



AUTOMOBILE NEWS



FIGURES PROVE LONG AUTO LIFE

Knight-Engined Cars Reliability Due to Simplicity, Is Claim

TOLEDO, O., (Special)—There is probably no moving piece of machinery ever built about which the manufacturers could claim it would improve in mechanical efficiency the longer it was used. In any form of mechanical movement, wear will develop eventually, and with this wear are associated its companions, noise, vibration, loss of power, and heavy cost of up-keep.

According to records in the hands of Willys-Overland officials, no case is known where a Knight-engined car has been scrapped, or discarded because of the engine losing any of its former efficiency. Included in the 300,000 Willys-Knight cars on the roads in this country today are hundreds of models which have been driven more than 100,000 miles, scores with records of 300,000 miles and more, and there are cases where

cars are in excellent condition today whose speedometers show in excess of 600,000 miles of service.

Undoubtedly, the most important factor contributing toward the long life and reliability of these cars is the use of the Knight sleeve valve engine design. The fact that the slogan "an engine you'll never wear out" is no myth is demonstrated by these remarkable figures. Even in cases of cars with poppet valve engines having piled up as many as 300,000 miles since they were put into service, the time and expense of keeping them in good running condition during this period amounts to many hundreds of dollars.

There is virtually no expense connected with the maintenance of Knight type engines. Practically one-half the cost of up-keep with a poppet valve engine car may be charged to the carbon removal and valve grinding operations which have to be done periodically to every size and class of car employing this type of engine. In the Knight type engine, the sleeves which take the place of the valves in the poppet valve engine seldom require attention while the presence of carbon in a Knight engine is a desirable and beneficial factor rather than a detriment.

Vibration is one of the worst enemies of internal combustion

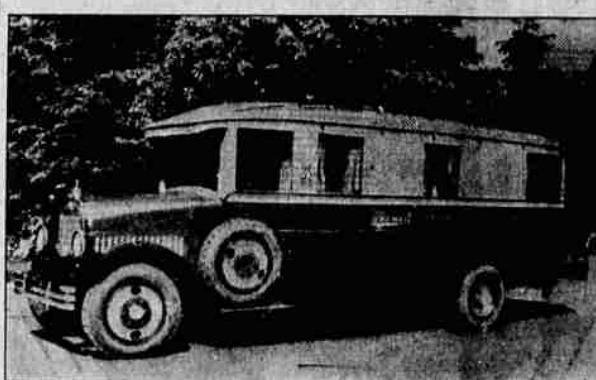
engines and this condition alone is responsible for sending many automobiles to the junk heap. While vibration may be attributed to many causes in automobile engines, the use of spring tensioned valves operated by cams in a poppet valve engine is a common source of trouble of this kind. With the use of sliding sleeves positively operated by a crank, this source of vibration and noise is eliminated in the Knight type engines.

DECISION DUE MONDAY

PORTLAND, Ore., Apr. 23 (AP)—Decision by the Oregon Truck as to acceptance of a common user contract offered by the Southern Pacific company on its tracks between Portland and Klamath Falls for the northern road's bend to Klamath Falls, extension is expected to be announced Monday, the day that time for consideration expires. The northern lines obtained an extension to that date with permission of the interstate commerce commission.

Some persons have raised the point whether the purple meat inspection mark is harmful. The purple dye and all other ingredients of the marking fluid as applied by the federal meat inspection service are entirely harmless.

DR. MARCELL'S PULMANETTE



Said to be the finest private touring car in America, Dr. Marcell's Pulmanette is here this week from Portland, while the owner is conducting a tour show at Fourth and K. The car can travel 600 miles without refilling because of its extra capacity for gas and oil. It is six and a half feet wide, 22 feet long with an extra three feet extension on the rear for the observation platform. It includes cupboards, ice chest, refrigerator, kitchenette, bed, electric piano, radio, artillery cabinet, desk and book case and other arrangements of a similar nature. Its cost is said to have been \$18,000.

else than this. For their measurement there is a gauge which is in the form of a meter. This meter amplifies the difference from the required dimensions by ten. Thus a piece that must be made accurate to within one one-hundred thousandth of an inch, or one degree on the meter scale, will show up this difference by ten degrees on the scale.

Fine precision measurement is undertaken in checking up the sizes and variations of gears by means of a projector that throws a shadow of the gear and magnifies it from 50 to 400 times. On this screen the engineer can detect the slightest error.

Even the surfaces of flat objects, especially the gauges, have to be

checked up at times. For this purpose, the automobile plant has a master flat surface, carefully kept under oil and a cover of felt-lined wood.

It is all a matter of minute detail and extreme care. A fellow was pinched the other day up at House's Corners for raising a laundry check from 2 collars and one shirt to 14 collars and six shirts and a night gown.

Poisoning and trapping are the best means of checking the ravages in a growing crop of alfalfa of gophers, ground squirrels, prairie dogs and mice.

Blue Ousts Black For Formal Wear

LONDON, Apr. 23 (AP)—Even the funeral dress suit and dinner jacket are showing the effect of the demand for brighter colors in men's clothing.

From now on navy blue instead of solemn black will be the correct color for evening dress, according to a London fashion note. The Prince of Wales has given his approval to this color by wearing dinner suits of blue, and the fashion is spreading rapidly.

The fashions say a very dark blue material looks better under artificial light than does black, which is apt to take on a dingy hue.

5000 miles in 4909 minutes!

Studebaker Commander maintains mile-a-minute speed for 81 hours, 49 minutes

{ 5 amazing records for speed and endurance established by Big Six }

NEVER before has any automobile in America traversed 5,000 miles in less than 5,000 consecutive minutes.

A stock Studebaker did it—The Commander, a closed car fully equipped, including even spare tire.

In official tests under the sanction and observation of the American Automobile Association this stock Studebaker, identical with the car you can buy in any Studebaker sales room, not only established the amazing new record of 5,000 miles in 4909 minutes total elapsed time, but also set four other records.

2500 miles in 40 hours, 12 minutes, 54 seconds total elapsed time. An average speed of 62.16 miles per hour.

3102½ miles in 50 hours total elapsed time. An average of 62.05 miles per hour.

3500 miles in 56 hours, 47 minutes, 32½ seconds total elapsed time. An average speed of 61.62 miles per hour.

4,414 miles in 72 hours total elapsed time. An average speed of 61.3 miles per hour.

5,000 miles in 81 hours, 48 minutes, 22 seconds total elapsed time. An average speed of 61.12 miles per hour. No automobile or other vehicle in America has travelled so far so fast. No stock closed car has ever approached this record.

Here is what these records mean to you:

① It is possible to purchase a truly great automobile at a moderate price. These records prove that The Commander has justly been called "the greatest post-war achievement of automotive engineering."

② The Commander, because of the super-abundant power of its Big Six engine, will perform eagerly, easily, smoothly, with no labor or effort, any and all tasks placed upon it.

③ Studebaker has produced in these new models, cars which will excel even the staunch, dependable Studebakers of the past, in low repair and maintenance costs.

Any motor expert will tell you that 5,000 miles at more than a mile a minute is equivalent in strain and stress to 25,000 miles of ordinary driving. Yet in this terrible test, the only replacements or repairs were three grease-cups, one spark-plug and one punctured tire. Only one pint of water was used.

NOW! Drive a Commander yourself. Know this great car through your own hands and feet. These shattered records merely dramatize the thrilling performance which Studebaker Commander owners everywhere are enjoying. They explain why the Studebaker Big Six is far outselling the combined totals of all other cars in the world of equal or greater rated horsepower. The exact duplicate of this record-shattering car is waiting for you at Studebaker showrooms.

QUESTIONS AND ANSWERS

On This Great Victory Over Time and Distance

When and where did the test start?

April 1st, 1927 at 5:15 P. M. at the Culver City, California mile-and-a-quarter track.

When were 5,000 measured miles completed?

April 5th, 1927, at 3:03 A. M.—4909 minutes after the test started. Since this total elapsed time included time for stopping for fuel, relief of drivers, etc., it is obvious that the car attained a speed far greater than a mile a minute.

Who drove The Commander?

Harry Hartz, champion American race driver, started, finished and was driving at the time each record was established. He was relieved by Eddie Hearne, also one of America's great speed kings, Louis Wilson, another race driver, and Ab Jenkins, Salt Lake City contractor who smashed all previous transcontinental records last June when he drove a Studebaker Sheriff from New York to San Francisco in 86 hours, 20 minutes.

Under what auspices were these amazing records of The Commander made?

The American Automobile Association, which had official observers on the spot throughout.

Was it a strictly stock car?

Before and immediately following the test, representatives of the American Automobile Association checked The Commander thoroughly and made affidavit that it was strictly a stock car in every respect. Studebaker factories are working to capacity building this identical model.

Was the car stripped?

No, it carried full equipment, including a spare tire. Practically all the records which were smashed by The Commander had been made by open racing models stripped to the limit.

What condition was the car in at the end of the 5,000 miles?

To demonstrate its condition, Hartz put it around the track several times at the rate of 70 miles per hour, immediately after the five thousand mile had been run. Its condition seemed to indicate that it might have continued indefinitely.

What is 5,000 miles?

It is substantially the distance from New York to Constantinople; the distance from Nome, Alaska to Mexico City; the distance from London to Bombay, India; the distance from California to Japan; the distance from the Panama Canal to Bordeaux, France.

How far is it from New York to Chicago?

960 miles by the New York Central Railroad.

How fast does the 20th Century Ltd. travel?

Its average speed is 48 miles per hour between New York and Chicago.

How many engines are used in drawing the Century from New York to Chicago?

Four engines, each one costing \$51,500, are needed for the task. Despite the fact that these engines have fewer moving parts than a Studebaker car and are driven on steel rails by expert engineers, they are run less than 500 miles on any trip, then go in the roundhouse for service.

How do Commander prices compare with other cars of similar power?

No other car of equal or greater rated horsepower sells for less than double the price of The Commander. To match The Commander in power you must pay from \$4,000 to \$10,000.

Why are Commander prices so low?

Volume production on a One-Price basis gives you a truly great automobile—enormous power and luxurious comfort at a moderate price. That is why the Studebaker Big Six outsells the combined totals of all other cars in the world of equal or greater rated horsepower.

GAUGES ASSURE CAR'S EXACTNESS

Expert Continues Discussion of How Modern Automobile Is Made

By Israel Klein
(Science Editor, NEA Service)

On proper gauges depends the exactness required in automobile manufacture.

There are gauges for every purpose, for measuring internal diameters, for measuring depth of screw threads and sizes of threads, for measuring sizes and angles of gear teeth, and for making the every day measurements of length, breadth and thickness.

To make these gauges absolutely accurate there has to be a standard gauge for their measurement. For this, Carl E. Johansson, a Swedish rifle mechanic, has invented what is considered today the most marvelous set of gauges ever devised. They are called Johansson gauges, in his honor, and may be found in every shop where precision work is to be done. They are the standard of measurement accepted the world over, and are closely guarded against misuse or flaws. In fact, an automobile plant may have two or three sets of "master gauges," which are never used except to check up on other Johansson gauges for accuracy.

The gauges in use are always at hand to set operating machines to the required measurements and to check up on other forms of gauges.

These Johansson gauges are blocks of steel measuring from as low as one-half of a ten-thousandth of an inch to two feet. In fact, there is one set of Johansson gauges, the only one in the world, which differs in steps of a millionth of an inch. This is so delicate that even the heat of the sun's body would influence its length.

Attain True Parallel
The maintenance of accuracy of these gauges is Johansson's secret, although Henry Ford has taken over the rights of American manufacture, and Johansson now is doing this work for Ford. But it is known that the gauges go through a seasoning process of seven years before they are approved as standard.

What is most remarkable is the fact that the opposite surfaces of these gauges are exactly flat and mathematically parallel—one of the greatest achievements in the history of mechanics. So truly flat are the surfaces that, although non-magnetic, they will hold together against a pull of more than 200 pounds.

With these gauges as the foundation of precision another form of gauge is turned out in the automotive plant, for the accurate measurement of engine and other parts. It is called a snap gauge.

This is a steel block made in the form of two C's back to back. The jaws of the gauge, which conform with the edges of the C's, are what take the required measurement of parts. They are therefore made of a hard chromium steel and are ground down parallel to each other and as smooth as possible.

Ten-thousandth of an Inch Leeway

One set of jaws, on one side, is "lapped" or rubbed down with the use of a fine carborundum paste, to the exact width between surfaces required of the part it is to measure. On the other side, the surfaces are spaced one ten-thousandth of an inch closer together.

This affords the mechanic a leeway of a ten-thousandth of an inch in the manufacture of his part, although it will be found that the parts come out even closer to the exact requirement than that.

The narrower jaw is called the "Don't Go" side, and has the upper corners chamfered, or cut off, so that the mechanic may recognize it by the feel. When he wants to check the measurement of a piston, for instance, he applies it to the "Don't Go" side. The piece must not go through the jaws without being forced.

Then the mechanic puts the same piece through the jaws that are set to the required measurement. If the piston goes through, it is accurate enough for practical purposes.

In some cases, however, certain parts have to be even more pre-

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STUDEBAKER

[This is a Studebaker Year]

Commander Models and their One-Price Prices: Sedan, \$1585; Victoria, \$1575 (with broadcloth upholstery, \$1645); Coupe, \$1545 (with rumble seat, \$1645). Other Studebaker and Erskine models range in price from \$945 to \$2245. All prices f. o. b. factory.

M. J. GOSS

Cor. Fir and Adams Ave.