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# REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

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## Pollution From Cars On The Road— Problems In Monitoring Emission Controls

Environmental Protection Agency

Under its inspection maintenance and in-use-compliance programs, the Environmental Protection Agency has made little progress in carrying out the provisions of the Clean Air Act relating to the control of emissions from automobiles actually on the road.

Seventeen States and the District of Columbia have included limited inspection maintenance programs in their air quality implementation plans. Widely differing court decisions questioning the Agency's authority to require States to establish inspection maintenance programs have prompted the Agency to appeal the issue to the U.S. Supreme Court.

In-use-compliance programs enabled the Agency to identify 12 engine classes--about 3.7 million vehicles--which did not meet auto-exhaust emission standards. These programs have not resulted in the recall of any vehicles for corrective action by the manufacturers because the Agency did not believe the test data developed under the programs was sufficient to legally support a recall.

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COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-166506

The Honorable John E. Moss  
Chairman, Oversight and Investigations Subcommittee  
Committee on Interstate and Foreign Commerce  
House of Representatives

Dear Mr. Chairman:

This report describes how the Environmental Protection Agency has implemented programs for monitoring emission controls of cars actually on the road through its inspection and maintenance and in-use compliance programs. The results of our review were summarized in testimony before your Subcommittee on April 7, 1976. Both this report and the testimony were prepared in response to your request of August 18, 1975.

We invite your attention to the fact that this report contains a recommendation to the Administrator of the Environmental Protection Agency. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions he has taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. We shall be in touch with your office in the near future to arrange for the release of the report so that the requirements of section 236 can be set in motion.

Sincerely yours,  
*Lee R. Staals*

Comptroller General  
of the United States

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ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
IM	inspection and maintenance
IUCP	in-use compliance program

COMPTROLLER GENERAL'S  
REPORT TO THE SUBCOMMITTEE  
ON OVERSIGHT AND INVESTIGATIONS  
HOUSE COMMITTEE ON INTERSTATE  
AND FOREIGN COMMERCE

POLLUTION FROM CARS ON THE  
ROAD--PROBLEMS IN MONITORING  
EMISSION CONTROLS  
Environmental Protection  
Agency

D I G E S T

The Environmental Protection Agency has made only limited progress in carrying out provisions of the Clean Air Act relating to control of emissions from cars on the road.

The Agency primarily used two methods for controlling on-the-road vehicle emissions:

- Inspection and maintenance programs.
- In-use compliance programs. (See p. 1.)

INSPECTION AND MAINTENANCE PROGRAMS

The Agency does not require most States to include inspection and maintenance programs for on-the-road vehicles in their air quality implementation plans. Air quality implementation plans are to include where necessary (1) land use restrictions--such as not widening roads, deciding where roads should go, and planning parking lot development--and (2) transportation controls--such as express lanes on highways and carpools. (See pp. 1 and 4.)

Although 30 States have had implementation plans approved without transportation measures, Agency officials said this will change as more data becomes available. According to an Agency official, inspection and maintenance programs are essential for protecting public health and offer tangible benefits--fuel conservation and more reliable motor vehicle performance. (See p. 4.)

In those 17 States and the District of Columbia where inspection and maintenance programs were to be established, progress had been minimal. Although the necessary technology is available, State and local governments have been reluctant to promote inspection and maintenance programs. (See pp. 4 and 6.)

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Total funding for inspection and maintenance programs has been limited. Only about \$3.8 million has been provided since fiscal year 1967; fiscal year 1977 funding is about \$250,000. (See p. 4.)

Several States have challenged the Government's authority to require them to carry out inspection and maintenance programs. The courts rendered widely differing decisions which the Agency has appealed to the U.S. Supreme Court. (See pp. 7 and 8.)

The 94th Congress considered amending the Clean Air Act to require annual vehicle inspection and testing in States having transportation controls in their air quality implementation plans. Under this legislation, such States would prohibit vehicles not complying with emission standards from being registered and driven. The proposed legislation was not enacted. (See pp. 8 and 9.)

Inspection and maintenance programs need strong enforcement to be effective. This is difficult when the programs are limited to selected jurisdictions within a larger area. In Hamilton County, Ohio, the Agency ordered Cincinnati and the county government to begin inspection and maintenance programs. However, the order did not apply to 36 incorporated areas in Hamilton County. As a result, the county program was not enforceable over much of the county. (See pp. 4 to 6.)

#### IN-USE COMPLIANCE PROGRAMS

Under the 1972 in-use compliance program, 3,000 vehicles were tested, costing the Agency about \$2.1 million. The Agency identified five classes of engines, representing about 1.4 million vehicles, that should be considered for recall because they did not comply with emission standards. (See p. 12.)

In June 1975, the Agency decided that data from the 1972 program did not support a recall. During an earlier "mock hearing" it had been decided the data could not withstand a court challenge by the manufacturers. (See p. 13.)

The 1972 program results were inadequate because:

- The program--the Agency's first attempt to test in-use automobiles--did not fully anticipate the data needed to support a recall.
- The Agency did limited monitoring of contractors' test activities, and according to the testing contractors, the Agency did not formally advise them of problems identified.
- The Agency did not make a detailed review of contractors' test data until all tests were completed. As a result, the contractors believed their tests were adequate. (See p. 10.)

The Agency began the 1973 program before fully evaluating the 1972 results. (See p. 10.)

Under the 1973 program, 2,500 vehicles were tested at a cost of about \$1.9 million. In July 1975 the Agency identified seven classes of engines--about 2.3 million vehicles--not meeting emission standards. (See p. 14.)

In June 1976 the Agency determined its 1973 in-use compliance program data was not sufficient to support a recall of the seven classes. (See p. 14.)

The key to effective inspection and maintenance programs is strict enforcement and support by State and local officials. Before these programs can become fully effective the question of the Agency's basic authority to require States to operate inspection and maintenance programs must be resolved. This issue is before the U.S. Supreme Court. (See p. 9.)

The Agency should (1) determine what information is needed to support a recall of on-the-road vehicles not meeting emission standards and (2) design future in-use compliance programs to gather such data. (See p. 14.)

The Agency agreed that the 1972 and 1973 in-use compliance programs did not provide adequate test data. It has decided to discontinue the in-use compliance concept and replace it with a more efficient testing program. As of December 1976, the Agency had not provided GAO with the details on the data it will be collecting under the new program. Therefore, GAO could not evaluate the adequacy of the new data. (See pp. 14 and 15.)

## CHAPTER 1

### INTRODUCTION

In a letter dated August 18, 1975, the Chairman, Oversight and Investigations Subcommittee, House Committee on Interstate and Foreign Commerce, requested that we review the Environmental Protection Agency's (EPA's) monitoring of automobile-exhaust emission controls of vehicles actually on the road. (See app. II.)

Under the provisions of the Clean Air Act Amendments of 1970 (42 U.S.C. 1857) (hereafter called the act), EPA primarily used two methods to control emissions from on-the-road vehicles

- inspection and maintenance programs (IM) administered by State and local governments and
- in-use compliance programs (IUCP) administered by EPA.

### CLEAN AIR ACT AMENDMENTS OF 1970

The act required State air quality implementation plans to include land use restrictions--such as not widening roads, deciding where roads should go, and planning parking lot development--and transportation controls--such as express lanes on highways and carpools--where necessary. It also required EPA to promulgate national air quality standards for each air pollutant for which air quality criteria had been issued. The air quality standards prescribe pollutant exposures or levels of effect that are not to be exceeded in specified areas of the country. EPA prescribed air quality standards for the following pollutants: carbon monoxide, oxides of nitrogen, hydrocarbons, and photochemical oxidants. Photochemical oxidants are not emitted directly into the atmosphere but result from a series of reactions between air-borne hydrocarbons and nitrogen oxides in the presence of sunlight.

The act also required the manufacturers of new automobiles to clean up exhaust emissions by 90 percent from the allowable levels in effect for the 1970 model year. For two pollutants--carbon monoxide and hydrocarbons--the cleanup was to be achieved by the 1975 model year, and for oxides of nitrogen, by the 1976 model year. Interim standards were set for vehicles manufactured prior to these dates. Delays in meeting these dates, and revised interim standards, have since been granted by EPA under congressional authorization. For carbon monoxide and hydrocarbons the standards have been delayed through the 1977 model year, and for oxides of nitrogen

until the 1978 model year. Separate more stringent standards were set by the State of California.

Under section 110 of the act, each State must prepare and submit for EPA approval an air quality implementation plan for the achievement of national ambient air quality standards. In some cases, these plans provide for periodic inspection and testing of on-the-road vehicles by State and local governments to enforce compliance with auto emission standards through better automobile maintenance. An IM program is required to be included in a State's implementation plan only if the State, or a particular area within the State, cannot meet national ambient air quality standards without it.

EPA's IUCP program was established in accordance with section 207 of the act. Its purpose is to determine whether particular classes and categories of automobiles meet EPA's automobile emission standards.

EPA is authorized to institute a recall program for corrective measures against automobile manufacturers whose in-use automobiles are not meeting prescribed emission standards. EPA must first demonstrate that a substantial number of automobiles in a particular class or category are not meeting the prescribed emission standards, even though such automobiles have been properly maintained.

#### ENGINE TESTING PROGRAMS

Under the act, EPA can regulate exhaust emissions at various stages, ranging from the automobile's design, to its construction, and finally to the use stage. Included in this process are the (1) certification of various classes and categories of vehicles by EPA prior to their sale by the manufacturer--including engine prototype approval and assembly line testing of automobiles, (2) IM program, and (3) IUCP testing of various classes and categories of automobiles for possible recall by the manufacturer.

The IM program includes an emissions inspection; the IUCP program includes both an emissions inspection and an engine parameter inspection.

Emissions inspection involves sampling exhaust gases from the vehicle at either a no-load mode condition (in which the engine is idling) or a loaded mode condition (in which a dynamometer is used to simulate road conditions) and passing the gases through analytical instruments to measure the amount of air-polluting compounds.

Various types of emissions test systems and equipment are available for these tests. If the concentration of the compounds measured falls below the applicable emissions standards, the vehicle passes. If concentrations of any pollutant are above the standards, the vehicle fails. Vehicles failing would then be adjusted to bring the emissions into compliance and resubmitted for emissions tests.

Engine parameter inspection involves examining engine components and adjustments to determine whether the particular engines are functioning on the road according to prescribed manufacturing specifications.

#### SCOPE OF REVIEW

We reviewed EPA's monitoring of automobile emission controls under the IM and IUCP programs. We examined legislation, documents, reports, and records for both programs.

We interviewed responsible agency officials at EPA headquarters in Washington, D.C., and obtained additional information at EPA's Chicago regional office and EPA's Mobile Source Air Pollution Control Laboratory, Ann Arbor, Michigan. To determine what the local problems would be in establishing an IM program, we reviewed programs in Cincinnati, Norwood, and Hamilton County, Ohio. We visited and reviewed the records of EPA contractors in California and interviewed personnel concerning tests performed as part of EPA's IUCP programs.

## CHAPTER 2

### INSPECTION AND MAINTENANCE PROGRAMS

EPA does not require most States to include inspection and maintenance programs for on-the-road vehicles in their air quality implementation plans. Although 30 States have had implementation plans approved with no transportation measures required, agency officials have said this will change as more complete monitoring data becomes available. EPA's Assistant Administrator for Enforcement stated IM programs are essential in protecting public health and offer tangible benefits in terms of fuel conservation and better motor vehicle performance.

EPA told us that, for the States where IM programs were to be established, progress had been minimal. Only 17 States and the District of Columbia provided for the establishment of IM programs in their implementation plans.

These States, including Arizona, California, Colorado, New Jersey, New York, Ohio, and Utah, either have serious pollution problems mainly in their large metropolitan areas or have a special interest in preserving clean air. Only New Jersey has established a statewide operational IM program in conjunction with its implementation plan.

Limited programs are also in operation in New York City (its program only covers taxicabs) and in Chicago, Illinois; Riverside, California; Cincinnati, Norwood and Hamilton County, Ohio; and Portland, Oregon. In January 1976, Phoenix and Tucson, Arizona, initiated IM programs. (See app. III for details on State IM programs.)

EPA's funding for IM programs has been limited, amounting to only about \$3.8 million for fiscal years 1967-76. Of this amount, about \$1.3 million was provided for grants to the States for establishing and operating IM programs and about \$2.5 million was spent on contracts for developing test methods and equipment, demonstration programs, training programs, and data analysis on air quality monitoring. The fiscal year 1977 funding level for IM programs was estimated at about \$250,000.

#### CINCINNATI, NORWOOD, AND HAMILTON COUNTY, OHIO, INSPECTION AND MAINTENANCE PROGRAMS

We reviewed IM programs in Cincinnati, Norwood, and Hamilton County, Ohio, and found that these programs were not entirely effective because of insufficient enforcement at the local level.

A 1973 EPA order required the Cincinnati and Hamilton County governments to implement IM programs by January 1, 1975. The order did not apply to 36 incorporated municipalities in Hamilton County, but Norwood voluntarily established a program. Cincinnati and Norwood implemented their programs in January 1975. The Hamilton County program was not initiated until August 1975 because of a lawsuit by a private citizen, challenging the county's authority to establish an IM program.

The 1973 EPA order covered about 60 percent of the registered vehicles in the Cincinnati metropolitan area. According to EPA the order was limited in scope because EPA wanted to deal with only a few local governments yet cover as many vehicles as possible. This rationale created an enforcement problem in that it left only Cincinnati, Norwood, and scattered areas of Hamilton County to enforce the program.

The emissions test at the various Ohio locations took only about 30 seconds to complete. Cincinnati and Norwood added the emissions test to their existing safety inspection program and charged \$3.75 a vehicle for both emissions and safety inspections. In Hamilton County, which required no safety inspection, the cost was \$1.50 a vehicle. Owners of vehicles that failed were given 30 days to correct the problems.

Cincinnati and Norwood used the same enforcement mechanism employed in their safety programs. Stickers were issued and placed on the windshields of vehicles that passed inspection. Others received 30-day temporary stickers to permit time for necessary repairs. Cincinnati police issued citations to locally registered vehicles with expired or missing stickers. Inspectors of the Cincinnati Air Pollution Control Division could also issue citations for sticker violations.

In Hamilton County the sheriff contended that, because of the large number of automobiles involved and other pressing duties, he did not have enough officers to enforce a countywide program. The program director also said that the county had trouble enforcing the program because not all of the local governments in the county had adopted the necessary ordinances. When EPA asked Ohio's Secretary of State to require Cincinnati and Hamilton County vehicles to pass an emissions inspection before auto tags could be issued, he said he lacked such authority. EPA did not pursue the matter.

Cincinnati and Norwood had a reciprocal agreement for testing vehicles. In 1975, only 184,000 of the estimated 253,000 vehicles located in both cities which were required to be tested were actually tested. During 5 months of

operations, Hamilton County tested only about 1,900 of the 250,000 vehicles registered. An additional 11,800 vehicles were tested as part of an oil company's promotional program which provided a free inspection. Of the vehicles tested in the three jurisdictions, 25 percent failed.

In 1975 EPA provided a grant of \$93,000 and public relations materials to Cincinnati to pay for certain equipment and the salaries and related costs for four inspectors. An \$8,000 grant for test equipment and for training of test employees was provided to Norwood and a \$32,000 grant was provided to Hamilton County to assist in setting up test facilities.

Despite the EPA grants and the fees charged, city and county officials reported that during 1975 the Cincinnati Safety and Emissions Program lost \$125,000, the Norwood Safety and Emissions Program \$47,000, and the Hamilton County Emissions Program \$46,000. These losses were due to the low number of inspections which resulted when motorists realized there was no effective mechanism for enforcement.

Cincinnati and Norwood officials stated that unless their programs became self-supporting, they may be terminated. Hamilton County officials said that the two test facilities they operated could not be run economically because of the low volume of vehicles being tested. The facilities were closed as of February 1, 1976. To comply with EPA's order, vehicles registered in the county are now required to be tested at the Cincinnati and Norwood test facilities. However, as of July 9, 1976, all the local governments in the county had still not adopted the ordinances necessary to allow enforcement of the program.

#### AVAILABILITY OF TEST EQUIPMENT

The equipment necessary for conducting vehicle inspections and required maintenance is available and a State has a range of systems to choose from in setting up IM programs. The scientific instrument, computer, dynamometer, and garage service industries have participated in various IM programs over the last several years, and have developed a substantial equipment capability.

In its simplest form, an emissions sampling system consists of a metal probe which is placed in the automobile exhaust pipe. The probe is attached with flexible tubing to an instrument system which indicates the pollutant concentration on a dial as a percent of volume for carbon monoxide and parts per million for hydrocarbons and nitrogen oxides.

The cost of instrumentation and equipment for emissions inspections can vary widely, from simple visual instrumentation which registers a simple pass-fail reading, costing about \$2,000 a unit, to a fully automated system (including building construction) costing about \$70,000 a unit.

COURT DECISIONS AFFECTING  
IM PROGRAMS

On the basis of recent Federal Appeals Court decisions on the constitutionality of transportation controls promulgated by EPA under the act, there is doubt as to whether EPA can require States to establish IM programs. EPA and the Justice Department are currently appealing these decisions to the U.S. Supreme Court.

EPA stated that these recent decisions paralyze its efforts to reduce auto pollution in metropolitan areas. EPA also said the decisions further delay its program and make it virtually impossible to implement IM programs already developed.

Under the act, States were required to attain primary ambient air quality standards by May 31, 1975. To achieve these standards, States were to develop transportation control plans. When EPA attempted to grant extensions to certain States, the Federal Court of Appeals ruled that EPA lacked such authority and ordered that plans be promulgated for 38 cities where programs were inadequate.

At the outset, EPA believed it could prescribe State transportation control plans because the States by building and maintaining highway systems, registering motor vehicles, licensing motor vehicle operators, and establishing traffic laws had encouraged the use of motor vehicles which created air pollution. EPA also believed a State's failure to enact, administer, and enforce EPA specified controls in accordance with the act could lead to EPA enforcement actions against the State.

Initially the Federal Appeals Court agreed with EPA that the States had, by their transportation policies, contributed to the problem of air pollution from automobile emissions, and that EPA could require the States to take affirmative corrective actions. In one decision the court said that requiring States to carry out and enforce Federal regulations did not conflict with the Federal-State system embodied in the Constitution. The court noted that the only alternative to State enforcement would be direct Federal enforcement, which EPA

had determined would be impracticable. The court said it could not see how Federal enforcement was less an intrusion on State sovereignty than required State action.

However, in a more recent decision another court reconsidered and stated that EPA regulations directing a State to enact legislation went beyond the scope of the act. In that decision, the court set aside the provisions of a State implementation plan which directed the establishment of an IM program.

In another decision, although the court agreed that a State's "pollution-creating" activities are subject to EPA regulation, it rejected the idea that operating a State highway system was analogous to a pollution-creating activity. It said that the act does not authorize sanctions which would direct a State to regulate pollution-creating activities where it does not conduct such activities itself. The court said the act permits sanctions against a State that pollutes the air, but not against a State that chooses not to govern polluters in the way EPA directs.

In still a more recent decision, the court said that once the Congress determines that the emission of pollutants affects interstate commerce, it has the power to regulate such activities and it is irrelevant that a particular source of pollution is or is not operated by the State. Under the Constitution's commerce clause, the court said that the Federal Government could order States to operate their transportation systems in accordance with Federal regulations designed to protect the health of the Nation's citizens. The court endorsed an EPA requirement which prohibited States from registering motor vehicles which did not conform to specified IM standards. The court refused however to accept EPA's argument that the States could be forced to actively administer IM programs. The court said that by promulgating such a requirement EPA would be "commandeering" the regulatory powers of the States, including personnel and resources, to administer and enforce a Federal motor vehicle regulatory program. The court said it is doubtful that the Federal Government may validly exercise its commerce power by directing unconsenting States to regulate activities affecting interstate commerce. As previously stated, this entire matter has been appealed to the U.S. Supreme Court.

Legislation was considered in the 94th Congress that would have amended the Clean Air Act by specifically providing for vehicle inspection and maintenance. Under the proposed amendments, a State having transportation controls as part of its implementation plan would have been required to annually

inspect and test light-duty vehicles registered in the air quality control regions of that State. Unless such vehicles complied with emission standards specified for those regions, their registration and operation would have been prohibited. The proposed legislation was not enacted.

#### CONCLUSIONS

EPA, through its IM programs, has made only limited progress in carrying out the provisions of the Clean Air Act relating to the control of emissions from automobiles actually on the road. We believe that the key to effective IM programs is strict enforcement and support by State and local officials. However, before these programs can become fully effective, the question of EPA's basic authority to require States to operate IM programs must be resolved. This issue is presently before the U.S. Supreme Court.

## CHAPTER 3

### IN-USE COMPLIANCE PROGRAM

As of June 1976, EPA had conducted two IUCP programs--a 1972 and a 1973 program. Although EPA identified 12 classes of vehicles which it believed did not meet the standards, EPA did not require manufacturers to recall any of these automobiles. EPA concluded that the test data was not sufficient to support a recall action.

Under its 1972 program, EPA identified five classes of vehicles as not meeting the emission standards. We found three basic reasons why the 1972 program results were inadequate:

- The 1972 program was EPA's initial effort to test in-use automobiles and EPA did not fully anticipate the data needed to support a recall.
- EPA only did limited monitoring of contractor's test activities and, according to the contractors, EPA did not formally advise them of problems identified during visits to the test sites.
- EPA did not make an in-depth review of contractors' test data until all tests were completed. As a result, the contractors believed they were adequately performing the tests.

EPA began the 1973 program before fully evaluating the results of the 1972 program. In June 1976, EPA determined that data developed under its 1973 program was not sufficient to support the recall of any of seven classes of engines identified as not meeting the emission standards.

### ESTABLISHMENT OF PROGRAM

Section 207 of the act authorizes EPA to determine if automobiles in actual use, after proper maintenance by the owner, perform within prescribed manufacturing specifications for emissions control as warranted by the manufacturer for the useful life of the vehicle--5 years or 50,000 miles. If a substantial number of a particular class of vehicles tested do not meet the standards--and the failure is the manufacturer's fault--EPA is required to have the manufacturer recall that particular class of automobile and correct the defect at the manufacturer's expense. EPA initiated two separate IUCP programs--the 1972 and 1973 programs--to test in-use automobiles. EPA contracted with private contractors to conduct the tests for both programs at a total cost of about \$4 million.

In carrying out these programs, EPA contractors:  
(1) selected classes of vehicles to be tested from a statistically valid sample of in-use automobiles, (2) offered owners incentives to participate in the program, (3) tuned automobiles to manufacturers' specifications, and (4) tested the automobiles for compliance with EPA emissions standards.

Vehicles tested under the program were selected from State vehicle registration lists. Letters were sent to vehicle owners requesting that they volunteer their vehicle for the program. A number of incentives were offered for participating in the program, including

- a \$50 savings bond,
- the loan of an automobile while theirs was being tested,
- an engine tune-up, and
- a full tank of gas.

Automobiles tested had to be properly maintained and used by owners. Automobiles showing signs of abuse or abnormal operation were rejected. For example, the following conditions disqualified a vehicle:

- Damage to the frame, gas tank, or engine resulting from an accident.
- Use in transporting heavy loads.
- Entrance in competitive speed events.
- Operating on unpaved roads more than 50 percent of the time.
- Oil and oil filter not changed at specified intervals.

After misused and improperly maintained automobiles were screened out, the remaining automobiles were tuned up to manufacturer's specifications. This included cleaning, adjusting, or replacing engine and emission-control components. The automobiles were then to be tested in accordance with prescribed emission testing procedures and the EPA contract specifications.

The 1972 and 1973 test programs are discussed below.

## 1972 TEST PROGRAM

Under the 1972 program, about 3,000 1972 model year automobiles were tested at a cost of about \$2.1 million by three contractors at five different test sites--Atlanta, Detroit, Los Angeles, Philadelphia, and St. Louis. The contracts, awarded in September 1972, specified that 125 vehicles were to be tested in each of 24 different engine classes. The 24 classes represented about 70 percent of all engines used in 1972 model year automobiles. Testing began in January 1973 and was completed in October 1973, with some retesting through March 1974.

EPA personnel began reviewing the test data submitted by the contractors after the original testing was completed. As a result of this review, EPA initially determined that 5 of the 24 engine classes tested, representing about 1.4 million vehicles, should be considered for recall because they did not comply with emission standards.

In June 1974, EPA notified the manufacturers of its preliminary findings of poor emissions performance for the five engine classes. EPA provided the manufacturers with vehicle test files and supporting documents for each vehicle in the sample. EPA also held meetings with the manufacturers at various times after the notification. At the meetings, the manufacturers questioned the credibility of some of EPA's test data.

As a result of questions raised by the manufacturers, EPA performed a detailed review of the test data for the five classes to insure the data could support a possible recall action. EPA found problems with the test data for 215 of the vehicles tested. The problems generally related to the contractors' failure to follow prescribed procedures and to adequately document the tests performed, as follows.

<u>Type of problem</u>	<u>Number of vehicles</u>
Procedural	118
Both procedural and documentation	62
Documentation	26
Other	<u>9</u>
Total	<u>215</u>

In January 1975, EPA held a "mock hearing" to simulate what might happen at a public hearing if an automobile manufacturer challenged a recall action. Many problems surfaced, further weakening the validity of the test data. For example, an EPA official who acted as hearing officer, stated that the mock hearing raised doubts as to whether restorative maintenance was properly performed, testing equipment was correctly calibrated, and supporting records were accurately maintained. The official stated "It is my view that it would be a serious error for EPA to order recall from the data generated in the FY 72 In-Use Compliance Program." In June 1975 EPA decided not to take any recall action based on the 1972 program test results.

During the 1972 program, EPA personnel made a limited number of visits to the contractors' testing sites to monitor the restorative maintenance activities, testing procedures, and equipment calibration. During the testing period, EPA personnel made about 11 trips to each of the sites--a total of 53 visits to the 3 contractors.

The following table shows the number and average length of these visits from January through October 1973.

	<u>Contractor A</u>		<u>Contractor B</u>		<u>Contractor C</u>	
		<u>Site</u>	<u>Site</u>	<u>Site</u>	<u>Site</u>	
		<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	
January	0	0	0	3	2	
February	0	1	0	0	1	
March	2	2	2	1	0	
April	2	0	0	1	2	
May	2	2	2	1	0	
June	2	3	2	2	3	
July	0	1	2	1	0	
August	3	0	2	1	1	
September	0	0	0	1	1	
October	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	
Total	<u>11</u>	<u>10</u>	<u>10</u>	<u>11</u>	<u>11</u>	
Average length of visit in days	1	1.6	2.2	1.2	1.3	

EPA officials told us that for EPA to have effectively monitored contractor performance, one or more full-time EPA personnel should have been stationed at each contractor's testing facility. One official told us that if full-time EPA personnel had been assigned they would have reviewed all

aspects of the contractor's activity including restorative maintenance, emission testing, and data audit. Officials said, however, that staff resources were not available for such comprehensive monitoring.

Testing contractors also told us that they believed EPA did not adequately monitor testing activities. We were told that EPA visits were too infrequent and that EPA did not always formally advise contractor management of the problems it observed. The officials said that EPA personnel mentioned problems to mechanics and line supervisors but did not provide management with any type of report. As a result, contractor management believed their tests were adequate.

### 1973 TEST PROGRAM

Under the 1973 program, about 2,500 vehicles were tested by two contractors at the same five test sites as the 1972 program at a cost of about \$1.9 million. The contractors tested 31 different classes of 1972, 1973, and 1974 engines. In March 1974, the contractors began 9 months of testing. Test data was submitted to EPA weekly. During the test period, EPA visited the test sites to observe the testing. Four EPA personnel each made an average of one site visit a month. The visits averaged less than 2 days each.

Because of problems with the 1972 program test data, EPA reviewed in detail the 1973 data. This review was completed in July 1975 and EPA identified seven classes of engines involving about 2.3 million vehicles which did not meet emissions standards. In June 1976, EPA determined that data developed under its 1973 IUCP program was not sufficient to support a recall of the seven classes of engines.

### CONCLUSION AND RECOMMENDATION TO THE ADMINISTRATOR, EPA

The 1972 and 1973 IUCP programs did not provide adequate test data that could be used to recall vehicles not meeting emissions standards. Therefore, we recommend that before proceeding with any future in-use compliance programs, EPA should (1) determine what type of data is needed to support a recall of on-the-road vehicles that do not meet the emissions standards and (2) design future programs to gather such data.

### AGENCY COMMENTS AND OUR EVALUATION

In commenting on our report (see app. I) EPA stated:

"\* \* \*We concur with your conclusion that 'the 1972 and 1973 in-use-compliance programs (IUCP) did not provide

adequate test data that could be used in recall actions for vehicles not meeting emission standards. \* \* \*

EPA decided to terminate IUCP after we completed our review work. Consequently, in commenting on our recommendation concerning the type of data needed to support recall actions, EPA stated:

"\* \* \*We have determined what type of data is needed to support recall actions.\*\*\* The IUCP did not produce such data because it was too ambitious and not enough scrutiny was applied to the testing contractors' performance. EPA decided in June 1975 that funds for a FY 1975 IUCP would be reprogrammed. The IUCP concept of testing many classes of vehicles at several contractor's sites has been abandoned due to the lack of sufficient manpower to effectively oversee this magnitude of testing."

EPA also said it had developed and implemented a more efficient testing program for recall. However, as of December 10, 1976, EPA had not provided us with the details on the data it will be collecting under the new program. Therefore, we could not evaluate the adequacy of the data to be collected.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

NOV 12 1976

OFFICE OF  
PLANNING AND MANAGEMENT

Mr. Henry Eschwege, Director  
Community and Economic Development Division  
United States General Accounting Office  
Washington, D. C. 20548

Dear Mr. Eschwege:

As requested in your letter of August 16, 1976, we have reviewed your report to Congress entitled "Monitoring of Auto-Exhaust Emission Controls of Vehicles Actually on the Road." We concur with your conclusion that "the 1972 and 1973 in-use-compliance programs(IUCP) did not provide adequate test data that could be used in recall actions for vehicles not meeting emission standards." We would, however, like to point out that IUCP is only one of several sources of data obtained by the Environmental Protection Agency's(EPA) Recall Program. Other sources of information include certification information, consumer complaints, reports from vehicle fleet managers, vehicle configuration inspections conducted by EPA at assembly plants, manufacturers, emission audit programs, EPA emission surveillance programs and data from state inspection/maintenance programs. From information supplied by this surveillance network, classes of vehicles suspected of exceeding emission standards are selected for formal investigation.

The IUCP was the primary testing activity available to the recall program in the past; not as a source of surveillance information to identify suspect classes, but as a source of legally defensible data which would support recall action. In spite of the failure of IUCP to provide testing data of sufficient quality to be used in recall actions, the recall program has used other means to pursue to successful completion a number of investigations that have resulted in recalls promoted or ordered by EPA. These recalls involved repairs to the emission control systems of about two million cars.

Our recently-initiated contract for emissions testing and the mobile source enforcement facilities under construction will substantially augment the Agency's capability to perform litigation-quality confirmatory emission tests of vehicles on the road.

GAO's recommendation is "that before proceeding with any future IUCP's EPA determine what type of data are needed to support a recall of on-the-road vehicles that do not meet emission standards and design future programs to gather such data." We have determined what type of data is needed to support recall actions. The critical task is to determine the best method of obtaining such data. The IUCP did not produce such data because it was too ambitious and not enough scrutiny was applied to the testing contractors' performance. EPA decided in June 1975 that funds for a FY 1975 IUCP would be reprogrammed. The IUCP concept of testing many classes of vehicles at several contractor's sites has been abandoned due to the lack of sufficient manpower to effectively oversee this magnitude of testing. However, from the experience gained in reviewing the results of IUCP, we have developed and implemented a more efficient testing program designed to test only classes suspected of being in nonconformity with the standards as indicated by surveillance emission data. The data collected from this program are believed to be of a nature and quality that will be sufficient for the purposes of recalls. This program will primarily differ from IUCP in that a smaller number of vehicles will be tested in each individual investigation, and a substantial number of resources will be devoted to scrutiny of the testing.

I appreciate the opportunity to comment on this report prior to its submission to Congress.

Sincerely yours,



Alvin L. Alm  
Assistant Administrator  
for Planning and Management

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CONGRESS OF THE UNITED STATES  
 HOUSE OF REPRESENTATIVES  
 SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS  
 OF THE  
 COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE  
 WASHINGTON, D.C. 20515

August 18, 1975

Honorable Elmer B. Staats  
 Comptroller General of the United States  
 General Accounting Office  
 Washington, D. C.

Dear Mr. Staats:

I am writing with reference to Special Assistant Richard Falknor's memorandum of August 12, 1975 (copy attached) to Vincent Griffith about your staff reviewing the Environmental Protection Agency's monitoring of automobile-exhaust emission controls of vehicles actually on the road.

The Subcommittee would deeply appreciate your help in this regard. We look forward to receiving your advice on this EPA enforcement matter which may well be pertinent to our regulatory reform effort.

Sincerely,

JOHN E. MOSS  
 Chairman  
 Oversight and  
 Investigations Subcommittee

JEM:rff  
 Enclosure

SUMMARY OF STATE INSPECTION AND  
MAINTENANCE PROGRAMS

<u>Areas where inspection and maintenance programs are required</u>	<u>Status of inspection and maintenance programs as of March 1, 1976</u>
Alaska Fairbanks	None implemented.
Arizona Phoenix Tucson	Mandatory testing began January 2, 1976, and main- tenance is to become mandatory in January 1977.
California Los Angeles Sacramento San Diego San Francisco San Joaquin Valley	A pilot program in Riverside, Calif., began September 2, 1975. The Riverside program has mandatory inspection and voluntary maintenance. Programs have not been im- plemented in any other area of the State.
Colorado Denver	None implemented.
District of Columbia	Despite no legislation, funds were appropriated and facilities are operating for voluntary emissions testing of automobiles.
Illinois Chicago	Mandatory inspection began in June 1973. Because there is no enforcement, recent figures show less than 20 percent of the vehicles being inspected.
Indiana Indianapolis	None implemented.

## APPENDIX III

## APPENDIX III

<u>Areas where inspection and maintenance programs are required</u>	<u>Status of inspection and maintenance programs as of March 1, 1976</u>
Maryland	
Baltimore	None implemented
Suburbs of Washington, D.C.	None implemented
Massachusetts	
Boston	None implemented
Springfield	None implemented
New Jersey	
Trenton	The Nation's longest ongoing inspection and maintenance program began in July 1972 and became fully mandatory February 1, 1974.
Suburbs of New York, N.Y.	
Suburbs of Philadelphia, Pa.	
New York	
New York	Mandatory inspection and maintenance programs for taxicabs only.
Ohio	
Cincinnati	Fully mandatory inspection and maintenance began January 1, 1975, in Cincinnati and Norwood. The program began in Hamilton County in August 1975.
Oregon	
Portland	Voluntary inspection and maintenance began January 1974. Program became fully mandatory on July 1, 1975.
Pennsylvania	
Philadelphia	None implemented.
Pittsburgh	None implemented.
Texas	
Houston	None implemented.
San Antonio	None implemented.

Areas where inspection  
and maintenance programs  
are required

Status of inspection and  
maintenance programs as  
of March 1, 1976

## Utah

Salt Lake City

None implemented.

## Virginia

Suburbs of Washington, D.C.

None implemented.

## Washington

Seattle

None implemented.

Spokane

None implemented.

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