

# HINTS FOR THE MOTORIST

by ALBERT L. CLOUGH  
Editor Motor Service Bureau Review of Reviews  
Evils Of Over-Thin Engine Oil  
Power Losses And Oil Pumping Are Among Them

THE LIABILITY OF EXCESSIVE wear of parts of engines, which are run with oil that is greatly diluted with unburnt fuel or which is of such inferior quality as to thin excessively when heated, has been greatly stressed of late—possibly even more than the facts warrant, as it is being realized that dirty oil is a more serious evil than oil which is merely too thin.

### Viscous Oil For Sealing Pistons

Important as is the influence on lubrication of overthinness of oil, its adverse effect upon the tightness of pistons should not be ignored. Piston-rings, in the last analysis, do not make pistons gas tight in their cylinders. They merely act as supports for the oil that surrounds them and which itself forms the seal which prevents gas leakage. Properly viscous oil holds fast around the rings and resists gas escape, but extremely diluted or heat-thinned oil is blown out and lets the gas by. Low power development in an engine which is running on watery oil may be due more to loss of gases past the pistons than to frictional losses resulting from insufficient lubrication.

### Demonstrating The Oil Seal

To demonstrate the all important part played by the oil film in containing the gases in the cylinder, it is only necessary to hand crank an engine just after it has been treated with liquid carbon remover or has had its pistons and rings cleaned of oil in any other way. Resistance to backcranking through the compression strokes will be found practically nil, thus indicating a virtually unresisted escape of gas past the pistons.

### Diluted Oil "Pumps" Too Freely

Oil that is too thin to hold fast around piston rings is free to move upward into the cylinder clearance space under the suction acting during the charging strokes and this fact accounts for the excessive tendency to foul spark-plugs and to collect carbon deposits, on the part of engines which are run on greatly diluted oil or oil which cannot successfully withstand high temperatures. If the oil used is not of good quality or if it is not renewed when its useful properties have been lost, an engine will fall off in power and will give ignition and carbon trouble, not to speak of wearing out fast. The recent stress placed upon the dilution of oil by admixture of unburned gasoline has somewhat diverted attention from the paramount necessity of using oil which is inherently of good quality, which wears well and maintains its lubricating qualities under prolonged exposure to engine heat, but nevertheless the question of initial oil quality is really of more importance than that of its subsequent deterioration.

### AVIATION GAS FOR EASIER STARTING



H. A. E. writes: I keep my car in a detached, single-stall garage, with no means of heating it and, of course, have all kinds of trouble in starting my engine, all winter. A friend, who is similarly situated, has been using aviation gasoline instead of the regular grade of fuel, since cold weather came on, and says that he has had much less starting trouble than formerly. Do you advise my trying this? Answer: Yes, you will find it helps the situation noticeably, not only by making starting prompter, but in reducing the time required to get the engine running properly.

### Automatic Gear Shifting

SINCE ALMOST THE EARLIEST DAYS of the gasoline automobile—about as soon as it became universally acknowledged that some sort of variable gear-ratio connection was necessary between the engine and drive wheels—it has been the dream of inventors to devise a form of continuously variable transmission, the ratio of which should be automatically altered, in proportion to the resistance encountered by the car. Considerable experimentation directed toward this end, has recently been going on abroad, where economy calls for cars with such small engines that frequent gear shifts are required. Changes of gear are so seldom useful in the operation of conventional American cars that less interest has been shown in these automatic torque-speed conversion devices here, but with the promised advent of European type small cars, the problem of eliminating manual gear shifting should assume a new importance. Very many people are still deterred from operating cars at all or are driven to use the two-speed planetary gear, simply because of road or friction difficulty in handling sliding gears and everyone will readily admit that it would be fine to jump into a car, and merely engage the clutch and open the throttle to have the car automatically change from a low starting ratio, through intermediate speeds, to the highest ratio compatible with the best service. Yet it looks as if this were within the realm of not distant possibility.

### OLD STYLE CLUTCH "GRABS"



J. H. C. writes: The clutch of my car grabs, although I have had a new leather installed in it and have treated this with neat-foot and castor oils. The flat springs under the leather seem in good condition and there is nothing about the clutch that is out of line. This trouble has been present since I owned this car and before I renewed the leather facing. Can you suggest a remedy? Answer: It is doubtful if there is anything you can do to relieve this condition, it being more likely that the design of this clutch is not what it should be to give gentle engagement. The fact that this manufacturer has discarded his leather lined cone clutch in later models, may be regarded as an admission of its imperfections. It is just possible that you might be able to alter the operative linkage in some way, so that there would be a somewhat longer pedal movement in proportion to the movement of the cone, at the engaging position, but we do not know as to this. You might also try a new set of springs under the facing, as your old ones may have lost part of their resiliency, even though they appear all right.

### DIRT IN CARBURETOR?



W. H. G. writes: The engine of my car lately began to miss, both at high and low speeds, although the battery is all right, the plugs are clean and everything else about the ignition system seems O. K. Recently, I have been using carbon removing liquid, mixed with the fuel in the tank and have been running on non-detonating gasoline. What do you

think causes this missing? Answer: We do not know, but it sometimes happens that carbon removing liquids loosen particles of carbon from the piston heads or elsewhere and that some of these get caught under certain exhaust valves and hold them open slightly, causing their cylinders to miss. Try the compression in each cylinder separately and if it has become very weak in one or more of them, you may find carbon on the valve seats. Another effect of carbon removing liquids, applied with the fuel, sometimes is to remove foreign matter from the fuel tank or piping, which material may clog the carburetor strainer, needle valve passage or other fuel ducts, so that the engine fails to get a mixture rich enough to fire regularly. You better clean out the fuel system thoroughly throughout.

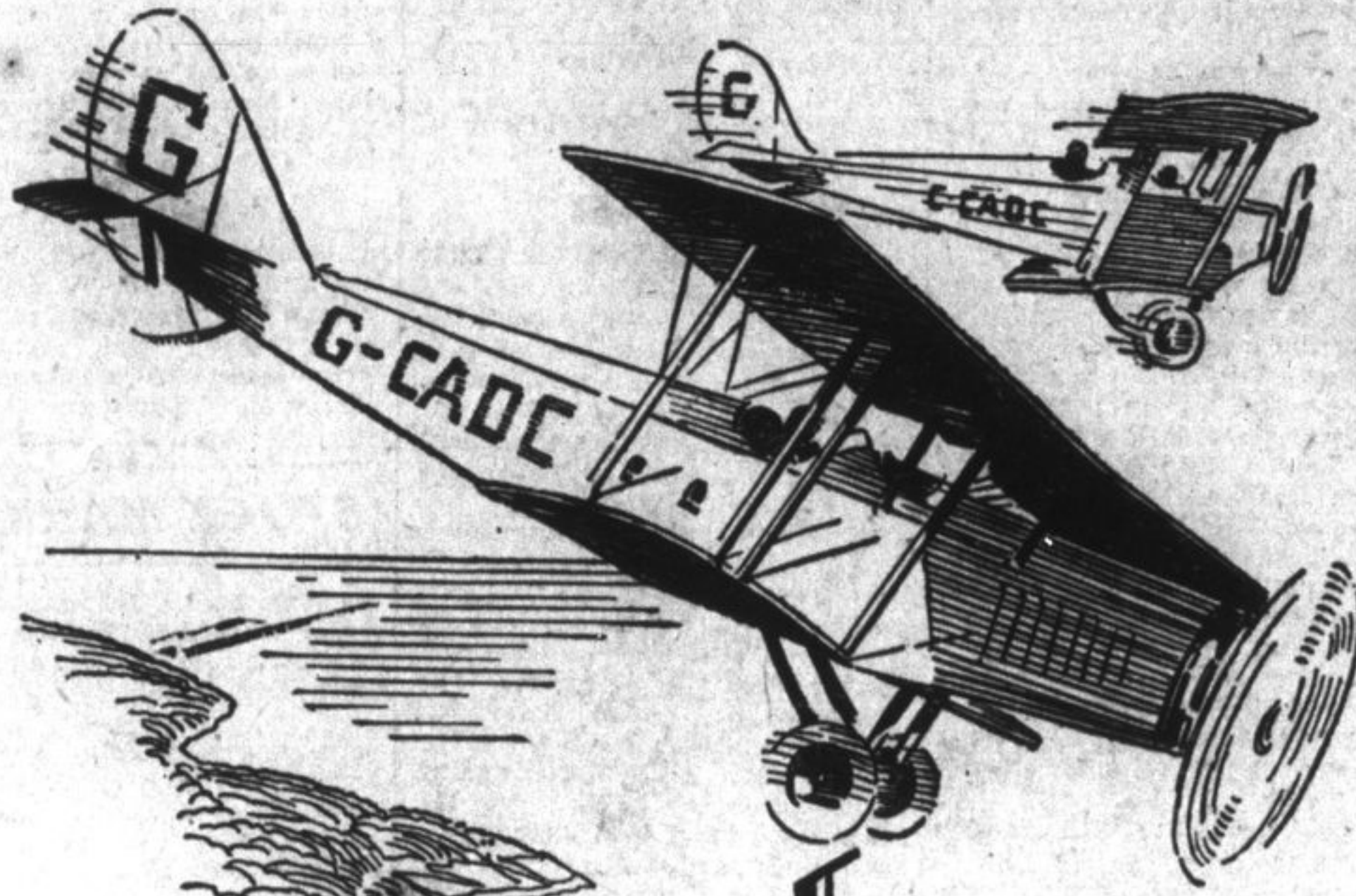
### HEAVY OIL FOR WORN ENGINE



W. C. M. asks: What is the "dope" in regard to using heavier-than-recommended oil in an engine, the bearings and pistons of which have become pretty well worn, taking into consideration the fact that winter is here again? Answer: We presume you are thinking of finding a lubricant that will not pass worn pistons or escape through worn bearings as rapidly as does the grade of oil recommended. Our experience has been that the use of an oil of heavier grade does not produce this result in nearly the degree that is generally believed, because of the fact that oils of even heavier grades become thin enough, when hot, to escape with very little restriction through large clearances. A heavy oil would probably leak very little past worn pistons and bearings, while cold and viscous, but after the engine became hot, we fear that the bearings and pistons would find little restriction in the rate of escape. Moreover, you might get into trouble in using excessively heavy oil, in regard to starting difficulties and possibly as to poor distribution of lubricant during the warming-up period, in very cold weather.

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.

# Marvelube MOTOR OIL



## Conquers the Highways of the Air

Border Cities, Ont.  
July 12, 1926.

Imperial Oil Limited,  
66 Church Street,  
Toronto, Ontario.

Gentlemen:

After using your Marvelube Oil Extra Heavy in our aeroplane I would like to tell what a difference there is in running motors using Marvelube Oil.

I am running a water-cooled, eight cylinder, V. type, 90 H.P. Curtiss engine, which turns up 1,600 R.P.M.

Since using your Marvelube Extra Heavy have flown over 90 flights, approximately 100 hours, averaging between 72 and 75 miles per hour.

After flying with Marvelube Oil Extra Heavy my observation has been that the motor only makes half the noise and turns up much faster. The motor gets away immediately, does not gum up in bearings and cause friction and carbon when starting.

I say this oil is free from carbon and can prove it to any one who will come to our field and see the motor stop after a flight. If there is carbon in a hot motor, the motor will not stop when the switch is shut off. The motor will give a few explosions, perhaps in a backward direction, which is very hard on bearings and crankshaft. After using Marvelube have noticed that the motor will stop directly when switch is turned off, which is saying a lot for this oil in a hot motor.

Many spectators have remarked, since we made the change to Marvelube Oil Extra Heavy, that we must have repaired our motor because it does not throw oil.

You see the rings in an aeroplane motor can not be as tight as in a car, so if your oil has not got a body to it there is sure to be oil burning in the exhaust pipe which throws out smoke.

While using your Marvelube Extra Heavy the water temperature has never risen above 72° Centigrade and the motor motor on radiator has never risen above the white line.

Have flown as long as fifty hours without changing oil, and after fifty hours flight I took your Marvelube Extra Heavy out of the aeroplane crank case and it looked so good that it seemed a shame to throw it away, so put it in my Dorr Six car, 1922 model, and have used it ever since. The car operates very smoothly, my oil gauge staying at six pounds pressure.

Your Marvelube Oil seems to have all of the necessary characteristics to properly lubricate an aeroplane engine and an exciting this letter to you in the hope that my experience may be of value to other aeroplane or motor car users.

Yours truly,

Pilot Peel.



PILOT ROBERT PEEL,  
Border Cities, Ont.

### A Striking Tribute to Marvelube Quality

In commercial aviation, the proper lubrication of the motor assumes vital importance. Success—even life itself—often depends on the quality of the oil in the engine, for a stalled or faulty motor is too often fatal.

In selecting Marvelube Motor Oil as a lubricant for his aeroplane motor, Pilot Robert Peel, commercial flyer and veteran of seven years in the R.A.F. and U.S. Air Service, did so because indisputable tests convinced him of its absolute superiority.

His letter, reproduced here, sums up his final opinion of Marvelube after testing it for 100 hours (7,200 miles) in the air.

### Good Engineering Practice

All automotive engineers agree that it is important to always have the oil system flushed out with a light grade of oil (not coal oil) before refilling your engine with fresh oil—and also to avoid speeding up your engine for the first few minutes after the new oil is put in.

Another important point is to always secure the exact grade of Marvelube that is specially recommended for your particular car. Our Chart of Recommendations should be your guide. There are six grades, one for every make and model of automobile.

## IMPERIAL OIL LIMITED

### DETROIT AWARDED THE SOO FRANCHISE

Question of Franchise For Chicago is Under Consideration.

St. Paul, Minn., Aug. 17.—The Central Amateur Hockey League next winter probably will include Kansas City and Chicago, it was indicated at a meeting of league officials here. This would make it an eight-city circuit for the coming season. Kansas City was represented at the meeting. The league voted to admit the new club if rink building plans and other details can be arranged satisfactorily for the officials. The question of a franchise for Chicago also was discussed, but no definite action was taken. Detroit, Mich., was formally awarded the franchise of the Sault Ste. Marie, Ont., club, which was in the central loop last season.

The proposed new members, the schedule and possible changes in the playing rules will be discussed at the next meeting of the board in October. League members represented at

the meeting included St. Paul, Minneapolis, Sault Ste. Marie, Ont., Eveleth-Hibbing, Minn., Duluth, Minn., and Winnipeg, Man.

Jack Dempsey Busy. Saratoga Springs, N.Y., Aug. 17.—Jack Dempsey yesterday saw his first day of active training when he sparred a dozen rounds with partners before a crowd of 2,000 persons. After tuning up with roadwork in the morning, the heavyweight champion stepped into the ring for his initial work there, preparatory to the expected September clash with Gene Tunney.

### WEIGHS 195 POUNDS.

Jack Dempsey weighs 195 pounds, which experts believe is too light in view of the fact that he is about to begin training for what promises to be one of the greatest fist encounters of all time. However, a spirit of supreme optimism prevails in the Dempsey camp, and his crowd of handlers declare the champion is in the pink of condition for this time and at the very height of his career.



Over the ocean course which Leif Erikson took in his search for North America, the four Norsemen shown above are en route from Norway to Philadelphia. Left to right they are Johnsen Molde, Capt. T. Folgero, T. Thomassen and Kristian Andersen. Inset is their vessel, replica of the one Leif used.