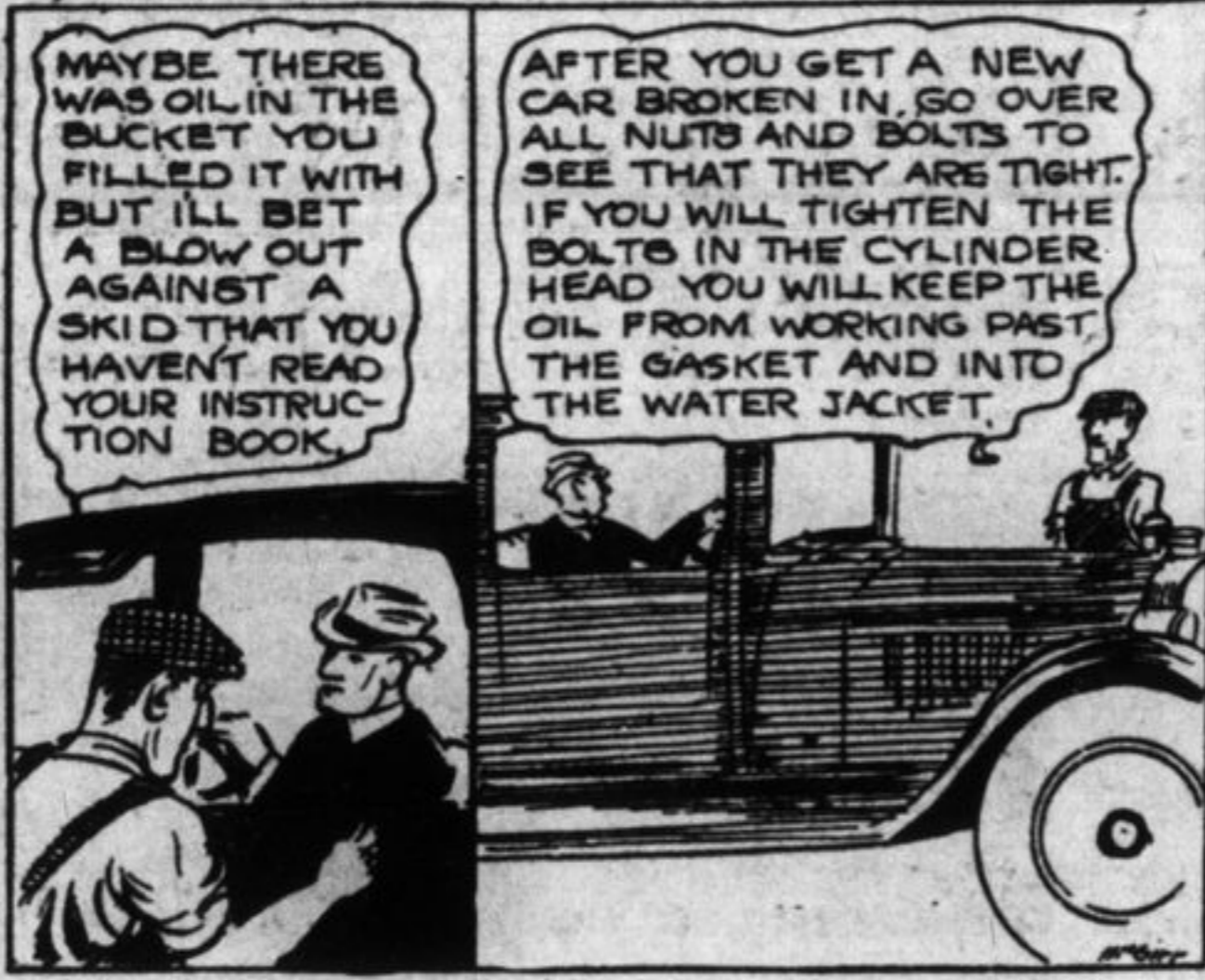


AUTO SENSE

OIL AND WATER

By WILLIAMSON



When a car leaves the factory all of the bolts and nuts are supposed to be tight, but the car will loosen up a bit after it has been driven a hundred miles or so. For this reason it is important that a careful watch be kept on a new car until it is thoroughly broken in.

The case Doc deals with this week is due to failure to take up on bolts in the cylinder head. There is a copper and asbestos gasket between the cylinder block and head. Water

comes in contact with the side of the gasket as it is forced through the water jacket while the other side is subjected to an intense heat from the combustion chamber and a pressure of approximately 250 pounds to the square inch on the compression stroke. Until the gasket has adapted itself to these conditions it is necessary to keep pulling down on the bolts referred to.

Some oil is obliged to work by the piston rings and into the combustion

chamber, where it is burned, but if the gasket does not fit snugly this oil and part of the combustion mixture will be forced by it and into the water jacket. A little oil in the water will do no serious damage, but it often indicates a leak in the gasket which may be causing you to lose power. There is a grease cup on the water pump which supplies grease to bearings under pressure. If the shaft is a little worn and if you screw down too much on the

cup some of the grease may be forced into the water.

Do not become alarmed if you find a little oil in the water in the radiator after the car has been worked on in a garage, for nearly all of the buckets in a garage have had oil in them at times and it is possible that a mechanic had used one of these in refilling your radiator. Flush out the radiator and refill it with clear water. If the oil reappears then look for a leak.

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HINTS FOR THE MOTORIST
By ALBERT L. CLOUGH

Information From The Hand Crank

As To Whether An Engine's Cylinders Are Gas Tight Or Leaky

A FEW MINUTES devoted to cranking an engine by hand will tell more as to its condition than will any other single test. It will indicate the degree of gas tightness possessed by each of its cylinders and this is by far the most important thing to know about it. If gas leaks from cylinders excessively, that is, if they have poor compression, high output and economy cannot be expected. With the car in neutral and the ignition switch off, remove all spark plugs but that of No. 1 cylinder and attach the hand crank. The engine should then crank perfectly freely until it is turned the point where both valves of No. 1 cylinder close, but at that point there should commence a strong resistance to cranking and when the crank is turned further, it should spring back positively, when turning force is removed. It should do this again and again, even though the crank is held for some time, with the compression pressure acting in the cylinder. If a cylinder will pass this test, its number can be set down as one which is tight. The spark-plug should then be moved to No. 2 cylinder and the same test repeated, but it may be that, in this instance, only a slight and temporary resistance is encountered, which soon ceases, if force is kept applied to the crank. There is no "back spring" when the crank is released and the escaping air can usually be heard hissing out. No. 2 cylinder will then have to be noted down as leaky. After all cylinders have thus been tested, by moving the spark plug and cranking, one will have a record of which are leaking and it is these which require attention. Do not allow anything to be done to the valves of cylinders which are satisfactorily gas tight. It is fruitless and grinding may only impair their condition. Have only the valves in the leaky cylinders ground to perfect seating and their push-rods adjusted to the right clearance. It may be that after all this is carefully done one or more cylinders still fail to show springy compression resistance, when cranked, in which case it is much to be feared that leakage is past the piston instead of at the valves. The result of such tests of cylinders for gas tightness, usually explains at once shortcomings in engine performance, such as low fuel economy, lack of hill climbing ability, "roughness" of operation, unusual vibration and uneven operation at slow speeds. Every two or three thousand miles the handcranking test can profitably be made.

RED HOT SPARK-PLUG



E. G. L. writes: The spark-plug in No. 2 cylinder of my four-cylinder engine, becomes red hot and causes backfiring, after the car has run four or five miles. Valve action and lubrication are all right. What causes this plug to overheat?

Answer: If this particular plug is different from the others and not of the type recommended for use with this engine, especially if it is so long that it projects unduly far into the combustion chamber or has too massive sparking points, its overheating is accounted for. Another cause of the same thing is a gas leak through a plug, which will keep its metal parts hot enough to ignite the next incoming charge. Occasionally, if water circulation is sluggish or some of the passages in the cylinder-head are obstructed with sediment, a steam pocket may

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.

form and cause local overheating. If this involves the part of the head in which a spark-plug is located, the plug may run red hot.

LEAKY TIMING-GEAR CASE
W. H. H. writes: The oil level in the crankcase of my engine gets low much sooner than formerly and I notice, that after the car has stood idle in the garage, there is some oil on the floor, not under the engine itself but rather in front of it and just a little back of the radiator. Where does this oil escape and how can I stop it from so doing?



Answer: It probably leaks out from the timing-gear case. It may be that the bolts which hold the cover on have become loose and need tightening only, but quite likely the gasket between the cover and the case itself, is damaged and will have to be replaced before leakage can be stopped. You will have to empty the cooling system, detach the rubber water connections and take off the radiator, before you can get at the timing-gear case to work on it.

There is such a thing as being too eccentric to be agreeable.

TWICE AS MANY CANADIAN CARS IN NEW ZEALAND

The supremacy of Canadian-made automobiles and motor trucks in the New Zealand market is shown by the returns published in the Commercial Intelligence Journal, issued in Ottawa by the Department of Trade and Commerce. Canada sold nearly twice as many cars in New Zealand as the United States did and quadrupled its own 1922 business.

Figures submitted by Trade Commissioner W. A. Beddoe, from Auckland, show that in 1923 New Zealand imported 12,359 motor cars, of a total value of £2,073,297. Of these 7,380 cars, worth £966,384, came from Canada; 4,309, worth £854,171, from the United States, and 496 cars, worth £208,953, from Great Britain.

Canada sent 925 motor lorries, busses, etc., to New Zealand during the year. The value of them was £81,589. The United States sent 437 and Great Britain 217. The total imports of this class of vehicle into New Zealand in 1923 was three times that of 1922. Of motor cars New Zealand imported nearly four times as many as in 1922.

TO HALT ALL TRAFFIC AT RAIL CROSSINGS

New Plan to Be Tried Out on Long Island As Experiment.

Motorists everywhere will watch with interest the new system for the protection of level crossings which will this month be inaugurated by the Long Island Railway. Under the new rule, just adopted special traffic men will be employed who will blow a whistle as a warning to the drivers of automobiles, motor trucks, motorcycles, bicycles, horse-drawn vehicles and pedestrians to halt at public highways which intersect the railroad tracks at grade. This will mean that all who proceed over such a crossing will be compelled to come to a complete standstill before doing so, which in case of the approach of a train should render this system of keeping the tracks clear of other traffic effective.

DON'T NEED BIG INCOME TO PURCHASE MOTOR CAR

While 10,250,000 passenger automobiles were registered in the United States last year, no more than 4,000,000 persons filing income tax reports reported an income of more than \$2,000 a year. This indicates there are 5,000,000 or 6,000,000 persons earning less than \$40 a week that have bought motor cars, and probably bought them on the installment plan.

Carburetor Float Test.

A defective metal float chamber of the carburetor can be tested by immersing it in a bowl of very hot water. If bubbles rise, it is sure indication that there is gasoline in the chamber. Make the hole slightly larger, and also punch another very small hole on the edge of the float, and shake out the gasoline.

When it is empty, drop a small spot of solder on holes, but be very careful not to use too much or the balance of float will be upset. Be careful not to use very much heat, or it will open up the seams in the float and ruin it. If the float is made of cork, the probability is that it is water-logged. In that case, dry it out in an oven with a very mild heat, then give two or three coats of shellac.

Back-firing in the carburetor may be another indication of poor seating valves.

A wise motorist will keep everything tight, and drive his car at speeds where the engine will not cause vibration. A quivering car helps to chip off paint and enamel. Corroded terminals or poorly-fitting terminals are the chief sources of battery troubles.

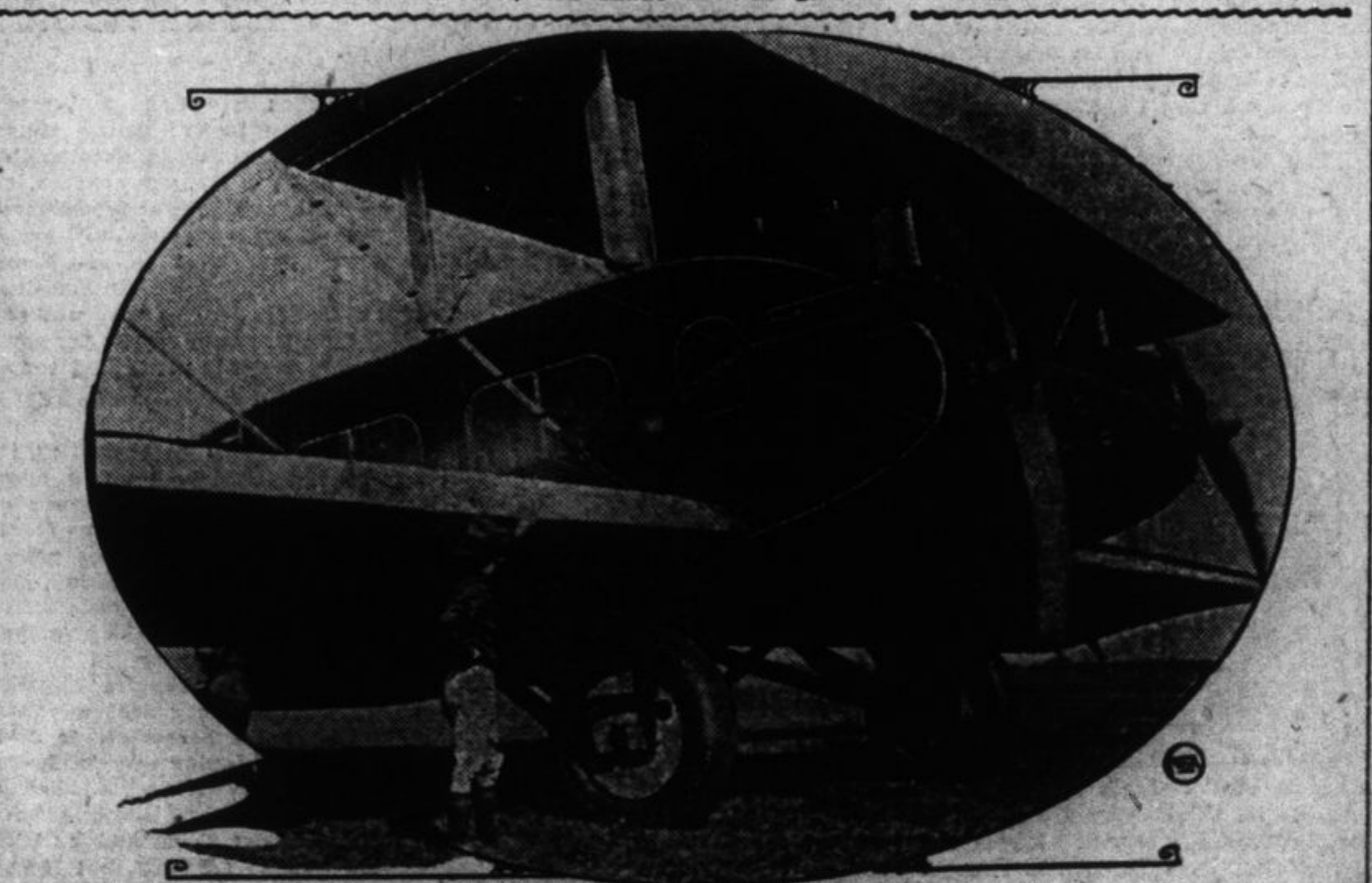
Brakes are always inclined to be more conductive to skidding when the linings are damp and the streets wet.

For An Easy Start.

To make starting easier, throw out the clutch when starting the engine. Otherwise the starting motor has to turn over the clutch and counter-shaft gears, besides the engine, which is a heavy strain on the battery.

There are people who seem to think they ought to be commended for attending funerals, even if the sole purpose of doing so is to observe the feelings of the mourners.

The man who doesn't have to work might as well collect his life insurance.



THEY EVEN CARRY BABY GRAND PIANOS!
Anything is liable to happen now. This giant plane, recently tested at Curtiss Field, Long Island, can carry thirty passengers or a heavy load of freight. It will be used in freight service, according to present plans. Note the two propellers and the great width of the body.

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