

GEAR SHIFTING TEST OF DRIVER'S ABILITY

Letting Gears Clash Usually Mark of the Novice.

RIGHT METHOD DESCRIBED

In Climbing Hills, Change Should Be Made Quickly and Firmly. Knack Easy to Get.

One of the marks of a good driver is the manner in which he handles the gear shifting lever. Of course the design of the clutch and transmission has a great deal to do with easy gear shifting, but even with these advantages a certain amount of practice is necessary

make the shift, but smoother shifting will result if, after moving the lever from first or second speed, it is allowed to remain in neutral speed position. The driver will acquire this knack much quicker if he will cultivate the habit of not gripping the shifting lever too firmly. For example, shifting from second to high speed is a straight backward movement. By moving the lever backward with the finger tips, the driver can actually feel when the gears are rotating at proper speed to mesh perfectly. With the lever gripped tightly this is not possible.

Shift Quickly on Grades.

These rules will apply to all ordinary driving on fairly good and level roads, where the car does not lose momentum quickly. But on an up grade or in heavy pulling of any kind where the car slows down the instant the power is shut off, the shift should be made quickly and firmly from all speeds.

Shifting from a high speed to a lower speed is practically the reverse of the motions described above, except in the matter of handling the throttle. The principal thing is to make the shift as firmly and quickly as possible, so as not to let the gears slow down. It is also well to press the clutch pedal down only far enough to barely release the clutch.

Never attempt to reverse the car until it has come to a full stop, nor to shift from reverse into forward speed until the car is standing still, because

RIMS NOT TO BE CARRIED

BEARINGS SERVICE CO. DROPS THIS FEATURE.

Entire Activities of National Organization to Be Confined to Bearings Service Only.

"At the close of June business our company will discontinue the handling of rim and rim parts for service," said Alfred K. Kebner, general manager of the Bearings Service Company.

"Going back to the fundamental aim behind the formation of the Bearings Service Company, which has been the convenience of the motoring public when it required bearings for service purposes, we again liken our plan to the union station idea, whereby through one terminal, owned or controlled by competing railroads, the traveling public is greatly accommodated in one specific regard.

"For a time our concern steadfastly pursued the objects back of its organization, but in its desire to grow and become of more service to the community the handling of rims and rim parts for service was also taken on. After dealing with this type of service commodity for a while, it has been de-

ONE OF MANY DIAMOND T TRUCKS IN LOGGING WORK.



This truck, a 3 1/2-ton model, is paying its cost many times over for the Quigley-Roberts Lumber company of Klamath Falls. They purchased it from August Junge of the Diamond T Truck Sales agency, Portland.

In order to shift the gears deftly, without noise or clashing, this clashing is caused by the outer ends of the gear teeth striking each other instead of meshing as they should, with the result that the transmission gears are sometimes injured by constant improper shifting of gears.

A clear understanding of what happens in the process of gear shifting will enable the driver to master the process in a very short time, says an instructive article in the Buick Bulletin.

The transmission is made up of a series of gears, mounted on the main shaft and the countershaft, with the driver gear mounted on the transmission case. The first speed, second speed and reverse combinations are simply the sets of reduction gears with various ratios, to give the motor a greater leverage against the driving mechanism when required. High speed is direct drive, which means that the propeller shaft revolves at the same rate of speed as the motor crankshaft.

The various gears are brought into play by moving the gear shifting lever to the proper position.

Theory of Gear Shifting.

When the clutch pedal is pressed all the way down the power of the motor is disconnected from the transmission system, which releases the pressure of the gear teeth against each other and makes it possible to shift the gears easily. Also, when the gear shifting lever is in neutral position, the power is disconnected from the rear driving mechanism, because none of the transmission gears are in mesh.

The lower end of the gear shifting lever connects with the gear shifting forks, which are arranged as to push the gears forward and backward on the square main shaft in order to make the different gear combinations.

The whole theory of gear shifting may be summed up in the statement that the two gears about to be meshed should be revolving slowly and as nearly as possible at the same rate of speed. If one is revolving much faster than the other it is difficult to shift without

TO STOP GEAR CLASHING.

On the car which has been operated for some months the operator frequently finds that gear changing cannot be accomplished without noise. The gears do not mesh easily, which is not only annoying, but interferes with the operation of the car. The cause of this changing is generally caused by a spinning clutch—that is, one that rotates after it has been disengaged. Sometimes, however, the trouble is a misalignment of the shafts of the gears, due to distortion of poor bearings. When a loose clutch spins it is usually possible to remedy the trouble by adjustment. Roughness of the leather may be the cause, and in this case a coat of neatfoot oil or a dressing of fullers earth will cure the condition. In a disc clutch thinking the oil sometimes helps the spinning. When a disc clutch spins it is generally caused by gummed discs.

Don't Let Motor Pound.

Don't let your motor pound. On hills this is generally due to the spark being too far advanced, and if the retarding low spark does not remedy it one should look for loose crankshaft bearings or a loose flywheel. Pounding will soon loosen a motor, and should be remedied at once.

this action throws an enormous strain on the mechanism.

These rules, if observed, soon become as automatic as the act of walking, and the driver who observes them will have no difficulty in shifting gears on cars with perfect ease and silence.

WEST WAY AHEAD IN CARS

PER CAPITA DISTRIBUTION NOT SO HIGH IN EAST.

Oregon in Seventeenth Place of States of Union in Relative Ownership of Autos.

The west leads the nation in per capita auto ownership, according to figures compiled by the bureau of publicity of the Omaha chamber of commerce.

The first nine states are west of the Mississippi, namely, Nebraska, California, Iowa, South Dakota, Montana, Kansas, North Dakota, Arizona and Minnesota.

Michigan, in tenth place, is the leading state east of the Mississippi.

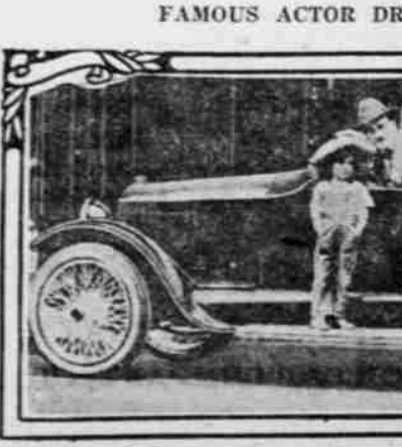
In Nebraska there is an auto to every 7.3 people. In other words, if it were necessary for the entire population to leave the state it could be done quickly with the assistance of railroads.

The state of Oregon is in seventeenth place.

Rank of State	Population	Autos. One to
1-Nebraska	1,233,000	172,397 7.8
2-Iowa	2,245,000	407,741 7.9
3-South Dakota	734,000	86,153 8.6
4-Montana	493,000	31,658 8.7
5-Kansas	1,996,000	183,271 10.7
6-North Dakota	805,000	71,865 11.2
8-Arizona	276,000	29,965 11.5
9-Minnesota	2,336,000	204,450 11.5
10-Michigan	2,125,000	202,125 12.1
11-Wyoming	157,000	16,200 12.1
12-California	1,655,000	82,000 12.4
13-Indiana	2,478,000	227,160 12.7
14-Ohio	3,272,000	418,000 12.7
15-Wisconsin	2,610,000	196,844 13.2
16-Illinois	4,800,000	129,993 13.5
17-Oregon	900,000	63,324 14.2
18-Missouri	1,250,000	81,180 15.1
19-Connecticut	1,300,000	84,849 15.3
20-Idaho	495,000	32,282 15.3
21-Massachusetts	2,563,000	206,600 16.2
22-Vermont	368,000	22,653 16.2
23-Delaware	220,000	12,955 17.0
24-Utah	437,000	26,298 17.4
25-Maine	779,000	44,712 17.5
26-N Hampshire	450,000	24,917 18.0
27-Maryland	1,410,000	71,283 18.2
28-Texas	4,563,000	231,118 18.2
29-Massachusetts	2,563,000	198,497 18.4
30-Missouri	1,250,000	189,205 18.5
31-New Jersey	1,950,000	154,870 18.5
32-Louisiana	2,430,000	127,087 18.7
33-Florida	935,000	46,196 20.2
34-Rhode Island	820,000	29,178 20.2
35-New York	10,270,000	441,183 23.0
36-Pennsylvania	8,850,000	392,041 24.4
37-New Mexico	490,000	18,000 25.8
38-South Carolina	1,540,000	60,937 27.9
39-Georgia	2,015,000	72,293 27.9
40-Virginia	2,250,000	72,228 31.0
41-Montgomery	223,000	65,000 36.0
42-Kentucky	1,415,000	63,825 36.0
43-West Virginia	1,435,000	38,750 37.0
44-North Carolina	2,650,000	90,000 37.0
45-Louisiana	1,825,000	46,000 40.4
46-Arkansas	1,825,000	46,000 40.4
47-Mississippi	1,825,000	46,000 40.4
48-Mississippi	1,825,000	11,792 168.0

FAMOUS ACTOR DRIVES LIBERTY.

GEORGE WEBERAN AND HIS SMALL SON GEORGE JR. SNAPPED IN DETROIT IN LIBERTY AT ENTRANCE TO THEATER.



decided that even though we are filling a real need and in a fairly comprehensive way, we can better serve by confining our entire activities to the bearings service business.

"Were we to continue to handle other merchandise with bearings, it would mean that we should reorganize our fundamental aim as a company, separate our interests into classes, and departmentalize to handle various grades of service material. The compelling answer for the present is to the contrary. Our splendid expansion and the knowledge that we have little more than touched the possibilities of the bearings service market is a sufficiently convincing proof.

"Beginning with July, which marks the start of our fiscal year, we will again entirely concentrate upon the development of our purely bearings service aims, and to this end we purport to do every logical thing which will continue to increase the breadth of our specialized effort.

"Arrangements have been made with United Motors Service, Inc., a nationally operating service organization, to take over the rim service business which we have been conducting."

Women Drivers Have Unique Answers to Questions.

But While Short on Technique, Perhaps, They Seem to Be Long on Logic, at That.

A MOTORING authority having nothing better to do, propounded a series of technical questions to a group of feminine drivers. He says the results were amazing.

Here are his questions and some of the answers he says he got:

Q.—If your brakes failed to work going down hill, what would you do? A.—I would jump out and throw a rock under the wheels.

Q.—Which side of a car going in the same direction must you pass? A.—Always pass on the safest side.

Q.—If your engine stalled on a car-truck, what would you do? A.—Telephone my husband to come and fix it.

Q.—When the car is standing which side should be next to the curb? A.—The side nearest the sidewalk.

Q.—What precaution should be taken in backing your car? A.—Reverse the engine.

Q.—What is the accelerator? A.—A thing that has something to do with something inside the car, when you step on it, or something.

Q.—When the batteries run out what must you do? A.—Run after them or get new ones.

Q.—Why must we keep grease and oil off the wheels? A.—Because it gets your hands and clothes dirty.

Q.—What is the office of the spark plug? A.—The office of the spark plug is the office where it is made or sold.

Q.—How far must you stop from a fire hydrant? A.—Far enough not to scratch the varnish.

Q.—If your engine stalls going up a hill, what do you do? A.—Try to start it.

Q.—What would you do if the steering gear broke? A.—Drive to the nearest garage and have the man fix it.

Q.—What is the speed limit in the city? In the country? A.—Not over 40 miles an hour in the city. Slower in the country, because the roads are bad.

Stop when the street car ahead of you stops, and stand still till all passengers getting off are out of the street. In most cities this is required by ordinance.

TRUCK INSPECTOR HERE

DIAMOND T REPRESENTATIVE ON TRIP OVER TERRITORY.

Julius Nelson, Traveling Mechanical Inspector, Calls on All Diamond T Truck Owners.

Julius Nelson, traveling mechanical inspector for the Diamond T Motor Car company, of Chicago, is spending this week in the territory covered by August Junge, Diamond T distributor here, calling upon owners of Diamond T trucks.

"I have often heard of Oregon and hoped to have been here before this, as I think it one of the most wonderful states I have ever visited," said Mr. Nelson. "From the viewpoint of a buyer of trucks, I consider that Oregon will be one of the biggest truck buyers in the west.

"But any truck put out on the hard work that trucks used in road construction here must meet has to be a real truck from the tires up. Every truck I have seen in this work is overloaded and operating on badly torn roads.

"It has been a pleasure to go over this territory and listen to the praise given Diamond T trucks by their owners and drivers. I account for this by the fact that every Diamond T truck is thoroughly tested out by our own test track at the factory with an overload of cement blocks. No truck ever leaves the factory until it is in perfect condition.

"By the time a truck is placed on a freight car and started on the only easy trip it ever makes, we know at the factory that it is ready for hard work."

Mr. Nelson goes from here to the Seattle territory, but intends to return by the end of the year on a semi-annual trip of inspection.

THEY GET NEW WRINKLE

New York Crooks Find Purchaser First, Then Steal Car.

NEW YORK, June 21.—A new method of stealing motor cars against which the motor car owner is not protected has recently come to light. The thief poses as a dealer in used cars. He finds out the particular kind of motor car the prospect desires, and how much he wishes to pay for it. The thief assures him he will be able to supply him in a few days, but at present has none of

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The Kind of Tire to Sell Is the Kind That People Buy

WE'VE found that the inclination of the public is a pretty safe indication of the worth of any merchandise. So, from our experience, we do our thinking ahead and strive to secure merchandise that our knowledge tells us people will appreciate and buy.

Not opinions, but facts, guide us. And so, when it came to tires we journeyed to Akron to see what goes into the tire we would recommend. In the factory of Akron's Master Tire Builders we saw STAR TIRES being made and we quickly understood why they gave the extraordinary mileage that built their reputation and enormous sale.

STAR TIRES are made by men who know how to build tires. They use nothing but the very finest materials and they use them in extra generous quantities—mixed with brains.

You are absolutely safe in buying STAR Hand-Made, Extra Ply TIRES (fabric), or STAR CORD TIRES—we, as well as the factory, stand back of them, and every Star Dealer does the same. If you've tried STAR TIRES you know how good they are—if you haven't, let one STAR TIRE prove how good they all are

Waterhouse & Lester Co.

53 Fifth Street, at Davis St. Portland, Oregon

Do You Sell Tires? You'll find the Star exclusive franchise one of the greatest business-building assets you ever had—Write or wire us.

that make on hand, and he then sets out to find the victim owning the kind of a car the prospect wishes and the most convenient time and place to steal it.

The owner who is careless about locking his car, or parks for extended periods in an easy victim, and the thief, after selecting the car, secures the motor and factory numbers. He then procures a license from the secretary of state's office, if the license clerk is not an expert. He goes back to get the car, knowing the owner's lack of punctuality in removing it, drives far enough to change license plates, and then is ready to meet his prospect. After the demonstration the prospect, finding the car satisfactory, hands over the check or cash and obtains a bill of sale. The shrewdness of the license clerk may check the thief in obtaining a license, and spoil his game.

Do you cut corners just because there isn't any cop there to give you the evil eye.

Buy your car more power

McQUAY-NORRIS LEAK-PROOF PISTON RINGS

Turn all the gas you buy into power. Make sure that none of it leaks past your piston rings. Make certain all your gas is compressed with its consequent power. You can do it by installing the genuine McQuay-Norris LEAK-PROOF Piston Rings.

Their exclusive two-piece design insures equal action all around the cylinder wall. That's why they are the only piston rings of their kind. There's no such thing as a Leak-Proof type of piston ring. "Leak-Proof" is the trade-marked name of this particular ring. Be sure you get the genuine.

They are made in every size and over-size to fit every model and make of motor.

Your repair man can get the proper sizes for you promptly from his jobber's complete stock.

Buy more power for your car.

McQUAY-NORRIS MFG. CO., ST. LOUIS, U. S. A.

To Control Excess Oil

A special ring for motor cars that are on gasoline. Cut in the two pieces of each piston. In the lower groove, cut the McQuay-Norris LEAK-PROOF Piston Rings for full compression—power.