

ENGINEERING

## Auto Exhaust Smog May Be Cut by Mixing Device

THE AUTOMOBILE as a smog-producer may be eliminated if the composition of its exhaust is changed.

Richard D. Kopa, a research engineer at the University of California, Los Angeles, has been studying the composition of the auto exhaust gas for several years, trying to eliminate the components responsible for obnoxious smog.

Among hundreds of organic and inorganic compounds found in auto exhaust gas, Mr. Kopa says, only two groups are serious trouble makers: certain unburned hydrocarbons and the oxides of nitrogen.

His main weapon against nitrogen oxides is an inexpensive mixing device mounted on top of the carburetor. Using the device to inject additives into the air stream before combustion, he has been able to eliminate 80% of the nitrogen oxide from auto exhaust in laboratory experiments.

The injection method is not new, but for the first time Mr. Kopa has discovered the underlying reason for its effectiveness. Simply stated, the injected additives lower the peak combustion temperature, thereby lowering production of nitrogen oxides.

Turning to the second exhaust pollutant, the UCLA engineer is testing various compounds to alter the chemical make-up of gasoline, so as to cut down on smog-forming unburned hydrocarbons emitted from engine exhaust.

In a series of road tests during the next few months, Mr. Kopa will measure the smog-reducing ability of the mixing device and of the blended gasoline, and check their effect on engine performance and economy.

Science News Letter, October 10, 1959

ENTOMOLGY

## Killing Back Yard Wasps Is a Tricky Business

DESTROYING wasp nests in the back yard is a precise and exacting task, the Department of Agriculture reports.

You should wait until an hour after full darkness, creep up on the nest by flashlight and then thoroughly dust or spray the nest with a solution of DDT or chlordane.

The darkness will not necessarily protect the sprayer but it will insure that all the wasps are home and bedded down for the night.

A comb-like nest may be treated by covering the open cells with a dust containing five percent chlordane or five to ten percent DDT, the USDA says. To kill hornets or yellowjackets in their paper-like globular nests, you must spray a water emulsion of two percent chlordane or five percent DDT into the one opening in the nest.

A few precautionary measures: put your flashlight on the ground because the wasps will come out and follow the beam of light; wear dark clothes, and work fast.

Single copies of "Wasps, How to Control Them" (Leaflet 365) are available free from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Science News Letter, October 10, 1959

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