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REO MOTOR CAR COMPANY OF CANADA, LIMITED, Windsor, Ont.

HINTS FOR THE MOTORIST

ALBERT L. CLOUGH

Testing An Engine Under Load

Making The Engine Pull With The Car At Rest

CERTAIN ENGINE DEFECTS manifest themselves during idle operation and usually is not difficult to locate them exactly by tests conducted on the engine, running unloaded, with the car at rest. More commonly, however, knocks and other objectionable sounds, missed explosions and other annoying and other defects show up only when the engine is doing more or less work and tests applied to locate them are futile during idle operation. Attempts to locate such defects when a car is in road service are oftentimes frustrated by the noise and motion of the car. Inability to use instruments and the precarious situation of the would-be observer, and it becomes necessary for him to find a means for loading the engine with the car at rest.

Motor car testing laboratories accomplish this by setting the rear tires of the car on rotating friction pulleys and loading these pulleys with an electrical generator, but this apparatus is not available to the ordinary motorist, for whom loading the engine by brake application offers a crude but useful substitute.

Brakes To Absorb Power
To accomplish this, the rear wheels are jacked clear of the floor and the front wheels securely blocked. The engine is then started, high gear engaged and the clutch let in. In order to load the engine a person in the driver's position applies the service brake and simultaneously gives the engine gas until the required conditions of load and speed are obtained, while another person uses the sonoscope, shorts spark-plugs and performs such other tests as may seem advisable.

Limitations Of The Method
Obviously, the brakes will become too hot, if applied too powerfully for too long continuous periods and this danger must be guarded against, but the load can be applied long enough to enable useful tests and observations to be made both on the engine and upon transmission parts, if the tester is in readiness when the load is put on and makes the best possible use of the load period.

A WEAK CLUTCH

is effected by a stop and a set-screw located on the clutch shaft.

D. J. H. writes: When I am starting my car from rest, and when shifting from second to high, the engine runs faster than it should, considering the speed of the car. Why is this and how can it be prevented?
Answer: Evidently your clutch slips under these circumstances. This clutch is of the multiple, metal disc type and should run in a half and half mixture of engine oil and kerosene. If there is too high a proportion of engine oil in the mixture in the clutch housing, slipping will occur. If, on the other hand, there is no lubricant in the clutch case, the cork inserts in the discs may become swollen and interfere with full engagement. It is very important that the pedal position should always be such that there is 3/8 inch clearance between it and the toe board or the pedal will strike the board before the clutch is engaged sufficiently to give it full holding power. Pedal adjustment

RELUBRICATING AN AXLE

J. A. M. asks: How should I proceed to re-grease the rear-axle and completion of my car?
Answer: Judging from the wording of your question, you have been using grease in these housings and, if this is the case, it should be removed as the lubricant advised by the manufacturer is 60W steam cylinder oil and not grease for both transmission and axle. You can probably thin down the grease in the former until it can be drained out by adding kerosene and running the car in neutral for a time. By removing the axle-housing inspection plate, you can remove some of the grease by hand and wash out the remainder with kerosene as in the case of the transmission, running the car in high with rear wheels jacked up. When all old grease has been cleaned out, fill both housings up to their test plug holes with steam cylinder oil.



The Advantage Of Specialized Service

Make Use Of The Authorized Service Station

NOW THAT PRACTICALLY all large manufacturers of cars and accessories maintain their own service stations in most important cities and towns, full use should be made of such facilities, by all motorists. It should be obvious that, as a general proposition, a shop specially devoted to the repair and maintenance of cars of a certain make, can do better and quicker work on these cars at a lower price, than can a shop devoted to general repair work. The specialized shop has workmen trained to care for the one make of cars, special tools and repair parts, as well as well worked out rates of charge for all repair jobs upon cars of its particular make. Nevertheless, very many motorists habitually take their cars to general shops or service stations of other makes.

Service On New Models
In the case of models which have been on the market practically unchanged for years, the general repair shop may give very good service, but the service rendered by them on cars of brand new model embodying radical changes in, for a time at least, likely to be much inferior to that offered by the service stations controlled by their own manufacturers.

Accessory Service Stations
Every car includes units not produced by its manufacturers but by various accessory makers, among these component parts being carburetors, batteries, horns, speedometers, magnetos, shock-absorbers, ignition systems, starting systems, vacuum tanks and other devices. Nearly every important manufacturer of any of these component parts maintains a service station in or near the community and it is a fact that any but the most ordinary repairs of these devices can be handled more satisfactorily at the specialized service stations than at a general repair shop or even at the station of the make of car upon which they are installed.

Auto Mechanics Not Omniscient
It is very poor judgment to expect an ordinary auto mechanic to diagnose and deal with an obscure electrical or carburation trouble when right around the corner so to speak can be found men whose only business is to handle these particular problems, and who have everything in the way of tools and apparatus to facilitate their special line of work. With the multiplication of motor car repair shops a very wide choice is afforded the car owner in regard to where he shall have any particular job performed and it is the sign of the shrewd motorist if one is able to make a decision that will result in the highest efficiency.

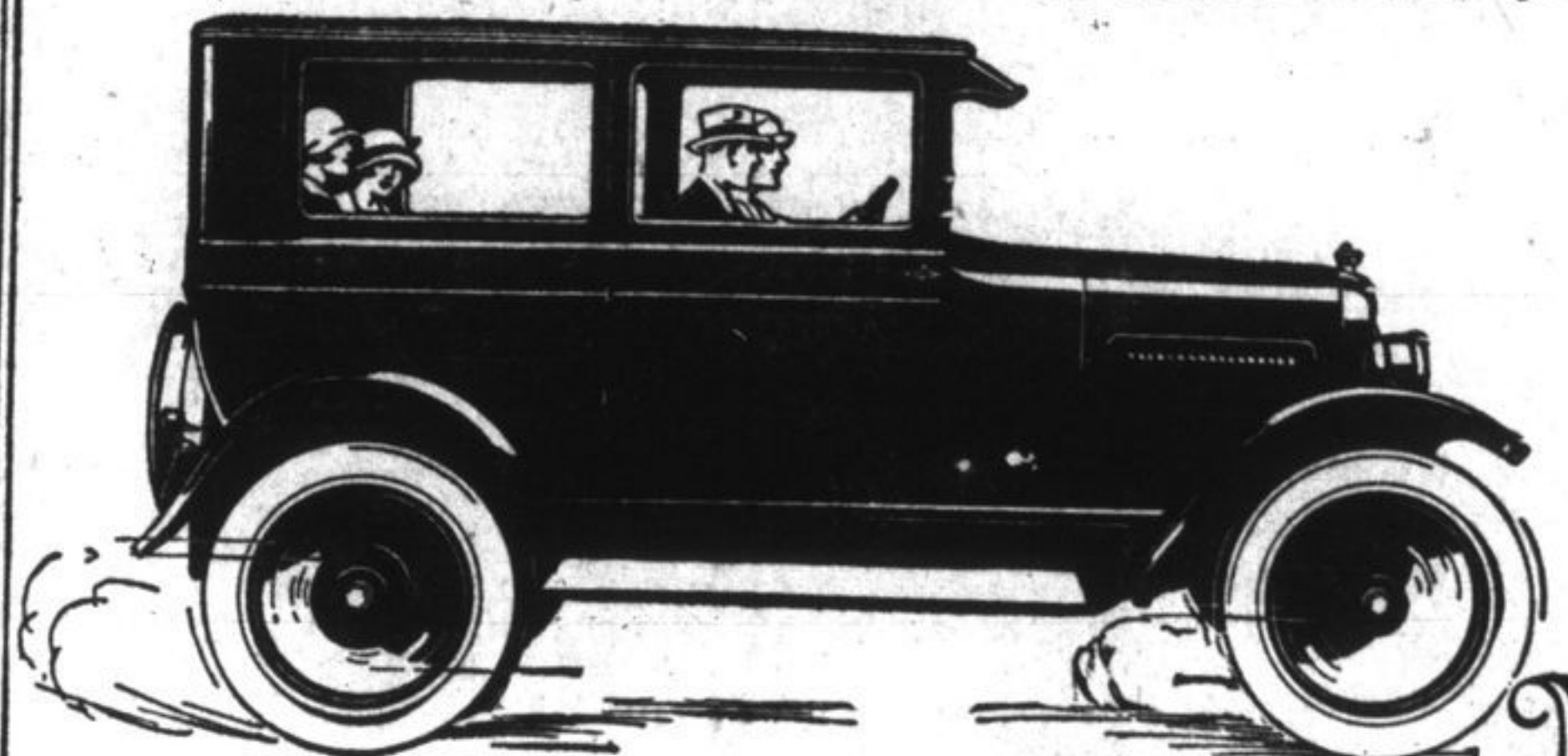
AN ODORIFEROUS TRUCK
[Illustration of a truck] absence of leaks in the exhaust system, put a little kerosene in each cylinder, stop up the muffler tail-pipe lightly, race the engine and where does not escape, escaping somewhere. Also note how the end of the tail pipe points, as changing this may improve matters. Run the engine with kerosene under the hood off and see if smoke escapes through the breather or elsewhere. Also note whether the vacuum-tank or carburetor hood under certain conditions, for these defects might account for raw gasoline fumes. The leaner the fuel mixture, the less objectionable are the exhaust fumes.

WELDING A BROKEN BLOCK
A. C. Van S. writes: The cylinder block of my engine is broken at both ends where the last head bolt enters, the breaks extending into the cylinder, through the outside wall and water jacket. Can this be repaired by welding or is the block a total loss?
Answer: Only an expert welder, who can examine the breaks, can answer this question intelligently, and you better call one of these specialists in and get his opinion.

Questions of general interest to the motorist will be answered by Mr. Clough in this column, space permitting; if an immediate answer is desired, enclose self-addressed, stamped envelope.

BEING A SELF-INSURER.
When full coverage is out of the question for the car owner who desires as much insurance protection as he can afford to buy, the next question is to know how much of a self-insurer he can afford to be. The usual thing is to start with fire and theft insurance and then fade out when the broker starts talking about public liability, property damage and the other forms of coverage that are less clearly understood. The motorist, therefore, often becomes a self-insurer on forms of coverage in which the limit of possible loss is not fixed. For instance, there is no limit to the possible damage your car can inflict upon other people and other people's cars. Should your car be stolen, however, you lose no more than the car is worth. Obviously you can afford to be your own insurer only in cases where the maximum possible loss is known in advance.

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ARTHUR CALLAGHAN
210-214 Wellington Street, Kingston.

ORDERLY DRIVING TO PREVENT ACCIDENTS

Failure to Obey Rules Blamed for 47 Per. Cent. of Trouble Calls.

Somebody's failure to obey the traffic rules was responsible for 47 per cent. of all trouble calls received by the emergency road service department of the Cleveland Automobile Club during a four-hour test period, according to J. Harry Killius, manager of the department.

During the four hours, the club received 60 calls for first aid for causes ranging from tire and ignition troubles to collisions. Of the 60, 28 calls were in the collision class, and these were due to five specific causes, Killius said:

- (1) Hogging the middle of the road and refusing to get over upon the signal of a driver wishing to pass from the rear.
- (2) Cutting in ahead too close after passing another car from the rear.
- (3) Parking on the travelled portion of a narrow, heavily travelled highway.
- (4) Congestion due to a few drivers hogging the road by driving at a snail's pace.
- (5) Failure of drivers to give adequate warning signals before changing their course or stopping, and failure of drivers to recognize and obey such signals.

"One of the most frequent causes noted," Killius said, "was the practice of a few drivers of weaving in and out from one lane of traffic to another. This was particularly true in accidents in city traffic.

"Ducking in and out at the most can gain fewer than five minutes in an hour of crowded city traffic, yet, if enough drivers practice it, they can slow up all traffic and cause many accidents.

"If drivers proceed in an orderly manner at the best speed consistent with safety, nine-tenths of the confusion will be eliminated, the danger of accidents will be greatly lessened, and the peak of traffic congestion will be cleared away much more speedily."

JAY-WALKER LEADS
IN THE DEATH LIST
While the debate on jay-walking is still warm among people who voice their opinion in the open forum columns of the newspapers, the scattered red pins on the accident maps leave little room for

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doubt as to which side is right. The largest single cause of accident fatalities in New York, according to the report of the Bureau of Public Safety, is crossing the street at places other than those provided for the purpose. Of last year's accident deaths, 341, or about one-third, were due to jay-walking. Crossing the streets at crosswalks are responsible for the next largest number of fatalities, 191. The other causes as given in the report follow:

- Collision of vehicles 82
- Running off sidewalk 77
- Playing games in the roadway 74
- Crossing streets diagonally 41
- Bicycle riding in the roadway 28
- Falling from vehicles 26
- Stealing rides on vehicles 26
- Boarding or alighting from vehicles 23
- Autos hitting poles, wall etc. 22
- Roller skating in the roadway 21
- Autos jumping curb 17
- Walking in the roadway 12
- Autos overturning 10
- Autos falling over embankments 8
- Working in the roadway 6
- Other causes 37

KNOWING STRANGE NOISES.
One of the most puzzling noises you will ever hear under the hood is a sort of snapping sound. It will be alarming, not because it sounds serious, but because you have never heard it before. Also the engine will not run as well when you hear it, but your attention may be too absorbed with the noise to note the drop in engine performance. The noise is due to a loose ignition wire or to one that's shorted.

BUENOS AIRES PASSENGER BUSES TRAVEL ROUGH ROADS
Motorbus accidents are increasing at such an alarming rate in Buenos Aires that the municipal authorities have been obliged to take hasty



The New Overland Standard 2-Door Sedan. A 5-passenger closed car that surpasses all past standards of automobile value. Extra wide doors—one piece windshield—double beading at waist line.

WATCH IDLING MIXTURE.

If your carburetor is equipped with two adjustments, one for normal speed and the other for idling, it is important to remember that too rich

idling mixture will be more wasteful than too rich normal speed mixture. If the normal speed mixture is rich the chances are the car will attain its normal running speed at a slightly narrower throttle opening. In other words, while there may be a sacrifice in economy there may not be as much waste as might be supposed. If the idling mixture is too rich, however, the engine is always wasting gas whenever the driver coasts or stops in traffic.

James Walker, Shamokin, Pa., was released on \$1,000 bail for driving a truck loaded with beer. Next day he was arrested on a similar charge.

NOTICE TO CAR OWNERS

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