COMMISSION DIRECTIVE 1999/102/EC

of 15 December 1999

adapting to technical progress Council Directive 70/220/EEC relating to measures to be taken against air pollution by emissions from motor vehicles

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 70/220/EEC of 20 March 1970 on the approximation of the laws of the Member States relating to measures to be taken against air pollution by emissions from motor vehicles [1], as last amended by Directive 98/69/EC of the European Parliament and of the Council [2], and in particular Article 5 thereof,

Whereas:

(1) Directive 70/220/EEC is one of the separate directives under the type-approval procedure laid down by Council Directive 70/156/EEC 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 [3], as last amended by Directive 98/91/EC of the European Parliament and of the Council [4].

(2) Directive 70/220/EEC lays down the specifications for the testing of emissions of the motor vehicles covered by its scope. In view of the recent experience gained and the rapidly developing state of the art of on-board diagnostic (OBD) systems, it is appropriate to adapt those specifications accordingly with effect from the dates specified in Directive 98/69/EC.

(3) It is necessary to clarify the dates of application of the OBD requirements of this Directive for new types and all types of vehicles of category M_1 equipped with compression-ignition engines and the maximum mass of which exceeds 2 500 kg and for vehicles in category N_1 classes II and III.

(4) It is appropriate to clarify the OBD requirements in relation to tamper prevention, disablement of engine misfire monitoring during certain operating conditions, the storage of distance travelled by the vehicle while a malfunction is indicated to the driver through the malfunction indicator, the capability of the OBD system to perform bi-directional logic control, the use of the P1 and P0 fault code sets of ISO 15031-6, the diagnostic connector and to express the OBD threshold limits to two decimal places. It is appropriate to introduce revised provisions for misfire monitoring under conditions likely to cause catalyst damage to reduce the possibility of false fault indications and to introduce the possibility of partial catalyst volume monitoring and the use of the enhanced on-board to off-board communications link provided by controller area network (CAN).

(5) It is appropriate to allow the type-approval of vehicles with OBD systems that contain a limited number of minor deficiencies that may arise at, or prior to the time of type-approval or are discovered when vehicles are already in service. The type-approval authority may also issue an extension to the type-approval certificate for vehicles that have already been type-approved in cases where deficiencies are subsequently found within the OBD system on vehicles in-service. Such extensions may not be issued if there is a complete lack of monitoring capability. A period should be specified within which deficiencies authorised by the authority must be corrected on future manufactured vehicles.

(6) The measures provided for in this Directive are in accordance with the opinion of the Committee for Adaptation to Technical Progress established by Directive 70/156/EEC,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Annexes I, VI, X and XI to Directive 70/220/EEC are amended in accordance with the Annex to this Directive.

Article 2

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1999 at the latest. They shall forthwith inform the Commission thereof.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the texts of the main provisions of national law that they adopt in the field governed by this Directive.

[1] OJ L 76, 6.4.1970, p. 1.
[2] OJ L 350, 28.12.1998, p. 1.
[3] OJ L 42, 23.2.1970, p. 1.
[4] OJ L 11, 16.1.1999, p. 25.

Article 3

This Directive shall enter into force on the third day following its publication in the *Official Journal of the European Communities*.

Article 4

This Directive is addressed to the Member States.

Done at Brussels, 15 December 1999.

For the Commission

Erkki LIIKANEN

Member of the Commission

ANNEX

AMENDMENTS TO ANNEXES I, VI, X AND XI TO DIRECTIVE 70/220/EEC

A. Annex I is amended as follows:

1. Section 5.1.4.1 is replaced by the following:

'5.1.4.1. Any vehicle with an emission control computer must include features to deter modification, except as authorised by the manufacturer. The manufacturer shall authorise modifications if these modifications are necessary for the diagnosis, servicing, inspection, retrofitting or repair of the vehicle. Any reprogrammable computer codes or operating parameters must be resistant to tampering and afford a level of protection at least as good as the provisions in ISO DIS 15031-7; dated October 1998 (SAE J2186 dated October 1996) provided that the security exchange is conducted using the protocols and diagnostic connector as prescribed in Section 6.5 of Annex XI, Appendix 1. Any removable calibration memory chips must be potted, encased in a sealed container or protected by electronic algorithms and must not be changeable without the use of specialised tools and procedures.'

2. Section 5.1.4.5 is replaced by the following:

'5.1.4.5. Manufacturers using programmable computer code systems (e.g. electrical erasable programmable read-only memory, EEPROM) must deter unauthorised reprogramming. Manufacturers must include enhanced tamper-protection strategies and write protect features requiring electronic access to an off site computer maintained by the manufacturer. Methods giving an adequate level of tamper protection will be approved by the authority.'

3. Sections 8.1, 8.2, 8.3 and 8.4 are replaced by the following:

'8.1. **Vehicles with positive-ignition engines**

With effect from 1 January 2000 for new types and from 1 January 2001 for all types, vehicles of category M_1, except vehicles the maximum mass of which exceeds 2 500 kg, and vehicles of category N_1 class I, must be fitted with an on-board diagnostic (OBD) system for emission control in accordance with Annex XI.

With effect from 1 January 2001 for new types and from 1 January 2002 for all types, vehicles of category N_1 classes II and III and vehicles of category M_1, the maximum mass of which exceeds 2 500 kg, must be fitted with an OBD system for emission control in accordance with Annex XI.

8.2. **Vehicles with compression-ignition engines**

Vehicles of category M_1, except

— vehicles designed to carry more than six occupants including the driver,

— vehicles whose maximum mass exceeds 2 500 kg,

from 1 January 2003 for new types and from 1 January 2004 for all types, must be fitted with an on-board diagnostic (OBD) system for emission control in accordance with Annex XI.

Where new types of compression-ignition engined vehicles entering into service prior to this date are fitted with an OBD system, the provisions of sections 6.5.3 to 6.5.3.6 of Annex XI, Appendix 1, are applicable.

8.3. **Vehicles with compression-ignition engines exempt from Section 8.2**

From 1 January 2005 for new types and from 1 January 2006 for all types, vehicles of category M_1 exempted by Section 8.2, except vehicles of category M_1 equipped with compression-ignition engines and the maximum mass of which exceeds 2 500 kg, and vehicles in category N_1 class 1 equipped with compression-ignition engines, must be fitted with on-board diagnostic (OBD) systems for emission control in accordance with Annex XI.

From 1 January 2006 for new types and 1 January 2007 for all types, vehicles in category N_1, classes II and III equipped with compression-ignition engines and vehicles of category M_1 equipped with compression-ignition engines and the maximum mass of which exceeds 2 500 kg, must be fitted with on-board diagnostic (OBD) systems for emission control in accordance with Annex XI.

Where compression-ignition engined vehicles entering into service prior to the dates given in this section are fitted with OBD systems, the provisions of Sections 6.5.3 to 6.5.3.6 of Annex XI, Appendix 1, are applicable.

8.4. **Vehicles of other categories**

Vehicles of other categories or vehicles of category M_1 and N_1 not covered by 8.1, 8.2 or 8.3, may be fitted with an OBD system. In this case, Sections 6.5.3 to 6.5.3.6 of Annex XI, Appendix 1 are applicable.'

B. In Annex VI, the table in Appendix 2 entitled 'Diurnal ambient temperature profile for the calibration of the enclosure and the diurnal emission test' is replaced by the following table:

'Diurnal ambient temperature profile for the calibration of the enclosure and the diurnal emmission test

Time (hours)		Temperature ($°C_i$)
Calibration	Test	
13	0/24	20
14	1	20,2
15	2	20,5
16	3	21,2
17	4	23,1
18	5	25,1
19	6	27,2
20	7	29,8
21	8	31,8
22	9	33,3
23	10	34,4
24/0	11	35
1	12	34,7
2	13	33,8
3	14	32
4	15	30
5	16	28,4
6	17	26,9
7	18	25,2
8	19	24
9	20	23
10	21	22
11	22	20,8
12	23	20,2'

C. Annex X is amended as follows:

1. The table in Section 1.8. is replaced by the following table:

'Type I	CO (g/km)	THC [3] (g/km)	NO_x (g/km)	THC+NO_x [2] (g/km)	Particulates [2] (g/km)
Measured					
with DF					
					'