

AN EVALUATION OF THE BOSE  
AUTOMOBILE ANTI-AIR POLLUTION DEVICE

December 1973

Test and Evaluation Branch  
Emission Control Technology Division  
Environmental Protection Agency

## Background

The Washington office of EPA was contacted by Mr. R.K. Bose who requested that his device be evaluated by the Test and Evaluation Branch of MSAPC, Ann Arbor. Mr. Bose presented test data conducted at Olson Laboratories which detailed the emission levels obtained from a vehicle equipped with his device. Mr. Bose alleges that his device causes a 75% reduction in exhaust pollutants coupled with a 25% improvement in fuel economy.

## Device

The device was described by the inventor as a "...mechanical exhaust gas refining device," the exact workings of which were not revealed due to the patent status of the device. The device recycles "refined" combustion gases back to the inlet of the carburetor for reburning. Additional air was supplied by means of a blower to achieve a lean mixture over all engine speeds. No changes were made to the basic ignition timing while minor enleanment changes were made to the carburetor settings. Replacement of the device with a stock system took approximately two hours. The inventor stated that the device contained no precious metals and could be manufactured utilizing present technologies for a cost of \$100-150.

## Test Program

A 1965 Ford Fairlane, 200 CID, supplied by the inventor was used for the test. Three valid tests were conducted; one with the device installed and two with the stock exhaust system installed. All testing was performed in accordance with the 1975 Federal emission test procedure as outlined in the November 15, 1972, Federal Register, Vol. 37, Number 221.

All tests were conducted using the standard dynamometer inertia loading for a Fairlane which is 3500 pounds. Test fuel was Indolene Clear.

## Test Results

The test results are presented in the Appendix of this report. These results are summarized below:

### Summary of Emission Results % Change from Baseline

	Bose Device
HC	9% decrease
CO	61% decrease
CO <sub>2</sub>	0% change
NOx	1% increase
Fuel Economy	7% improvement
Aldehydes	64% increase

### Conclusions

Application of this device resulted in a reduction of hydrocarbons and carbon monoxide emissions with no effect on oxides of nitrogen. These reductions are consistent with enrichment techniques, except that oxides of nitrogen did not significantly increase.

Application of this device resulted in a modest increase in fuel economy. Aldehyde measurements indicated an increase in aldehydes with the use of this device.

APPENDIX

w/Bose device                      Grams per mile

<u>Test No.</u>	<u>Date</u>	<u>HC</u>	<u>CO</u>	<u>CO<sub>2</sub></u>	<u>NOx</u>	<u>MPG</u>
16-906	12-6	3.41	14.4	456.3	3.75	18.1

Baseline wo/device

16-910	12-7	3.68	44.6	440.6	3.65	17.0
16-922	12-10	3.79	29.5	473.3	3.80	16.7
Avg.		3.73	37.0	456.9	3.72	16.85

% Reduction

8.5	61.0	+ .8%	7.4% improvement
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Aldehyde Results

<u>Test No.</u>	<u>PPM</u>	<u>gm/mi</u>	
16-910	3.9244	0.1507	wo/device
16-906	6.4452	0.2474	w/device