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REPORT ON DIESEL FUEL ADDITIVES AND OTHER MATTERS RELATING TO DIESEL EMISSIONS, AS REQUIRED UNDER SENATE CONCURRENT RESOLUTION NO. 90 INTRODUCED BY SENATOR COLLIER, CHAIRMAN, SENATE COMMITTEE ON TRANSPORTATION

Concurrent Resolution 90 directed the Motor Vehicle Pollution Control Board:

1. To test or cause to be tested various diesel fuel additives to determine compliance with State standards, costs, detrimental side effects, if any, and effect on operation of diesel trucks and buses.
2. To cooperate with the California Highway Patrol to determine if such additives would reduce smoke density on diesel equipment below existing enforcement levels for "excessive smoke."
3. To render a progress report concerning the effectiveness of diesel fuel additives to the Senate Factfinding Committee on Transportation and Public Utilities, and the Assembly Interim Committee on Transportation and Commerce by July 1, 1966.

INTRODUCTION

As a result of emission standards being established by the State Department of Public Health for smoke and odor from motor vehicles, the Motor Vehicle Pollution Control Board has been engaged in several areas of activity to secure compliance with these standards.

In addition to this activity, which is directed toward certifying a device, the staff of the Board has endeavored to secure the cooperation of the petroleum and trucking industries to purposefully accomplish better emission control from diesel vehicles prior to the time, and possibly in lieu of, actual devices.

It is the policy of this Board, and has been in the past in relation to other areas of control, that the primary objective is to secure compliance. If, through cooperative interest, emissions from diesel vehicles can be reduced without the necessity of enforcement of the law, this is by far the best course of action to take.

FUEL ADDITIVES

The principle of utilizing an additive to diesel fuel to eliminate visible emissions has been recognized for many years as a potential means of control. As is discussed in the attached paper to be presented by our Supervising Engineer, at the August SAE meeting in Los Angeles, significant reduction of emissions may be achieved. Due to this reduction and the preponderance of evidence that there is no injury to the engine or significant increase in cost, it appears at this time that an additive will be added to diesel fuel supplied to the California market. The use of this fuel additive should result in effective smoke reduction. Unfortunately, it appears that it will not be added to all diesel fuel marketed, but only as a premium fuel as an addition cost to the trucker if he wants to place the additive in his fuel tank after he has purchased the untreated fuel.

Extensive tests and evaluations by the Lubrizol Corporation and several California petroleum refining companies clearly indicate that no damage, after hundred of thousands of miles, will result to the engine from the use of a fuel additive. The attached report from the Lubrizol Corporation contains data and material relating to their evaluations.

There are two observations and possible objections to the fuel additive approach for diesel smoke suppression. First, the Department of Public Health, although they find no foreseeable injurious effect as a result of fuel additives; feel that to require the use of an additive is, in a sense, requiring something similar to lead in gasoline. It may or may not be a health problem. Basic ingredients of a fuel additive are metals, such as barium and iron, and have the effect of being a combustion improver. There is, however, a residual which results from their use. The best information to date from all sources is that there is no potential problem found in their use. However, it does concern the Department of Public Health that if they were to be required by law, it would be specifying an additional ingredient which may be a potential problem.

The second objection to the additive approach is that since it acts as a combustion improver, increased available horsepower results; and the operator of the vehicle could re-adjust his driving practices and engine adjustments so as to utilize the horsepower, rather than getting the benefit of the smoke reduction. In other words, he would utilize the horsepower rather than allow the additive to