II

(Acts whose publication is not obligatory)

COMMISSION

COMMISSION DIRECTIVE 92/62/EEC

of 2 July 1992

adapting to technical progress Council Directive 70/311/EEC relating to steering equipment for motor vehicles and their trailers

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to Council Directive 70/311/EEC of 8 June 1970, on the approximation of the laws of the Member States relating to steering equipment of motor vehicles and their trailers (1) and in particular Article 3 thereof,

Whereas a comprehensive evaluation of Directive 70/311/EEC has shown that it is possible to improve road safety further by applying practical experience and technological development and taking into account the progress made in the Economic Commission for Europe of the United Nations, notably in Regulation No 79 and supplements 1 and 2 thereto. These improvements may be obtained by reducing steering control effort, inserting requirements for power-assisted steering equipment using the same energy source as the braking device, introducing a steering test at higher speed for motor vehicles, introducing requirements for auxiliary steering equipment, and introducing a uniform presentation for the information document and the EEC type-approval certificate in order to facilitate computerization of storage and transmission of data by applicants and approval authorities;

Whereas it is also necessary to adapt to technical progress definitions and existing requirements;

Whereas the provisions of this Directive are in accordance with the opinion of the Committee on the Adaptation to Technical Progress of the directives on the removal of technical barriers to trade in motor vehicles, set up under Article 12 (1) of Directive 70/156 (2),

HAS ADOPTED THIS REGULATION:

Article 1

1. Directive 70/311/EEC is modified as follows:

   in Article 2 the word 'Annex' is replaced by the word 'Annexes'.

2. The Annex is replaced by the Annexes to this Directive.

Article 2

1. With effect from 1 January 1993 no Member State may on grounds relating to steering equipment:

— refuse, in respect of a type of vehicle, to grant EEC type-approval, or to issue the copy of the certificate provided for in the last indent of Article 10 (1) of Council Directive 70/156/EEC, or to grant national type-approval, or

— prohibit the entry into service of vehicles,

if the steering equipment of this type of vehicle or of these vehicles comply with the provisions of Directive 70/311/EEC, as amended by this Directive.

(1) OJ No L 133, 18. 6. 1970, p. 10.

(2) OJ No L 42, 23. 2. 1970, p. 1.

2. With effect from 1 October 1993 Member States:

— shall no longer issue the copy of the certificate provided for in the last indent of Article 10 (1) of Directive 70/156 in respect of a type of vehicle,

— may refuse to grant national type-approval in respect of a type of vehicle,

of which the steering equipment does not comply with the provisions of Directive 70/311/EEC, as amended by this Directive.

3. With effect from 1 October 1995 Member States may prohibit the entry into service of vehicles of which the steering equipment does not comply with the provisions of Directive 70/311/EEC, as amended by this Directive.

Article 3

1. Member States shall implement the provisions necessary to comply with this Directive before 1 January 1993. They shall forthwith inform the Commission thereof.

When Member States adopt these provisions, these shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by Member States.

2. Member States shall ensure that they communicate to the Commission the wording of any essential provisions of national law that they adopt in the field covered by this Directive.

Article 4

This Directive is addressed to the Member States.

Done at Brussels, 2 July 1992.

For the Commission

Martin BANGEMANN

Vice-President

ANNEX

'ANNEXES TO DIRECTIVE 70/311/EEC

LIST OF ANNEXES

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ANNEX I

DEFINITIONS, APPLICATION FOR EEC APPROVAL AND SPECIFICATIONS

1. DEFINITIONS

For the purposes of this Directive:

1.1. *Approval of a vehicle* means the approval of a vehicle type with regard to its steering equipment;

1.2. *Vehicle type* means a category of vehicle which does not differ with respect to the manufacturer's designation of the vehicle type and/or variations which can affect its steering;

1.3. *Steering equipment* means all the equipment the purpose of which is to determine the direction of movement of the vehicle.

The steering equipment consists of:

— the steering control,

— the steering transmission,

— the steered wheels,

— the energy supply, if any;

1.3.1. *Steering control* means the part of the steering equipment which controls its operation, it may be operated with or without direct intervention of the driver. For steering equipment in which the steering forces are provided solely or partly by the muscular effort of the driver the steering control includes all parts up to the point where the steering effort is transformed by mechanical, hydraulic or electrical means;

1.3.2. *Steering transmission* includes all parts of the steering equipment which are the means of transmitting the steering forces between the steering control and the steered wheels; it includes all parts down from the point where the steering control effort is transformed by mechanical, hydraulic or electrical means;

1.3.3. *Steered wheels* means the wheels the alignment of which may be altered directly or indirectly in relation to the longitudinal axis the vehicle in order to determine the direction of movement of the vehicle. (The steered wheels include the axis around which they are rotated in order to determine the direction of movement of the vehicle);

1.3.4. *Energy supply* includes those parts of the steering equipment which provide it with energy, control the energy and where appropriate, process and store it. It also includes any storage reservoirs for the operating medium and the return lines, but not the vehicle's engine (except for the purposes of item 4.1.3) or its drive to the energy source;

1.3.4.1. *Energy source* means that part of the energy supply which provides the energy in the required form e.g. hydraulic pump, air compressor;

1.3.4.2. *Energy reservoir* means that part of the energy supply in which the energy provided by the energy source is stored;

1.3.4.3. *Storage reservoir* means that part of the energy supply in which the operating medium is stored at or near to the atmospheric pressure.

1.4. **Steering parameters**

1.4.1. *Steering control effort* means the force applied to the steering control in order to steer the vehicle;

1.4.2. *Steering time* means the period of time from the beginning of the movement of the steering control to the moment at which the steered wheels have reached a specific steering angle;

1.4.3. *Steering angle* means the angle between the projection of a longitudinal axis of the vehicle and the line of intersection of the wheelplane (being the central plane of the tyre, normal to the spin axis of the wheel) and the road surface;

1.4.4. *Steering forces* mean all the forces operating in the steering transmission;

1.4.5 *Mean steering ratio* means the ratio of the angular displacement of the steering control to the mean of the swept steering angle of the steered wheels for a full lock-to-lock turn;

1.4.6. *Turning circle* means the circle within which are located the projections onto the ground plane of all the points of the vehicle, excluding the external mirrors and the front direction indicators, when the vehicle is driven in a circle;

1.4.7. *Nominal radius of steering control* means in the case of a steering wheel the shortest dimension from its centre of rotation to the outer edge of the rim. In the case of any other form of control, it means the distance between its centre of rotation and the point at which the steering effort is applied. If more than one such point is provided, the one requiring the greatest effort shall be used.

1.5. **Types of steering equipment**

Depending on the way the steering forces are produced, the following types of steering equipment are distinguished:

1.5.1. For motor vehicles

1.5.1.1. *Manual steering equipment* in which the steering forces result solely from the muscular effort of the driver;

1.5.1.2. *Power assisted steering equipment* in which the steering forces result from both the muscular effort of the driver and the energy supply (supplies);

1.5.1.2.1. Steering equipment in which the steering forces result solely from one or more energy supplies when the equipment is intact, but in which the steering forces can be provided by the muscular effort of the driver alone if there is a fault in the steering (integrated power systems), is also considered to be power assisted steering equipment;

1.5.1.3. *Full-power steering equipment* in which the steering forces are provided solely by one or more energy supplies;

1.5.1.4. *Self-tracking equipment* is a system designed to create a change of steering angle on one or more wheels only when acted upon by forces and/or moments applied to the tyre to road contact.

1.5.2. For trailers

1.5.2.1. *Self-tracking equipment*

see item 1.5.1.4 above.

1.5.2.2. *Articulated steering equipment* in which the steering forces are produced by a change in direction of the towing vehicle and in which the movement of the steered trailer wheels is firmly linked to the relative angle between the longitudinal axis of the towing vehicle and that of the trailer;

1.5.2.3. *Self-steering equipment* in which the steering forces are produced by a change in direction of the towing vehicle and in which the movement of the steered trailer wheels is firmly linked to the relative angle between the longitudinal axis of the trailer frame or a load replacing it and the longitudinal axis of the sub-frame to which the axle(s) is (are) attached.

1.5.3. Depending on the arrangement of the steered wheels, the following types of steering equipment are distinguished:

1.5.3.1. *Front-wheel steering equipment* in which only the wheels of the front axle(s) are steered. This includes all wheels which are steered in the same direction;

1.5.3.2. *Rear-wheel steering equipment* in which only the wheels of the rear axle(s) are steered. This includes all wheels which are steered in the same direction;

1.5.3.3. *Multi-wheel steering equipment* in which the wheels of one or more of each of the front and the rear axle(s) are steered;

1.5.3.3.1. *All-wheel steering equipment* in which all the wheels are steered;

1.5.3.3.2. *Buckle steering equipment* in which the movement of chassis parts relative to each other is directly produced by the steering forces.

1.5.3.4. *Auxiliary Steering Equipment* (ASE) in which the rear wheels of vehicles of category M and N are steered in addition to the front wheels, in the same direction or in the opposite direction to the front wheels, and/or the steering angle of the front wheels and/or the rear wheels may be adjusted relative to vehicle behaviour.

1.6. **Types of steering transmission**

Depending on the way the steering forces are transmitted, the following types of steering transmission are distinguished :

1.6.1. *Purely mechanical steering transmission* means a steering transmission in which the steering forces are transmitted entirely by mechanical means ;

1.6.2. *Purely hydraulic steering transmission* means a steering transmission in which the steering forces, somewhere in the transmission, are transmitted only by hydraulic means ;

1.6.3. *Purely electric steering transmission* means a steering transmission in which the steering forces, somewhere in the transmission, are transmitted only through electric means ;

1.6.4. *Hybrid steering transmission* means a transmission in which part of the steering forces are transmitted through one and the other part through another of the abovementioned means ;

1.6.4.1. *Hybrid mechanical steering transmission* means a steering transmission where a part of the steering forces is transmitted by purely mechanical means and the other parts either by :

1.6.4.1.1. hydraulic or mechanical/hydraulic
or

1.6.4.1.2. electric or mechanical/electric
or

1.6.4.1.3. pneumatic or mechanical/pneumatic means.

In either case, where the mechanical part of the transmission is designed only to give position feedback and is too weak to transmit the total sum of the steering forces, this system shall be considered to be purely hydraulic, respectively purely electric, or purely pneumatic steering transmission ;

1.6.4.2. *Other hybrid steering transmission* means any other combination of the abovementioned steering transmissions.

2. APPLICATION FOR EEC TYPE-APPROVAL

2.1. The application for approval of a vehicle type with regard to the steering equipment shall be submitted by the vehicle manufacturer.

2.2. It shall be accompanied by the information required by the information document which is attached as Annex II.

2.3. A vehicle representative of the vehicle type to be approved shall be submitted to the technical service responsible for conducting approval tests.

3. EEC TYPE-APPROVAL

A certificate conforming to the model specified in Annex VI shall be issued by the authority granting an EEC type-approval pursuant to this Directive.

4. CONSTRUCTION PROVISIONS

4.1. **General provisions**

4.1.1. The steering equipment shall ensure easy and safe handling of the vehicle up to its maximum design speed or, in the case of a trailer, up to its technically permitted maximum speed. There must be a tendency to self-centre when tested in accordance with item 5. The vehicle shall meet the requirements of item 5.2 in the case of motor vehicles and of item 5.3 in the case of trailers.

If a vehicle is fitted with ASE, it shall also meet the requirements of Annex IV. Trailers equipped with purely hydraulic steering transmissions shall also comply with Annex V.

4.1.1.1. It must be possible to travel along a straight section of the road without unusual steering correction by the driver and without unusual vibration in the steering system at a maximum design speed of the vehicle.