EPA Evaluation of the Gas Meiser I under Section 511 of the Motor Vehicle Information and Cost Savings Act

by

Edward Anthony Barth

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Test and Evaluation Branch
Emission Control Technology Division
Office of Mobile Source Air Pollution Control
Environmental Protection Agency
ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 610]

[FRL __________]

FUEL ECONOMY RETROFIT DEVICES

Announcement of Fuel Economy Retrofit Device Evaluation

for "Gas Meiser I"

AGENCY: Environmental Protection Agency (EPA)


SUMMARY: This document announces the conclusions of the EPA evaluation of the "Gas Meiser I" 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 December 17, 1980, the EPA received a request from Gas Meiser Corporation for evaluation of a fuel saving device termed "Gas Meiser I". This Device is claimed to "... increase fuel economy by pre-heating the fuel." The Device consists principally of a gasoline hose wrapped around the vehicle's upper radiator hose.

Availability of Evaluation Report: An evaluation has been made and the results are described completely in a report entitled: "EPA Evaluation of the Gas Meiser I under Section 511 of the Motor Vehicle Information and Cost Savings Act," report number EPA-AA-TEB-511-81-1 consisting of 18 pages including all attachments.

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

National Technical Information Center
U.S. Department of Commerce
Springfield, VA 22161
Phone: Federal Telephone System (FTS) 737-4650
Commercial 703-487-4650
Summary of Evaluation

The stated method of operation of the "Gas Meiser I" is that the "Gas Meiser I" is designed to preheat the fuel and thereby increase a vehicle's fuel economy.

The Applicant submitted no test data with the application for evaluation. Analysis of the information submitted by the Applicant did not prove that use of the "Gas Meiser I" would enable a vehicle operator to improve a vehicle's fuel economy.

Previous EPA testing of another device that preheated the fuel showed that preheating the fuel gave no emissions or fuel economy benefits.

Thus, there is no technical basis to support any claims for a fuel economy improvement due to the use of the "Gas Meiser I" device.

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.

Edward F. Tuerk
Acting Assistant Administrator
for Air, Noise, and Radiation
Evaluation of the Gas Meiser I 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 submitted by the Applicant and the resulting EPA analysis and conclusions.

1. **Marketing Identification of the Device:**

   "Gas Meiser I"

2. **Inventor of the Device and Patents:**

   **A. Inventor**
   
   William LaBombard  
   1516 Oakes Street  
   Marinette, WI 54143

   William Blemke  
   1516 1/2 Oakes Street  
   Marinette, WI 54143

   **B. Patent**

   "No Patent - 6 feet approved 5/16" Neoprene Hose, 2 approved hose clamps, 2 wire ties

   "Mr. Redman of Wisconsin Department of Agriculture Trade & Consumer Protection indicated that at most, a person could expect a 10% increase. See enclosure #1." Enclosure #1 is Attachment A.

3. **Manufacturer of the Device:**

   "Pending"

4. **Manufacturing Organization Principals:**

   "Pending"

5. **Marketing Organization in U.S. Making Application:**

   Gas Meiser Corporation  
   1516 Oakes Street  
   Marinette, WI 54143

6. **Applying Organization Principals:**

   William LaBombard - President and Treasurer  
   Verna LaBombard - Vice-President and Secretary  
   William Blemke - Sales Manager and Representative in Communications
7. Description of Device:

(a) **Purpose of the Device (as supplied by Applicant):** "To increase fuel economy."

(b) **Theory of Operation (as supplied by Applicant):** "To expand the atomic structure of gasoline by preheating."

(c) **Detailed Description of Construction and Operation (as supplied by Applicant):** "6 feet approved 5/16" Neoprene hose, 2 approved hose clamps, 2 wire ties. Preheats the gas with the heat from the top radiator hose expanding the atomic structure of the gas which increases the gas mileage. See enclosure #2. Enclosure #2 was the device plus the General Instructions which were also provided as Enclosure #3. (Enclosure #3 is Attachment B of this report.)

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

"All combustible gas engines except diesel and air cooled. Gas Meiser I will be marketed in one size only and will fit all automobiles except diesel and air cooled."

9. **Device Installation (as supplied by Applicant):**

"a. General Instructions - See Enclosure #3": (Enclosure #3 is Attachment B.)

"b. All combustible engines except diesel and air cooled"

"c. Tube cutter, screw driver"

"d. None"

"e. Reduce wrapping if vapor lock occurs"

"f. Minimal mechanical ability"

10. **Device Operation (as supplied by Applicant):**

"See Enclosure #3"

11. **Device Maintenance (as supplied by Applicant):**

"Maintenance Free"

12. **Effect on Vehicle Emissions (non-regulated) (as supplied by Applicant):**

"No independent test results available"

13. **Effects on Vehicle Safety (as supplied by Applicant):**

"See Enclosure #4" (Enclosure #4 is Attachment C).
14. **Test Results - Regulated Emissions and Fuel Economy (submitted by Applicant):**

"No independent test results available"

15. **Analysis**

A. **Description of Device:**

The Device consists principally of a gasoline hose wrapped around the vehicle's upper radiator hose. The Device is judged to be able to heat the fuel to some limited extent.

B. **Applicability of the Device:**

The applicability of the device, as stated in Section 8, "All combustible gas engines except diesel and air cooled" is judged to be valid.

C. **Device Installation - Tools and Expertise Required:** were identified in Section 9

   (1) The general instructions provided are judged to be adequate for the physical installation of the device.

   (2) The claim that the instructions are applicable to "all combustible engines except diesel and air cooled" (Section 8.), i.e. no vehicle specific instructions are required, is judged to be correct.

   (3) The tools identified in Section 9.c. are judged to be adequate for installation of the Device.

   (4) The statement that no special equipment is required for installation checkout is judged to be correct.

   (5) The Device is judged to not require adjustments nor require vehicle adjustments. If vapor lock problems are encountered, the Applicant suggests reducing the number of wrappings of the "Gas Meiser I" around the engine's upper radiator hose. This is judged to be able to alleviate any vapor lock problems induced by the device.

D. **Device Operation:**

The Applicant refers to the installation instructions for Device Operating instructions. The only post installation instructions contained therein relate to vapor lock. This is deemed adequate.

F. **Device Maintenance:**

Applicant claims the Device is "Maintenance Free" in Section 11. This is true in the general usage of the term maintenance, the
added Device fuel fittings and fuel line installed in the vehicle, would require the normal periodic inspection accorded similar components in the vehicle.

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

The Applicant submitted no test data, Section 12. However, since the Device does not appreciably modify the vehicle's emission control system or powertrain, it appears reasonable to assume that the Device would not significantly affect a vehicle's non-regulated emissions.

H. Effect on Vehicle Safety:

The Applicant's enclosure on safety is a letter from his attorney to an automotive association (see Attachment C). In this letter the claims for safety appear to be based on three points:

(1) the fuel is not heated above the temperature of the automobile coolant.

(2) the fuel is not pressurized or vaporized.

(3) no problems have been encountered in the unspecified number of installations made.

When properly installed, it appears unlikely that the Device would adversely affect vehicle safety in normal usage and that the Applicant's claim is justified.

However, if vapor lock is encountered, the Applicant's solution of reducing the wrappings on the radiator hose will require disconnecting the fuel line. If this was done on a hot, stalled vehicle, fuel would be spilled in the hot engine compartment. To minimize this hazard, the Applicant should specify that this procedure be only performed after the engine has cooled.

Also, in event of an accident, the vehicle's fuel system would be more vulnerable due to the added length of the fuel line wrapped around the upper radiator hose.

I. Test Results Supplied by Applicant:

Applicant did not submit any test data per the Federal Test Procedure or Highway Fuel Economy Test. These are the only EPA
recognized test procedures(1). This requirement for the test data following these procedures is stated in the Application Format and two subsequent letters EPA sent to the applicant (Attachments D, E, and F). Therefore, there was no technical basis to support the Applicant's claim of increased fuel economy.

J. EPA Testing of a Fuel Preheater:

EPA tested a fuel preheater(2) which used water from the engine block to heat the fuel in a copper tube and shell heat exchanger. This device could be expected to add more heat to the fuel than "Gas Meiser I" because the copper tube and shell design is a more efficient heat transfer mechanism than the "Gas Meiser I" neoprene hose wrapped around the upper radiator hose. Also it would have acted sooner because the engine would not first have to raise the engine coolant to the thermostat setting for the hot coolant to flow through the upper radiator hose.

This fuel preheater did not improve vehicle fuel economy. Since the "Gas Meiser I" could be expected to receive less heat from the coolant, in the absence of valid test data there is no reason to expect the "Gas Meiser I" to improve vehicle fuel economy nor justification for EPA to test the Device to further investigate the claim for fuel economy.

16. Conclusion:

The Applicant submitted no test data that proved that the "Gas Meiser I" would improve vehicle fuel economy.

EPA previously tested a similar device which failed to show a fuel economy benefit. Therefore, it is unlikely that testing of the device would have shown a fuel economy benefit.

(1) From EPA 511 Application Format:
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 CRF 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 CRF 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 the Highway Fuel Economy Data and 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).

(2) Evaluation of the Fuel Xpander, EPA-AA-TAEB-80-2
Mr. William Blenke
P. O. Box #4
Bryant, WI 54416

RE: Gas Preheater

Dear Bill:

I believe that I have some answers to the questions that you raised regarding the development and marketing of your gas preheater.

As far as I have been able to determine, there is no State Agency that would test your product before marketing can start.

However, I did talk with a Mr. Tom Redman at the Wisconsin Department of Agriculture and Trade, Consumer Protection Division, 801 W. Badger Road, Madison, WI 53702, (608) 266-7222, regarding the proposed advertising and marketing of your product.

He is forwarding to us a law which went into effect on April 30, regulating the advertising and marketing of devices intended to increase or improve fuel mileage in automobiles and motor vehicles, which is enclosed.

What we have to avoid, of course, is making a misleading or unsubstantiated claim about the increase that a customer could expect by buying and using your product.

Mr. Redman indicated to me that the University scientists they have talked with have indicated that at most, a person could expect only a 10 per cent increase by the use of any gas preheater or vaporizer in the gas line as yours is set up.

They talk about this as the maximum, theoretical efficiency increase.
GAS MEISER I

Read Instructions Before Installation

1. Cut fuel line approximately 6" from carburetor WITH TUBE CUTTER.

2. Connect 1 end of hose to line from carburetor and secure with clamp.

3. Begin wrapping fuel line hose around radiator hose. Be sure fuel line hose is wrapped tightly to receive top performance from GAS MEISER I.

4. After wrapping fuel line hose approximately 4 to 6 times, depending on engine size, connect other end of hose to fuel line from fuel pump and secure with clamp.

5. After fuel line hose is connected on both ends, use plastic wire ties to secure GAS MEISER I to radiator hose.

6. Before starting engine, make sure gas filter and air cleaner are clean.

7. Start engine to make sure all lines are connected properly.

8. If vapor lock should occur, reduce wrappings on radiator hose.
September 15, 1980

Mr. Gary L. Antoniewicz
Staff Counsel
Wisconsin Automobile & Truck Dealers Assoc.
25 W. Main Street
P.O. Box 5345
Madison, Wis. 53705

Re: William Blemke — Gas-Meiser Gas Preheater

Dear Gary:

I have your letter of September 12, 1980, and expected that sooner or later my correspondence would cross your desk when I learned that the Wisconsin Automobile & Truck Dealers Association was involved.

I make no claims to having any engineering skills or expertise, but I would like to take just a couple minutes of your time to explain the principles involved in Mr. Blemke's "Gas Preheater".

Mr. Blemke has developed two models; the first model uses a right angle plumbing joint and the gas line runs through a copper tubing surrounded by hot water from the automobile or truck's cooling system.

The gasoline under no circumstances is heated above the temperature that the coolant obtains during normal engine operation of approximately 190° to 200°.

Mr. Blemke's second model involves using six feet of black neofrene gas line tubing which is wrapped directly around the hot water hose that runs from the engine block to the radiator.

Once again, the gas in the black neofrene tube is not heated above the temperature of the coolant in the automobile approximately 190° to 200°.

Both models of Mr. Blemke's gas preheater have been installed on a number of automobiles and trucks and to date there have been no problems with fires, explosions, or vapor lock that is associated with gas preheaters that use the engine heat from the manifold, which raises the gasoline considerably above a safe temperature.
The greatest results with Mr. Blemke's gas preheater are realized during the winter months, when gasoline in the gas tank is normally at 20° to 25° below zero, depending upon the ambient air temperature and instead of entering the carburetor at 20° to 25° below zero would enter it at 180° to 190° Fahrenheit, which results in increased and easier vaporization and better gas mileage.

Neither model of Mr. Blemke's gas preheater alters the chemistry of the vehicle's emissions.

We have been working with State and Federal agencies regarding Mr. Blemke's invention and I share your concerns regarding the product's liability issue, but I reiterate, to date there have been no problems with either model and none of the State and Federal agencies that we have contacted seem concerned about the safety of the product.

Once again, I want to reiterate that Mr. Blemke's device does not pressurize or vaporize the gasoline. By the way, Mr. Blemke's advertising and experience with the gas mileage improvement are much more reasonable and in line than the crazy advertising schemes probably been lately.

Mr. Blemke's customers have been experiencing a 3 to 4 mile per gallon increase and not the 100 to 500% seen advertised by others.

Mr. Blemke has advertised a 10% to 30% increase in mileage based on the vehicle and the previous mileage experience of the driver.

Yours truly,

James T. Runyon
Attorney for William Blemke and Gas-Meiser, Inc.
July 7, 1980

Mr. James T. Runyon
Rogers & Hartel Lawyers
Lincoln House
P. O. Box 398
Merrill, WI 54452

Dear Mr. Runyon:

This is in response to your letter of June 24, 1980 requesting information on procedures which are to be used in the evaluation of the effectiveness of "Fuel Saving Products". The enclosed documents (Test Policy, Retrofit Device Regulations, and 511 Application Format) provide the necessary information.

It should be noted that the EPA neither approves nor certifies retrofit devices for retail sales. The basic charter of the evaluation program under Section 511 of the Motor Vehicle Information and Cost Savings Act is to generate, analyze, and disseminate technical data. There is no requirement for EPA testing prior to marketing.

Since the corporation you represent produces a gas "pre-heater" type device, you may be interested in EPA test results on a device with similar function. Enclosed for your information is a copy of an EPA report detailing the results of that testing. The general conclusion drawn in that report was that the device tested, "FuelXpander", had no significant effect on fuel economy when installed on properly tuned vehicles.

With regard to your request to discuss material and workmanship, the EPA has no requirements for material and workmanship. Since the product you represent modifies the fuel delivery system of automobiles, the National Highway Traffic Safety Administration (NHTSA) may have an interest from a safety standpoint. It is suggested that your firm contact that agency for their recommendations on this subject.

If you have any additional questions, please feel free to contact me for assistance.

Sincerely,

P. Peter Hutchins, Project Manager
Test and Evaluation Branch

Enclosures
December 4, 1980

Mr. William Blemke
1514 Gables Street
Marinette, WI 54143

Dear Mr. Blemke:

This letter is in response to your inquiry of November 26, 1980 regarding an EPA evaluation of Gas Meiser. 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. If you have not yet conducted the tests we require, we can assist in the development of a satisfactory test plan.

Once we receive your application, it will be reviewed to determine if it meets the requirements listed in the format. If so, 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.
If your application is not complete, we will ask you to submit further information or data. This request may require test results which would 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. Once this test data or other missing information has been submitted, your application will be reconsidered as described in the previous paragraph.

There are 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.

**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 will qualify it for further evaluation by EPA. 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. For a minimum test plan which was conducted on a fleet of two cars, the average improvement should be at least 3%. This was determined using the average fuel economy test variability in our laboratory and represents the improvement that would have to be shown to yield an 80% confidence (statistically) that there is any improvement.
We would expect a minimum of 5% improvement for a fleet of 5 vehicles (see table below). Test results which display a significant increase in emission levels may be reason for EPA to require more extensive testing or to deny further evaluation.

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, allows 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.

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, 2565 Plymouth Road, Ann Arbor, Michigan, 48105. The telephone number is (313) 663-4200. 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
January 8, 1981

Mr. William Blemke
1516 Oakes Street
Marinette, WI 54143

Dear Mr. Blemke:

EPA has received your application for evaluation of Gas Meiser I under Section 511 of the Motor Vehicle Information and Cost Savings Act.

EPA has reviewed your application. However, no test data was submitted with your application. If you decide to obtain data from a private laboratory as described in my letter to you on December 4, 1980, we will be happy to work with you in designing a test plan. The EPA policy documents that you received require only hot start data but it may be to the advantage of your device if it is tested on a cold start basis.

The Gas Meiser I is a fuel preheater that routes fuel through a flexible fuel line that is wrapped around the upper radiator hose. EPA recently tested a fuel preheater called FuelXpander which showed no fuel economy benefits. (A copy of this report which was sent to your attorney, Mr. James T. Runyon, on July 7, 1980.) Therefore, in the absence of valid new data showing a benefit for your device, there is no basis for EPA conducting confirmatory tests of the Gas Meiser I.

EPA will continue to process your application on the basis of the available information.

Enclosed for your information is a copy of the EPA report detailing the FuelXpander test results. Please contact me (phone (313) 668-4299) if you have any questions or require any further information.

Sincerely,

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