



## Alco-meter Service

is something new in all leading garages and service stations, giving "Maple Leaf" Non-freeze protection.

After you have had a mixture of "Maple Leaf" denatured Alcohol and water in your radiator for a while and you wish to know how strong the mixture is, just stop at any garage or service station displaying the "Maple Leaf" denatured Alcohol sign, and they will test the mixture with an "Alco-Meter" and tell you the exact Freezing Point.

### THAT'S "ALCO-METER" SERVICE

Only mixtures of "Maple Leaf" denatured Alcohol and water can be tested in this way. The exact freezing resistance of other mixtures become unknown after a time, and expose your car to the risks of freezing.

A mixture of "Maple Leaf" denatured Alcohol and water gives better satisfaction at less cost.

Correct Winter Driving preparations when "Maple Leaf" denatured Alcohol is used, are as follows:

- Empty and flush the radiator and cooling system and see that there are no leaks.
- Tighten or renew the hose connections.
- Tighten the gaskets.
- Put fan and belt in good order and renew belt if necessary.

- Do not run car with radiator cover or cardboard in front.
- Allow a free flow of air to the fan at all times.
- Then with Maple Leaf Brand denatured Alcohol in your radiator—your car is completely protected.



## HINTS FOR THE MOTORIST

By ALBERT L. CLOUGH

### How Much Alcohol For The Radiator?

Not Only Supply The Right Proportion At First, But Maintain It

FOR THE BENEFIT OF THOSE who have only recently acquired cars and also for those who do not keep in mind or on file data in regard to the proportion of denatured alcohol required to protect the cooling water from freezing at different temperatures, the following table is presented, the figures being taken from the S. A. E. Handbook and the Bureau of Standards. The latter vary considerably from the former. The percentages given represent the proportion of denatured alcohol, the rest of the mixture being water, and the degrees Fahrenheit represent the temperatures at which the various mixtures freeze.

Percentage	S. A. E. Handbook	Bureau of Standards
10	24 degrees above	15 degrees above
20	12 " "	10 " "
30	2 " below	5 " below
40	10 " "	2 " below
50	34 " "	18 " "

The Bureau of Standards Table calls for much more alcohol to furnish protection at the lower temperatures and may be the safer to follow, although it is believed that the S. A. E. table calls for enough alcohol to protect against the development of bursting pressures in the liquid, and it probably specifies enough alcohol to prevent the formation of sufficient floating ice crystals to impede circulation through the radiator passages.

In supplying alcohol anti-freeze proceed as follows: Find out the total liquid capacity of the cooling system from the instruction book or dealer or by measuring it. Determine the amount of alcohol required. For instance, if the Bureau of Standards table is to be followed, if the cooling system holds 15 quarts and protection is desired down to 2 degrees below zero 0.40 x 15 = 6.4 quarts of alcohol will be required. Drain and flush out the system with water. Replace all the drain plugs. Pour into the radiator the 6 1/2 quarts of alcohol and then fill the system completely with water. By supplying alcohol—the lighter liquid—first, it will mix with the water very readily, but complete admixture can be insured in a pump system, by running the engine for a few moments in a thermosiphon system by running it until a little heat is developed. In most parts of this country, for cars that are indoors overnight, if 30% of alcohol is kept in the water, freezing dangers are slight.

### ONE CYLINDER PUMPS OIL



D. G. C. writes: The spark plug of the fifth cylinder of my engine has troubled me for a long time by getting oily and shorting and recently I had new piston rings fitted in this cylinder to remove this trouble, but this has not helped matters at all. What do you think is the trouble?

Answer: Have the walls of this cylinder been recently inspected for scratches and groovings? If such defects exist, piston rings cannot be expected to keep oil pumping, as the oil will follow up the grooves and pass the rings. It is hardly to be expected that this cylinder bore is any more out of round than the others, but if it should happen to be so, this might account for its over oiling, as circular rings cannot fit all around the walls of a cylinder which is considerably oval in bore. If this engine is splash lubricated, and there is anything about the splash tray or the scoop on the connecting rod of this cylinder that causes its walls to receive an extra heavy splash this

might account for its being over oiled.

### PRIMER WON'T START ENGINE

M. S. writes: I am finding it next to impossible to start my engine these cold mornings. It has no choker on the carburetor air-inlet, but there is a primer, which can be turned on from the driver's position, that sucks gasoline from the fuel line and is supposed to spray it into the intake, when the starter turns the engine over. It does not work as it used to. What is wrong?



Answer: Perhaps the spray-nozzle of this primer has become clogged with dirt. Maybe the operating device does not actually open the gasoline passage as it appears to do, or it may be there is an air leak around where the primer is connected into the manifold. You better take it apart and see that there is no obstruction preventing the flow of fuel and no failure of the valve to open when the control is operated. The tighter the throttle is closed the greater will be the suction created to operate the primer.

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.

### HOW TO KEEP THE FACTORY FINISH

A Good Polish Is Necessary, as Water Alone Will Not Remove the Scum.

In place of the thrill, now rarely experienced, which came from glimpsing a sparkling carriage, drawn by a spanking pair of well-groomed high-steppers, we have the pleasure of seeing wonderfully designed, luxurious cars roll by, in all the glory of exquisite stream lines in glistening varnish and japan.

To keep these modern vehicles looking one hundred per cent, it calls for as much care as was bestowed upon the coach of other days, or possibly more, as the later methods do not lend themselves to obtaining finishes equalling in resistance those of former periods.

Feverish demand for speeding up in this section, corresponding with production in other departments, does not admit of allowing the finish that length of time for "setting" which was formerly insisted upon, and which was requisite where best results were sought.

Varnishes, it is true, have been adapted, in some measure, to these more rapid methods of treatment, but much "spotting" of new cars is caused by exposing the cars to weather and mud conditions while the finish is "green," or, in other words, before a sufficiently hard skin has formed on the varnish. Hardening of the varnish skin is assisted by flowing cold water over the surface for from three to four hours, and the purchaser of a new car will derive considerable security from doing this before operating the car. It might be pointed out here that a car bought in the fall and its finish allowed to "set" in cool weather, will retain its lustre longer and better than one purchased and immediately run in the heat.

However well conditioned, a finish will suffer from permitting mud and dirt to remain on it for any length of time, due to the action of alkaline salts present in the mud.

Finish may be, and very frequently is, damaged beyond repair by careless washing.

The sponges and chamois used for this purpose should be carefully selected, the sponges chosen must be free of sea grit; the chamois soft, without hard fibre. There must be a separate set for the upper and lower portions of the car. Those intended for the upper parts should

taking off the more stubborn dirt by aid of the sponge always keeps a film of water between the sponge and the dirt, otherwise the finish will be badly scratched.

Chamois the car dry, and in the process rinse the chamois in clear water occasionally and wring it.

Never use soap on the highly finished surfaces, whether of varnish or baked japan. The alkali it frees in solution is destructive. A little soft soap is permissible, even necessary, for the under parts, but must be used very sparingly on the wheels and thoroughly washed off. The wheel spokes on many cars are deadened by a too free use of soap.

We now come to a matter which has been the subject of much controversy, namely, the advisability of using polish on a car.

Some people hold with unreasoning tenacity to the theory of "water only," seemingly oblivious of the fact that waters are extremely variable in chemical contents, and practically all contain sufficient sodium potassium, calcium and magnesium salts to grey the finish in course of time unless followed by a proper dressing.

Further, a process of oxidation is continuously going on in varnish and japan exposed to atmosphere, causing the formation of a grey scum that water is powerless to remove, and which, if allowed to remain on the surface for any length of time, will destroy it.

If these arguments for the use of polish are not convincing, it might be added that practically all automobile manufacturers employ polish.

The question really resolves itself into the one of what polishes are fit and which unfit for use. In this article it is possible only to submit a few general points for your guidance in the matter.

Oily and greasy preparations are objectionable. They catch the dust and make the finish flatter than if it had no polish at all, and oil kills varnish just as grease kills a tire.

Spirit preparations are dangerous in the hands of those unskilled in their use.

War accumulates, oxidizes and turns grey, and is difficult to remove. It gives, at best, a soft gloss which is a poor substitute for the high brilliancy of varnish and baked japan.

A polish and cleaner should be separate articles, as it is not necessary or desirable to use a cleaner every time you use a polish.

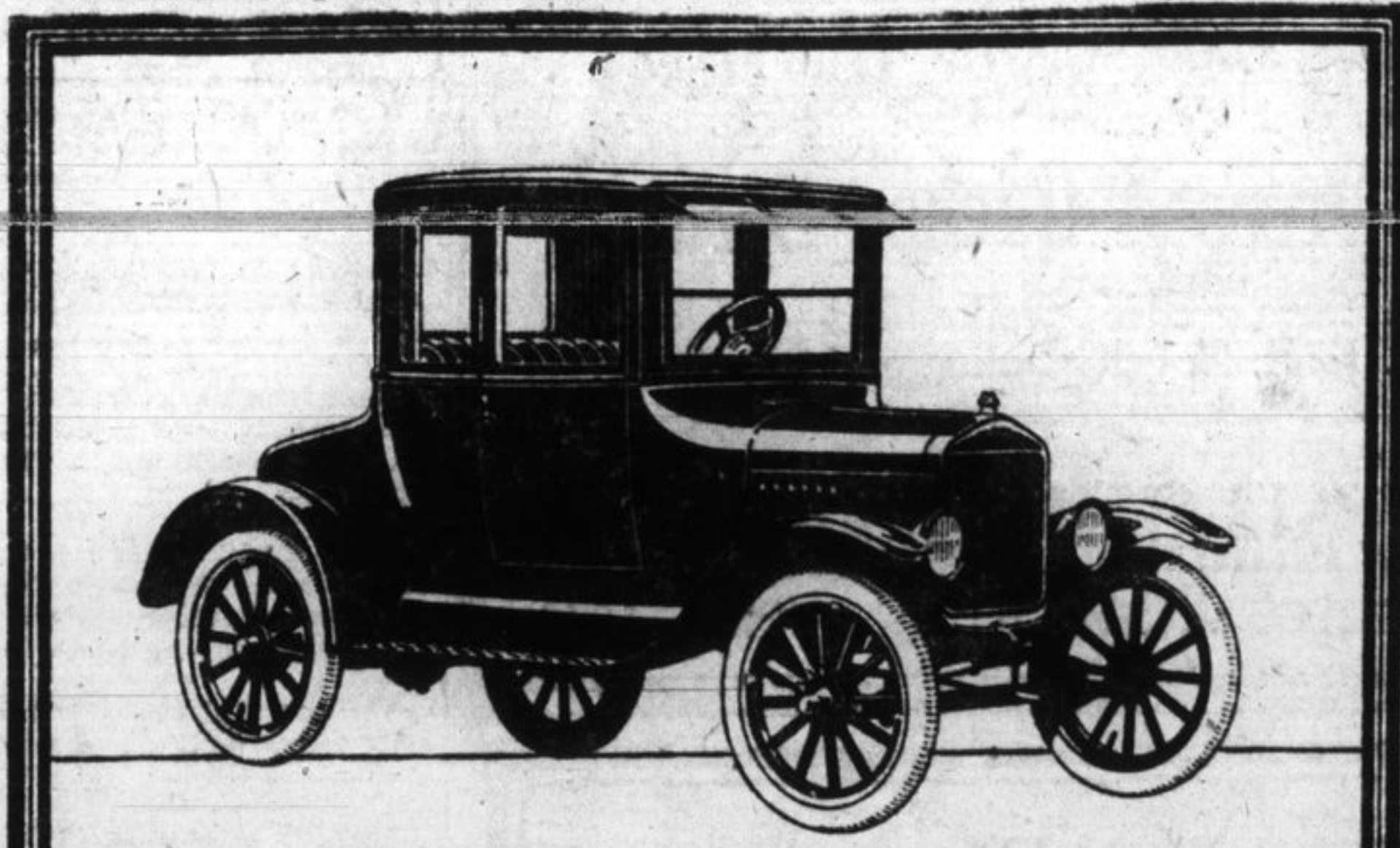
Cheese cloth is preferred for polishing. It should be of the heavier variety, and washed to remove the dressing. The insides of sugar bags, sometimes offered for this purpose,

for the removal of grit, and, in the case of the chamois, to rid it of excess grease.

As much of the dirt as possible should be removed from the surface by slow flowing water alone. In

woven right into the cloth which will scratch the finish.

A good polish will hold a finish as closely as possible to its original condition for the longest period of time.



## The New Ford Coupe

An entirely new body design of remarkable beauty as well as practical utility, is the distinguishing feature of the new Ford Coupe.

The body lines follow in one graceful sweep from the new high radiator to the "Turtle-back" curve of the rear deck, which has been enlarged to conveniently accommodate bulky grips and packages.

Upholstering is luxuriously deep both in the seat and back, the covering being of rich brown broadcloth with mahogany stripe. A recess shelf is provided behind the seat, for parcels.

Interior fittings include revolving window regulators, and door locks and handles finished in nickel. The large rear window is fitted with silk poplin shade in dull silvered mountings.

The windshield is surmounted by a broad sun-visor, which protects the eyes from glare.

As a handsome and practical all-weather car for town or country, the new Ford Coupe cannot be surpassed.

### New Ford Prices

- Coupe, \$665
- Fordor Sedan, \$895
- Touring Car, \$445
- Runabout, \$405
- Truck, \$495

All prices l. o. b. Ford, Ontario. Government Taxes extra. All Ford models may be obtained through the Ford Weekly Purchase Plan



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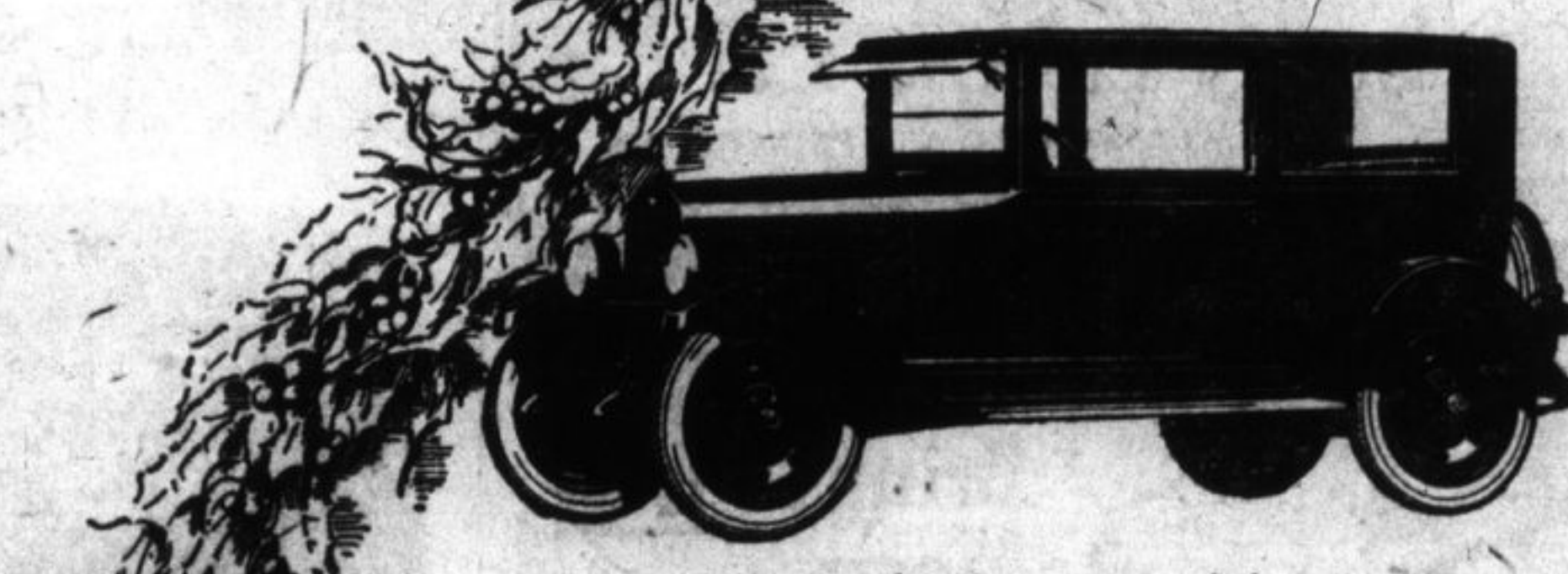
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## Give Your Family A Maxwell Club Sedan For Christmas



If you have had in mind buying an automobile in the near future, decide now and make it a Christmas present—for yourself, your family, your friends.

The latest Maxwell triumph—the Club Sedan—is ideal for this purpose. It is a new expression of the popular Sedan idea—two-door friendliness with four-door facilities. No enclosed car on the market can excel it in usefulness and comfort.

Built on a standard Maxwell chassis, you can count on fine performance and reliability as a matter of course. And its price is little more than the cost of an open car.

Price \$1675, delivered. CLARK BROS. Maxwell-Chalmers Dealers.

Corner Princess and King Streets, Kingston. Phone 23571.

## The Good MAXWELL

of refined gasoline are sold each month in Kansas. From each one of these barrels a sample is sent to one of the state chemists to undergo his official inspection. The samples must pass two tests before barrels from which they are taken. To keep more than 13,000,000 motor vehicles in operation in the United States, gasoline is now being burned at the rate of 230,000,000 gallons a month, the highest average of about 41 gallons a month per car. The saddest thing under the sky is a soul incapable of sadness. It is no small commendation to manage a little well.