HERE'S REASON WHY CORDS LAST LONGER

And Why They Ride Easier and Skid Much Less.

CORDS BUILT UP IN LAYERS

Friction of Cross-Woven Fabric Is Eliminated and Lower Air Pressure Needed.

Just what is a cord tire and why are cord tires so superior to fabric tires that tires of cord construction are slowly but surely elbowing fabric tires out of public favor?

These questions, says the United States Tire company, are of interest to every tire user who cares anything about the cost of his tires. The automobilist who wants his tires to give him most miles for fewest dollars is interested in knowng what a cord tire is and why the cord tire construction may be expected to give far better service than a fabric tire.

The intelligent motorist is interested in knowing why it is that if a car rolls down a hill under its own momentum it will go many feet farther if equipped with cord tires than on fabric tires. He is interested in knowing why a journey on cord tires is more comfortable than on other tires, and why cord tires are less likely to skid than those of fabric construction.

The United States Tire company finds that many users of its famous Royal cords know there is some magic in these tires that makes them roll along for thousands of miles more than fabric tires, but know only in a hazy way that there is something radically different about the construction of the Royal cords.

What's Under the Rubber?

When the average motorist thinks of a tire he usually thinks of rubber and rubber only. When he looks at a tire all he sees is rubber, and it is natural for him to assume that on the quality and durability of the rubber depends the strength of the tire. But deep in the heart of the tire is a carcass built up, layer upon layer, of tough cotton, and it is on the strength of this inner carcass of cotton that the tire must rely for its real strength.

In the so-called fabric tires this carcass is made up of layers of closely woven cotton fabric. The threads which go into this fabric are tough and stout and make a fabric so strong that the casual observer would be justified in believing it could not be improved upon as material out of which to construct the tire foundation.

In an illustration showing a highly magnified section of this cross-woven fabric any lay person may find the explanation for the outstanding weakness of fabric construction. In this cross-woven fabric the threads cross each other, and when the tires go into action they begin to see-saw against each other. This see-sawing has two harmful effects. First, it causes a great deal of frictional heat, the worst enemy of long life for a tire, and, second, it causes the threads to wear out where they touch each other.

If one of the threads in this fabric is pulled out of the cloth, it will be found to be full of little crinkles where the thread has passed under and over the cross-threads. These crinkles are the beginning of the breaking-down process, which takes place after the tire has been in long service.

Cords Like Fish Line.

Cord construction does away with the cross-threads in the construction of a tire. When a Royal cord tire is built one layer after another of cords is built into the carcass. In each layer the cords lie side by side and run in the same direction. The layer looks exactly as a piece of cross-woven fabric would look if it had no cross-threads. Each of the cords is about as thick and fully as strong as a stout piece of fish cord.

It is obvious that it would be an endless task to build up a tire by the process of laying one cord on at a time. To do away with this difficulty delicate filaments of cotton are woven through the cords at intervals. This makes it possible to handle the cords as a fabric during the period of construction, but when the tire goes into action the delicate threads break down immediately, so that none of the harmful results found in the cross-woven tires arise.

In making a cord tire each of the cords is thoroughly impregnated with rubber and each is insulated with rubber, so that there is no direct contact of any cord with its neighbors.

Layer after layer of these cords is built up, each layer being placed at such an angle with the layers above and beneath that, when all are welded together in the vulcanizer, they make a solid piece which it is impossible to pull or twist apart.

A very interesting feature connected with the use of cord tires is that they require on an average of five pounds less air pressure than fabric tires.

More Tractive Area.

This lower pressure makes them softer and much more comfortable to ride on. The lower pressure makes it possible for the tire to spread out more as it touches the ground and give a greater traction area than fabric tires. This additional tractive area means that the tire has a surer grip on the road bed and that skidding is decreased.

Cord construction provides also a greater flexibility in the tire. This results from the fact that each individual cord can bend freely. In passing over obstructions a much smaller area of the tire construction flexes than in a fabric tire, and what flexing does take place is accomplished with the loss of less energy. It is for this reason that a car on cord tires will run considerably farther under its own momentum than on fabric tires.

The chief gain to a motorist who uses cord tires is, however, in the greater mileage of his tires and the resultant smaller cost. Fabric tires have improved greatly in a number of points in recent years and give mileages so much superior to those of former years that they are still satisfactory to a great proportion of automobilists who seek a moderate-priced tire. The superiority of the cord tire has been so thoroughly demonstrated, however, that it seems destined ultimately to stand alone in the field.

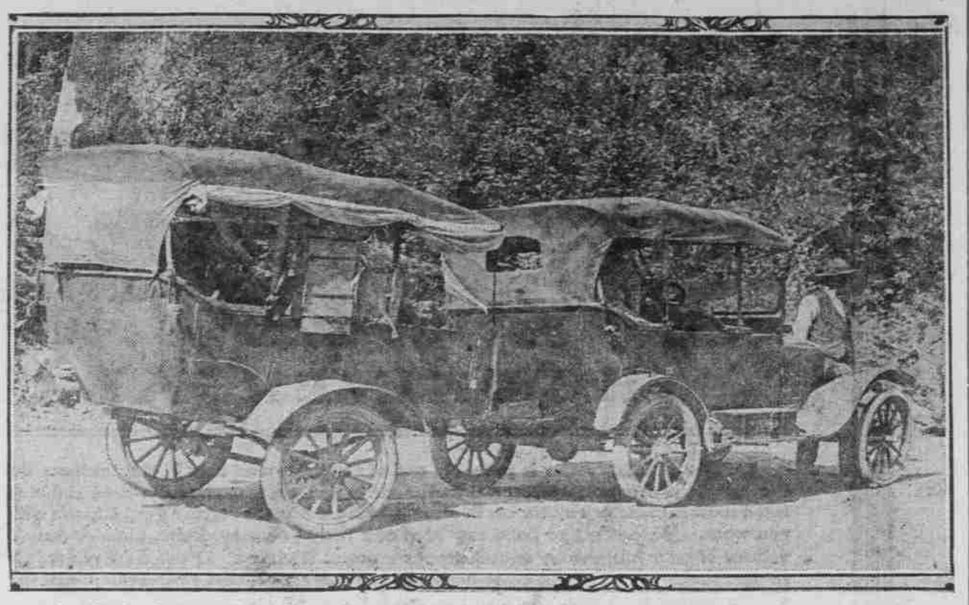
Keep Off the Rails.

With nearly a million new drivers on the roads this year we may be excused for reiterating the suggestion that running on car tracks is a deadly habit as regards the tires. The small, sharp pieces of steel that flake off from the tracks cut the rubber and tear the tread, and cost the motorists of America many miles of honest tire year every year. Keep off the car tracks as much as possible.

Holding Drill Work.

When a piece of work to be drilled is too small or of such shape that it cannot be bolted to the drill press table it can be kept from turning by putting under it a piece of stiff emery cloth.

WE'LL VENTURE TO REMARK THAT THIS IS GETTING THE LAST DROP OF SERVICE OUT OF THE OLD HENRY.



After running Lord only knows how many miles with his old car, this enterprising owner is using the body and rear wheels as a two-wheel trailer behind a newer Ford.

This unusual outfit was met by the automobile editor the other day in the Grand Ronde reservation on the road to Tillamook. This is no feather-bed road, yet the driver of this Ford, with family of three, trailer, camp outfit, bedding and two cub bears, were getting over it all right. Up hill or down dale, it was all the same to them. The cub bears rode in a couple of wire cages along with the camping outfit in the trailer, where they inhaled a lot of dust, but appeared reasonably well natured.

LIBERTY IS FAST SELLER

MANY DEALS CLOSED IN FIRST 15 MINUTES.

W. H. Wallingford Points Out Features of Car Specially Constructed for the Average Man.

"A surprising fact about the selling of Liberty cars," says W. H. Wallingford, Liberty dealer here, "is that so many sales are closed in the first 15 minutes of demonstration.

"A first ride in the Liberty is always accompanied by remarks about its ease of handling, the convenience of its controls and its riding and driving difference.

"There are very definite reasons for this difference. The Liberty originated from the desire to build a car that would be more nearly like the car the average owner would build for himself if it were possible for him to construct his own automobile.

"In response to what would naturally be his first requirement, Liberty cars were made thoroughly good. They were made easy to drive, comfortable to ride in and easy to maintain.

The average owner drives his own car. He must sit in a certain position, must operate certain controls in driving and do certain things in order to keep his car in good operating condition. The Liberty designers were scrupulously exact in fitting the slope and width of seats to afford the utmost comfort. They were just as exacting in determining the angle of the steering wheel and the position of pedals and levers, so that the driver's convenience would be assured. And the care necessary to insure maintenance of the car's running condition was reduced to an absolute minimum through the simplifying of construction and the fixing of such a high standard of quality as to do away with the need for frequent attention.

"These precautions have resulted most notably in a riding and driving difference which is the most frequently commented-on quality of Liberty cars and one most appreciated by Liberty owners. It is the quality most certain to attract one who is unacquainted with the Liberty, because of the positive rarity of this exceptional riding and driving enjoyment. Its radical difference and unusual charm usually lead to quick appreciation and—another sale."

FUTURE MOTOR TRUCK FIELD

Short-Haul Freight Offers the Best Opportunity.

In an interesting article in MoToR is a significant discussion of the future of the motor truck, which the author holds to be the overland hauling field, rather than in handling the local traffic of the cities.

"In spite of its gratifying progress in general favor and understanding," says this writer, "the motor truck is still, comparatively speaking, so new to its position as a recognized transportation medium that there is danger of its sphere of future usefulness being misunderstood and miscalculated.

"Such an error, we believe, has already arisen in many quarters with respect to the future for trucks. The majority of commentators on the development of the motor truck industry have always assumed that the great field for this utility vehicle would always remain the city with its manufactories and its comprehensive system of distribution. Now the fact of the matter is that the real future of the motor truck lies in the short-haul freight field. Inevitably the truck will continue its magnificent work in its familiar field of city activity, but it is demonstrable that many times more trucks will be sold for overland work than for urban service.

"Official figures of the Secretary of State's office show that there are about 35,000 motor trucks of all degrees in the city of New York at the present time. In addition there are approximately 100,000 horses. Between them, the trucks and the horse-drawn vehicles constitute the 'service of supply,' so to speak, of the metropolis.

"Experience has shown that a motor truck will do the work of four horses and accepting this estimate, 25,000 additional motor trucks would supply the intramural transportation needs of New York city, eliminating the horses altogether. This would give us 60,000 motor trucks to serve a population of 6,000,000. Thus we have arrived at a factor, which may be applied to the rest of the cities, giving us an approximate idea of just how many motor trucks can be absorbed in useful work in the urban centers.

Figures compiled by the United States Census bureau tell us that the urban population of the country number 42,000,000. Urban in this sense includes a large population that we do not regard as city dwellers, but let that pass, it simply makes our estimate more conservative.

If the 60,0000 motor trucks are adequate to serve 6,000,000 people in New York, it is a simple sum in multiplication to find that 420,000 trucks will serve the entire urban population of the country. And that may be accepted as representing the approximate saturation point for motor trucks in the cities of America."

The author's conclusion is that it behooves the motor truck builders of America to get behind the good roads movement and hasten the day when general overland freight hauling by motor truck is an accomplished fact.

ARIZONA HITS 'EM HARD

MOTORISTS HAVE TO PAY OUT BIG SUM IN LICENSES.

Moreover, License Number Isn't Issued Till Owner Has Receipt for His County Taxes.

PHOENIX, Ariz., Aug. 2—It may be considered notable that Arizona, with next to the smallest white population among the states of the Union, pays more money for automobile license fees than any one of the states of Rhode Island, Nevada, Wyoming, Mississippi, Kentucky or New Mexico. Last year's receipts for Arizona auto licenses aggregated $142,827. There were registered 23,905 motor vehicles and 685 motorcycles, valued, respectively, at $8,202,956 and $39,227.

Maricopa county, including the city of Phoenix, is far in the lead from a motor car standpoint, with 8340 registered. Then follow Cohise, 3621; Gila, 2117; Yavapai, 1906; Pima, 1874, and Yuma, 1327. The least number in the 14 counties is within Apache county, 254.

The licenses thus far issued this year already exceed in number those taken out last year. The counties will derive larger revenue, as it will be necessary hereafter to show a receipt for county taxes on an automobile before the secretary of state will issue a license number to the machine.

Don't let your inflation get below the point recommended by the tire dealer. Underinflation is keeping thousands of tire builders working overtime.

AMERICAN TRUCKS WIN

DANISH GOVERNMENT HOLDS SECRET TEST.

European Competitors Bested in Unique Plan Involving Actual Service for Months.

News of a secret test conducted by military authorities of Denmark and involving 20 American and foreign-built motor trucks has just been received in the United States.

The trials resulted in a victory for American automotive engineering. An American truck won first place in the competition.

The test was a unique one, secretly conducted. Without announcing their intentions, Danish military officials obtained one each of 20 different makes of trucks, both American and foreign. These trucks were diassembled and accurate and minute measurements were made of cylinder bores, bearings, gears and various other parts upon which there supposedly is much wear.

The trucks were then reassembled and placed in regular military service. For two months the trucks underwent the most rigid tests. Over roads which in this country would be termed impassable, and in all sorts of weather they hauled heavy materials for gun factories, munition works, etc., for great distances.

The work was proportioned evenly among the 20 trucks, and accurate records were kept in order that all should cover the same mileage and operate under the same conditions as to load, road and weather.

At the end of the two months the trucks were torn down a second time and accurate measurements of the various parts were made as before. This, of course, was to ascertain which of the trucks withstood the strenuous service with the least evidence of wear.

The results disclosed that the American-made truck led all competitors.

DRIVERS DEVELOPED BY WAR

Men Who Learned Truck Operation at Front Follow It Here.

The motor truck industry has received a great impetus since the war through the return of those men who drove army trucks in France and Germany. These men learned to handle their trucks under heart-breaking conditions and became experts. They are returning in ever increasing numbers, and in many cases inducing their former employers to let them drive trucks.

Loss of fingers or a foot is not necessarily a handicap for automobile driving in the estimation of the United States government, which, through the federal board vocational training bureau, is aiding some 200,000 wounded and partially disabled men to find civil employment for which they are fitted.

GLYCERINE FOR THE RADIATOR

Small Amount Used in Summer Keeps Down Scale.

Many car owners make a practice of using a small amount of glycerine in the cooling water during the summer months, naturally not as an anti-freeze agent, but to keep down scale deposits. The glycerine in the radiator has a tendency to keep down scale and has long been used in steam boiler operation for this purpose. The proportions are one-half pint to each five gallons of water.

PLANT IS WELL PROTECTED

Three Big Fire Pumps at the Willys-Overland Factory.

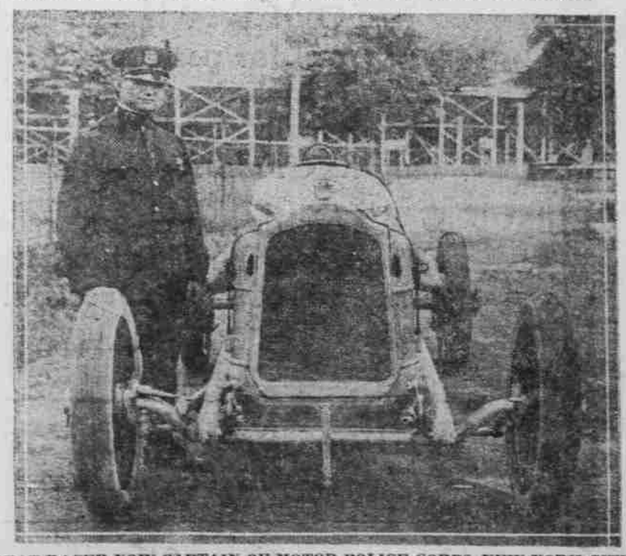
Three fire pumps with a capacity of 1000 gallons per minute, two steamers and one electric fire engine of 100 and 125 pounds' pressure, and a force of 150 men, help guard the Toledo plant of the Willys-Overland, Inc., from fire. These are in addition to a sprinkler system capable of discharging 2,400,000 gallons of water per minute.

Short Wrenches Good.

Only a practiced hand can feel that a nut has been pulled up as tightly as is good for the bolt. A clumsy wrench, particularly if the handle is long is almost sure to lead to rough treatment of the smaller bolt at the hand of the novice. Another thing that often leads even those who should know better to pull too strongly with the wrench is that the nut often has to be pulled around to a certain position to allow a cotter pin hole to be exposed above it, or if a castellated nut to align the slots in the nut with the hole through the bolt. Another thing that is bad for the bolt is when its head is forced awry, because of surface of the metal about the hole is not true with it. This causes an elongation of one side of the bolt at one short portion of its length which is obviously detrimental to its strength. A short wrench and a gentle hand make a good combination for this sort of work.

Don't neglect necessary adjustments and repairs until it is too late and you are laid up by the roadside.

THIS IS RALPH DE PALMA IN HIS NEW COP'S UNIFORM.



GREAT RACER NOW CAPTAIN OF MOTOR POLICE CORPS, NEW YORK CITY.

Ralph De Palma and his famous Packard Twin Six racer, shown in the picture, known as the fastest car in the world, recently was made honorary captain of the motor police corps of New York City. In this uniform he gave a ten-mile exhibition sprint at the police field day, Sheepshead Bay, late in July.