

GOOD BRAKES ROGE FACTOR IN MOTORING

Bringing Car to Stop More Important Than Starting.

KEEP BRAKES IN REPAIR

Bad Breaks on Part of Both Motorist and Pedestrian Emphasize Need for Good Brakes.

First they had trouble starting them and now the big problem is to make them stop.

According to Thermoïd—or, to be exact, the Thermoïd Rubber company, producer of brake lining and tires, this is a summary of the automotive industry. And in its "make them stop" propaganda, the company is doing much toward educating both motorist and pedestrian to the need of adequate equipment and careful driving.

When a machine is supposed to go and does not, inconvenience alone results. But when it suddenly becomes necessary to stop a car and it cannot be stopped, then something serious happens, probably the least serious being the wrecking of the machine. Therefore, those advocates of careful attention to the brakes of motor cars or trucks are really missionaries in the cause of eliminating, or at least reducing, the number of automobile accidents.

There are two elements which enter into the problem—bad breaks on the part of either the motorist or pedestrian which are responsible for the predicaments which make quick stops necessary, and good brakes on the machine to stop within the shortest possible time and smallest distance. Laws of inertia, friction and motion make it a practical impossibility to stop a machine instantly, however slowly it is moving. Therefore an added measure of caution is necessary.

All Up to the Brakes.

"Ninety per cent of the accidents occur while the machine is moving at a speed of either 15 or 20 miles an hour," says George R. Keith, district representative of the Thermoïd Rubber company. "The majority of these accidents are due to a poor brake as just as dangerous on a car moving at 15 miles an hour as a machine traveling 50. A good brake is just as efficient because the greater the speed the greater the braking effort in proportion. But it is not remembered that the physical laws are to be considered in calculating the distance in which an automobile will stop. No moving body can be stopped instantly.

"According to the standardization table prepared by the company, the following is what a motor car should do if its brakes are in good condition: At 10 miles an hour it should stop in 9.2 feet; at 15 miles, 30.8 feet; 20 miles, 57 feet; 25 miles, 88 feet; 30 miles, 124 feet; 35 miles, 160 feet; 40 miles, 196 feet; and 50 miles, 231 feet.

"From this comparison should be learned the lesson of not expecting the machine to do the impossible. The driver who makes an effort to stoken the speed of his machine until he is almost to the stopping point is flirting with danger. The pedestrian who defies a driver by counting slowly across the street in front of a motor car, relying on his rights as a pedestrian to gain safe passage for him, is taking a chance that the driver will not be able to stop the car. These misunderstandings, rather than any malice, are thought are what cause a pedestrian against motorist in a general education and an emphasis on both sides is necessary to the good of the cause.

Jay Walker Always With Us.
"Any motorist who admit that the brakes are the most important part of his car as far as his safety is concerned. But when his attention to his brakes, the motorist loses his appreciation of their importance. No precaution is taken until the brakes refuse to work and he has a narrow escape or possibly an accident. The brakes of a motor car are inconsequential until they are needed. At that moment of need, however, they at once assume proportions of great importance.

"Human nature is susceptible to mistakes. Jay walking probably, can be diminished but never eliminated. There are always drivers among motorists who take chances. Education and good brakes form the antidote. Together these influences are working for the safer motoring era which is fast approaching."

A few minutes ago a busy street intersection will demonstrate clearly to the observant person just how important brakes are to a motor car. A car suddenly approaches from around the corner, brakes of both machines are brought into action. The machine stops to permit traffic to pass—brakes in working order, confidence and he starts to cross even before the vehicle has stopped. Someone starts to work in between a few parked machines and a sudden application of the brakes is the only thing that saves an ambulance call. A machine starts in parking position without signaling and a collision is averted by good brakes. A street car turns in another direction while a machine is about to cross in front of it. A big truck suddenly appears from an alleyway. All these occasions call for good brakes and teach the lesson of paying attention to this important mechanical part of an automobile.

TRUCK NOT GAMBLE NOW

BUT IN EARLY DAYS BUYER WAS TAKING A CHANCE.

White Company Really Builder of the First Motor Truck Along in 1909.

In the days of long ago the men who bought motor trucks were considered gamblers and to a great extent they were. In 1909, when White built the first truck, the motor car industry was in its infancy. We all remember the cars of those days. Some of them still had the doors in the rear, so that those who entered had to climb steps and sit with nothing but atmosphere over their heads. There were no windshields and tops were unheard of. Trucks were uncertain and ran sometimes, and more often did not. They were built on passenger car chassis with truck bodies and were more or less makeshift.

"White built a truck that was a real truck from one end to the other," says G. A. Urquhart of San

Francisco, Pacific coast manager of the White company. Some of these old-timers are still running.

The departure of the White company into the truck industry marked an epoch in truck development. Expert engineers used their best efforts to perfecting this truck and year by year improved their designs.

"All this time passenger cars, built by the White company, were being improved. The White steam car was abandoned for the gasoline vehicle and design progressed.

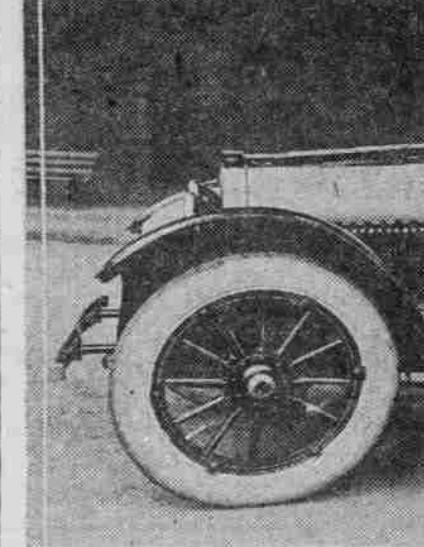
"Then came the announcement of the engineers and officers of the company that White would not build a truck with anything but chain drive for heavy-duty models until something better was perfected. They stuck to this idea until some other form of final drive was evolved that was more efficient than the chain drive and better. This the White company engineers found after years of work and study; the double reduction gear drive.

"This form of final drive is now used for White heavy duty trucks, and hundreds of trucks in active service all over the world attest its efficiency.

"The double-reduction gear drive, as used in White trucks, delivers maximum power to the rear wheels. This form of final drive combines all the advantages of the chain drive, with none of the disadvantages.

"White trucks in use in hard service in the northern woods during the

WELL-KNOWN SINGER AND BUIK SEDAN IN WHICH HE VIEWED FOR FIRST TIME THE COLUMBIA RIVER HIGHWAY.



JOHN HAND, TENOR, DECLARES OREGON HAS WORLD'S GREATEST SCENIC HIGHWAY.

George W. Dean, manager of the Portland branch of the Howard Automobile company, with Mrs. Dean, was host last Sunday to John Hand, the tenor; his manager, John Russon, and accompanist, Len Van Jensen, on a trip to the Columbia river highway and dinner following at Chanticleer. The trip was an enthusiastic Buick owner. Mr. Hand doesn't yet own a car, having just learned to drive, but he was mightily pleased at the opportunity given him by Mr. Dean to pilot the sedan in from Multnomah Falls. He declared the distance in highway tour the greatest scenic trip he has ever taken, and at that the highway in this cold weather is far from being at its best.

summer and fall of 1919 proved that this form of drive was correctly designed. In carrying capacity loads of lumber over rough roads or in the service of big concerns in hauling gasoline and oil, the performance was the same.

"These trucks earned money for their owners and are still producing."

HIGHWAY ALL-YEAR ROAD

H. T. MCKAY PROVES IT BY TRIP DOWN TO MEXICO.

Mud Is Found in Some Sections but Going Is Not Bad and Fast Time Is Made.

Proving the Pacific highway an all-year road from British Columbia to the extreme limits of southern California and to Mexico, if you please, H. T. McKay of 800 Robinson street, Vancouver, B. C., arrived in Portland from his home city early last week and departed within a day or two over the Pacific highway for Los Angeles, Cal. He is driving a new model "R" 1920 Hupmobile roadster.

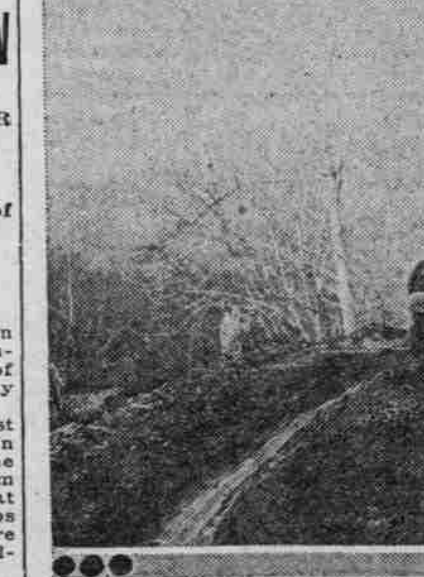
On its arrival in Portland the Hup was spattered with heavy globes of mud from head to foot, but Mr. McKay explained that, aside from 15 miles of sluggish and rough road in southern Washington, the roads from Vancouver to Portland are fairly good.

He did, however, depart from the regular Pacific highway at Kalama, Wash., by ferrying across to Goble on the Oregon shore. Mr. McKay made the drive from Vancouver, B. C., to Seattle in 11 hours. For nine miles of that distance the mud was up to the hubs of his car, necessitating a fight with slush which made three hours the running time for that short stretch. The rest of the way he could average around 20 miles to the hour.

Despite the thickness of the mud in some places, Mr. McKay's car did not hold him up once for any engine or machine trouble, one puncture being the only sad incident of the trip.

An English syndicate has purchased all of the 16,000 reserve motor vehicles from the American third army at Coblenz, Germany.

ALONG THREE RIVERS SECTION OF TILLAMOOK ROAD.



Typical of road conditions in this district. For the first time the road to Tillamook now is passable in mid-winter. Though road work in the Grand Ronde Indian reservation has ceased until spring, a crew of men is still at work in the Three Rivers section and a good many sharp pitches like the one shown here are being eliminated. The car is a Chalmers, the man, Ted Herlihy, Chalmers territory man for the C. L. Boss Automobile company.

LINCOLN HIGHWAY IS NUCLEUS FOR SYSTEM

Main Line Road Becomes Backbone of Continent.

ROAD NEED EMPHASIZED

War Brought Home Lessons of Good Roads and Assured Necessary Co-operation.

DETROIT, Mich., Jan. 17.—All America is interested in the Lincoln highway. This great road, laid out and proclaimed as a memorial to Lincoln by the Lincoln Highway association in 1913, as the first great

tively promoting the construction of the route.

The Lincoln Highway association's headquarters here has just completed a careful compilation of the expenditures made by the various states and counties through which the Lincoln highway passes upon its improvement during the past year. The Lincoln highway, which was at first largely a series of connecting country roads, has gradually become, through official action of the various states, an integral portion of the several state highway systems with the result that the tabulation of expenditures provided direct to the association by the state highway departments of the eleven states traversed very accurately indicates not only amounts expended, but the mileage of improvement accomplished.

In the majority of states federal aid has largely augmented the state and county funds, the route having been established as a federal aid road to be improved directly under the inspection of the government for more than three-quarters of its total distance between New York and San Francisco. In the following table prepared by the Lincoln Highway association, showing the expenditures of the Lincoln highway in each state traversed, the amount of federal and state aid accurately reported through the highway departments is augmented by such scattered county reports as were available. In nearly every state, however, the expenditures were larger

than the actual detailed figures reported.

Expenditures on the Lincoln highway for 1919, by state, for reconstruction and maintenance:

New Jersey	\$1,333,372.00
Ohio	1,043,708.10
Indiana	742,214.20
Illinois	515,925.00
Iowa	259,896.29
Nebraska	245,925.00
Wyoming	127,000.94
Nevada	411,046.58
Arizona	372,569.00
Total	\$8,886,800.31

To the foregoing must be added much of the county construction and maintenance work and city paving, for which it is impossible to get accurate detailed figures. Conservative estimates resulting from actual inspection of such work in progress following the war, which opened a large field for unemployed labor, and which offered a market for construction material.

War Helps Movement.

The war gave a tremendous impetus to American highway construction, as its lessons had a highly beneficial effect upon public opinion, with the result that there was almost a universal demand for proper permanent highway improvement in every part of the country as soon as the war ended. Moreover, during 1917 highway construction in every part of the country was greatly curtailed, and came almost to a stop in 1918, with a result that road conditions had become very bad, even on the most important main highways in every section of the country, while highway funds had continued to pile up in the treasuries of the various counties and states and were available for the undertaking of great construction projects early in 1919.

In many states large bond issues for highway construction have been passed in wartime with the provision that the bonds should be sold and the work started after the war.

As a result of all conditions 1919 will doubtless be looked upon as the real start of what will later probably be considered as the era of American highway building. While it cannot be said that 1919 marked the climax of Lincoln highway activity, in view of the fact that plans for 1920 indicate even greater accomplishments, nevertheless, the year's developments along the Lincoln highway are an excellent barometer of the highway situation in this country generally. The actual improvements accomplished on the Lincoln highway in 1919 bid fair to equal the combined work of the previous five years during which the Lincoln Highway association was ac-

1914	\$1,280,000.00
1915	2,580,280.00
1916	4,198,183.00
1917	2,490,915.99
1918	2,996,307.71
1919	6,286,800.31
Total expenditures on Lincoln highway in six years	\$23,962,472.04

It is interesting to note that the total amount spent for Lincoln highway improvement by all of the states crossed by the road between the amount spent on the work in four separate states during the past year.

The association also points out that contracts covering a total of 153.8 miles of permanent improvement were let in 1919 in seven of the states traversed by the route, the total amount of these contracts aggregat-

ing an additional \$2,232,112.59—money already provided and in addition to that actually expended for work completed in 1919. It will thus be seen that total financing for Lincoln highway improvement during the past year has amounted to close to \$12,000,000, only about a million short of the total actual expenditures for the five years 1913 through 1918.

While construction costs are interesting as reflecting the increasing demand for proper permanent improvement and a correspondingly increased willingness to liberally provide the necessary money for the work, the tourist or traveler or those interested in highway freight transportation, will be more easily concerned with the constructive results accomplished through these expenditures.

The Lincoln Highway association points out as significant the increasing proportion of the total expenditures which are permanently invested in standard types of construction designed to meet the traffic of the future. In addition to the considerable cost of properly maintaining such a heavily traveled road as the Lincoln highway, \$77.33 miles of new permanent work was accomplished on the Lincoln highway during 1919.

This new mileage was of the following types:

Concrete	121.14
Brick	21.29
Bituminous macadam	17.01
Macadam	28.72
Gravel	69.23
Shale	2.66
Permanent earth grade	117.89
Total	377.33

West of the Mississippi progress toward the ultimate achievement of the Lincoln highway ideal has been, if anything, more notable than that accomplished in the east, for the reason that during the past year fundamental

difficulties have been removed in several states and a safe and open route in line for rapid betterment opened from the Mississippi to San Francisco bay.

With the exception of California, Iowa is the one state west of the Mississippi through which the Lincoln highway passes which is fully capable of itself financing the adequate permanent completion of the road. Antiquated legislation, which was the main barrier to proper highway improvement in Iowa, was superseded which will enable the prompt permanent construction of all of the important main line roads, including the Lincoln way, which was established as one of the state highways.

WHEN YOU'RE STUCK IN MUD — Don't Dig Your Grave by Racing Wheels Around.

"A motorist often digs his own grave because he doesn't remember that the slower a wheel turns the more traction it has," said C. L. Boss, Hudson, Chalmers, Essex and Maxwell dealer. "His owners out of 10, when stuck in the mud, will put their cars in low gear and then raise their engines, shortening the life of both tire and motor. With the wheels going at such a pace it is impossible to get any traction, even if straw or twigs are placed beneath the treads and tire chains will be slipped around idly. The effect is usually to dig a deeper hole and increase the difficulty.

The correct way is to pack cloth or twigs beneath the wheels, use low gear and only speed the motor sufficiently to take the clutch without stalling.

Don't fail to stop, look and listen at railroad crossings.



Smashed to splinters

Yet the car was going only 15 miles an hour

MOST people think of a reckless driver as one who goes streaking along country roads at 50 miles an hour, or shooting through city streets faster than the law allows.

Yet official records show that 76% of all automobile accidents occur when the car is going 15 miles an hour or less.

Safety, for yourself and your car, is not a matter of how fast you are going, but how quickly you can stop.

Few motorists know how quickly they should be able to stop their car. It is so easy to assume the brakes are right—until an emergency shows they are all wrong.

How to avoid accidents

A simple inspection of your brakes at frequent intervals will

make them a source of protection instead of danger.

Perhaps a tightening of the brake rods, or an adjustment of the equalizer is all that is needed. The garage man will know if relining is necessary.

Why Thermoïd Brake Lining is safest and wears longest

In each square inch of Thermoïd Brake Lining there is 40% more material than in ordinary brake lining. This additional body gives a closer texture which is made tight and compact by hydraulic compression under 2,000 lbs. pressure. In addition to this, Thermoïd is Grapnelized, an exclusive process in manufacture which enables it to resist moisture, oil and gasoline.

Have your brakes inspected today. Remember that every foot of Thermoïd is backed by Our Guarantee: Thermoïd will make good—or WE WILL.

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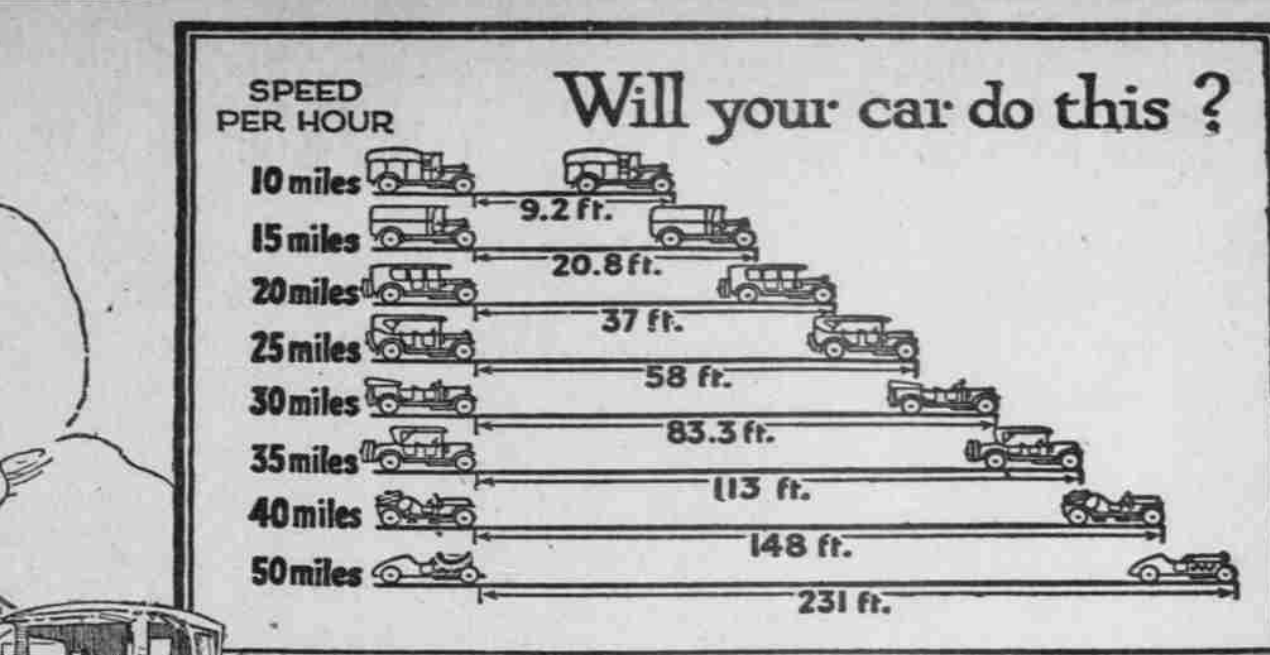
Branches in all principal Canadian cities

Notice the loosely woven surface. Wears down quickly and unevenly. Lacking its gripping power as it wears.

Notice the compact texture. Wears down slowly. Gives uniform gripping surface until wear thin.

Thermoïd Hydraulic Compressed Brake Lining

Makers of "Thermoïd-Hardy Universal Joints" and "Thermoïd Crotide Compound Tires"



Leading automobile engineers have worked out the accompanying chart. It shows how quickly an automobile going at various speeds, should be able to stop, providing the brake mechanism is efficient, and road conditions average.

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This MACK display chassis will prove to you that there is nothing about the construction of a MACK truck we desire to conceal. In fact, we desire to show you everything there is about it. We know there is not a mechanical weakness about the MACK truck, and if you can show us any place wherein an improvement may be made, we shall appreciate the suggestion. If you care to learn how MACKS perform on the road we will give you a list of owners and you may ask any of them anywhere.

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