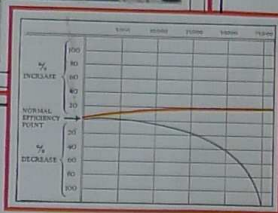


# This Miracle of Engineering for the first time clearly explained

"OVER a year ago, I purchased a '70' Willys-Knight Six. Since that time I have driven the car nearly 15,000 miles and, today, the motor is much smoother, quieter and more powerful than on the day I took delivery. It has not been necessary to have my car in the repair shop for any reason. Can you tell me why it is the Willys-Knight engine improves so steadily with use? I am often asked to explain this seeming phenomenon to my friends."



Graph indicating estimated comparative efficiency of sleeve-valve (top line) and poppet-valve (bottom line) motors based upon average performance of both types. Note gradual rise of sleeve-valve engine efficiency curve up to and beyond the 75,000 mile mark and gradual decline to zero point of average poppet-valve engine at corresponding mileage.

tiplicity of parts—lifter-rods, lifter-springs, cams and what not—that make up the complicated poppet-valve motor of the T-head, L-head or valve-in-the-head varieties.

### No valve adjustments

There is never any need for adjusting the valve-action in the Knight sleeve-valve motor. When the sleeves are first assembled into the motor, this is adjusted for all time. Therefore, since the valves in the Knight motor are always in proper adjustment, all of the wear and the trouble caused by improper valve adjustments is automatically done away with.

### No carbon-cleaning

In the Knight sleeve-valve motor such carbon as forms finds its way to the compression ring at the top of the cylinder, between the two sleeves and between the outer sleeve and the cylinder wall.

Between the sliding sleeves, this carbon is hardened into a glass-hard surface, constantly lubricated by the lubrication system of the motor until there is no place between the sleeves where the compressed gases can find an exit until the opening of the exhaust port. Hence, the same identical thing which breaks down the efficiency of the poppet-valve motor, serves only to increase the Knight motor's efficiency and to build up its power.

You really owe it to yourself to become informed upon this car before committing yourself to any less desirable automobile.



The Only Motor-Car Engine That Improves With Use.

THE LETTER reproduced on this page, from a Willys-Knight owner, is typical of many that come to us from time to time.

Naturally, it is difficult for any, save the professional automotive engineer, to grasp just why the patented Knight sleeve-valve engine of the Willys-Knight—against all established engineering rules—shows, with use, so noticeable a gain in smoothness and quietness and power where, under precisely the same conditions, all poppet-valve types of engine register an equally noticeable loss.

The purpose of this advertisement is, in so far as space limitations will permit, to state the reasons why.

When we say that the Willys-Knight sleeve-valve motor improves with use—that it wears in to greater efficiency and power while other motors are wearing out—we mean just that. And in no theoretical sense. But in a thoroughly factual and completely literal way.

The reason for this apparent phenomenon lies in the actual constructional principles of the patented Knight sleeve-valve motor which are basically and radically different from those employed in any motor of the poppet-valve type.

### No valves—just two single sleeves

For example, the Knight sleeve-valve motor has no valves, in the ordinary sense. The action of the intake and exhaust ports is controlled by two single sleeves, rather than by a series of valves with all their mul-

## "70" WILLYS-KNIGHT SIX

"70" Willys-Knight Six Prices from \$1,625 to \$1,945; Willys-Knight Great Six, from \$2,365 to \$2,830; 7 passenger Sedan, \$3,800; Limousine, \$3,925; f.o.b. Factory, Toronto. Taxes Extra. Willys-Overland Sales Co. Limited, Toronto, Canada, Branches: Toronto, Montreal, Winnipeg.

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