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CALIFORNIA AND FEDERAL MOTOR VEHICLE EMISSION STANDARDS¹

California Department of Public Health, Bureau of Air Sanitation, July, 1966

On March 30, 1966, the Federal Government adopted standards for exhaust and crankcase emissions. These standards are to be effective beginning with 1968 model cars. The purpose of this report is to evaluate quantitatively what the impact would be on vehicle emissions if California were to adopt standards similar to the Federal ones for small vehicles. The effects on emissions in Los Angeles will be used as examples. Because the Federal standards pertain only to hydrocarbon and carbon monoxide, consideration will be mainly concerned with these two contaminants.

In California, emission standards have been established for exhaust hydrocarbons, carbon monoxide, oxides of nitrogen, smoke, odor and irritation; for hydrocarbons in crankcase emissions; and evaporative losses. In 1970, more stringent standards for exhaust hydrocarbons and carbon monoxide will be in effect in the state.

Federal exhaust standards for Class A vehicles are more liberal than the corresponding California standards. The Federal crankcase standard, on the other hand, permits no emissions while California limits emissions amounting to 0.1% supplied fuel. Both crankcase emission standards, however, have the effect of requiring devices that are virtually 100% effective. Table I compares the standards established by the two governmental levels.

The effect of more lenient standards for Class A cars on the California program is dependent on the percent of these vehicles in the state's total vehicle population. Direct information on vehicle distribution by engine displacement is not available either for the nation or the state on the basis of registration figures. The distribution shown in Table II was derived from data contained in the 1965 "Automotive News Almanac", which gives numbers of cars in operation in California by model year and make. Estimation of engine class was made by the Department for each model and make according to the published data. The summation of this information yields the percentage of each engine class. Foreign cars were similarly estimated from reported figures for California in the Almanac.

TABLE I.—Comparison of California and Federal standards

Source	Class ¹	California			Federal		
		Hydro-carbon parts per million	Carbon monoxide percent	Oxides of Nitrogen parts per million	Hydro-carbon parts per million	Carbon monoxide percent	Oxides of Nitrogen parts per million
Exhaust (current standards)	A1-----	275	1.5	350	(¹)	(²)	None.
	A2-----	275	1.5	350	410	2.3	
	A3-----	275	1.5	350	350	2.0	
	B-----	275	1.5	350	275	1.5	
	C-----	275	1.5	350	275	1.5	
	D-----	275	1.5	350	275	1.5	
	E-----	275	1.5	350	275	1.5	
	F-----	275	1.5	350	275	1.5	
Exhaust (1970 standards)	All classes	180	1.0	350	Permits no crankcase emissions.		
Crankcase	do-----	0.1% supplied fuel. ³					
Evaporative emissions	do-----	6 grams hydrocarbons per day, fuel tank. 2 grams hydrocarbons per soak, carburetor.			None. None.		

¹ See table II for engine displacement.

² Exempt.

³ In effect, requires virtually 100 percent control.

¹ Presented at the August 10, 1966, California Motor Vehicle Pollution Control Board meeting, Los Angeles, California.