

A

STATE OF CALIFORNIA MEMORANDUM

AUGUST 10, 1966.

To: The Chairman and Members of the Board.

From: Motor Vehicle Pollution Control Board, Eric P. Grant, Executive Officer.

Subject:

The 1966 motor vehicles equipped in California with exhaust emission control devices are the result of action by your Board in approving systems submitted by the manufacturers. The conditions of approval were based upon engineering evaluations, in the State's laboratories and proving-ground data accumulated by the manufacturers, indicating that the devices would satisfactorily control emissions to the required State standards. Letters of representation from each of the manufacturers indicated that the systems would comply with the basic criteria when in service and installed on the motor vehicles sold to the motoring public.

The Board now must consider systems for the 1967 model vehicles.

Action by the Legislature and this Board eliminated compulsory annual recharging or servicing of exhaust devices, such that they must have durability equal to the car itself. As you are well aware, our test procedures require that durability and certification fleets be run by the manufacturers. The durability fleets are representative vehicles of the various engine, transmission combinations. These were run for 50,000 miles. By running the vehicles for this period of time, a trend of emissions was established for the life of the vehicle or 100,000 miles. Each manufacturer then fitted into this basic curve all the other various makes and models. The data thus accumulated from manufacturers indicate compliance with the emission standards for the life of the vehicle.

Surveillance data indicates that the average emissions are 223 PPM H.C. and 1.17% CO on a hot-start basis and 281 PPM HC and 1.62% CO on a cold-start basis. The reasons for this variance are discussed in the report. Average proving-ground data supplied for 1967 certification is 220 PPM HC and 1.23% CO. These figures represent a composite of the durability data supplied by the manufacturers for the 1967 model vehicles. You will note that the emissions are lower than those found on the 1966 models in public use. The importance of these figures are two-fold. First, that the manufacturers have achieved a significant reduction, and when considering all available data, have complied with the basic State standards as required by this Board. Secondly, these data are subject to question in that it represents a relatively small number of vehicles under various test conditions, as indicated in the attached report. There is a wide range of emissions, even between identical vehicles. Other variations in emissions are significant depending upon the type of tests, cold versus hot, conditions under which the vehicle was received, the mileage on the motor vehicle at the time of the test, and many other factors.

In considering the approval of the 1967 systems, the Board should consider surveillance data accumulated by the staff on 1966 model vehicles in use in California, and also improvements made in the basic systems.

Of great importance is the need for continued surveillance, representing more vehicles. There is considerable effort being put forth to have more and better surveillance data available. Surveillance is being carried on by your staff, and increased effort will be made to get more tests, both hot and cold. Additional tests are being run by the motor vehicle manufacturers. In addition, there is the ever present need to stabilize test methods and test conditions specified for the vehicle when it is received. It is our intent to nail down with the manufacturers an exact procedure and co-relation factor, if one can be established between hot and cold start tests. It is the feeling of the staff that by far the better method statistically would be to secure a very large number of hot start tests and correlate these to cold start officials test procedures. However, as is pointed out, there is this problem of relating cold to hot starts.

State standards

The original State standards established by the State Department of Public Health were based on average emissions of the car population (as measured in 1956) of 1375 parts per million of hydrocarbon, and an 80% reduction of these emissions was required. This resulted in a 275 part per million State standard. Based upon the data herein presented and the projection of emissions for the 1967 systems, the systems meet the requirements specified by the State Department of Public Health. Present emissions in the vehicle popula-