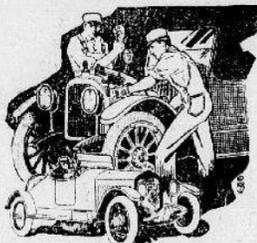
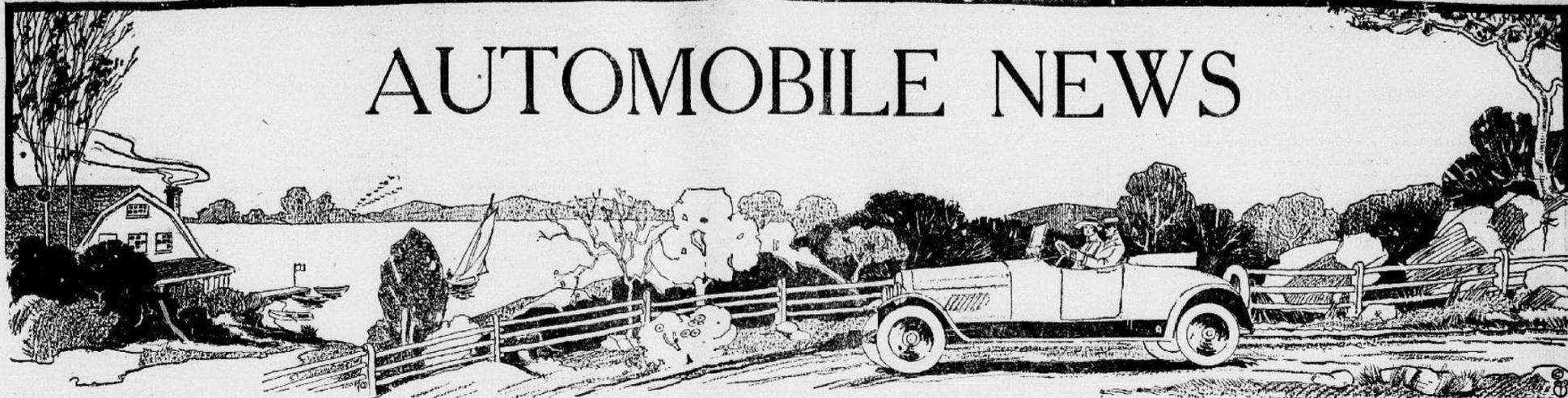


AUTOMOBILE NEWS



For the SPRING DRIVE

Bring your car in now--- before the big rush starts. Let us overhaul it and put it in perfect working order for another year's pleasure.

We employ only the most efficient mechanics and do every kind of repair work at the most reasonable of prices.

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CORNER OF MONTANA AND MERCURY
(Entrance on Mercury.)

AIRPLANE BEATS BURMAN'S SPEED

New Type Engine on Light Chassis Expected to Regain Supremacy for Automobiles.

The recent tests of the Loening monoplane at Dayton, Ohio, culminating in a burst of speed for 145 miles an hour eclipsed the record of 141.73 miles an hour made by the late Bob Burman in his Hiltzen Benz at Daytona Beach, Fla., 1911.

Thus has the airplane gained temporary ascendancy over the automobile as the world's fastest means of locomotion. Experts predict, however, that with the airplane engines of the type developed in the late war, mounted in light chassis, the automobile will quickly regain its supremacy.

The engine that propelled Burman to the pinnacle of speed fame was a huge cumbersome affair of more than 1,000 cubic inches piston displacement. It was geared 1 to 1, so that for every revolution of the motor there was a complete turn of the wheels.

300 Horsepower.
At its best this engine developed 300 horsepower with a weight of four or five times as great as that of the modern airplane motor like the Hispano-Suiza that propelled the Loening plane. The latter, developing the same horsepower, carries much less weight and is also much more compact, making possible a chassis that is lighter and also offers less wind resistance.

In high speed vehicles the element of wind resistance is even more important than that of weight, the wind resistance increasing much faster than the speed. In 1914 Ray Harroun built a number of Maxwell cars with windshields measuring less than one foot square, but had to discard them because they cut down the speed of the cars more than seven miles an hour.

Three Miles a Minute.
With a light, small motor like the Hispano-Suiza, it is believed that an automobile can be built that will attain a speed of perhaps three miles a minute, or 180 miles per hour. This is because the tractive power of an automobile is greater than that of an airplane, the wheels having solid contact with the ground instead of slipping through the air like a propeller.

The next Indianapolis 500-mile race, on May 31, is expected to see a number of airplane motor-propelled cars in action. Though these will not be built for utmost speed, they are expected to turn the course in much faster time than has ever been done before. An inkling of what is in store may be gained from the performance of Willard Rader who last year looped the track in 1:30 shattering the performances of Georges Bollot, the late European star, by .13 second. Bollot drove a Peugeot with an automobile motor of the latest type, but the airplane equipped bettered his mark with ease.

Expected to Revolutionize Industry.
The influence of airplane design on automobile racing car construction

BETTER SERVICE FOR CAR OWNERS

Return of Highly-Skilled Mechanics From Government Jobs Will Help Situation. Use Latest Devices.

Indications are that the car owner will get better and more efficient service in the garage and repair shops of Butte from now on. When you consider that many men from Butte entered the war service in the aviation corps of the army and navy, the motor transport, the motor ordinance, the signal corps and other similar branches, the benefit of the thorough and efficient training these men received is realized. These men also learned the use of labor saving devices and the use of high grade machinery and tools, in fact, the best that this country has ever produced.

The effect of this training will be far reaching and will stimulate the sale of better cars and tractors. Many a farmer's son entered the service and will come home with the idea in mind of using the money, power and labor saving devices that he has had experience with to good advantage.

The smaller garage man is fast developing into a much better business man as well as much better machinist and with more competition from thoroughly trained men than he has ever had before, he will have to turn out better work than heretofore.

During the war the manufacturers have all been busy with new developments with a view toward national standardization and have been keen to keep their organizations of dealers and agents intact. Before long they will be back to normal production. In all, conditions point to a prosperous and successful season for all branches of the automobile industry in this section.

MAY COST HIM MUCH REAL CASH

A motorist who recently undertook to assume the role of gallant knight and invite two attractive young women to accompany him on an automobile jaunt finds himself defendant in suits for damages aggregating \$75,000 in the supreme court, New York city, says the Buffalo Motorist.

The girls accepted the invitation to ride. They went spinning along at an exhilarating speed until the car, which sent the occupants flying over into the roadway. Now one of the guests wants \$25,000 for a broken arm and other injuries, while her friend thinks that double that amount would be none too much for injuries which she says are more serious. The motorist will thoughtfully consider whether chivalry pays before he again assumes the role of gallant.

BRANCHES ARE CONSOLIDATED

The Butte and Great Falls branches of the United States Rubber company have been consolidated and will hereafter be operated under one head. G. H. Schellner will be in charge of the Butte branch, succeeding C. E. Lanstrum, who will go to Great Falls to take charge there and will be at the head of both branches.

STARTING A WAR IS VERY COSTLY

Some idea of what \$120,000,000, 000 means is gained from statistics compiled by a statistician who estimates that the bill of Germany, paid at one time, would require 241,987 one-ton trucks to carry it, or the entire output of the Ford truck factory for two years and four months.

With the trucks running at a speed of 20 miles an hour, it would be 80 1/2 hours before they passed a given point. In a single line 20 feet apart they would reach from New York to Oklahoma City.

SON OF AUTO MAKER NOW HEAD OF PLANT

Edsel Ford, 24 years old, was recently given control of the huge business established by Henry Ford when the latter retired. Young Ford has been connected with the business for some time. He will draw a salary of \$150,000 a year as president of the company.

AUTOMOBILE FIX-IT

Inside of 60 days from now there is every likelihood that the weather will be such as to make driving reasonably pleasant; such will be the case very shortly after that date, at any rate. Then will come the mad rush to have cars overhauled and painted, with the result that every shop and service station will be loaded to the doors.

Labor will be scarce and it will resolve itself down to a waiting proposition—until the driving season is fairly well along.

There are thousands of cars laid up right now that will be overhauled in the spring, when the rush is on—and if they cannot be turned out in time to suit the owners it will not be the fault of the service departments or the repair shops, for they can do only so much in a given time and somebody will have to wait.

Wouldn't it seem sensible to run the old car into the shop now and give the repairman time to do his work as it should be? Isn't it better to have the work performed ahead of the rush and to be all ready to use the car with the appearance of spring? It will cost no more—perhaps not so much—as later on, and the work will be all the better for the little added time that is allowed.

This particularly applies to the painting. It will require from two to four weeks to do the overhauling and from four to six weeks at the least should be given the painter. This will permit the various coats to set well and the varnish to become hard and firm.

Now is the time at least to begin thinking of it if immediate action is not desirable.

CARE FOR BRAKES IMPORTANT TASK

No Matter How Good Your Motor Is You Have to Stop It Some Time. Should Alternate Speed.

It matters not how good an engine you have under the auto hood, if you haven't a means of stopping the car once it is started you are in for a bunch of trouble, declares H. Clifford Brokaw, a New York authority on brakes.

Each car is provided with two sets of brakes and some few have more. The emergency brake, as it is called, consists of a brake band operating within a drum on each wheel and connected by suitable linkage to a lever which is provided with a ratchet and pawl, so that the brake may be set and held there. It is intended that this brake shall be used primarily for holding the car at a standstill after it had been stopped, and it is used as an emergency brake only in case of mishap to the other brake or on long hills, where it is desirable to alternate between the two sets.

The running, or service brake, is operated by a pedal and is equipped with a spring to automatically release the brake when pressure on the pedal is removed. This brake may be a single band engaging a drum on the propeller shaft or a pair of bands operating on drums on the rear wheels—the same drum within which the emergency brake operates. The propeller shaft type gives greater braking power because of the leverage obtained through the

bearing engagement of the rear axle, and being on a separate drum there is less likelihood of heating the drums on hills. It has the disadvantage of putting a severe strain upon the rear axle gears with consequent wear.

The brakes should be kept in such a condition that either pair will stop the car quickly; it is very unwise to allow one set to remain out of order because you have one set you know is all right.

Where two brake bands are used in a set each band should hold equally or it will allow one wheel to slip. To obtain this result pedal and lever operate through equalizing bars, with linkage running from pedal or lever to the middle of the equalizing bar and from each end of the bar to the brake bands. When the bar sets straight across the car the bands should set with equal force on the drums when braking.

Brake bands are lined with some non-burning friction material, usually an asbestos material, which is fastened to the steel bands by copper rivets sunk deep into the lining, so that the heads do not come in contact with the drum.

When the linings become worn and the rivets secure on the drum they score it, leaving shallow grooves. In this condition there is not sufficient surface to give the lining a good grip and the brake slips. Scored drums must be removed and be turned true in a lathe to give a smooth surface for the best braking power.

It is also important that the lining be renewed when worn thin enough for the rivets to touch the drum. This should be done at the service station, if that is convenient, but linings of the proper dimensions for each car may be had at a supply station and a little common sense will enable anyone to make the replacements. Get the proper size rivets with the lining and remember that the heads must be sunk deep in the lining.

Among the various automobile meters is one that shows how many miles are being traveled to each gallon of fuel.



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PISTON RINGS ARE IMPORTANT

Effectiveness of Motor Is Determined by Material Used in Manufacture. Equal Tension Needed.

Wherever power is produced by pressure exerted on a moving piston, whatever the type of engine motor or compressor, its effectiveness is determined by the piston rings.

Upon the piston rings depends whether all of the force that is put into the cylinder—gasoline in the case of automobile motors—steam in steam engines, air in air compressors, etc., is used to create power, or whether or not more oil than is needed to properly lubricate works up the cylinder walls to form carbon and, in gasoline engines, to foul spark plugs and make smoke.

Equal tension, uniform pressure outward from the ring's center against the cylinder wall at every point of its circumference is the basic requirement for a piston ring properly designed and made to develop and maintain maximum compression and maximum fuel economy. The weakness of any piston ring design that doesn't produce this equality of tension is easily seen.

The pressure against the piston ring of the compressed gas in the cylinder is the same at all points of the ring circumference. It is in no one place greater than it is in another. Therefore, it is obvious that a ring's pressure against the cylinder wall should be the same everywhere.

Loss of Power.
If its tension of pressure against the cylinder wall is greater at one place than another, there is friction loss at the point of great pressure, which means loss of power and possible gas leakage at the point of least pressure. Merely closing its expansion vent by flanges or a locking device of stopping the joint does not prevent leakage past a ring which has not equal tension on the cylinder wall.

Piston ring material is also of great importance, rings can not be made successfully from ordinary cast iron. They require iron which is softer than the cylinder walls and of unusual close grain and elasticity. If the iron has not this softness the rings will score the cylinders and necessitate reboring and replacement.

THROW YOUR CLUTCH OUT

Hold out the clutch with the left foot while you close the starter switch. You can do this wherever the cranks engage directly with the engine. If your cranker operates under these conditions you will avoid turning over the clutch and the transmission shaft and gears as well. In cold weather particularly the oil or grease in the transmission is stiff and it requires considerable effort for the gears to revolve in it. Relieve the cranker of this extra work by holding out the clutch. It's not a bad habit for all year round.

ELECTRIC STARTER FOR FORD CARS

Announcement is made by the Ford Motor company that the 1919 Fords will have an electric starter as regular equipment. The starter will be made by the Liberty Motor company, a recently-organized Detroit concern. It is officially announced also that plans have been drafted for a production of 1,000,000 cars during 1919 and 1,500,000 in 1920.

Scored steam or gasoline engine cylinders can be repaired by a new process in which their pits are filled with an alloy that is fused electrically.

Make That Old Car Look Like New

We have the most complete auto repair, auto painting and trimming plant in the state of Montana.

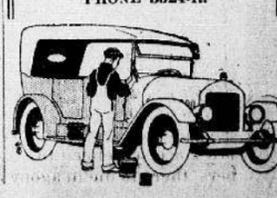
Bring your car into the machine shop and we will overhaul the engine. This is under the direction of Bert Selridge and J. B. Byrnes. Then to the—

BLACKSMITH SHOP
where all the dents and kinks can be taken out of fenders, body, etc., and have new springs made to order if needed. In fact, we are equipped to rebuild the whole car. In our

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under the direction of H. A. Karstedt, the car can be fitted with cushions, backs, celluloid lights and bevel glasses in curtains, new top, etc. (springs and cushions for trucks also carried).

PAINTING DEPARTMENT
under the direction of Louis Guay—more generally known as "Louis the Painter." Here's where your car will get the finishing touches by help schooled in the automobile industry, and able to do the high class work demanded by the trade. WE GUARANTEE all our paint jobs and will submit samples and prices upon request. When we say—

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