

ECONOMY GREATER IN SLOWER SPEED

Problem Presented for Motorist to Ponder Over.

LAW OF PHYSICS CITED

Air Resistance More at 50 Miles Than 25 and Gas Wastage Is Increased.

STANFORD, Cal., Feb. 11.—Here is a problem for the motorist to ponder the next time he hits the open road for a 50-mile or more trip.

That an automobile traveling 25 miles an hour on a 50-mile run will consume less gasoline than if it were traveling 45 miles an hour is the declaration of certain authorities on physics and mathematics at Leland Stanford Jr. university.

Try it out. Here is what the experts say. The primary reason for this conclusion is found in the fact that the greater the speed, the greater in proportion the resistance of the air becomes.

Other Factors Enter. Several other factors enter into the problem, such as the heat generated by the engine which goes to waste, gas mixture incompletely burned, and loss of the power from the engine through heat radiation on the road, all tending to make the consumption of gasoline higher at high speed.

In running an automobile at high speed there would normally be the same number of revolutions and explosions occurring in the engine in traveling a certain distance that there would be at low speed. But the fact that the automobile shoots forward under a higher speed tends to raise its wheels a trifle off the road, by centrifugal force, an effect further increased when the machine bounces from the crest of one bump to another, instead of riding the slopes of the depression.

The heat of an engine will vary almost directly with the speed of the engine. If the engine were to turn over the same number of times in making the run at 25 miles an hour that it did when traveling 45, the wastage of gas from heat generation would be very much less than at either speed. But, as has been pointed out, the engine will probably have to make many more revolutions to make the same distance at high speed and the heat generated in those additional revolutions is a loss above and beyond that from wastage at 25 miles an hour.

Gas Wastage Likely. The question of incomplete combustion of gas in the cylinder is one which presents several angles. As a general statement, it might be said that when an engine runs at high speed there is a tendency for the exhaust stroke to come so quickly after the firing of the gasoline vapor that a portion of the mixture is expelled before all of it has burned and has delivered its energy to the piston.

Whether the difference is perceptible between the fuel consumption of a car driven at 25 miles an hour and 45 miles an hour would depend upon the particular make of engine. The timing and functioning of the valves is usually adjusted to meet the requirements so that the car will not have this fault within the recommended and guaranteed operating speed.

If it is well-known fact that in making test runs, designed to show small gasoline consumption, automobiles are operated 20 miles an hour. These salesmen and automobile scientists take advantage of the laws of physics in their business.

MOTOR LEAGUE IS FORMED. Organization Announces Purpose to Protect Motorists' Interests.

A new organization known as the Motor Vehicle League has been launched in Portland, with the object of extending its membership throughout the state, according to the promoters. The league, according to a summary of its aims, is designed to aid automobile owners and operators from possible unjust laws and unfair taxation.

The following are the officers: C. H. Weston, president; F. K. Beach, C. W. Cabell, and James P. Hewitt, vice-presidents; J. T. Heming, secretary; John F. Daly, treasurer. Directors, in addition to the above, are: C. G. Lewis, W. C. Young, J. W. Worcester, H. J. Casey, H. W. Roberts and Fred N. Bay.

The purposes of the organization are outlined as follows in a pamphlet issued by the league: To protect motor vehicle owners of the state from unjust laws and unfair taxation; to develop a more equitable licensing system; to oppose inadequate road and traffic laws governing motor vehicles; to prevent waste of public funds and help in the more equitable spending of same; to represent motor vehicle owners in all matters for the purpose of bettering their condition.

New Standard Company Formed. NEW YORK, Feb. 11.—Formation of the Standard Motor Car company has just been announced to take over manufacture and sale of the Standard Eight. New interests experienced in the automobile industry are joining with the Standard Steel Car company in the formation of this company.

IT'S A TRIFLE EARLY FOR TRANSCONTINENTAL AUTOMOBILE TRIPS, BUT THIS OLDSMOBILE PARTY FROM THE SOUTH CAME ALONG JUST THE SAME.



ANY OLD TIME IS TOURING TIME FOR THESE TEXAS MOTORISTS, WHO HAVE JUST ARRIVED IN PORTLAND WITH THEIR MODEL 47 LIGHT EIGHT OLDSMOBILE.

In the picture are Frank Carter and his family of six, all of Weatherford, Tex. They have just driven their Oldsmobile light eight from Weatherford to Portland, distance, 2945 miles, in 14 days, an average of 210 miles per day, which is some traveling in mid-winter.

WILLYS-KNIGHT MOVES. WHOLE PLANT TRANSFERRED TO PONTIAC, MICH. Change Made in Less Than Nine Week and Then Production Is Resumed.

TOLEDO, O., Feb. 11.—In less than nine weeks, the entire Willys-Knight motor manufacturing plant of the Willys-Overland company was literally lifted out of the Elyria, O. plant and transferred to Pontiac, Mich., where production has been resumed.

The buildings themselves were not moved, of course, but the entire equipment was, including the very elaborate electrical equipment. The work of transferring this equipment began late in November. Over 600 machines had to be taken down, loaded into freight cars, shipped, unwrapped, set up and adjusted. Eight freight cars were required to transport all of the material.

The most complicated task was that of the transfer of the motor testing department with its 30 stands. At Pontiac there were seven buildings, the Flanders plant, and that was all, not even electric wires. It was necessary to install the conduits for the high-tension current with the transformers and connect them up with the elaborate electrical equipment brought from Elyria. Then there were the exhaust, water, gas and water-cooling systems which had to be brought up to complete efficiency.

Valves Influence Compression. 2.—Improper clearance at tappet ends will cause loss of power in the engine. If there is no clearance between valve stems and push rods, the valves will not open fully for the valves to remain open just enough to cause compression in the cylinders, especially when the engine is fully warmed and the stems have expanded.

RUBBER BOOKLET PUBLISHED. Gates Company Tells How Money Is Made Out of Tire Business.

After an extended investigation, which included interviews with 415 dealers, handling all makes of tires, and 112 bankers with whom these dealers transact their business, the Gates Rubber company has published a booklet entitled "How Real Money Is Being Made in the Tire Business," which sets forth what they found to be the reason why some tire dealers are prospering while large numbers of them are barely meeting expenses.

Low Temperature Numbs Battery. 6.—Low temperature has a numbing effect on a storage battery. In cold weather the battery does not deliver the discharge voltage it will in moderate temperature, and its ampere-hour capacity seems less.

NEW WILLARD BATTERY STATION OPENED IN ROSE CITY PARK. LATEST OF CHAIN OF ELECTRICAL SERVICE STATIONS THROUGHOUT CITY.



Another Willard battery service station, the 11th in Portland devoted exclusively to Willard service, has been opened at East Thirty-eighth street and Sandy boulevard, in Rose City Park, under the general direction of Harper-Burg, Inc. Willard battery agents. The new station is in charge of W. A. Alverdes, who has been an employee of the Harper-Burg company for over two years past.

ALREADY IN AMERICA SOON AS YOU DEPART WHEELS

Motor Transportation Constantly Growing.

SERVICE HIGHLY RATED

55 Per Cent of All Motor Cars in Country Reported to Be in Towns of 5000 or Less.

ATLANTIC CITY, N. J., Feb. 11.—"With motor transportation for passengers and merchandise now taking its rightful place in the transportation of the nation, a few years more will see America on wheels, with millions of motor cars and trucks coordinating their service with the railways, waterways and trolleys," says a recent article by Alfred Reeves, general manager of the national automobile chamber of commerce.

Service Highly Valued. "Our people demand the best form of transportation and the motor vehicle, whether for merchandise, for business or for individual service, will, on meritorious performance, secure its share of patronage with their proper share going to the railroads, trolleys and waterways.

Courtesy Club Plan. Among the recent nation-wide automobile organizations is the "Courtesy club," which members plan to compete with the Boy Scouts in their "one good turn a day" and the Rotarians in their campaign of national service.

Auto Thefts Numerous. 7.—There were 39,946 automobiles stolen in 28 of the principal cities of the United States last year. Of this number 21,212 were recovered. Chicago led New York with 346 more cars stolen, but Chicago also recovered 142 more of her stolen cars than New York. Detroit ran third with a recovery of 2563 from 3300 stolen cars and Cleveland fourth, with 2649 and 1764 recovered.

Small Cities Best Auto Buyers. To the farmer the motor car is indispensable. Big cities are the poorest field for motor vehicles, the registration figures showing that 55 per cent of all motor cars are in towns of 5000 or less, and 82 per cent in cities of more than 600,000 inhabitants.

Fields Gets New Field. 2 MORE COUNTIES OBTAINED BY CHEVROLET DEALER. Portland Concern Named Distributor for Light Car in Washington and Yamhill Districts.

Additional territory in the form of Washington and Yamhill counties has been granted the Fields Motor Car company by the Chevrolet organization. It was announced by LeRoy Fields, head of the company, last week. Mr. Fields was enthusiastic over the new arrangement as Washington and Yamhill counties are among the richest and best developed of the state and are considered splendid fields for a light car such as Chevrolet.

Largest Mileage for Business. Based on the false idea that motor vehicles are luxury, our people have been heavily overtaxed. Last year we paid taxes individual to our own industry of more than \$24,000,000. Why do right tires of a car wear fast than the left are? 3.—For how long a time should the radiator of a car be flushed with water to clean it thoroughly? Can scale be removed in this manner? 4.—What trouble would cause the lamps of a car to go out for only a short time? 5.—What is a test for broken transmission gear teeth, or wear in the gears? 6.—Does looseness of a front wheel indicate wear in the bearings? 7.—What would result if the terminals of the battery to the generator were reversed? 8.—How can oil be kept away from the radiator hose connections? 9.—How does the fuel which is drawn into cylinders of an engine cause carbon deposit during combustion? 10.—What instruments are used to test a storage battery? (Copyright, Thompson Feature Service.)

TOLEDO SHOW MAKES RECORD. Sale of Overland and Willys-Knight Heavy During Week.

TOLEDO, O., Feb. 11.—Willys-Overland and its home city, Toledo, combined to break a new record for the automobile shows in the local dealers' show which came to an end last week. In the four hours—from 7 until 11 o'clock—the dealers sold 49 bona fide retail orders with deposits were received, or one order every six minutes. During the entire show there were 115 orders entered for Overland and Willys-Knight cars, which stands as a top figure for any show.

75 AT WORK ON NEW ROAD. Highway Being Built on North Bank of Suilaw. EUGENE, Or., Feb. 11.—(Special.)—Seventy-five men are at work on the new road being built by the Southern Pacific company down the north bank of the Suilaw river from Mapleton to Cushman, a distance of 13 miles, according to C. D. Willson, contractor for the company, who was in the city during the week. This road is being built to replace the one taken by the company when it built its road from Eugene to Coos bay and is to cost about \$15,000,000. Lane county having agreed to pay \$10,000 toward the expense.

Cracked Crank Chamber Cured. When a big crack develops in the crank chamber there is but one cure, which must be administered by a firm specializing in welding. If the crack

A good name

DODGE BROTHERS Sedan



Sedan, \$1440. Coupe, \$1280. Touring Car, \$880. Roadster, \$850. Panel Business Car, \$980. Screen Business Car, \$880. Prices L. O. B. Factory.

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if a small one, however, it can be repaired by riveting a thin metal plate over the whole area embraced by the crack. If the break is very small a hole can be drilled at each end of the crack to keep it from spreading and then the whole can be hammered over with a hammer and chisel.

Scratches on Body Treated. While a deep gouge in the car's body work will usually call for the attention of the coach builder, still the really skillful owner may be able by running into the scratch beeswax and resin melted together and then smoothing off the surface and repainting to accomplish a satisfactory result.

GASOLINE TAX IN 14 STATES

Oregon and New Mexico Only Ones Having Tax of Over Cent. NEW YORK, Feb. 11.—In fourteen states taxes on gasoline are now operative, according to a recent statement by Harry Maxwell, Jr., secretary of the motor vehicle conference committee, New York City. The tax is 1 cent per gallon, except in Oregon and New Mexico, where a 2-cent levy is imposed. The list is as follows:

Colorado, Kentucky, New Mexico, Oregon, Arizona, Arkansas, Connecticut, Florida, Georgia, Montana, North Carolina, Pennsylvania, South Dakota, Washington.

Glycerin for Radiator. Many car owners make a practice of using a small amount of glycerin in the cooling water during the summer months, naturally not as an antifreeze agent, but to keep down scale deposits. The glycerin in the radiator

The thousands of Wills Sainte Claire miles—safe miles—and the satisfaction of the car's many owners deserve your consideration.

The New Prices

Table listing car models and prices: Touring Car - \$2475, Roadster - 2475, Coupe - 3275, Sedan - 3475, Imperial Sedan - 3575, Limousine - 3850, Town Car - 3850.

WILLS SAINT-CLAIRE

The Mo-by-ten-car MARYSVILLE MICHIGAN

WAS. C. FAGAN CO., Inc. Chas. C. Fagan, Pres. Ninth and Burnside.

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