

cause a reduction in smoke. The net result would be that the diesel would continue to smoke, but more horsepower would be used by the driver.

Experience with additives indicates that it would be desirable to have the fuel additive used as an alternative method for smoke reduction. It is inconsistent with established Board policy, however, under existing law, to specify its use since it would appear that it is not a device, as defined in the laws under which this Board must operate.

OTHER AREAS OF EMISSION REDUCTION

As Mr. Brubacher points out in the attached paper, maintenance, driver practices, fuel specifications, engine modifications, and engine derating all have their effect on diesel emission reduction. Through a cooperative campaign with the California Trucking Association, we are endeavoring to inform the trucking industry of the benefits of all of these approaches. We have met, and will continue to meet with representatives of the petroleum industry, in an effort to determine the advisability of securing tighter fuel specifications. We know that quality fuel will help reduce emissions. We also know that if a diesel vehicle's injectors are set for a certain grade of fuel, a change in the fuel may cause the vehicle to emit smoke. As an example, a Los Angeles trucking operator maintains excellent shop facilities, good driver habits are followed by the drivers, and he purchases a quality fuel for his vehicles in Los Angeles. A truck moving from Los Angeles to Redding would re-fuel at that Northern California city. Unless he has available substantially identical fuel, the vehicle may smoke.

In a follow-up report to the Committee we hope to indicate that a cooperative program between the refinery industry, the trucking industry, and ourselves will be solving this problem.

ENFORCEMENT

As you are well aware, the Legislature, in Senate Resolution 18, directed law enforcement officers within the State of California, and particularly the California Highway Patrol, to increase their efforts in the area of visible smoke emissions. The number of citations issued has indicated that this directive has been given a great deal of support. It is my considered judgment that the strong enforcement now being utilized in the State of California will cause the diesel user to recognize the need to control emissions, and to respond, in the areas mentioned above, to see that they are in compliance with the law.

DIESEL TECHNICAL ADVISORY COMMITTEE

The Diesel Technical Advisory Committee to the Motor Vehicle Pollution Control Board has met, and will meet in the future, in relation to the technical approach to this problem. Interesting observations were made by these technical experts (a list of the Committee is attached) that basically, in the low elevation areas in the State of California, visible diesel emissions can be controlled within existing legal requirements.

A major point of concern, however, was the difficulty, due to reduced oxygen concentrations in the air at higher elevations, of keeping emissions at a low level. The problem is this: We know that oxygen decreases with increase in elevation, because of the decreased density of the air. Since all motor vehicles, including the diesel, rely upon the available oxygen in the air, the combustion process is affected. It may therefore be suggested (and this would again be the subject of future reports to the committee) that an allowance be made for legal emission levels when the vehicle is at higher elevations. As an example, possibly a No. 1 Ringelmann would be used at sea level to 2000 feet; and above 2000 feet a No. 2 Ringelmann. An alternative would be to fit an aneroid control to the engine fuel system. This would hold smoke essentially constant with altitude. However, the fleet operators may object to the resultant slight horsepower decrease at altitude.

To summarize, therefore, in this interim progress report to your committee, considerable effort is being put forth to reduce visible emissions from motor vehicles, particularly the diesel, with significant results. Plans and procedures are being prepared which, as a cooperative effort of all concerned, hopefully will result in a significant reduction in visible smoke. In conjunction with this program, enforcement policies are being strongly supported by law enforce-