

# Auditorium Gayly Decorated for Annual Motor Exhibition

## Bowers Talks on Radiation

Declares Volume of Water in Heating System at Home Is Comparable to Motors.

By F. A. BOWER, Assistant Chief Engineer Buick Motor Company.

Radiation, as applied to internal combustion engines, is casting off the surplus heat, over and above that required to operate the engine at the right temperature to insure good results. Naturally, it varies with the design of the engine.

The automobile radiator differs from the ordinary hot water radiator, in that it is used to keep the temperature of the motor down to a safe point, while the heating radiator emits heat for the purpose of warming the air in a room. The action of both types of radiators on the source of heat, however, is almost identical.

The temperature of the water in a heating radiator represents a certain amount of fuel. So does the temperature of the water in an automobile radiator.

The greater the volume of water in the heating system in your home—including the pipes and radiators—the greater amount of fuel required to keep that water at a certain temperature. The very same thing is true of the cooling system of an automobile engine.

**Radiator Metal Walls.**

The heat in the water of either type of radiator is conducted by the metal walls of the radiator to the outside, where it is absorbed by the air. And every single heat unit that thus escapes is equivalent to a definite amount of fuel, for the simple reason that the heat is generated by the combustion of the fuel.

For this reason, the volume of water in the cooling system of an engine is quite a serious problem, because it is so intimately connected with the matter of fuel consumption.

Now, the water-jacketed space in an engine corresponds to the boiler and flues of a hot water heating plant. It conducts the heat from the source into the water, and the heated water rises to the top of the radiator, is cooled and circulates back to the water jackets again. The bigger the boiler, the more fuel required; the bigger the water-jacketed space on an engine, the more heat units lost from this source.

So, as far as the motor is concerned, a gallon of gasoline represents so many heat units, and the greater percentage of these heat units that can be converted into actual working power, the greater the efficiency—or economy—of the motor will be.

**Destructive Heat.**

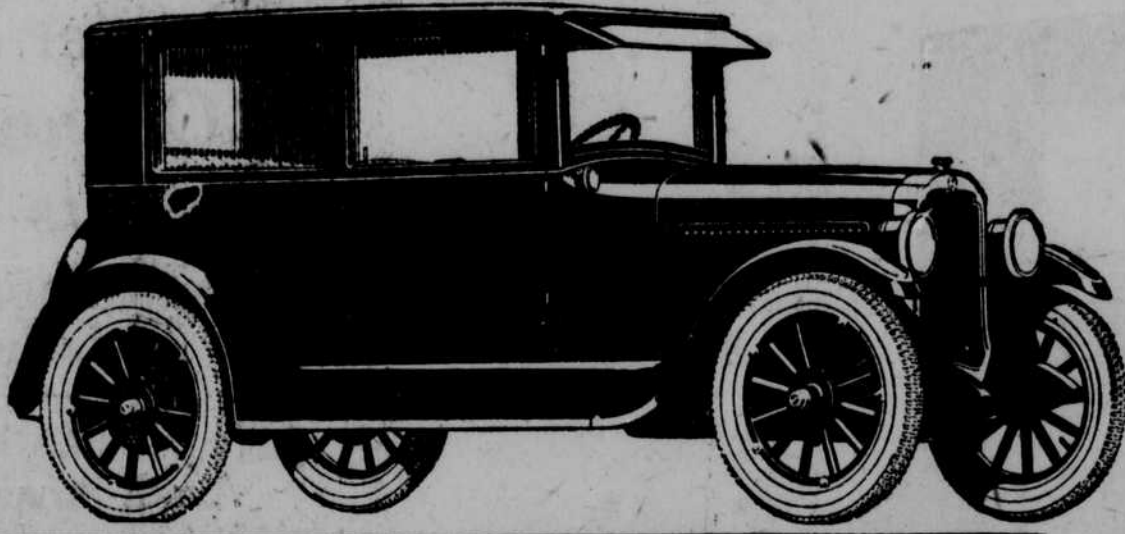
Unfortunately, it is impracticable to use all of the heat generated in such a motor for power, because unless some means of cooling the motor is used the heat soon becomes so great as to be destructive.

So, in making the cylinder castings, the water passages are cast around the cylinders in such a manner as to allow the excess heat to escape through the cylinder walls into the water, which in turn is cooled by the radiator on the front of the car.

It is quite evident, therefore, that the less water-jacketed space there is in a motor, the greater the thermal efficiency will be, because a smaller area of the cylinder walls and combustion chamber will be exposed to the cooling influence of the water.

In the Buick valve-in-head motor there is just a plain, unbroken cylinder, with the valves located in the head of the cylinder. And as the space is already water-jacketed, it follows that the valve-in-head type affords the minimum of water-jacketed space that is possible to be secured for any given size of cylinder.

## Oldsmobile at the Auto Show



## Oakland Has Founded School

Need of Improved Selling Methods Causes Company to Institute Classes.

Leading the way in actually putting into practice what was unanimously stressed by practically all the leaders in the motor car industry at the Chicago and New York national automobile shows, namely, the need of improved retail selling methods—the Oakland Motor Car company has organized a permanent school. Its first session was held last week at the Oakland factory.

This first permanent school of Oakland, established at the factory, Pontiac, Mich., will be followed by other similar schools to be instituted later at other points in the country.

The course is designed for Oakland dealers, salesmen, and service managers. While service schools have been in operation in the motor car industry for some time, the idea of a purely merchandising school for the training of retail salesmen is new.

Charts depicting every phase of the prospect-finding problem, the policy to follow in obtaining prospects, service selling methods, the choice and training of salesmen, as well as the development of salesmen were some of the fundamental subjects taken up in the course. Each course lasts a week, and after all possible Oakland dealers and salesmen have taken the first course, a second course will be given, which will go even more deeply into merchandising problems.

W. M. Chamberlain, director of sales development at Oakland, conducted the first course at the factory, assisted by E. V. Jolliffe and J. H. Vickers, attaches of the sales development department.

Mr. Vicker will be in Omaha during the automobile show. He will be at the Oakland Motor Car company headquarters, rooms 131, 133 and 135, Fontenelle hotel. He will have complete set of charts and data, showing the outline of this educational work. All Oakland dealers and salesmen are urgently requested to visit the Oakland headquarters and go over the sales development work with Mr. Vickers.

**Don't Drain Battery When Starting Engine**

Don't continue to spin the engine with the starting motor if it does not start after the first few turns, or the battery will rapidly be drained. It should be remembered, advises the Automobile Digest, that it takes about 20 times as long to replace the current to the battery which is used for starting. If the engine does not start after a few turns, there is something wrong, either in the ignition or carburetion; look for it and overcome it.

**Smashes Two World's Records**

Two new world's endurance records have just been made by "Smiles" Marow, dirt track driver, in an Oldsmobile coach. Marow drove 121 hours, 59 1/2 minutes—more than five days and nights, continuously, while shackled to the steering wheel of the Oldsmobile six. During that time he covered 3,558 miles.

The previous endurance record was 121 hours and 25 minutes, and the mileage was 3,398. Marow exceeded the previous mileage record after 110 hours of driving.

Marow made his record-breaking run in and about Battle Creek, Mich. He was handicapped by having to travel over slippery, snow-covered roads during the entire drive, with temperature below zero at times.

Several weeks ago Marow declared his belief that he could break the endurance record, and at the same time asserted that he could wear out any light six-cylinder car during the run. This latter declaration was challenged by Leo Barnhart, Oldsmobile dealer in Battle Creek, who offered Marow an Oldsmobile to make the test with and agreed to forfeit the car and \$1,000 in cash if the Oldsmobile failed to stand up as long as Marow could drive it.

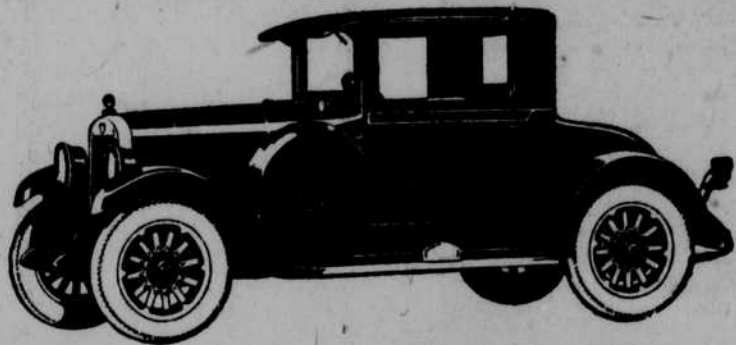
Marow was handicapped to the wheel and chained to the seat. The head of the car was sealed at the start of the run by Mayor Charles C. Green of Battle Creek and was opened at no time during the 121 hours. The locks and seals were put on by Chief of Police LaVern Fonda and city officials of Battle Creek. Marow and the car were under constant observation of newspaper men during the entire time. Periodic checks were made by police officials and at fire stations along the routes traveled.

At no time did the automobile come to a complete halt. Gas, oil and water were taken on as the car was slowly driven backward and forward. Food and drink were served Marow in the car, he partaking of them while driving. During the night, Marow drove at speeds ranging from 50 to 68 miles an hour in his effort to beat the mileage record. On one occasion, when Marow's route paralleled railroad tracks, he passed the famous "Wolverine," one of the fastest New York-bound limiteds, on a four-mile straightaway course.

Marow was able to walk unassisted when, at the conclusion of the run, the handcuffs and chains were unfastened. He was declared in excellent condition as to his heart and lung action by Dr. J. J. Holes, a famous Battle Creek specialist, who accompanied him on the last six hours of his run.

The Oldsmobile was in practically perfect condition, although it had no attention or adjustments during the 3,558-mile nonstop drive. The car was a new one not yet broken in, having been run but 262 miles when Marow started his record-breaking tour.

## Maxwell 1925 Model Coupe



## Hudson-Essex Salesmen Find Factory Is Efficiently Run

By LOUIS MOSER, Omaha Hudson-Essex Salesman.

I returned to Omaha the other day from the Hudson-Essex factory, convinced that the two six-cylinder models turned out by that factory, lead the entire motor world in popularity, priced six cylinder cars. Up at Detroit they are working night and day to meet the ever-increasing demand for their low-priced closed models, mounted on chassis that will deliver a maximum of service at a small upkeep cost.

That factory is, through the use of a perfected assembly line, turning out 800 cars a day. And it cannot meet the demand. Now it is planned to increase the force a third and go to 1,250 cars a day. That means a heavy addition to the 7,000 men now carried on the pay roll. Enormous though that pay roll must appear to the small manufacturer, some idea of the efficiency of the factory and its men can be gained when it is known that a competitor, turning out practically the same number of cars, employs 17,000 men.

The machinery which these men operate is almost human; it does every thing but think. No words can describe it, only a trip through that factory can really impress upon the layman the wonderful strides that have been taken in the automobile industry since its real inception 25 years ago.

Elimination of grade crossings, either by relocation of highways or rail lines, is urged by many as the only perfect solution of the grade crossing problem.

By TOM GORMAN, Omaha Hudson-Essex Salesman.

After spending several days at the Hudson-Essex factory at Detroit, viewing the many different operations required in preparing the various units for Hudson and Essex cars, I learned the answer to the question, How is it possible to test with accuracy the many units required for the 800 six-cylinder automobiles turned out in a day?

The enormous number of units made ready in advance of building on the assembly line explains this mechanical problem. The weighing, measuring and testing of the materials is not a hurried operation, as one might think.

The many men assigned to testing have ample time for the most exacting tests and a visit to the Hudson-Essex factory would convince the most skeptical that Hudson and Essex cars meet the strictest requirements known in this era of quality production.

And I can prove the truth of that statement with a demonstration which will be gladly given to anyone who calls me.

**MOHAIR ONCE USED FOR RUGS**

There is ample historic evidence that mohair, the hair of the Angora goat, from which is woven the mohair velvet for the interior of Cadillac cars, was used in the orient for the weaving of fine rugs and tapestries as early as the time of the patriarch Abraham.

## C. H. Wills Once Ford Assistant

Installed Some Systems in Plant of Leader Which Still Are in Use.

Among the manufacturers of motor cars whose names are closely coupled with some of the more important contributions to the industry, none occupies a more unique position than does that of C. H. Wills, active head of the Wills Sainte Claire interests at Marysville, Mich.

When the automobile industry was in its infancy, Mr. Wills became identified with Henry Ford, ultimately having charge of all Ford production.

During this latter period, Mr. Wills conceived the idea of straight line production and introduced these methods into the Ford plant, with the result that economies in time and labor were effected which were absolutely unheard of before in the building of motor cars.

Later other manufacturers began to recognize the efficacy of this new method of manufacturing and today practically all large producers of motor cars have adopted straight line production methods in fabricating automobiles.

However, Mr. Wills has not confined his contributions to the automobile industry. Besides being a skilled engineer and one of the outstanding production geniuses in American industry, C. H. Wills is world-famed as a metallurgist.

It was he who made the first practical commercial application of vanadium steel. Later he discovered molybdenum, the properties of which have caused it to be regarded as one of the most important metallurgical contributions in years.

And it is because of his mastery of the science of metallurgy that C. H. Wills has been able to accomplish many things in the further refinement of motor cars which have given his products almost unduplicated characteristics.

C. H. Wills' engineering begins with the basic materials. Knowing metal, as he does, his conception of the requirement of an automobile is most basic. He selects just the right metal for the use to which it is to be put in the car, just as he determines just the right formula for each metallic element with which he deals in order for it to possess the highest possible efficiency.

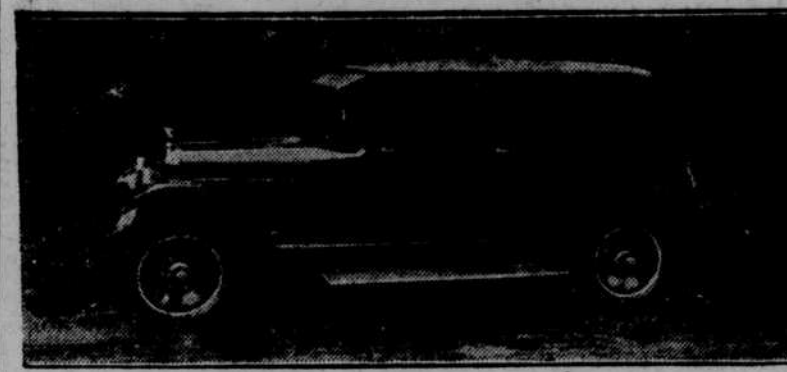
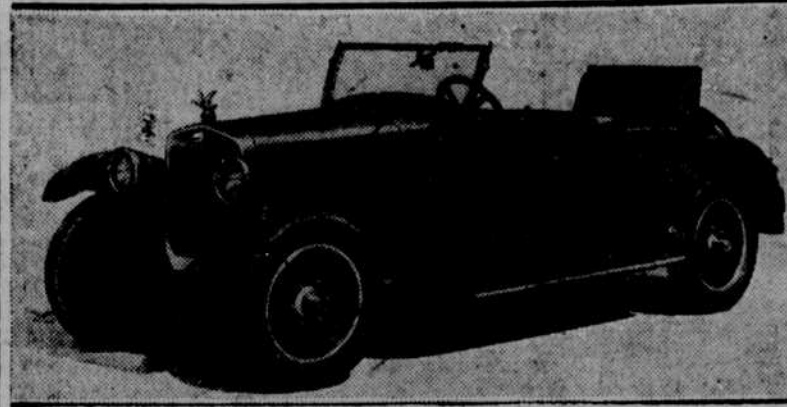
During the world war it was C. H. Wills who solved many of the most baffling problems which confronted the builders of the Liberty engine, by applying his knowledge of metals and overcoming what seemed to be insurmountable obstacles.

When, in 1920, C. H. Wills started to build cars under his own name, it was he who perfected a practical, quiet and efficient overhead camshaft design which is recognized everywhere as one of the most important advancements of recent years in automotive design and construction.

Likewise, he embodied in the Wills Sainte Claire other quite as notable improvements over former practice, bringing his product to so high a state of efficiency and beauty that soon Wills Sainte Claire automobiles came to be known as "the aristocrats of motor cars."

This year, Mr. Wills has announced the addition of a series of

## Two Wills Sainte Claire Models



six-cylinder cars to the Wills Sainte Claire line, which until now has been confined to cars of V-type eight-cylinder design, and experts report that in his "Six," C. H. Wills has again registered many advancements which are destined to have a determining effect on all future fine car engineering.

But, along with his skill as an engineer, his ability as a production manager, and his outstanding genius as a metallurgist, C. H. Wills possesses a keen instinct as a merchandiser. His vision is said to be almost uncanny at times.

Today the Wills Sainte Claire company ranks as one of the strongest financially among fine car producers. It has come through all of the storms which the automobile industry has encountered in recent years with colors flying.

forward to see themselves as they prepared to leave. As a result of their vanity, they alighted correctly.

## JAMMING BRAKES SOON RUIN TIRES

Too sudden application of brakes and excessive sliding of wheels will play havoc with any automobile tire. Sudden skidding wears a flat place in the tread and causes separation in the tire carcass.

More tires are found ruined by skidding in mountainous and hilly countries than elsewhere, but it is amazing to observe the amount of damage done to tires on the best of streets and in flat country through this type of careless driving. The life of the casing after excessive skidding is shortened so that the motorist gets far less mileage than he would otherwise obtain.

## 4-WHEEL BRAKES REDUCE ACCIDENTS

During the last 12 months 40 manufacturers of automobiles have adopted four-wheel brakes as standard equipment on their various models, and reports show in this same period accidents have decreased slightly more than 12 per cent in 14 of the largest cities of the country.

This falling ratio of accidents is due primarily to the four-wheel brake, and it is said that within the next two years every manufacturer making cars weighing more than 2,000 pounds will be using some type of four-wheel brake.

## Headquarters for RADIO PARTS

Form the profitable habit of consulting us when you need radio parts and equipment. It will pay you to become familiar with the extensive line of parts we carry regularly.

An experienced man in charge will gladly serve you and cheerfully aid you in selecting the parts for a home-built set.

Drop in soon and see our display. Let's chat about radio, even though you haven't a thing to buy. We want you to know Radio Headquarters and get acquainted with the splendid values offered here.

## Nebraska Buick Auto Co.

LINCOLN OMAHA  
Schmoller & Mueller Piano Co. P. A. Clark Motor Co., Benson  
A. Hesse Co. W. Peperkorn, Florence  
Troup Auto Supply Co. Continental Furn. & Carpet Co.  
Wilbur Brandt, Inc. Council Bluffs, Ia.

## SPEED WAGON

\$1185

Chassis, at Lansing

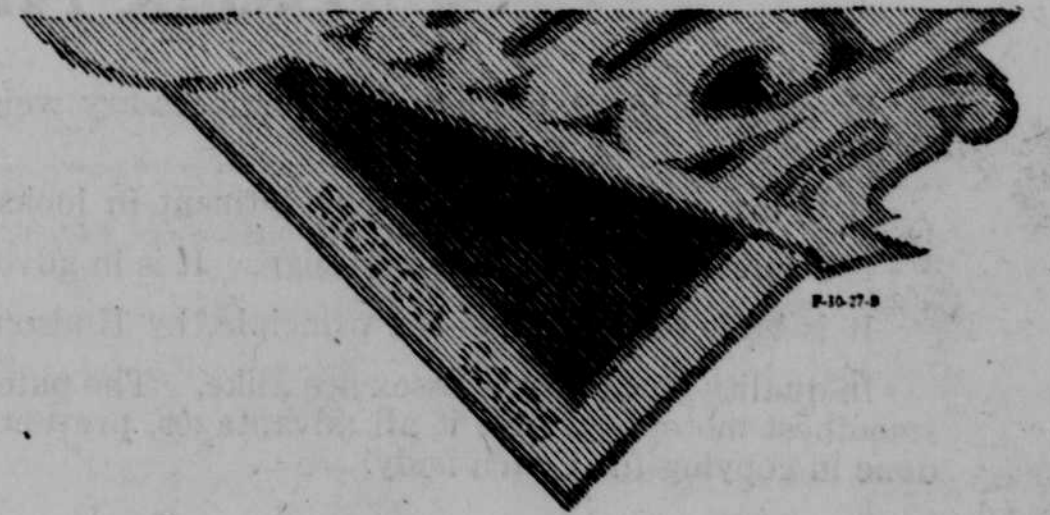
Master of road and load, the Mighty Speed Wagon carries a pound, a bushel, or any multiple up to its rated capacity, quicker and cheaper

## Dominant in Every Field of Commercial Haulage

J. M. OPPER MOTOR CO. REO DISTRIBUTORS  
2508 Farnam Street  
Reo Motor Car Company, Lansing, Michigan

To Be a Speed Wagon It Must Be a Reo

There are more than a Million Buick Owners



More than a million people know the great pleasure of Buick ownership, and more than 350,000 of them the great safety of Buick 4-wheel brakes. Ask any one of the million.

## Nebraska Buick Auto Company

Lincoln Omaha Sioux City  
H. E. Sidles, Pres. Lee Huff, Vice Pres. Chas. Stuart, Sec'y and Treas.  
NEB. BUICK AUTO CO. H. PELTON  
19th and Howard Sts. 2019 Farnam St.  
Omaha Retail Dealers

WHEN BETTER AUTOMOBILES ARE BUILT, BUICK WILL BUILD THEM