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And for that reason, we are now selling Goodyears exclusively.

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**FLAT RATE SERVICE SYSTEM FOUND FINE**

Nash Owners Approve Methods and Guess Work Eliminated

Service facilities for the automobile owner in thorough keeping with the advancement in motor car design and manufacture are regulated by officials of the Nash Motors company as of vital importance to the continued success of the automobile industry. What has been, perhaps, the most notable advancement in service work came with the adoption of what is known as the "flat rate" system by Nash dealers throughout America and abroad.

The owner is the chief beneficiary of the "flat rate" system of service as under this policy he may take his car to a dealer for a given adjustment or operation and learn, before work on the car has begun, exactly what the cost will be. This applies to practically all kinds of labor, from a simple adjustment of the carburetor to a complete overhauling of the automobile. In other words, the dealer after making a thorough diagnosis, eliminates "guess work" by quoting the owner the definite and established charge for the particular operation necessary.

It required many months of careful analysis on the part of Nash service men to arrive at the exact cost of each of the scores of adjustments and minor operations to which an automobile at various times may be subjected; it required also a long system of intensive training of dealer's service managers and mechanics and standardized equipment of the most efficient design before the "flat rate" system could be installed by Nash dealers on an extensive scale.

As far back as 1918 the "flat rate" plan of service was adopted by some of the Nash dealers; after it was thoroughly developed under the guidance of the factory service department the system was installed first in the large cities and later in the smaller communities; still later the "flat rate" system became operative in Canadian and overseas points.

**LOWEST PRICE SIX IN WORLD**

(Continued from page 1)

has undergone the most exhaustive tests ever made on any new model put out by the company.

"We determined to make this car mechanically correct in every detail before we offered it to the buying public," Mr. Willys declared. For months we have had 150 experimental Whippet Sixes in operation in all parts of the country, subjecting them to every known severe test. These cars traveled a total of more than 200,000 miles during these tests and gave us ample time to bring the car to a point of perfection before introducing it to the public.

"After the Whippet Six had been declared mechanically correct, we put it through a gruel-

ing 24-hour run on the Indianapolis Speedway where it set a new record for cars under \$1,000. The Whippet Six traveled 1,357 1/2 miles in 1,440 minutes, including stops, and averaged 56.52 miles an hour. It has shown outstanding ability to climb steep grades in high gear. During a special 50-mile run, it averaged 53 miles an hour, with Chick Murray, well known racing car driver at the wheel. In second gear, it averaged 35.73 miles an hour for 150 miles.

"Each of these tests was officially observed by the Hoosier Motor club, Indianapolis.

"In the design of the power plant and in the construction of the chassis, we have endeavored to incorporate all of the features usually associated only with the higher priced cars.

"The sales results of the first three months of this year plainly indicate a decided trend toward the lower priced fours and sixes. Coupled with the heavy demand for the Whippet Four, this new low priced six becomes an important part of the Willys-Overland program.

"Bodies for the new Whippet Six will be built in our new plant. This has resulted in a marked saving in body cost, and nothing economies have been effected in other manufacturing departments."

The wheelbase of this new car is 110 inches and full balloon tires are standard equipment on all models.

Equipment includes automatic windshield wiper on enclosed models, rear view mirror, dome light in the sedan and coach, combination stop light and tail light, gasoline tank at rear with vacuum feed, motor driven horn, front snubbers, 80-mile speedometer and usual instrument board indicators.

There are 8 1/2 inches of springs on either side of the car, the springs being semi-elliptic in type, with seven leaves. Tryon spring shackles are used. These shackles are self lubricating and self adjusting.

Braking equipment utilizes the mechanical type of four-wheel brakes, with 220 square inches of braking surface. The service brake operates on all four wheels, while the hand brake operates on the rear wheels. The action of the service brake is entirely independent of the action of the hand brake.

Bodies are low and the hood of the car is long and narrow, emphasizing the length of the car. Enclosed bodies are fitted with cadet type sun visor.

Remote door controls are used in accordance with the modern note in body design. The dash construction is extended under the hood to furnish extra leg room for the occupants of the front seat.

The detailed specifications of the Whippet Six reveal marked attention to quality in general features of design and in material. The motor has a bore of 3 1/2 inches and a stroke of 3 1/2 inches, and develops 43 horsepower.

The use of aluminum alloy pistons with an Invar steel strut prevents piston distortion and gives greater power, efficiency and smoothness.

The connecting rods are 9 1/2 inches long. The use of long connecting rods adds to the smoothness of operation of the motor by greatly reducing side thrust at high motor speeds.

7-Bearing Crankshaft.

An outstanding mechanical feature of the Whippet Six is the employment of a seven-bearing crankshaft, making the establishment of a new trend in quality construction among low priced Sixes. Mr. Willys declares that employment of seven-bearing crankshaft in every type of six-cylinder car will probably become general in the industry within the next two years.

The diameter of the crankshaft of the Whippet Six is 2 1/2 inches and the bearings are full bond, bronze backed babbitt. The center bearing acts as the thrust bearing.

The crankshaft is drilled to furnish direct oil leads to the main and connecting rod bearings. There are also direct leads to the camshaft bearings and to the silent timing chain bearings.

The camshaft is also unusual-

large in diameter, with four bearings and is driven by a silent chain which is an advanced feature of construction, adding to the quiet operation of the power plant.

A full pressure type lubricating system is used with a pressure regulated relief valve to prevent over-lubrication at high speeds. The oil pump is driven by a spiral gear on the camshaft.

The distributor for the ignition system is semi-automatic in operation. Retarding of the spark for starting is done through a control located on the instrument board. After the motor has started this control is pushed back and control of the spark is automatic, accomplished by a centrifugal governor located in the distributor.

Drive System. A single plate dry disc clutch is used, the clutch housing and transmission case being integral. Transmission is of the conventional three forward and one reverse gear type.

A seamless steel tube drive shaft is employed, designed to eliminate whipping. There are two universal joints in the drive line. The oversize rear axle is semi-floating in construction, with one-piece banjo-type housing of pressed steel. Timken bearings are used in the differential.

The drive is through the springs, utilizing the accepted Hotchkiss principle of final drive transmission.

Steering Gear. Worm and gear type of steering is used, with steering knuckles carried on Timken thrust bearings and vertical frame bushings. The steering gear is especially constructed for use with four-wheel brakes and balloon tires. The steering post is also adjustable to suit the comfort of the driver.

Three positions are afforded, the steering column being secured permanently in any of the three desired ranges of adjustment. Artillery type wheels are used with wood spokes and felloes. The tires are 28 x 4.75, full balloon equipment being furnished.

In the material specifications, the use of Timken bearings, molybdenum steel in the drive shaft, chrome vanadium steel in all springs, Invar-steel pistons and other equivalent materials indicate a careful attention to quality in this new Whippet Six.

The wide range of body styles affords a selection to meet all individual preference in body models.

Low Price Position in Two Fields.

With the prices on Whippet Six lower than any other six, and with the Whippet Four presenting one model at a lower price than that offered on any other car of its type, Willys-Overland steps into a price leadership in the two mass volume groups of cars, with distinctive models characterized by quality and beauty.

Sales of the Whippet Four have far exceeded any previous volume

in the history of the company, and production in this group is now at the rate of 1,100 a day.

Production of the Whippet Six has been in progress for several weeks and dealers now have dem-

onstrating models. Further shipments for prompt delivery to customers are well under way.

Production plans for the Whippet Six call for the largest output ever reached by Willys-Over-

land in the six cylinder field. Advance dealer orders following a series of sales meetings throughout the country have set a new record for demand in the light six group for Willys-Overland.

**Valve-in-head Supreme**

**-in the Sky -at the Speedway -on the Road**

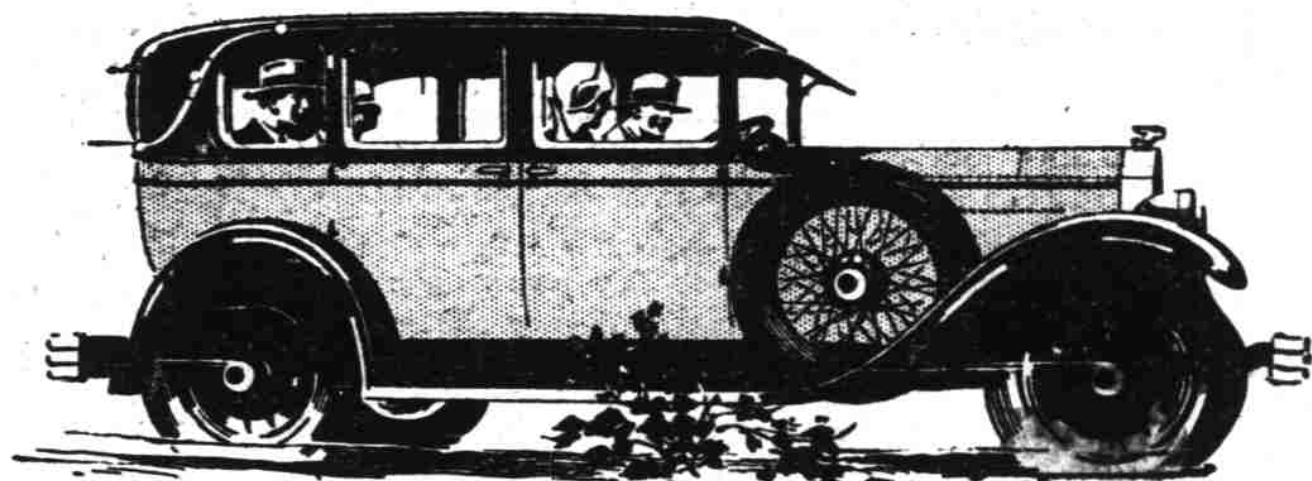
Lindbergh, Maitland, Chamberlin, Byrd—the famous flyers of the day—use engines employing the Valve-in-Head principle in their record-breaking flights.

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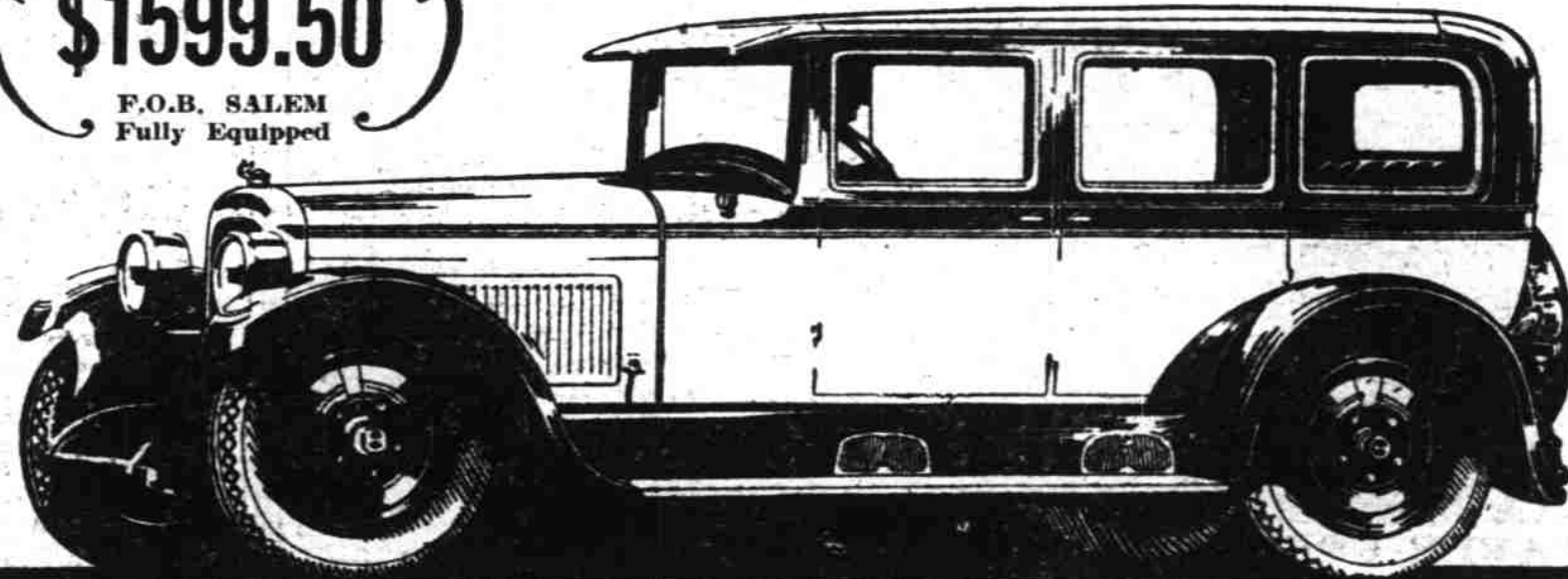
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atmosphere and refreshing style characterize every detail in their quality-built bodies.

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