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EVALUATION OF THE SPRITZER EMISSION CONTROL DEVICE

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Test and Evaluation Branch
Emission Control Technology Division
Environmental Protection Agency

Background

The Test and Evaluation Branch of the Emission Control Technology Division was contacted by Mr. Spritzer who requested an evaluation of an emission control device. Data indicated major reductions in hydrocarbons and carbon monoxide levels. Based on these preliminary results a confirmatory test program was arranged at the EPA laboratory.

Device and Vehicle Description

The device, which fits underneath the carburetor, is designed to produce better mixing and distribution of the intake charge and, at the same time, allows the use of a leaner fuel mixture to increase fuel economy and reduce exhaust emissions. Further description is not possible due to patent considerations.

The device was tested on a 1972 3/4-ton GMC pick-up truck equipped with a 5.7 litre (350 CID) engine and a four-speed manual gearbox. The carburetor is a four-barrel design. The vehicle was tested at an inertia weight of 2268 kg (5000 lbs).

Test Procedure

A total of four tests were conducted on the vehicle. Three tests were run with the device installed and one test was run without the device (baseline). For the baseline test the vehicle was adjusted to the manufacturer's specifications.

All tests were run in accordance with the 1975 Federal Test Procedure (FTP) Federal Register, Vol. 37, No. 321, Part II.

Results

Use of the device resulted in no significant decreases in either HC or CO and in one test produced fairly substantial increases in both of these. The device decreased NOx in two of the tests and produced no change in the third test. Fuel consumption increased in all three tests when the device was installed.

Conclusions

In its present state of development, the device does not show ability to significantly reduce either HC or CO. It possible might have limited application for the case in which NOx reduction was the main concern.

SPRITZER DEVICE
MASS EMISSIONS IN
GRAMS PER KILOMETER
(grams per mile)

Test #	HC	CO	CO_2	NOx	Fuel Consumption
1	2.83 (4.55)	15.95 (25.66)	386.59 (622.02)	2.40 (3.86)	18.0 litres/100 km (13.1 mpg)
2	3.95 (6.36)	12.09 (19.46)	390.48 (628.29)	1.15 (1.85)	18.2 litres/100 km (12.9 mpg)
3	5.71 (9.18)	36.89 (59.36)	399.16 (642.25)	1.62 (2.60)	20.8 litres/100 km (11.3 mpg)
4 Baseline	2.84 (4.57)	13.01 (20.94)	378.51 (609.03)	2.41 (3.88)	17.0 litres/100 km (13.8 mpg)
1975 Interim Standards	0.93 (1.5)	9.32 (15.0)		1.93 (3.1)	