

## Fighting pollution by cars

Would you like to do something about air pollution today? How? Read on...

A lot of air pollution can be traced directly to engines of the 89 million passenger cars now in use. So if you drive a car, you're automatically involved.

For example, the average car puts out about 1 1/4 pounds of unburned hydrocarbons each day (approximately 15 per cent of all air pollution emissions are hydrocarbons). That's gasoline which has not been burned completely. So it not only fouls the air, it wastes your money.

Carbon monoxide accounts for 47 per cent of pollution in the air. A colorless, odorless gas, it too, is evidence of money wasted. Just like the hydrocarbons, carbon monoxide is produced because some of the carbon in gasoline is not burned up in the combustion cycle. It reaches the outside air through the exhaust system of your car.

Another 10 per cent of air pollution consists of nitrogen oxides. These are by-products of most forms of combustion. Auto engines generate quite a bit of heat. And the hotter they get, the more oxides of nitrogen they release. In the blazing temperature of the combustion chamber, nitrogen combines with oxygen to form nitric oxide. It travels through the exhaust system and into the air we breathe.

Heart of the auto engine is the carburetor. That's where a lot of air is mixed with a small amount of gasoline to produce a highly explosive vapor. The mixture is fed to the cylinders in controlled amounts. A spark ignites the vapor in the cylinder head. The force of the explosion is transferred to the drive train which moves the car along.

Auto engineers have found that simple tune-ups — adjustment of the air-fuel ratio in the carburetor, and adjustment of the engine's

idle speed — produce immediate, substantial results in controlling two out of three gaseous pollutants emitted by automobile engines. For only a few dollars and in just a few minutes, you can have an engine which produces approximately 10 per cent less hydrocarbons, and 16 per cent less carbon monoxide. In addition to which, you'll get smoother performance at lower cost. An engine which is not well-tuned is inefficient. So it requires more fuel to operate.

About 60 per cent of cars on the road need tune-ups, so don't feel self-conscious if your auto's engine hasn't been tuned recently. Surveys show that most people don't know their cars' engines need attention, until the need is urgent. For most efficient performance, engines should be tuned about every 8,000 miles. The value of preventive maintenance has been recognized for a long time. But the need to clean up America's air has given engine maintenance the kind of attention it has never had before.

Simple adjustments to the engine help a lot to reduce air pollution. But if it's maximum improvement you want — and if you're willing to spend more than a few dollars on the job — then let the mechanic give your car a major tune-up. It can reduce emission of pollutants as much as 55 per cent, over all.

Most automotive pollution is caused by just three things: Incorrect timing; too-rich fuel mixture; spark plugs which misfire. A too-rich mixture of gasoline can produce a 200-300 per cent increase in hydrocarbon emissions, if your engine is not tuned up. Correcting these conditions helps clean up the air — immediately!

But a complete engine tune-up will do even more. It should include these steps:

- Check compression
- Adjust timing to factory specification
- Adjust air-fuel ratio to avoid over-rich mixture
- Check distributor contact points (also be sure distributor cap and rotor are not defective)
- Clean or replace air filter
- Clean or replace PCV valve
- Adjust automatic choke
- Replace spark plugs if badly pitted or corroded
- Check heat riser valve
- Be sure carburetor sediment bowl is clean and jets are functioning properly
- Check ignition wiring
- Check condition of evaporative-loss system
- Tighten intake manifold bolts
- Inspect fan belts and adjust for proper tension

Of course no one's going to get a pollution-free environment without giving up something. In the case of the tune-up engine, it means ordering adjustments which will cause the engine to run a bit rough — when it is in neutral. Performance on the road will probably seem no different to you. On the plus side, dynamometer tests have shown an average 8.2 per cent improvement in fuel mileage after a tune-up. That's money in your pocket!

Emissions control starts with reduction in the amount of fuel going into the carburetor.



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