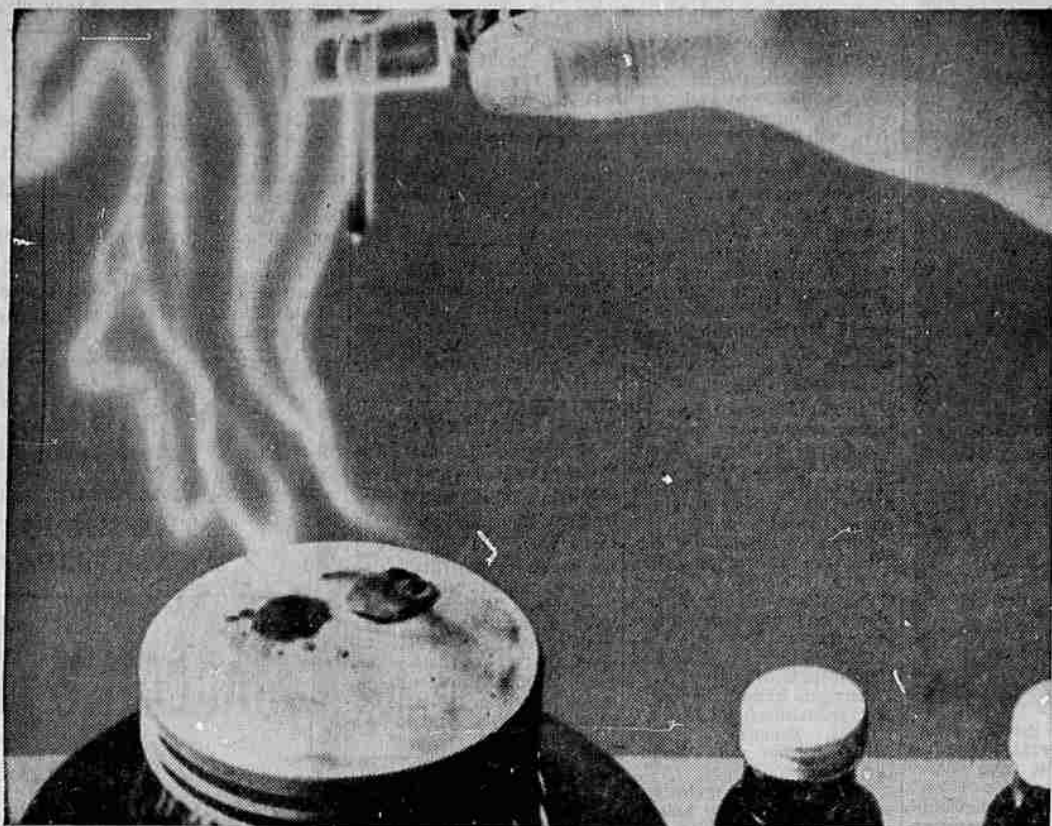
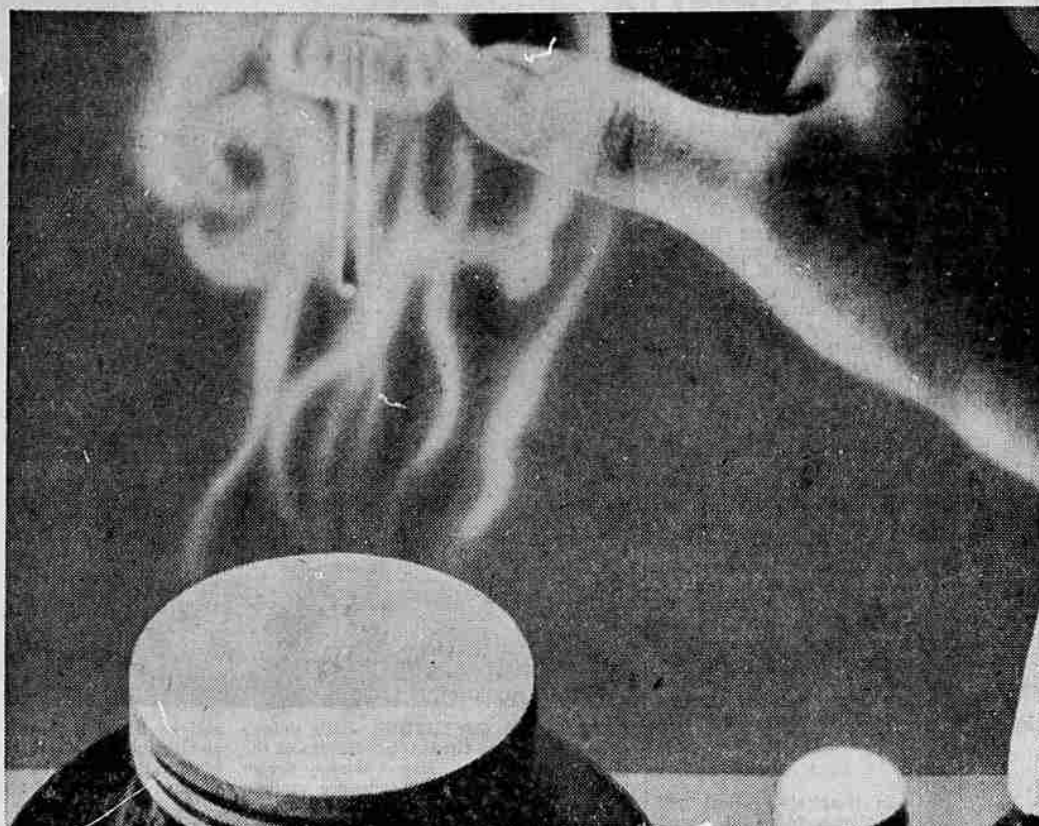




Hot piston test reveals the ash-free secret of Shell X-100 Premium. Here's how Shell scientists can prove that Shell X-100 Premium leaves no additive ash. A simulated aluminum piston is heated and a few drops of conventional multi-grade motor oil dropped on it. As the picture on left shows,



this oil leaves a deposit. This deposit is additive ash. When the test is repeated, as at right, with Shell X-100 Premium, all the oil vaporizes. It leaves no additive ash. This is important, because additive ash can contribute to engine knock and uneven performance.

BREAKTHROUGH:

**Suddenly Shell makes every other motor oil obsolete
—with a revolutionary new formula which fights
the five internal troubles that can shorten engine life**

Shell's research on engine behavior discloses five common internal troubles that can shorten the life of your car.

These troubles are additive ash, crankcase dirt, temperature changes, engine acid, and cooling system leaks. They all act silently and unseen.

Read how new Shell X-100* Premium Motor Oil prolongs engine life by fighting all five troubles—and why Shell scientists can make this unique promise.

Today, every Shell dealer in America has new Shell X-100 Premium Motor Oil ready for your Spring oil change.

New Shell X-100 Premium is a genuine scientific breakthrough because it is the only motor oil available that helps protect your car simultaneously against these five internal troubles that can shorten engine life.

Do you know what these troubles are? If not, you owe it to your engine to read this advertisement. Ten minutes' time now can save you hours of trouble in the future.

Trouble #1—additive ash

Up to now, even the best premium motor oils were powerless to guard against additive ash—because they actually created it. While endeavoring to keep your crankcase shipshape, some of the ingredients in these oils contributed to the hard crust of ash inside your combustion chamber.

All other premium motor oils still have the same snag.

The trouble stems from the metallic additives used to prevent scuffing, dirt deposits, oxidation and so forth. These additives do what's expected of them, but with each stroke of the piston, they can leave a tiny amount of metallic salts in the combustion chamber where they burn and form additive ash.

This hard crusty ash, when allowed to build up, can seriously affect your car's performance—and can make it knock and run roughly.

New Shell X-100 Premium doesn't add to

this problem—because it doesn't contain a single metallic additive.

No metal additives. No additive ash from motor oil. It's as simple as that.

Trouble #2—crankcase dirt

All engines accumulate crankcase dirt no matter how well they are protected by filters. The problem is to stop this dirt from getting together and forming sticky sludge, which can clog your engine.

Most premium oils use a detergent additive to do the job. And they perform well. But, like other additives, most detergents are metallic and cause that old devil—ash.

Shell's solution is to replace detergent with a remarkable new ingredient known as a dispersant. Shell scientists call it Alkadine.*

Alkadine in new Shell X-100 Premium helps keep your engine clean by holding dirt particles apart. Thus they don't form sticky sludge. Some particles can be trapped by the oil filter; most are drained out when you change your oil.

Oddly enough, nobody yet knows exactly how Alkadine works. But the proof of the pudding is in the testing. After 1,200,000 miles of city driving, engines of test cars lubricated with Shell X-100 Premium showed so little sludge that it could hardly be measured.

Trouble #3—temperature changes

Many motor oils tend to become too thick when cold and too thin when hot.

New Shell X-100 Premium is an all year



This is new Shell X-100 Premium. Look for the white can with red letters. Your Shell service station now has it.

oil. Here's how it works. Alkadine has a molecular structure that resembles a basket of eels.

When the oil is cold, Alkadine's eel-like molecules curl up as if for comfort. In effect, they take up less space in the oil—and the oil flows freely through the tightest bearing, even on cold nights.

Conversely, when the Alkadine in new Shell X-100 Premium is hot, its molecules uncurl. They take up more room. And the oil resists thinning.

Thus, new Shell X-100 Premium eliminates trouble from sudden temperature changes. It lubricates just as efficiently in June as it does in January.

Trouble #4—engine acid

All automobile engines manufacture acid. This acid can do far more damage than friction. It can eat away at engine parts in much the way stomach acid can cause ulcers. Then you're really in trouble.

One way to combat engine acid is to make the oil alkaline. Many oils use this method. But here's what happens.

The neutralizing effect of alkaline oil inevitably gets weaker and weaker as engine acid eats up the alkalinity—till it

eventually stops working completely. When this happens, your oil no longer gives you anti-acid protection.

Shell tackles this troublesome acid problem in a new and better way.

Shell X-100 Premium actually plates all engine surfaces with a thin chemical film. The metal literally adsorbs some of Shell X-100 Premium's protective qualities. Chemists call this phenomenon "chemisorption."

"Chemisorption" offers a longer-lasting protection against acid attack than any other method yet invented.

Trouble #5—cooling system leaks

Tiny anti-freeze leaks can play nasty tricks with many motor oils.

These oils can react chemically with permanent anti-freeze and form a horrible sludge which can actually bring an otherwise healthy engine to a standstill. Then you're on the way to a major repair bill.

New Shell X-100 Premium sets all such fears at rest. It resists reaction with any sort of anti-freeze. It shrugs it off. (Better get that leak fixed, anyhow, to keep your cooling system working.)

The additives in Shell X-100 Premium resist washing out with water, too. In some oils, additives can be lost to water leaks. In Shell X-100 Premium, they stay in the oil to protect your engine.

Astounding results from 5½ million-mile road test

Professional drivers put Shell X-100 Premium to a brutal test. They took \$270,000 worth of automobiles and drove them relentlessly for 5½ million miles. Over highways, up mountain grades, around test tracks, over turnpikes—and through city traffic.

When Shell technicians tore the engines apart for inspection, here's what they found.

1. Wear was incredibly low. One car lubricated with Shell X-100 Premium still revealed the original tool markings on its rings—even after 70,000 miles at speeds of 60 to 100 mph.

The low wear with Shell X-100 Premium was verified over and over. In fact, when nine cars were driven at test track speeds for 70,000 to 100,000 miles, it was found that,

from the standpoint of cylinder wear, the engines were good for another 100,000 miles.

2. Cleanliness ratings were tops. Pistons removed from a car lubricated with Shell X-100 Premium scored a rating of 9.5 out of a possible 10. A score of 9 is considered excellent.

3. Sludge was reduced to almost half the amount that lubrication experts consider to be acceptable.

4. Oil consumption records caused cheers. Cars lubricated with Shell X-100 Premium were driven at race track speeds for 100,000 miles, yet used only one quart every 1,800 miles.

On some tests, Shell X-100 Premium even out-performed expensive laboratory "reference oils." Shell X-100 Premium, fortunately, is neither expensive nor a laboratory oddity.

How much does Shell X-100 Premium cost?

If you drive the national average of 10,000 miles per year, the switch to Shell X-100 Premium (with regular oil changes) will cost you only \$3.60 more than ordinary oil—give or take a nickel. And probably nothing extra if you already use a premium grade.

Drive to your Shell service station and ask the dealer to change your oil while the engine is still hot. Be sure to ask for Shell X-100 Premium in the white can. It protects your engine from all five internal troubles listed above.



A BULLETIN FROM SHELL RESEARCH—where 1,997 scientists are working to make your car go better and better.