

# SPEEDWAY IS SAID TO BE AUTOMOBILE LABORATORY TEST

Cliff Durant, Declares Motor Improvements Due to Developments of Race Game.

Automobile racing has been responsible for the present-day small piston displacement motor. R. C. Durant, president of the Durant Motor company of California, said in a letter to E. J. Cooke of the Pacific Motor company. The speedways where the kings of the racing sport have dared death 60 times a minute, and paid the price of science with their own lives, have been the laboratories where these daring scientists of the automotive industry have made their experiments.

During the present racing season there have been many startling revelations of stamina and speed by these small motors carried in the world's fastest racing cars.

The 183 cubic racing motor, with its decrease in weight permitting lighter chassis, the letter read, "was conceived in the minds of automotive engineers late in 1913. By the end of 1920 this small motor was pronounced a success. The first actual test of the small racing motor was made on the Los Angeles speedway early in 1920. This was a motor built for me by Harry A. Miller and carried in a speedster known as the Durant Special. There were other 183-inch motors soon to make their appearance and in the first grueling race in which they appeared these tiny motors swept through the contest triumphantly and on through a strenuous season on the board speedways and in road races, piling up remarkable records for endurance and speed.

During the years of 1920 and 1921, the development of the 183 inch racing motor engaged the attention of automotive engineers extensively and the development of these small power plants had, at that time, a far reaching effect on passenger cars, commercial cars and mo-

tor trucks. Although possessing but six inches more piston displacement than the Ford motor, these tiny racing motors have exceeded the records made by the ponderous juggernauts of the past years, even though the huge engines of former times were powered by engines of 600 cubic inches displacement and over.

"At Elgin, Ill., in the last 235 mile road race there were nine cars to face the starter. All finished. Eight went through the entire contest without a stop, and without developing mechanical trouble of any description. The late Gaston Chevrolet was forced to stop on account of a clogged gasoline tank, but that could hardly be counted as a mechanical defect.

"This record is without parallel in racing annals; and is hard to believe after the long list of mechanical troubles registered by the speed kings in the old races at Santa Monica, Corona and Elgin in the days when the 450 and 600 cubic inch motors were being used.

"So successful has been the small racing motor that the type has been adopted by many passenger car and motor truck manufacturers. These lighter weight motors have great speed and stamina and are very economical in fuel consumption. Even in racing and high speeds around 112 to 115 miles an hour, these motors average about 11 miles per gallon of gas.

"Even now, the racing sport calls for further experimental work for automotive engineers. The next step will be the adoption of 125-inch motors and within another season we may expect to see these tiny engines just as fast as the present 183-inch jobs. First they had the 900 cubic inch cars. Then they dropped to 600, and then 450, and then 300 cubic inches. Each time the piston displacement allowance was lowered, there were skeptics who said the racing game would be killed as they could not get the speed out of the smaller jobs. But each time the smaller car has eclipsed in speed, stamina and efficiency, its predecessor.

"The automobile public, the manufacturer, the automobile dealer all owe a great debt to the racing sport; a great debt to the drivers who today dare death at risk their lives in the most hazardous of professions. A debt that can never be paid, is owed to those men who have paid the price that science has demanded—paid with their lives.

USE OIL FREQUENTLY

The accelerator pedal, the starting motor, the generator and other devices hidden away beneath the hood and floor boards, should be given attention and lubricated at frequent intervals.

# Natives of Ceylon Reckon Wealth by Number of Trees



By Dorsey B. Smith

In traveling through Ceylon, the train passes through miles and miles of coconut groves, with picturesque cottages dotted throughout the trees.

The residents do not reckon their wealth in rupees, but by coconut trees they possess.

Coconut trees grow to a height of from 60 to 100 feet, with trunks two feet in diameter. At an age of five to seven years, each tree produces about 60 nuts yearly. The nuts grow in clusters near the top of the tree and each nut is picked by hand as soon as it matures.

Natives in the tropics drink the milk of the coconut and eat the meat while still juicy, or become hardened. It is too mature for eating and the coconut is broken up, the meat dried and shipped as copra.

# TRANS-SIBERIAN RAILROAD BADLY DISRUPTED BY WAR

Many Bridges Gone and Travel on Line Is of Great Uncertainty; Recovery Expected.

By Frederick McCormick

Eight years ago men still marveled at going overland from Europe to East Asia and back again in less time than it took one way by sea and Suez. And the great Trans-Siberian railway by which they went was one of the most advertised, most talked-of and best known things in the world.

I find still hanging in hotel lobbies and ticket offices in Yokohama, Peking, Vladivostok, Tientsin, Shanghai, Harbin, framed advertisements of Trans-Siberian travel with seductive pictures of railway luxury and in the taiga.

"The Moscow Express arrives every Tuesday at Vladivostok, the St. Petersburg Express every Friday, and the International every Saturday," says the 1914 Siberian guide book. The traveler left the Baltic at 3 in the afternoon and in ten days descended on the shores of the Pacific ocean. From the Tartar City of Moscow to the Tartar City in Peking was 12 days. Time turned around; the world went back to its old routes. Travelers to East Siberia, China, Korea and Japan today go across America or through Suez. In the latest railway timetables of Japan and China, the connecting lines include those "to Petrograd"; but nowhere here has a ticket over the Trans-Siberian system been sold in five years.

Where are those luxurious trains? Where is that great railway across all Asia? When last I made use of them I went into a bank in Petrograd and bought 600 roubles for about \$120. Out of this I purchased a ticket for 120 roubles, paid a cash bonus of another 100 roubles to the ticket agent for his personal services, and traveled in 12 days to Harbin at a total cost of 200 roubles or about \$60.

Last summer when I reached the region of the Trans-Siberian terminus on the Pacific in these travels, an American started by this railway "to Petrograd." First he purchased one hundred millions of roubles (Rbls. 100,000,000) for which he was charged \$3000 American gold. It took three men and a cab to transfer this enormous "wealth" to the railway station. With a large part of it the new owner paid for a special car from which he hoped to derive conveniences and comforts comparable to those which accompanied former trans-Siberian travels. Although he still had many millions left on arrival in Moscow, roubles had declined one-half on the exchange while he was en route. But it made no real difference as the soviet forbade their redemption at any price. And as against \$60 which I had paid from Petrograd to Harbin four years and traveled for the other way cost more than \$3000.

Since this journey was made I have talked with half a dozen persons who have been over the Trans-Siberian east of Lake Balkal. I also have received reports of numerous journeys made from Europe; while I have traveled about 1500 miles over the Pacific terminals, and from Colonel Johnson of the American railway service corps and international technical board, in charge of Siberian railways, I have heard the whole story of the Trans-Siberian since I last passed over it.

On the Arctic-Pacific divide in Trans-Balkalia, in August, 1918, the Czechs were fighting on the line with armored cars, trying to hold the Reds in the divide until they could flank and cut them off. The railway men took 375 trainloads of Reds down the Pacific slope toward Chita in two days. It astounded the Czechs, who did not know what had become of their antagonist and they spent weeks trying to figure out how he got away and where to. Colonel Johnson

talked me such railroading could not be done in the United States.

The Czechs took good care not to mistreat the railway people. The worst they did occurred when a Czech officer got on a locomotive and threatened a driver. They had very strict regulations on the subject; anyone violating them was liable to be shot. The Reds had the same practices, but the Semenov forces always took a railway man out and shot him for an offense. Kolchak did the same, and the Japanese followed suit. And the railway men; they did their work uncomplainingly, all the way from the Ural to Manchuria and the Sea of Japan. A single locomotive would make the entire run across Asia, 4500 miles, its crew eating and sleeping, living and working for months aboard. These men

saw 150 bridges between Manchuria and the Ural, of 20-foot span to 350-foot span, blown up and practically destroyed. Some were blown up as many as three times. The great steel bridge over the Obi river lost a span in this way. In the bridge over the Irkutsk river spans were smashed, and the Irkutsk river bridge at Irkutsk had two spans shot down.

The power and rolling-stock of the railway received a tremendous punishment. From June to November, 1918, when the Czechs were coming out of Russia, followed by Kolchak, fighting occurred along most of the line. Parts of the track were removed, engines were derailed—blown up to stop rail movement—and with cars burnt and destroyed. This, together with wear and tear, and the allied embargo which prevented repair

parts reaching Russia, reduced the number of workable locomotives one-half. And these existed thereafter in only different condition.

Nevertheless the Trans-Siberian Railway has its original rolling-stock or the remains of it. Some disappeared for a time into European Russia. But in general, the Trans-Siberian Railway is intact. This is a parabolic, bow-string truss bridge of about 10 maximum Russian bridge steel spans of 850-foot length each. It has weathered every strain of foreign war and every storm of revolution. And owing to the high mechanical and operating standards of old Russia, the Trans-Siberian railway road itself is in as good condition, Colonel Johnson tells me, as

any transcontinental line in America. And there is another thing: That great railway across Asia stands practically idle in the summer sun, lined with the graveyards of its locomotives, cars and plundered stores of timber, steel, and iron, awaiting the magic touch of foreign capital and commerce, and revival of industry in Russia to give it life. And those railway people always ask, "What Americans when the American railway men are coming back to help reconstruct the railway. It seldom falls to the human lot to be missed by heroes and heroines, but these heroes and heroines of the great Trans-Siberian Railway are waiting for the American Railway Service Corps to come back and in my next letter I will tell the reason why. (Copyright, 1922, by Frederick McCormick.)

# WESTERN GIANT CORD 12,000 Mile GUARANTEE

What make of tires are you now using? Western Giant Cords will give you equal or better service. This may seem like a broad statement, but we know that the quality of material, the design, durability and appearance of Western Giants are so much superior to the many tires now on the market that are so much alike, that we have put upon them a 12,000-mile guarantee and the "Western Auto" name.



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Enormous production and distribution through our 50 stores results in economies that mean a saving to you of about 20% on the purchase price of Western Giants.

### "Western Auto" handles only tires that have been tried and proven over a period of time, and that can be liberally guaranteed with a guarantee that means what it says. Western Auto quantity distribution makes possible price considerably lower.

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For 8 years Pharis tires have been building a reputation for quality at a reasonable price in Western Auto stores. Consistent high mileage and freedom from trouble have made them the choice of thousands of motorists throughout the West.

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No matter how little you pay for a tire, you don't save money unless you get the mileage. It's miles you are buying, not the rubber. You'll pay less for your tire here, but in the Nebraska you'll get good tire that is absolutely backed by us to give 100% service.

NON-SKID	OUR TIRE PRICES			TAX PAID
	WESTERN GIANTS 12,000 Miles	NEBRASKA TIRES 10,000 Miles	PHARIS TIRES 10,000 Miles	
30x3	7.65	\$ 7.65	\$ 7.90	
30x3 1/2	\$17.75	8.90	9.75	
32x3 1/2	22.90	11.50	12.00	
31x4	27.40	12.95	13.25	
32x4	28.90	15.40	15.90	
33x4	29.75	15.65	16.15	
34x4	30.60	15.95	16.45	
32x4 1/2	35.60			
33x4 1/2	36.45			
34x4 1/2	37.30			
33x5	44.35			
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- Gasoline Stoves \$6.50-\$13.00
- Folding Tables \$4.50-\$12.50
- Luggage Carriers 95c-\$3.85

# What about carbon?

Chemical analysis shows that all lubricating oils are composed of about 85% carbon and 15% hydrogen in chemical combination.

All lubricating oils form carbon when burned in the combustion chamber. The important thing to determine is the amount and kind of carbon formed by the oil.

Some oils form a good deal of carbon, some a small amount; some produce hard, flinty carbon which will cause a great deal of trouble; others produce a soft, flaky carbon that will do no damage.

The important factors determining the amount and kind of carbon formed by a lubricating oil are the crude from which it is made, the process and care in refining it, its purity and stability.

## Advantages of Crude and Vacuum Refining

Great care is exercised in selecting the crudes from which Zerolene is made, to secure only those which contain the most desirable lubricating values and at the same time as little as possible, if any, of the undesirable hydrocarbons such as wax and asphaltum.

In selecting crudes for Zerolene, the Standard Oil Company has the advantage of its own large production of practically every type of crude oil. For this reason this company is not compelled to use any particular crude because it happens to be the only one available.

These selected crudes, carefully refined by our own patented, high-vacuum process, produce in Zerolene, oils of the highest lubricating value, which, when burned in the combustion chamber, develop a very small amount of carbon of a soft, flaky nature, which can do no harm and usually blows out entirely with the exhaust.



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