

How Union-ETHYL Stops Motor "Knocks"

Perhaps you have been puzzled by annoying knocks in the motor of your car. That jerky, uneven pull on hills, in traffic, when shifting gears, has made you wonder how this knocking comes about.

The answer is detonation.

Let us illustrate with an example of smokeless powder in the big guns of the army and the navy.

What is Detonation?

Detonation is a powerful explosion, always accompanied by a sharp, quick report. It tears, jerks, pounds and knocks, if not properly controlled.

Whether in a cannon or in an automobile engine, detonation causes a rending, rapid frictional wear. It is the most destructive force known to explosive engineers.

Without smokeless powder modern big guns would not be practical, for after only a few shots with a charge such as dynamite they would be unfit for further use.

The damage would result from *detonation*—all the force of the explosion being expended in one crashing blow against the projectile.

Dynamite would be a *detonating* charge.

But "smokeless" powder is *non-detonating*.

Its explosion (burning) and the power from it are *sustained* against the projectile *throughout its entire movement through the gun*. A tremendous force is thus unloosed under good control.

Here is *greater power with less recoil*. And projectiles are thrown several times as far with *less harm* to the guns.

Union Gasoline has always been an outstanding *non-detonating fuel for motor cars*, acting against a motor's piston as smokeless powder acts against the projectile in a gun. It exerts greater power with less "knock" and vibration than ordinary *detonating* gasoline.

And now comes the *Ethyl* compound, a highly effective agent that science has developed after years of tests and actual use to still *further control* detonation in a motor fuel.

In combination with Union Non-Detonating Gasoline it represents the smoothest, swiftest and most powerful of fuels now known for use in motor cars.

It stops the "knocks" by completely ending detonation—by causing the gas to keep on delivering its expanding power throughout the *entire length* of the piston's stroke.

Heavy "knocking" in a motor's cylinder is like the detonation of a high explosive in the old-time, short-range gun.

Union-Ethyl's action is like that of "smokeless" powder in the modern long-range rifles, now used on the dreadnaughts of the world's great navies.

It *completely ends* the detonation and so completely ends the "knock."

Thus lack of power, sluggishness on hills, sputtering pick-ups, and the kindred motor ills that detonation and knocking cause, are entirely eliminated.

Strains on your motor are reduced. Repair bills come less frequently. A new joy, a new thrill in driving soon becomes your prime delight.

Try Union-Ethyl today. Put it to the hardest tests you know.

Then *note the difference*.



Union-ETHYL

The Super Motor Fuel
Union Oil Company

The Color has nothing to do with the Quality.

