

EPA Evaluation of the Glynn-50 Device Under
Section 511 of the Motor Vehicle Information
and Cost Savings Act

This document contains several pages which may not reproduce well. Any questions concerning the legibility of these pages should be directed to: Merrill W. Korth, Environmental Protection Agency, Office of Mobile Source Air Pollution Control, Emission Control Technology Division, 2565 Plymouth Road, Ann Arbor, MI 48105, (313) 668-4299 or FTS 374-8299.

by

John C. Shelton

August 1981

Test and Evaluation Branch
Emission Control Technology Division
Office of Mobile Source Air Pollution Control
U.S. Environmental Protection Agency

6560-26

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 610]

[FRL _____]

FUEL ECONOMY RETROFIT DEVICES

Announcement of Fuel Economy Retrofit Device Evaluation
for "Glynn-50"

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Fuel Economy Retrofit Device Evaluation.

SUMMARY: This document announces the conclusions of the EPA evaluation of the "Glynn-50" device under provisions of Section 511 of the Motor Vehicle Information and Cost Savings Act.

BACKGROUND INFORMATION: Section 511(b)(1) and Section 511(c) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2011(b)) requires that:

(b)(1) "Upon application of any manufacturer of a retrofit device (or prototype thereof), upon the request of the Federal Trade Commission pursuant to subsection (a), or upon his own motion, the EPA Administrator shall evaluate, in accordance with rules prescribed under subsection (d), any retrofit device to determine whether the retrofit device increases fuel economy and to determine whether the representations (if any) made with respect to such retrofit devices are accurate."

(c) "The EPA Administrator shall publish in the Federal Register a summary of the results of all tests conducted under this section, together with the EPA Administrator's conclusions as to -

- (1) the effect of any retrofit device on fuel economy;
- (2) the effect of any such device on emissions of air pollutants; and
- (3) any other information which the Administrator determines to be relevant in evaluating such device."

EPA published final regulations establishing procedures for conducting fuel economy retrofit device evaluations on March 23, 1979 [44 FR 17946].

ORIGIN OF REQUEST FOR EVALUATION: On June 2, 1981, the EPA received a request from the Hopkins-Glynn Corp. for evaluation of a fuel saving device known as the "Glynn-50". This device is claimed to reduce exhaust emissions and save fuel.

Availability of Evaluation Report: An evaluation has been made and the results are described completely in a report entitled: "EPA Evaluation of the Glynn-50 Device Under Section 511 of the Motor Vehicle Information and Cost Savings Act," report number EPA-AA-TEB-511-81-28 consisting of 22 pages including all attachments.

Copies of this report may be obtained from the National Technical Information Service by using the above report number. Address requests to:

National Technical Information Service

U.S. Department of Commerce

Springfield, VA 22161

Phone: Federal Telecommunications System (FTS) 737-4650

Commercial 703-487-4650

Summary of Evaluation

EPA fully considered all of the information submitted by the device manufacturer in his application. The device description and supporting text indicated that the device should improve combustion efficiency. However, no test data was submitted with the application.

While thorough mixing of fuel and air and even distribution will enhance the combustion process, there is no evidence that the use of the Glynn-50 device will result in any improvements over an unmodified induction system. The use of smaller jets in the carburetor will tend to enlean the mixture but may cause driveability problems in some vehicles. Based on EPA's experience with similar devices, there is no reason to support any claims for improvements in fuel economy or exhaust emissions due to the use of the Glynn-50.

FOR FURTHER INFORMATION CONTACT: Merrill W. Korth, Emission Control Technology Division, Office of Mobile Source Air Pollution Control, Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan 48105, (313) 668-4299.

Date

Kathleen Bennett
Assistant Administrator
for Air, Noise, and Radiation

EPA Evaluation of the "Glynn-50" Device under Section 511 of the Motor Vehicle Information and Cost Savings Act

The following is a summary of the information on the device as supplied by the Applicant and the resulting EPA analysis and conclusions.

1. Marketing Identification of the Device:

Glynn-50

2. Inventor of the Device and Patents:

A. Inventor

Mr. Percy Glynn
R.D. #1
3041 Briner Road
Middletown, PA 17057

B. Patent

Applicant stated "The necessary papers are being filed by our patent attorney."

3. Manufacturer of the Device:

The Hopkins-Glynn Corp.
140 South Main Street
Madisonville, KY 42431

4. Manufacturing Organization Principals:

Mr. Barney Q. Hopkins - President
Mr. Percy Glynn - Vice President
Mr. Jerry F. Wilbur, Jr. - Treasurer
Mr. Curtis D. McCoy, Jr. - Secretary

5. Marketing Organization in U.S. making Application:

The Hopkins-Glynn Corp.
140 South Main Street
Madisonville, KY 42431

6. Applying Organization Principals:

Mr. Barney Q. Hopkins - President
Mr. Percy Glynn - Vice President
Mr. Jerry F. Wilbur, Jr. - Treasurer
Mr. Curtis D. McCoy, Jr. - Secretary

7. Description of Device:

A. Purpose of the Device (as supplied by Applicant):

"The primary purpose of the device is fuel economy and it should produce lower exhaust emissions."

B. Theory of Operation (as supplied by Applicant):

"The theory of operation is a venturi box fits under the carburetor with two heat sources which vaporizes the fuel better and the carburetor jet is reduced in size and a fuel regulator to prevent over supply of fuel. As the fuel goes down the venturi the fuel becomes more combusive by better vaporization and expansion of air and gasoline because of the heat sources. Thereby reducing the amount of fuel requirement, which is accomplished by reducing the size of the jet and the fuel pressure regulator eliminates excessive pressure."

C. Detailed Description of Construction (as supplied by Applicant):

See attached sketch "A" (Attachment B).

8. Applicability of the Device (as supplied by Applicant):

"The device is applicable to all carbureted gas powered vehicles with very minor adaptations."

9. Costs (as supplied by Applicant):

Not supplied.

10. Device Installation - Tools and Expertise Required (as supplied by Applicant):

(a) "Remove the carburetor and install the device between the carburetor and manifold; cut the gas line and install the fuel regulator; install smaller jet.

(b) "Applies to all carbureted gas powered vehicles.

(c) "The tools required are 1/2" wrench, screwdriver, small pipe cutter and 9/16 wrench.

(d) "No equipment necessary to check proper installation.

(e) "No adjustments necessary.

(f) "The average mechanical skill is necessary."

11. Device Operation (as supplied by Applicant):

"No instructions are necessary which pertain to its usage."

12. Maintenance (claimed):

"Maintenance is not necessary."

13. Effects on Vehicle Emissions (non-regulated) (claimed):

"Less fuel is used therefore less emission and pollutants should result."

14. Effects on Vehicle Safety (claimed):

"The device will not cause any unsafe condition."

15. Test Results (Regulated Emissions and Fuel Economy) (submitted by Applicant):

The applicant stated that Automotive Testing Laboratories of East Liberty, Ohio would test on June 8 and 9, 1981 and the results would promptly be furnished to EPA. To our knowledge, this testing was not performed and no test results have been supplied to EPA.

16. AnalysisA. Description of the Device:

The device is judged to be inadequately described. A brief description is contained under Section 8, Description of Device, of the application (Attachment B).

B. Applicability of the Device:

As stated in the application, the device is applicable to gasoline-powered vehicles equipped with carburetors.

C. Costs:

Not supplied.

D. Device Installation - Tools and Expertise Required:

A skilled mechanic with ordinary tools should be able to install the device, although complications could arise due to the alteration of carburetor linkages. In some cases, the additional height of the carburetor could also prevent the hood from closing properly.

E. Device Operation:

The instructions were incomplete and no mention was made of any operating instructions being required.

F. Device Maintenance:

The device does not appear to require maintenance.

G. Effects on Vehicle Emissions (non-regulated):

The device is claimed to lower emissions, but no data to support these claims were ever submitted.

H. Effects on Vehicle Safety:

One safety problem that might arise is leakage of fuel if the pressure regulator is not installed or secured properly. There is also the problem that the throttle linkage may not operate correctly.

I. Test Results Supplied by Applicant:

The applicant did not submit any test data in accordance with the Federal Test Procedure or the Highway Fuel Economy Test. The requirement for test data following these procedures is stated in the application test policy documents that EPA sends to potential applicants*. The applicant did state that Automotive Testing Labs of East Liberty, Ohio would test the device on June 8 and 9 1981 and the results would promptly be furnished to EPA. To our knowledge, this testing was not performed.

17. Conclusions

While thorough mixing of fuel and air and even distribution will enhance the combustion process, there is no evidence that the use of the Glynn-50 device will result in any improvements over an unmodified induction system. The use of smaller jets in the carburetor will tend to enlean the mixture but may cause driveability problems in some vehicles. Based on EPA's experience with similar devices, there is no reason to support any claims for improvements in fuel economy or exhaust emissions due to the use of the Glynn-50.

* From EPA 511 Application test policy documents:

Test Results (Regulated Emissions and Fuel Economy):

Provide all test information which is available on the effects of the device on vehicle emissions and fuel economy.

The Federal Test Procedure (40 CFR Part 86) is the only test which is recognized by the U.S. Environmental Protection Agency for the evaluation of vehicle emissions. The Federal Test Procedure and the Highway Fuel Economy Test (40 CFR Part 600) are the only tests which are normally recognized by the U.S. EPA for evaluating vehicle fuel economy. Data which have been collected in accordance with other standardized fuel economy measuring procedures (e.g. Society of Automotive Engineers) are acceptable as supplemental data to the Federal Test Procedure and Highway Fuel Economy Data will be used, if provided, in the preliminary evaluation of the device. Data are required from the test vehicle(s) in both baseline (all parameters set to manufacturer's specifications) and modified forms (with device installed).

List of Attachments

- Attachment A Letter, EPA to Mr. Hopkins of Hopkins-Glynn Corp. January 6, 1981.
- Attachment B 511 application from Mr. Hopkins to EPA, June 2, 1981.
- Attachment C Letter, EPA to Mr. Hopkins, June 30, 1981.
- Attachment D Letter, EPA to Mr. Hopkins, July 22, 1981.

January 6, 1981

Mr. Barney O. Hopkins
140 South Main Street
Madisonville, KY 42431

Dear Mr. Hopkins:

This letter is in response to your inquiry of 1/5/81 regarding an EPA evaluation of your device. The Environmental Protection Agency is charged by Congressional mandate to evaluate fuel economy and emission control devices. While the EPA does not actually "approve" such devices, it does conduct evaluations for the purpose of increasing the common knowledge in the area. For this reason, the outcome of any testing by EPA becomes public information. It is this information which may be cited although no claims can be made that any EPA findings constitute "approval" of the device or system.

Enclosed with this letter is a packet of materials which you will need to apply for an EPA evaluation of your device. This packet consists of 1) an application format, 2) a document entitled "EPA Retrofit and Emission Control Device Evaluation Test Policy" and 3) a copy of the applicable Federal Regulations.

In order for the EPA to conduct an evaluation of your device, we must have an application. Once you have reviewed all the documents in the packet, you should prepare an application in accordance with the guidelines of the application format. A critical part of the application is the substantiating test data. The required test results will have to be obtained at a laboratory of your choice. Such testing would be conducted at your expense. A list of laboratories which are known to have the equipment and personnel to perform acceptable tests has been included in the enclosed packet. If you desire, we can assist in the development of a satisfactory test plan.

There are, however, several aspects concerning testing at an outside laboratory which I would like to bring to your attention at this time:

Minimum Test Requirements - Although different types of devices may require a more complex test plan, the minimum we require involves two vehicles and two test sequences run in duplicate. The vehicles should be selected from those listed in Table 1; if possible. Each vehicle is to be set to manufacturer's tune-up specifications for the baseline tests.

The tests are conducted in a "back-to-back" manner, once with the vehicle in baseline condition and again with the device installed with no vehicle adjustments between tests. If installation of the device also involves some adjustments, e.g. timing, fuel-air mixture, choke or idle speed, another test sequence with only these adjustments should be inserted between the first and last. Also as a minimum, the test sequence shall consist of a hot-start LA-4 portion (bags 1 and 2) of the Federal Test Procedure (FTP) and a Highway Fuel Economy Test (HFET). The details of these tests are contained in the enclosed packet. Although only a hot-start FTP is required to minimize the costs to you, you are encouraged to have the entire cold-start test performed since any testing and evaluation performed by EPA will be based on the complete FTP and you may wish to know how a vehicle with your device performs over this official test. As a final requirement, the personnel of the outside laboratory you select should perform every element of your test plan. This includes preparation of the test vehicle, adjustment of parameters and installation of the device.

Submission of Data - We require that all test data obtained from the outside laboratories in support of your application be submitted to us. This includes any results you have which were declared void or invalid by the laboratory. We also ask that you notify us of the laboratory you have chosen, when testing is scheduled to begin, what tests you have decided to conduct, allow us to maintain contact with the laboratory during the course of the testing, and allow the test laboratory to directly answer any questions at any time about the test program.

Cost of the Testing - The cost of the minimum test plan (two vehicles, two test sequences in duplicate) described above should be less than \$2000 per vehicle and less than \$4000 for the total test at any of the laboratories on the list. You will have to contact them individually to obtain their latest prices.

Outcome of the Tests - Although it is impossible to accurately predict the overall worth of a device from a small amount of testing, we have established some guidelines which will help you determine whether the test results with your device should be considered encouraging. These values have been chosen to assure both of us that a real difference in fuel economy exists and that we are not seeing only the variability in the results. The table below presents the minimum number of cars that need to be tested for varying degrees of fuel economy improvement assuming a typical amount of variability in fuel economy measurement. For a minimum test plan which was conducted on a fleet of two cars, the average improvement should be at least 8%. If at least an 8% difference in average fuel economy can be shown, then we would be able to say statistically at the 80% confidence level that there is a real improvement. Similarly, we would expect a minimum of 5% improvement for a fleet of 5 vehicles. Test results which display a significant increase in emission levels should be reason for concern.

Minimum Fuel Economy Improvements versus Size of Test Fleet

<u>Fleet Size</u>	<u>Average Improvement Required</u>
2	9%
3	7%
4	6%
5	5%
10	4%
25	2%

Once we receive your application, it will be reviewed to determine if it meets the requirements listed in the format. If your application is not complete, we will ask you to submit further information or data. After any missing information has been submitted, your application will be reconsidered and once it meets our requirements, you will be advised of our decision whether or not EPA will perform any confirmatory testing. Any EPA testing will be performed at no cost to you and you will be given the opportunity to concur with our test plan. Once this testing is complete, an evaluation report will be written. If no further testing is required, the report will be written solely on the basis of the test data submitted and our engineering analysis.

Despite the current backlog and increasing number of inquiries regarding fuel economy device evaluations, the EPA intends to process your application in as expeditious a manner as possible. We have established a goal of twelve weeks from the receipt of a complete application to the announcement of our report. The attainment of this objective requires very precise scheduling and we are depending on the applicant to respond promptly to any questions or to submit any requested data. Failure to respond in a timely manner will unduly delay the process. In the extreme case, we may consider lack of response as a withdrawal of the application.

I hope the information above and that contained in the enclosed documents will aid you in the preparation of an acceptable application for an EPA evaluation of your device. I will be your contact with EPA during this process and any subsequent EPA evaluation. My address is EPA, Motor Vehicle Emission Laboratory, 2945 Plymouth Road, Ann Arbor, Michigan, 48105. The telephone number is (313) 668-4200. Please contact me if you have any questions or require any further information.

Sincerely,

Merrill W. Korth, Device Evaluation Coordinator
Emission Control Technology Division

Enclosures



June 2, 1981
140 S. Main St.
Madisonville, KY
42431

Mr. Merrill W. Korth
Environmental Protection Agency
Motor Vehicle Emmission Laboratory
2565 Plymouth Road
Ann Arbor, Michigan
48105

Dear Mr. Korth:

Please consider this letter our application to the EPA to evaluate our fuel economy retrofit device, as specified in Section 511 of the Motor Vehicle Information and Cost Savings Act.

The following is the information you requested and in the format you specified:

1. TITLE:

Application for Evaluation of a Fuel Economy Retrofit Device
Under Section 511 of the Motor Vehicle Information and Cost
Savings Act.

2. MARKETING IDENTIFICATION OF THE DEVICE:

The Glynn-50

3. IDENTIFICATION OF INVENTOR AND/OR PATENT PROTECTION:

(a) The inventor is: Mr. Percy Glynn, R.D. #1, 3041 Briner Rd,
Middletown, PA. 17057

(b) The necessary papers are being filed by our Patent Attorney.

4. IDENTIFICATION OF DEVICE MANUFACTURERS:

The device will be manufactured by:
The Hopkins-Glynn Corporation
140 South Main Street
Madisonville, Kentucky
42431

5. IDENTIFICATION OF MANUFACTURING ORGANIZATION PRINCIPALS:

Barney Q. Hopkins, President
Percy Glynn, Vice President
Jerry F. Wilbur, Jr., Treasurer
Curtis D. McCoy, Jr., Secretary

6. IDENTIFICATION OF ORGANIZATION MAKING APPLICATION:

The Hopkins-Glynn Corporation
140 South Main Street
Madisonville, Kentucky
42431

7. IDENTIFICATION OF APPLYING ORGANIZATION'S PRINCIPALS:

Barney Q. Hopkins
Percy Glynn
Jerry F. Wilbur, Jr.
Curtis D. McCoy, Jr.

All correspondence and communication as a result of this application is to be directed to

Barney Q. Hopkins
140 South Main Street
Madisonville, Kentucky 42431
(502)821-1985

8. DESCRIPTION OF DEVICE:

- (a) The primary purpose of the device is fuel economy and it should produce lower exhaust emissions.
- (b) The theory of operation is a venturi box fits under the carburetor with two heat sources which vaporizes the fuel better and the carburetor jet is reduced in size and a fuel regulator to prevent over supply of fuel. As the fuel goes down the venturi the fuel becomes more combustive by better vaporization and expansion of air and gasoline because of the heat sources. Thereby reducing the amount of fuel requirement, which is accomplished by reducing the size of the jet and the fuel pressure regulator eliminates excess fuel pressure.
- (c) See attached sketch "A"

9. APPLICABILITY OF THE DEVICE:

The device is applicable to all carburetored gas powered vehicles with very minor adaptations.

10. DEVICE INSTALLATION:

- (a) Remove the carburetor and install the device between the carburetor and manifold; cut the gas line and install the fuel regulator; install smaller jet.
- (b) Applies to all carburetored gas powered vehicles.

- (c) The tools required are ½" wrench, screwdriver, small pipe cutter and 9/16" wrench.
- (d) No equipment necessary to check proper installation.
- (e) No adjustments necessary.
- (f) The average mechanical skill is necessary.

11. DEVICE OPERATION:

No instructions are necessary which pertain to its usage.

12. DEVICE MAINTENANCE:

Maintenance is not necessary.

13. EFFECTS OF VEHICLE EMISSIONS:

Less fuel is used therefore less emission and pollutants should result.

14. EFFECTS ON VEHICLE SAFETY:

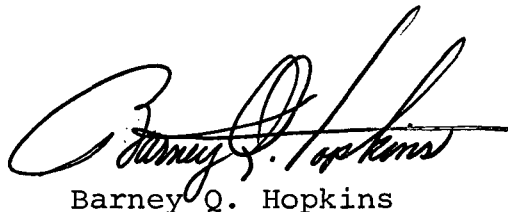
The device will not cause any unsafe condition.

15. TEST RESULTS:

Automotive Testing Laboratories of East Liberty, Ohio will conduct test on June 8 and 9, 1981 and the results will promptly be furnished to the EPA Laboratory in Ann Arbor, Michigan.

Mr. Korth, if there are any further requirements I would appreciate it very much if you would promptly get in touch with me at the above address and phone. I will look forward to meeting you in the near future.

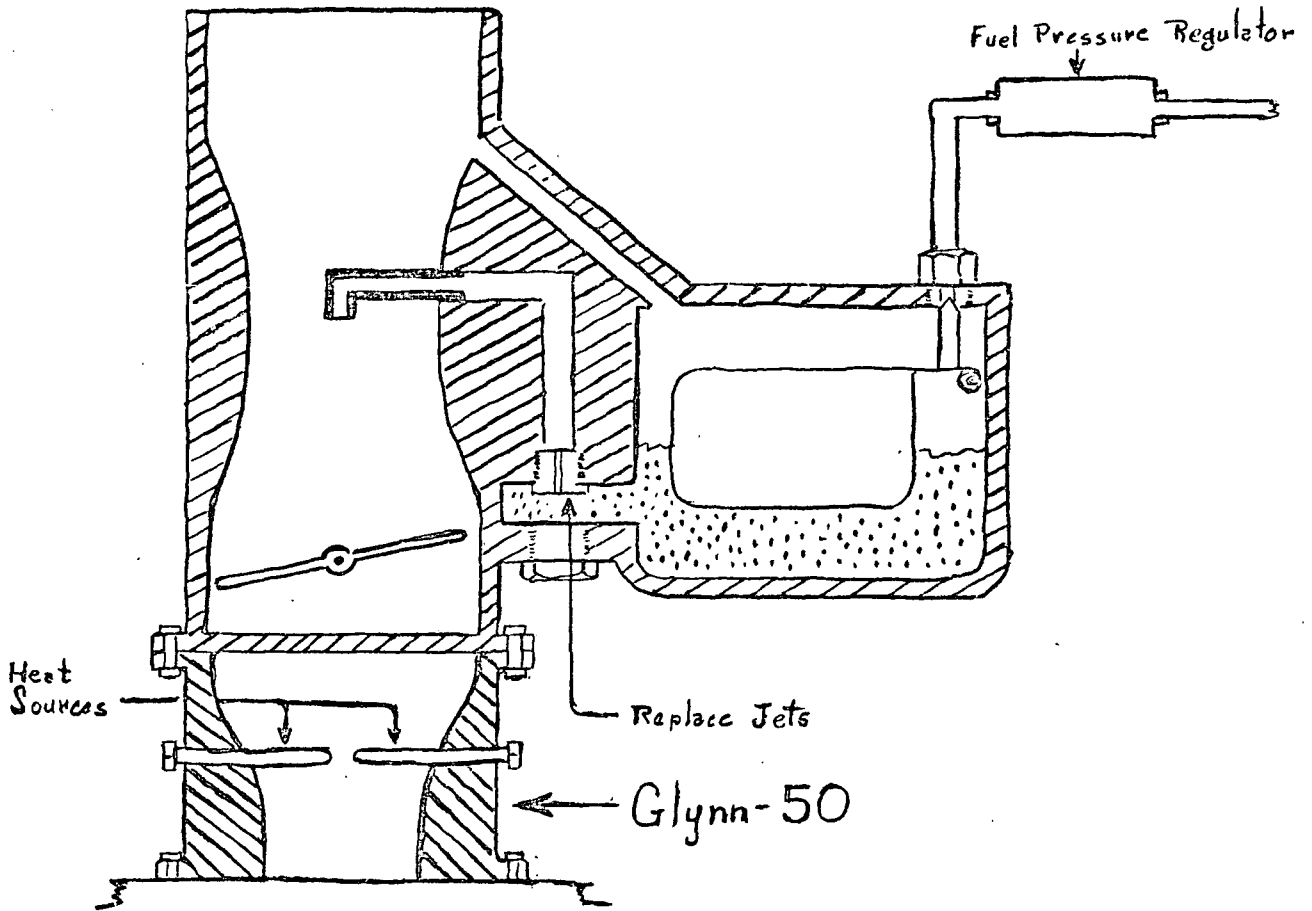
Sincerely,



Barney Q. Hopkins

BQH/reh

Sketch "A"



The Glynn - 50
by
The Hopkins-Glynn Corporation
Madisonville, Kentucky

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ANN ARBOR, MICHIGAN 48105



June 30, 1981

OFFICE OF
AIR, NOISE AND RADIATION

Mr. Barney Q. Hopkins
180 South Main Street
Madisonville, KY 42431

Dear Mr. Hopkins:

We have received your recent application for an EPA evaluation of "The Glynn-50", a fuel economy retrofit device. We have made a preliminary review of your application and will undertake a complete review upon receipt of appropriate test data in accordance with the provisions of my original letter to you. Our preliminary comments are as follows.

1. Section No. 8(c) does not provide sufficient descriptive information for the following parameters.
 - a. Fuel pressure regulator: Does one size/design apply to all engines?
 - b. Fuel metering jets: Does one size/design fit all carburetors? How much is the diameter of the jet reduced?
 - c. Venturi: Does one size/design fit all engines? How much is the inside diameter of the venturi throat reduced?
 - d. Heat source: Does one size/design fit all engines? What is the method of operation (e.g. electric, exhaust gas, etc.)? Is the heat source operating continuously or intermittently? If electric, what is/are the power rating(s)? Is data available which would show the change in temperature of the air-fuel mixture as a result of the heat source? If so, please provide such data.
2. Section No. 13 does not address non-regulated pollutants adequately. Please identify which pollutants were measured and provide the specific results.
3. Section No. 14 states "the device will not cause any unsafe condition". Because "The Glynn-50" is changing the air-fuel mixture ratio and the engine's volumetric efficiency, EPA is concerned the drivability characteristics of a vehicle may be adversely affected. Does the statement within Section No. 14 take into consideration the driveability aspect? With respect to the affect on driveability, has an evaluation been made for the vast number of engine/vehicle calibrations available on late model vehicles? Is test data available which would provide assurance that the statement is applicable to all vehicles? If so, please provide such data.
4. Section No. 15 indicates that "The Glynn-50" will be tested by Automotive Testing Laboratories (ATL) of East Liberty, Ohio.

Following are a few points regarding the testing I would like to stress.

First, to assure the test vehicles are fully broken in, we ask that each vehicle have at least 4000 miles accumulated prior to start of testing. Selected test vehicles should a) be typical of most vehicles being driven today, b) be in good mechanical condition and, c) have a representative history of use. Please refer to the list of suitable makes and models I provided to you earlier.

Second, the minimum test requirements consist of at least two vehicles. Each vehicle is subjected to baseline tests which consist of a Federal Test Procedure (FTP) followed by a Highway Fuel Economy Test (HFET). The FTP and HFET test sequence is then repeated, thus resulting in four baseline tests per vehicle. The retrofit device is then installed and the same test sequence is repeated, thereby giving a total of four FTP and four HFET per vehicle. Of course, this does not include void tests. If installation of the device also involves some adjustments, (e.g., timing, fuel-air mixture, choke or idle speed), another test sequence with only these adjustments should be inserted between the baseline test sequence and the installation of the device.

Third, all test data should include test location (e.g., test facility name), test cell number, test number, and test date. This will facilitate EPA's tracking of data during the evaluation.

Fourth, your supporting test data should include a detailed description of each test vehicle used in the test program. This includes, but is not limited to the following information:

- (1.) Vehicle Identification Number
- (2.) Model Year
- * (3.) Model
- * (4.) Body Style (e.g., 2 door with hatchback)
- * (5.) Curb Weight
- (6.) Engine Displacement
- (7.) Engine Family (from the emission sticker in the engine compartment)
- (8.) Fuel System type (e.g., 2 barrel carburetor)
- (9.) Ignition System Type (e.g., high energy breaker-less)
- (10.) Emission Control System Type (e.g., air injection reactor (AIR), exhaust gas recirculation (EGR))

- (11.) Transmission Type (e.g., automatic, manual)
- (12.) Number of transmission gears (noting overdrive or lock up features)
- (13.) Drive axle ratio
- (14.) Tire type, size, air pressures and brand name.

*Please refer to 40 CFR 86.079-2 and 40 CFR 86.080-2 titled: "Definitions". Copies of the regulations containing these sections are enclosed. We would like to comment on your test plan before testing begins.

In order for EPA to process our evaluations efficiently, we have established a schedule for each. I ask that you respond to this letter by July 17 and plan to submit the required test data by August 3. If you have any questions or require further information, please contact me.

Sincerely,

Merrill W. Korth

Merrill W. Korth, Device Evaluation Coordinator
Test and Evaluation Branch

Enclosures

cc: S. Syria



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ANN ARBOR, MICHIGAN 48105

OFFICE OF
AIR AND WASTE MANAGEMENT

July 22, 1981

Mr. Barney Q. Hopkins
180 South Main Street
Madisonville, KY 42431

Dear Mr. Hopkins:

In a letter dated June 30, 1981, we asked for additional information on your application for an EPA evaluation of "The Glynn-50". We also asked that you respond to our request by July 17.

We have not yet received your response. If you are still interested in pursuing an EPA evaluation, I ask that you contact me by August 6. Otherwise, we will complete our evaluation based on the information we have. My telephone number is (313) 668-4299. I am looking forward to hearing from you.

Sincerely,

Handwritten signature of Merrill W. Korth in cursive.

Merrill W. Korth, Device Evaluation Coordinator
Emission Control Technology Division