR at ►M1 maximum mass ◄ of semi-trailer

E_R = distance between king-pin and centre of axle or axles of semi-trailer

h_R = height above ground of centre of gravity of semi-trailer

3. REQUIREMENTS FOR MOTOR VEHICLES

3.1. **Two axle vehicles.**

3.1.1. (1) For all categories of vehicle for k values between 0·2 and 0·8:

$$z \geq 0 \cdot 1 + 0 \cdot 85 \ (k - 0 \cdot 2)$$

For all states of load of the vehicle, the adhesion utilization curve of the front axle shall be situated above that for the rear axle:

— for all braking rates of between 0·15 and 0·8 in the case of vehicles of category M_1.

However, for vehicles of this category over the range of z values, between 0·3 and 0·45, an inversion of the adhesion utilization curves is permitted provided that the adhesion utilization curve of the rear axle does not exceed by more than 0·05 the line defined by the formula k = z (line of ideal adhesion utilization — see diagram 1A);

— for all braking rates of between 0·15 and 0·30, in the case of vehicles of other categories. This condition is also considered satisfied if the adhesion utilization curves for each axle of between 0·15 and 0·30 are situated between two parallels to the line of ideal adhesion utilization given by the equation k = z ± 0·08 as shown in diagram 1 B and the adhesion utilization curve for the rear axle for braking rates z ≥ 0·3 complies with the relationship

$$z \geq 0 \cdot 3 + 0 \cdot 74 \ (k - 0 \cdot 38)$$

▼M1

3.1.2. In the case of a vehicle authorized to draw trailers of category O_3 or O_4 fitted with air brakes, the pressure at full application of the braking control must be between 6·5 and 8 bar at the coupling head of the supply line and between 6 and 7·5 bar at the coupling head of the control line, irrespective of the load condition of the vehicle. These pressures must be demonstrably present in the drawing vehicle when uncoupled from the trailer.

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3.1.3. In order to verify the requirement of item 3.1.1, the manufacturer shall provide the adhesion utilization curves for the front and rear axles calculated by the formulas:

$$f_1 = \frac{T_1}{N_1} = \frac{T_1}{P_1 + z \dfrac{h}{E} P} \qquad f_2 = \frac{T_2}{N_2} = \frac{T_2}{P_2 - z \dfrac{h}{E} P}$$

(1) The provisions of item 3.1.1 do not affect the requirements of Annex II relating to the braking efficiency. However, if, when verifying the provisions of item 3.1.1 braking efficiencies are obtained which are higher than those prescribed in Annex II, the provisions relating to the adhesion utilization curve shall be applied within the areas of diagrams IA and IB defined by the straight lines k = 0·8 and z = 0·8.