

STREAMLINING TO INCREASE SPEEDS

New Tests Indicate Possibility of Defeating Resistance of Air

By W. E. Berchold (A. P. Automobile Editor) WASHINGTON (AP)—If automobiles were streamlined like airplanes they would double their present speeds. However, they would rival the futuristic designs of modern artists and probably would not be wanted by present day motorists.

Speeds of stock automobiles today, it has been learned through experiments carried on by the bureau of standards, are determined almost exclusively by the amount of resistance offered by the air through which they must pass.

Careful streamlining solved the problem of defeating air resistance in airplane construction, but a streamlined automobile with a pointed front and a long thin tail is beyond the averaged motorist's imagination.

It has been learned that the present-day automobile with a maximum speed of 50 miles an hour would have to have an engine eight times its present size and power to attain a speed of 100 miles an hour. This illustrates the enormous amount of speed sacrificed in automobiles because of present design fixed by popular taste and convention.

Dr. H. L. Dryden of the bureau of standards found in the course of his tests with perfect eighth scale models of a small car now on the market that a 49 miles an hour, eight extra horsepower would be necessary to overcome the air resistance of the full scale automobile. At 50 miles an hour, 15.7 extra horsepower would be required; at 60 miles, 27.2 horsepower; and at 70 miles, 43.2 horsepower.

In carrying out the bureau of standards' project, Dr. Dryden used the wind tunnel which has proved an indispensable aid to the development of airplanes. The tests were made at the request of an American automobile manufacturer, who supplied two specially scaled models built at a cost of \$1,000 for the tests.

The wind tunnel is capable of stirring up an air stream or gale of any intensity from a few miles an hour to more than 100 miles an hour. The model is suspended in the tunnel so that the air forces can be studied and recorded on appropriate instruments which show the extra horsepower necessary to overcome air resistance in automobiles of present design.

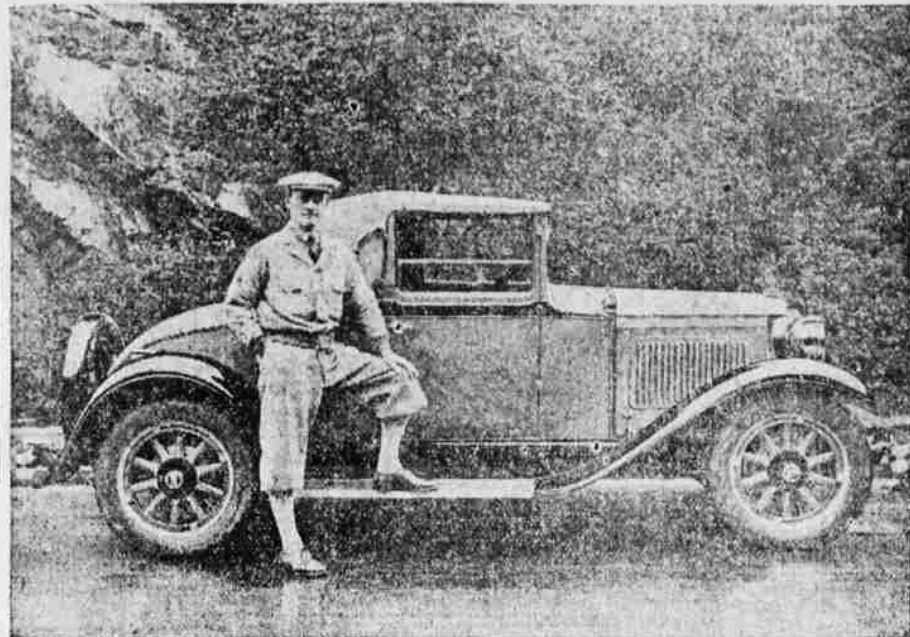
Overcoming air resistance is a vital factor in the successful flight of airplanes, because without streamlining planes would not be able to maintain speeds sufficient to insure controlled flight. In automobiles, however, the designer has bowed to the desires of the public for beauty of line and plenty of room, only to sacrifice speed and make necessary the use of larger engines and more gasoline.

It would take a brave designer or manufacturer to put a car on the market conforming to the lines which scientific investigation might reveal as most efficient. Conventional designs have become rooted in the minds of the buying public, that any departure would be doomed to almost certain failure. The tests are valuable, however, to learn how much speed is sacrificed and to make possible further study which may lead to development of some device to cut down air resistance without injuring the lines and beauty of the automobile.

GAS PRICE STUDY

WASHINGTON (AP)—Aroused by the continuous increase in the retail prices of gasoline, the Royal Automobile club of Italy has announced it will study factors entering into the actual cost of gasoline from the time of its purchase in the producing country until it is delivered to the consumer in Italy, the department of commerce has been informed.

NEW NASH "400" STANDARD SIX CABRIOLET



Here is Captain Einar Lundberg, Swedish flier, who rescued Gen. Noble and other members of the crew of the ill-fated dirigible Italia, standing beside his new Nash "400" standard six cabriolet. Capt. Lundberg's daring exploit in rescuing Noble has gone far toward making him a Swedish national hero.

Willys-Overland Leads Industry In First Nine Months Of The Year

TOLEDO, Dec. 1.—The Willys-Overland Company of Toledo, manufacturers of Whippet fours and sixes and Willys-Knight sixes, stand in first position in the entire automobile industry in percentage of gain for new car registrations for the first nine months of the current year, as compared with the same period of last year with an increase of 86.3 percent, according to figures just released.

European manufacturers alone showed 21 eight-cylinder cars, while for the first time six-cylinder models were more numerous than the four-cylinder cars. One of every four cars displayed at the salon was of American manufacture.

With its record breaking sale of Whippets and Willys-Knights during the first nine months of the current year which established a new high record for the company, Willys-Overland finds itself in undisputed possession of third place in the industry in total car sales, first and second places going to two other manufacturers whose products were limited only to four-cylinder cars. In this record-breaking nine months the Willys-Overland Company secured 7.8 percent of all the business done by the entire automobile industry.

Registrations for the month of September alone gives the Toledo manufacturer an increase of 140.8 percent over September of last year while the industry as a whole for September showed an increase of but 46.2 percent.

These figures bear out the statement recently made by the executives of the Willys-Overland Company that 1928 from month to month has established the greatest gain volume in the history of the company and that the business for the year already has surpassed the best previous year since the company started business more than twenty years ago.

The fact that the company's business in September showed such a remarkable gain over the total business done by the industry as a whole, indicates that the buying demand for Willys-Overland products was not affected by the usual seasonal slump.

THE OUTPUT BOOSTED BERLIN (AP)—The German tire output last year increased 76 per cent over 1927 but owing to the heavy increase in motor traffic consumption in Germany kept pace with production. The output of tires in 1927 totaled 18,676,248.

Four States To Build New Road Systems, Report

CHICAGO, (AP)—Four states will undertake gigantic road building projects in 1929 as the result of bond issues, totaling \$240,000,000, approved by voters in the November election.

Iowa are preparing to "get out of the mud" at an even faster rate than during 1928 as the result of a \$100,000,000 bond issue approved by the electorate. The bonds will make possible the improvement of 6,500 miles in the state's primary system, and the taking over of \$40,000,000 indebtedness voted by 51 counties.

Louisiana, Missouri and West Virginia are the other three states planning an expansion of their road building programs as the result of new bond issues approved.

Louisiana voted to raise its gas tax to four cents a gallon to provide a \$30,000,000 bond issue for

improvement of the state highway system. Missouri is preparing to complete the state's system of 7,640 miles of improved roads, and the construction of "farm to market" roads over a three-year period. The bond issue of \$75,000,000 is to be divided into three parts with an equal portion being used during each of the next three years.

West Virginia's approval of a \$25,000,000 bond issue makes possible the improvement of rural roads and the construction of new sections of the state's road network. Plans are under way for the immediate beginning of operations under the bond issue voted.

Two states, Pennsylvania and Colorado, turned down proposals for new highway bond issues at the November election, while California frowned upon a proposal to spend \$10,000,000 for the elimination of grade crossings.

Officer: Say, lady, do you realize that you were going fifty miles an hour?

The Lady: Oh, officer, I couldn't have been; I've only been driving fifteen minutes!

Hupp Company To Control Chandler

CLEVELAND, O., Dec. 1 (AP)—Samuel Regar, treasurer of the Chandler-Cleveland Motors corporation, announced that negotiations for control of the Chandler company by the Hupp Motor Car corporation were concluded yesterday.

Speaking for himself and his associates, including Fred C. Chandler, president, who is abroad, Regar said the deal had been consummated and arrangements made for the transfer of Chandler-Cleveland to Hupp.

No statement was issued as to Hupp plans for the Cleveland plants acquired.

WASTED EFFORT Two attorneys, one decidedly grim of countenance, met on the street.

"Well, how's business?" the first asked of the dismal one.

"Rotten!" the pessimist replied. "I just chased an ambulance 12 miles and found a lawyer in it."

FIRESTONE CO. FACTORY WILL OPEN ON DEC. 4

LOS ANGELES, Dec. 1.—According to official announcement made this morning, the program for the formal opening of the new Firestone tire factory in Los Angeles will take the form of a five-day celebration starting Dec. 4, in which many distinguished guests from out-of-town. Firestone officials from Akron headquarters, the Los Angeles Chamber of Commerce and the leading automotive dealers and operators of the district, will have a prominent part.

On the opening day, the keys of the new plant will be formally presented to general manager H. J. Cope, by John W. Thomas, vice-president of the parent organization, Akron, O.

Another thing that doesn't turn out as it should is the automobile just ahead of you.—Exchange.

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DEISEL TRUCK MOTOR NOW ON GERMAN MART

WASHINGTON (AP)—Soon after the Packard Motor company's recent announcement that it has installed successfully a new type Diesel engine in an airplane, the department of commerce has been informed by its Berlin trade commissioner that a new tractor powered with a Diesel motor has been put on the German market.

The new German oil-burning tractor, which is being manufactured with equipment for both agricultural purposes and for street hauling, has attracted much attention within the German motor industry. James E. Wallis, Jr., American trade commissioner at Berlin, reported to the department.

Adaptation of the Diesel oil-burning type of engine, now in common use in ships at sea, to the purposes of the motor or airplane industry, had shown little progress until the recent experiments were completed with success.

The National Advisory Committee for Aeronautics has been working on the development of an oil injection engine for airplanes at the Langley Field Laboratories for some time, and has reported encouraging progress in its experiments. The Packard Motor company, from experiments carried on privately and from aid obtained through the National Advisory committee, recently perfected a Diesel engine, installed it in an airplane engine, flew it with reported success.

The new German tractor engine consists of a two-cylinder, compression Diesel motor having a continuous output rating of 27 horsepower, and a maximum rating of 29 horsepower, at 1500 revolutions a minute. The motor has been especially developed for tractor work, with great advantages both in fuel economy and safety of operation.

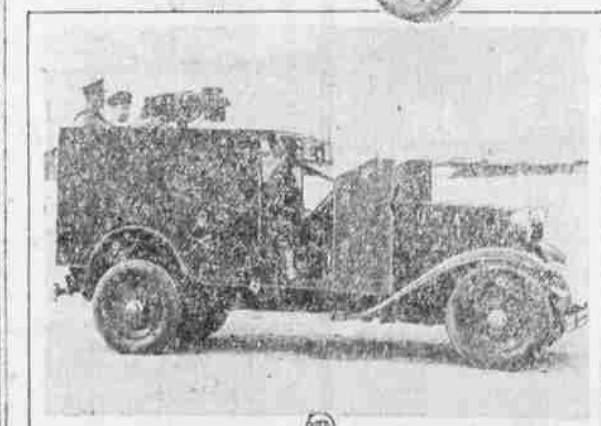
Cadillac Markets New Body Model

Cadillac-LaSalle distributors and dealers are just receiving their first shipments of a new body model for the LaSalle chassis. It is the LaSalle town sedan, an addition to the recently announced new line of LaSalle cars. An advance showing of the model was made at the General Motors Fall show in Detroit.

The new arrival is a five-passenger sedan, somewhat shorter than the standard sedan, with two doors and two windows on each side. The upper rear body panels are of metal. The model is beautifully proportioned, and combines striking appearance with exceptional balance. A trunk at the rear adds a smart touch to the exterior appearance, and the entire effect is individual and distinctive.

Some men take good care of an automobile; others treat it like one of the family.—Life.

Clank, Clank! Here's the Cavalry!



The picturesque cavalryman of tradition may soon be only a memory, as a result of tests with a motorized cavalry unit made by the U. S. Army. A detachment of seven armored cars, designed to replace the old-fashioned mounted troopers, completed a 2000-mile overland trip from Maryland to Ft. Bliss, Texas, and drew enthusiastic comment from observers in charge. Above is one of the light scout cars, fitted with two one-pounders that can be used as anti-aircraft guns if necessary; below is a heavier model, equipped with .39 and .59 caliber machine

Place your order Now. The Outstanding Chevrolet of Chevrolet History - a Six in the price range of the four!

Since the announcement of The Outstanding Chevrolet of Chevrolet History, tens of thousands of people have already placed their orders for this sensational new car! Never before has any new Chevrolet ever won such tremendous public acceptance in so short a period of time!

The new six-cylinder valve-in-head motor is an engineering masterpiece. Not only does it develop 32% more power than any previous Chevrolet motor... not only does it offer increased speed and faster acceleration—but it provides this amazing performance with such outstanding economy that it delivers an average of better than 20 miles to the gallon of gasoline!

A new heavier crankshaft, statically and dynamically balanced—and designed with shorter crank throws to minimize torsional strain—results in a degree of smoothness and freedom from vibration that is truly remarkable. A new automatic lubricating system carries a continuous supply of oil to the entire rocker arm mechanism—resulting in exceptional quietness of operation.

A plentiful supply of gasoline is assured under all operating conditions by a new AC gasoline pump and filter. An automatic accelerating pump on the new carburetor gives faster acceleration and increased economy. And scores of other features—such as fabric camshaft gear... hot-spot manifold... high compression, non-detonating head... and semi-automatic spark control—contribute to every phase of performance, economy, long life and dependability.

Throughout the entire chassis is found similarly advanced design.

Four long semi-elliptic shock absorber springs—set parallel to the frame and equipped with Alemite lubrication at all the shackles joints—cushion the entire upper structure against road shocks. A full ball-bearing steering mechanism, with complete lubrication at all the points of contact, results in delightful ease of control. And newly designed 4-wheel brakes—positive in action, easy of application and noiseless in operation—provide a measure of braking control more than equal to the most unusual requirements.

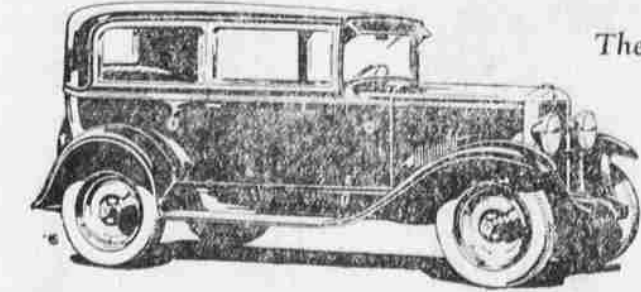
The marvelous new bodies by Fisher are longer, lower and roomier and incorporate in all closed models an adjustable driver's seat that may be moved forward and back to suit the comfort of the driver!

Come in and learn the full and significant story of this greatest of all Chevrolets!

Advance Showings

The Outstanding Chevrolet of Chevrolet History will be displayed in a series of advance showings in the cities listed below:

- Washington, Dec. 1-4, Mayflower Hotel... Chicago, Dec. 1-6, Pure Oil Bldg., Wacker Dr. and Wash. Ave... Los Angeles, Dec. 1-6, Ambassador Hotel Auditorium... San Francisco, Dec. 8-13, Civic Auditorium... Larkin Hall... Cincinnati, Dec. 8-14, Hotel Simon... St. Louis, Dec. 8-14, Arcadia Ballroom, 3515 Olive Street... Atlanta, Dec. 18-22, Auditorium-Armory... Dallas, Dec. 18-22, Adolphus Hotel... First Ballroom... Portland, Ore., Dec. 18-22, Public Auditorium.



The COACH 595 f.o.b. Flint, Mich.



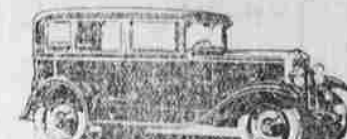
The ROADSTER \$525 f.o.b. Flint, Mich.



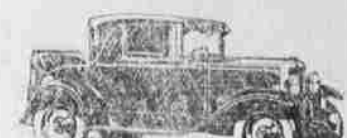
The PHAETON \$525 f.o.b. Flint, Mich.



The COUPE \$595 f.o.b. Flint, Mich.



The SEDAN \$675 f.o.b. Flint, Mich.



The Sport CABRIOLET \$695 f.o.b. Flint, Mich.



The Convertible LANDAU \$725 f.o.b. Flint, Mich.

SEDAN DELIVERY.....\$595

LIGHT DELIVERY CHASSIS.....\$400

15-TON CHASSIS.....\$545

15-TON CHASSIS WITH CAB.....\$650

All prices f.o.b. Flint, Mich.

Blue Mountain Garage

M. A. HARRISON, Mgr. Opposite P. O.

QUALITY AT LOW COST

Official A. C. Service On A C Gasoline Pumps Take the Place of Vacuum Pumps. Complete Stock of Service Parts Factory Equipment on These Cars. Auburn Oldsmobile Buick Pontiac G M C Trucks Studebaker Graham-Paige Chevrolet Oakland Cadillac LaSalle DALE COX "Auto Electric Service" 1425 Adams Ave.