

State of California
AIR RESOURCES BOARD

Notice of Public Availability of Modified Text
and Supporting Documents and Information

PUBLIC HEARING TO CONSIDER AMENDMENTS TO REGULATIONS
REGARDING ON-BOARD DIAGNOSTIC SYSTEM REQUIREMENTS
FOR 1994 AND LATER PASSENGER CARS, LIGHT-DUTY TRUCKS,
AND MEDIUM-DUTY VEHICLES AND ENGINES

Public Hearing Date: December 8, 1994
First Public Availability Date: January 19, 1995
Deadline for Public Comment: February 3, 1995
Second Public Availability Date: April 3, 1995
Deadline for Public Comment: April 18, 1995

At a public hearing held December 8, 1994, the Air Resources Board (the "Board") considered amendments to sections 1968.1 and 2030-2031, Title 13, California Code of Regulations ("CCR"). The proposed amendments would improve the overall effectiveness of the OBD II requirements while addressing implementation concerns expressed by manufacturers. The proposed regulatory action is described in detail in the Staff Report, released October 21, 1994.

At the hearing, the Board approved amendments to sections 1968.1 and 2030-2031, Title 13, CCR, and the documents incorporated therein with modifications to the originally proposed regulatory language. Those modifications were noticed in the Notice of Availability of Modified Text, issued on January 19, 1995, which were available for public comment through February 3, 1995.

In addition to the documents that were identified in the Staff Report, the staff has added to the rulemaking record the following Society of Automotive Engineer (SAE) documents that staff relied upon in developing these regulations:

Draft SAE Recommended Practice J1939, "Serial Control and Communications Vehicle Network", January 1994. (The document's title and the date of the draft were inadvertently omitted from section (k)(5.0) of the regulation. Section (k)(5.0) has been modified to correctly reflect the title and date, and is attached hereto. The modifications reflecting the added language are indicated by double underline.)

International Standards Organization (ISO) 9141-2, "Road vehicles - Diagnostic Systems - CARB Requirements for Interchange of Digital Information", February 1994. (Reference of this document was inadvertently omitted from the Board Hearing Notice).

SAE 940975, "Road Tests of a Misfire Detection System", William B. Ribbens and Jaehong Park, 1994

SAE 920236, "Miniature Magnetostrictive Misfire Sensor", Robert D. Klauber et al, 1992

SAE 890486, "Cylinder by Cylinder Engine Pressure and Pressure Torque Waveform Determinations Utilizing Speed Fluctuations", Stephen J. Citron, John E. O'Higgins, and Lillian Y. Chen, 1989.

The ARB is also adding to the rulemaking record the following comments and information (much of which has been identified as confidential) that have been submitted to the ARB by motor vehicle manufacturers and other interested parties and that the ARB staff relied upon in adopting amendments to the OBD II regulations:

Data provided by Chrysler Corporation on May 9, 1994, regarding misfire detection test results.

Data provided by General Motors on May 11, 1992, and August 31, 1994, regarding evaporative system monitoring requirements.

Data provided by Ford Motor Company regarding misfire detection and catalyst monitoring, received July, 1994.

Mazda application for 1995 model year certification.

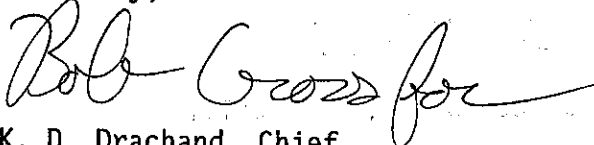
Mitsubishi application for 1995 model year certification.

The text of section 1968.1 (k), Title 13, California Code of Regulations, with the proposed amendment to complete the reference to SAE J1939, is attached. The other materials referenced are available for public inspection at the the Mobile Source Division Offices at 9528 Telstar, El Monte, California. However, for information that has been designated as confidential, the ARB will follow the disclosure policies set forth in Title 17, CCR, section 91000 et seq. Inquiries should be made to the attention of Mr. Allen Lyons, (818) 575-6833.

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt the amendments to sections 1968.1 and 2030-20 and the documents incorporated by reference there, as approved, after making the modified regulatory language and additional supporting documents and information (excluding confidential information) available to the public for comment for a period of at least 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

Written comments must be submitted to the Board Secretary, Air Resources Board, P.O. Box 2815, Sacramento, California 95812, no later than April 18, 1995, for consideration by the Executive Officer prior to final action. Only comments relating to the modifications or supporting documents and information described in this notice, will be considered by the Executive Officer.

Sincerely,



K. D. Drachand, Chief
Mobile Source Division

Attachment

Modifications to Section 1968.1 (k), Title 13, California Code of Regulations

These are amendments to section 1968.1, Title 13, CCR. Amendments adopted by the Board on December 8, 1994, are shown in underline to indicate additions and ~~stikeout~~ to indicate deletions. Amendments noticed for comment between April 3 and April 18, 1995, are indicated by double underline for additions.

- (k) **STANDARDIZATION** Standardized access to emission-related fault codes, emission-related powertrain test information (i.e., parameter values) as outlined in subsection (l), emission related diagnostic procedures, and stored freeze frame data shall be incorporated based on the industry specifications referenced in this regulation.
- (1.0) Either SAE Recommended Practice J1850, "Class B Data Communication Network Interface", ~~August, 1994~~ May, 1994, or ISO 9141-2 ~~CARB~~, "Road vehicles - Diagnostic Systems - CARB Requirements for Interchange of Digital Information," ~~February, 1994~~, which are incorporated by reference, shall be used as the on-board to off-board network communications protocol. All SAE J1979 emission related messages sent to the J1978 scan tool over a J1850 data link shall use the Cyclic Redundancy Check and the three byte header, and shall not use inter-byte separation or checksums.
- (2.0) J1978 & J1979 Standardization of the message content (including test modes and test messages) as well as standardization of the downloading protocol for fault codes, parameter values and their units, and freeze frame data are set forth in SAE Recommended Practices on "OB2 II Scan Tool" (J1978), ~~March, 1992~~ June, 1994, and "E/E Diagnostic Test Modes" (J1979), ~~December, 1994~~ June 1994, which have been incorporated by reference. Fault codes, parameter values, and freeze frame data shall be capable of being downloaded to a generic scan tool meeting these SAE specifications.
- (2.1) Manufacturers shall make readily available at a fair and reasonable price to the automotive repair industry vehicle repair procedures which allow effective emission related diagnosis and repairs to be performed using only the J1978 generic scan tool and commonly available, non-microprocessor based tools. In addition to these procedures, manufacturers may publish repair procedures referencing the use of manufacturer specific or enhanced equipment.
- (2.2) The J1978 scan tool shall be capable of notifying the user when one or more of the required monitoring systems are not included as part of the OB2 system.

- (3.0) J2012 Part C Uniform fault codes based on SAE specifications shall be employed. SAE "Recommended Format and Messages for Diagnostic Trouble Codes" (J2012), March ~~January~~, 1992 ~~1994~~, is incorporated by reference.
- (4.0) J1962 A standard data link connector in a standard location in each vehicle based on SAE specifications shall be incorporated. The location of the connector shall be easily identified by a technician entering the vehicle from the driver's side. Any pins in the standard connector that provide any electrical power shall be properly fused to protect the integrity and usefulness of the diagnostic connector for diagnostic purposes. The SAE Recommended Practice "Diagnostic Connector" (J1962), June, 1992, is incorporated by reference.
- (5.0) With Executive Officer approval, medium-duty vehicles may alternatively employ the communication protocols established in Draft SAE Recommended Practice J1939, "Serial Control and Communications Vehicle Network", January, 1994, which is incorporated by reference, to satisfy the standardization requirements specified in sections (k)(1) through (k)(4) above. The Executive Officer's decision shall be based on the effectiveness of the SAE J1939 protocol in satisfying the diagnostic information requirements of Section 1968.1 in comparison with the above referenced documents.