

2 Background to the reference

Introduction

2.1. This reference was made to the MMC by the Director General of Fair Trading following complaints to his office that certain manufacturers of EGAs used in MOT tests on vehicle emissions were preventing access to markets for calibrating and servicing these instruments by independent operators. This chapter describes the background to the introduction of tests on vehicle emissions and the systems introduced to maintain the accuracy of the instruments used.

Vehicle emission tests

2.2. In its White Paper on Britain's Environmental Strategy 'The Common Inheritance' published in September 1990 (Cm 1200) the Government proposed '... to take immediate steps to include an emissions check in the MOT test to ensure that vehicles are kept in tune'. This was in the context of proposals then under consideration by the EC to improve the fuel consumption of motor vehicles. The Government's decision was taken in the knowledge that these EC proposals were likely to lead to an emission test requirement but in advance of any agreed EC Directive specifying vehicle emission limits. This came later in EC Directive 92/55/EEC (see Appendix 2.1).

2.3. The vehicle emission limits to be applied in Great Britain were introduced by Statutory Instrument No 1526 of 1991 (The Road Vehicles (Construction and Use) (Amendment) (No 1) Regulations 1991) laid before Parliament on 10 July 1991 to come into force on 1 November 1991. The latter date became the start date for the introduction of vehicle emission tests. The specified limits were for carbon monoxide (CO), not to exceed 4.5 per cent by volume for vehicles first used on or after 1 August 1983 (or 6 per cent for others), and for hydrocarbons (HC), not to exceed 0.12 per cent by volume (see Appendix 2.1).

2.4. The introduction of the tests was organized by the VI, an Executive Agency in the Department of Transport (DOT) established in 1989 to operate and administer schemes for the inspection and testing of vehicles. The necessary consultations and arrangements took place over an 18-month period prior to the start date of 1 November 1991. There were two essential prerequisites for the start of the exhaust emission tests by that date. First, each of approximately 18,000 MOT stations wishing to continue to carry out MOT tests had to have an EGA approved by the VI for that purpose. Second, arrangements had to be made for the calibration of these instruments.

2.5. As the standard of approval for EGAs to be used in MOT tests the VI adopted an existing international standard set by the Organisation Internationale de Métrologie Légale (OIML). The OIML is a world-wide inter-governmental organization whose main task is to harmonize the metrological regulations and controls applied by the national metrological services of its member states. OIML's recommended standard for EGAs (OIML R 99) set specifications for two classes of instrument (Class I and II), Class I having, for example, the more stringent maximum permissible errors and digital indication requirements. On the advice of the Transport Research Laboratory (TRL), also an Executive Agency in the DOT, and others the VI specified that EGAs conforming to the requirements of either Class I or Class II of OIML R 99 would be approved for use in MOT exhaust gas emission tests.

2.6. Prior to the introduction of emission tests only a minority of MOT stations had EGAs. These had for many years been sold as part of a more comprehensive set of instruments used in engine testing and tuning. Some of these EGA models had obtained approval broadly equivalent to OIML classification from accredited

laboratories in other European countries and were already in place or were acquired by MOT stations when the introduction of emissions tests was announced. Approximately 60 of these models were approved by the VI for MOT tests provided they were in place by 1 November 1991. The VI also arranged with NAMAS, part of the National Physical Laboratory, to accredit laboratories in the UK for the pattern approval of EGAs to the OIML standard. Two such laboratories, operated by Sira Test & Certification Limited (SIRA) and GEC Avionics Ltd, were subsequently accredited by NAMAS for EGA pattern approval. This enabled UK manufacturers to submit EGAs, some specifically designed for the MOT test requirements, for approval in time for them to be marketed in the period up to and immediately after 1 November 1991. Some 16,000 EGAs were sold in this period and another 2,000 in 1992.

Calibration of EGAs

2.7. EGAs contain considerable electronic circuitry and, in some cases, controlling software and are technically more sophisticated and more complex than other measuring instruments, such as brake or headlamp-aim testers, used in MOT tests. The VI requires that all instruments used in MOT tests are calibrated periodically, eg every six months for brake and headlamp-aim testers. For calibration of these other instruments the MOT station may choose between the manufacturer, an appointed agent, a calibration specialist or an experienced member of its own staff. The carrying out of these calibrations is checked by the VI on its annual inspection of each MOT station. For the calibration of EGAs the VI consulted the manufacturers (through their trade association the Garage Equipment Association (GEA)) and NAMAS. An agreed document setting out the requirements for the calibration of EGAs at MOT test stations was drawn up by the VI in August 1991 (Appendix 2.2).

2.8. The VI also decided, in consultation with NAMAS, that because of the greater sophistication of EGAs the calibration should be carried out by an operator independent of the MOT station, who had been assessed by a NAMAS accredited laboratory and individually approved by NAMAS. Four laboratories subsequently received NAMAS accreditation for this purpose; SIRA, Sun Electric UK Limited (Sun), Tecalemit Garage Equipment Co Ltd (Tecalemit) and Hermann Electronics (UK) Ltd (Hermann). The frequency of calibration was determined by the DOT's Vehicle Standards and Engineering Division, following advice from the VI and others. This was set at once every three months for OIML Class II instruments, every six months for certain OIML Class I instruments and annually for a limited number of EGAs equipped with a self-calibrating facility.

2.9. Apart from the three EGA suppliers which established their own NAMAS accredited laboratories (Sun, Hermann and Tecalemit) the bulk of UK manufacturers and a number of independent calibrating companies obtained NAMAS approval for their calibrators through SIRA. This is an independent laboratory active in the field of scientific instrument development, testing and calibration. SIRA also drew up a draft scheme for the calibration of EGAs to the NAMAS requirements. This proposed that engineers employed by manufacturers or calibration companies would be trained by their employer to calibrate the instrument for which NAMAS approved signatory status was sought. SIRA would provide any necessary assessment to comply with NAMAS and VI requirements and would put the candidates forward to NAMAS for approval. The calibrator would carry out the calibrations under a contract between SIRA and his employer. The scheme also provided that SIRA would prepare calibration procedure manuals (again in line with NAMAS and VI requirements) for each EGA for which calibrators sought NAMAS approval, would provide and control the issue of calibration certificates and would regularly (every six months) audit the performance of each calibrator approved by NAMAS through its scheme.

2.10. The draft SIRA scheme was discussed at a meeting with all the interested parties towards the end of June 1991 (ie the VI, NAMAS, the GEA and a number of manufacturers). It was broadly accepted and with some minor adjustments (see paragraph 7.60) is essentially that which is currently in operation. Some 250 engineers have been approved by NAMAS through the SIRA laboratory, about 50 through Sun, 13 through Tecalemit and 5 through Hermann. These latter three laboratories submit their candidates for approval directly to NAMAS and are also responsible for twice-yearly auditing of their performance. In addition NAMAS has undertaken a programme of itself carrying out an audit check on the performance of each of its approved calibrators over a three-year cycle.

2.11. All these arrangements had to be in place by 1 November 1991 and, in the event, it was not possible for all the companies involved to achieve NAMAS approval of a sufficient number of engineers to calibrate

the EGAs they had contracted to cover by that date. As a result the VI had to issue a temporary one-month dispensation to 1 December 1991 allowing machines calibrated by manufacturers' unapproved employees to be used in MOT tests for that limited period. The limited time available also partly accounted for the fact that most suppliers sought NAMAS approval for their engineers through the SIRA route rather than establish their own NAMAS-accredited laboratory.

2.12. These calibration requirements were given legal force through their introduction by the VI into a revised appendix to its 'MOT Inspection Manual'. This manual constitutes the VI's instructions to MOT stations for carrying out MOT tests. As such it has legal force under the VI's statutory authority deriving from the Secretary of State for Transport through the Motor Vehicle (Tests) Regulations 1981 (see Appendix 2.1).