

# In The Automobile World

## THE EXPERTS' JAY.

This is the touring season, and the wise driver will chalk up mentally the proved fact that the most economical touring speed is from twenty to twenty-five miles an hour. Not only does fast driving on tours mean increased fuel consumption, greater strain on car and occupants, including driver, but it actually results in lower mileage.

A condition that results in poor operation of the starting motor, dullness in the lights, or flickering, is usually caused by poor connection at the battery. The green deposits that gather at the terminals produce these results. Terminals should be kept absolutely clean, they should be greased frequently, and the wires secured firmly. Distributor points must be adjusted

with a wrench especially devised for that purpose. It embodies a steel finger, or thickness gauge, to be inserted between the contact in open position on any of the contacts. In other words, this steel finger is the exact width of the correct opening between the point and the segment.

The only entirely satisfactory method of removing the carbon and soot that periodically clogs up the muffler is to take the device apart. By tapping the muffler with a bit of wood or a mallet, much of this soot will be loosened so that the exhaust can later blow it out.

It sometimes happens that while the wheel itself may run perfectly true, improper mounting of rim and tire give the impression of wobbling to the whole assembly.

The car owner who would rather produce all his own "ingredients" at

home may be glad to know that an excellent body polish may be made from the following: One pint of turpentine, one pint of wood alcohol, one quart of distilled water, and one quart of paraffin oil. The alcohol and turpentine should be mixed, after which the water and paraffin oil should be added. The best way of mixing the latter two is to place them in a bottle and shake them briskly. The solution should be applied with the soft side of a cotton flannel cloth and polished with a dry cloth.

Should a carburetor catch fire by reason of a back fire, it can generally be extinguished by turning off the gasoline and racing the engine. The engine will soon suck it out and there is very little danger.

## DANGER TO CAR FROM BACKFIRING

### Causes of Trouble Are Given And What To Do to Avoid Fire.

Backfiring in the carburetor is dangerous to the car, as it is likely to set the automobile on fire. Cars have been burned from that cause in the past, and similar accidents are bound to happen again. It is well to be on guard and eliminate the cause for backfiring.

The most frequent cause is a lean mixture. This means more air in the mixture than usual. The carburetor sets out of adjustment some way, and the mischief is done. A lean mixture is slow-burning. It burns during the power stroke, during the exhaust stroke, and is still burning when the inlet valve opens, admitting the fresh mixture. This takes fire and the flame runs back to the carburetor. If gasoline is dripping from the carburetor, a heavy vapor is formed, extending under the engine, where it is held by the mud pan. The flame spreads under the engine and soon reaches the tank, melting the connections and releasing a flood of gasoline.

Lean mixture may be due to derangement of the carburetor or a leaky inlet manifold. Some of the causes may be the spray nozzle too far closed, auxiliary air valve spring too weak, or valve open, or a clogged fuel line. A leaky inlet manifold may be detected by running the engine and injecting oil around the joints. Oil will be sucked in at the leak where the bolts must be tightened or a new gasket installed in place of the leaky one.

Troubles of the inlet valve are rare. The valve lifter may be out of adjustment, leaving no clearance, or actually pushing the valve off its seat. If there is little or no clearance the valve will hold the compression when the engine is cold, but will leak when the engine warms up, due to lengthening of the valve stem, and of course popping in the carburetor occurs immediately. Set the clearance at about two thicknesses of newspaper. Occasionally this valve may become stuck so that it cannot close. This may be seen from the outside, as there will be an unusually large space between the valve stem and lifter. There may be electrical troubles. With a single coil and distributor sys-

tem, as used on the majority of cars, there would be some distributor trouble or a short circuit of the distributor wires. See that all wires are properly insulated and wipe all dust from the distributor head. If you know how to open the distributor, you should wipe out the inside occasionally, using a cloth dipped in gasoline. This will remove all accumulations of dust, which will cause short circuit if allowed to remain.

On a Ford car we find the trouble caused by short circuits on the timer wires. These chafe against each other and sometimes against the sides of the engine, wearing away the insulation and so causing trouble. Close the switch, using a battery, or run the engine on magneto, and advance and retard the spark, watching the commutator and wires. If sparks are seen a short circuit is indicated, which may easily be stopped with tire tape. Fortunately cars do not burn as frequently now as formerly, probably because the flame is led away from the carburetor by the hot air pipe leading from the hot air stove on the exhaust manifold. But don't think your car is safe on that account. There are leaks in these pipes and there is a summer adjustment with large holes to let in air when necessary. So look out for popping in the carburetor and determine its cause immediately.

An English rail ad has built the heaviest single leaf rolling bascule bridge in the world, the leaf being 160½ feet long and with counterweights, weighing 6,325,000 pounds.

## WHAT COURAGE IS.

The "stuff" that soldiers are made of is described in the following extract from an article by Lieut. Leon Archibald in the current Good Housekeeping. This Canadian officer enlisted at the beginning of the war, was wounded at Ypres, fought at Arras, the Somme, and the Somme, and is now at home recovering from wounds. He writes:

"Winter certainly measured out its full quota of hardships for us. On account of the impassable condition of communication trenches, our journeys to and from the front line were reserved for the darkness. This condition increased our difficulties materially. The wounded, for instance, were almost invariably forced to remain in a cold, dirty, and water-logged trench until darkness arrived to obscure their passage out. One day, however, in order to give a badly wounded boy the benefit of his one chance in ten thousand that he had to recover, two of his chums decided to make the attempt to get him out in daylight to a dressing station. Stretchers could not be used on account of the sharp turns and narrowness of the trench, so the boy was placed on his rubber sheet, the two bearers grasping each of the four corners. The wounded chap's leg had been badly shattered above the knee, while his left arm and side had been liberally dosed with shrapnel. He was a large fellow, and the going was bad. Ev-

ery few yards, owing to obstacles or to the fatigue of the bearers, it was necessary to put down the improvised stretcher, when the occupant's body from his shoulders downward would immediately sink out of sight into cold, soupy muck. Just what that boy suffered and just how many times a minute he died is not difficult to imagine, but we never heard a murmur. "Arriving at the junction of the trench and a hedge, the little party laboriously climbed out and still more laboriously bore their comrade back to the expert attention which finally saved his life. No finer demonstration of self-sacrifice have I ever seen than the exhibition of this wounded boy's two chums. They opened seven hundred yards back to the dressing station, and in the end their sterling courage and indomitable perseverance were crowned by success. I heard a senior officer remark on seeing the pitiful little procession go down the trench, 'That sort of thing will never learn the bitter taste of defeat, for it will never know when it's beaten.'

"It was this same indescribable 'stuff' for which I saw a little lance corporal a V.C., not many days later. The award, like many such, was posthumous. During a period of great stress this little chap, with his arm literally torn out by the roots, kept circulating among his men, encouraging them and using them to their best advantage. He died two hours later from loss of blood, still on the job when he could have sought the aid that might have kept him alive."

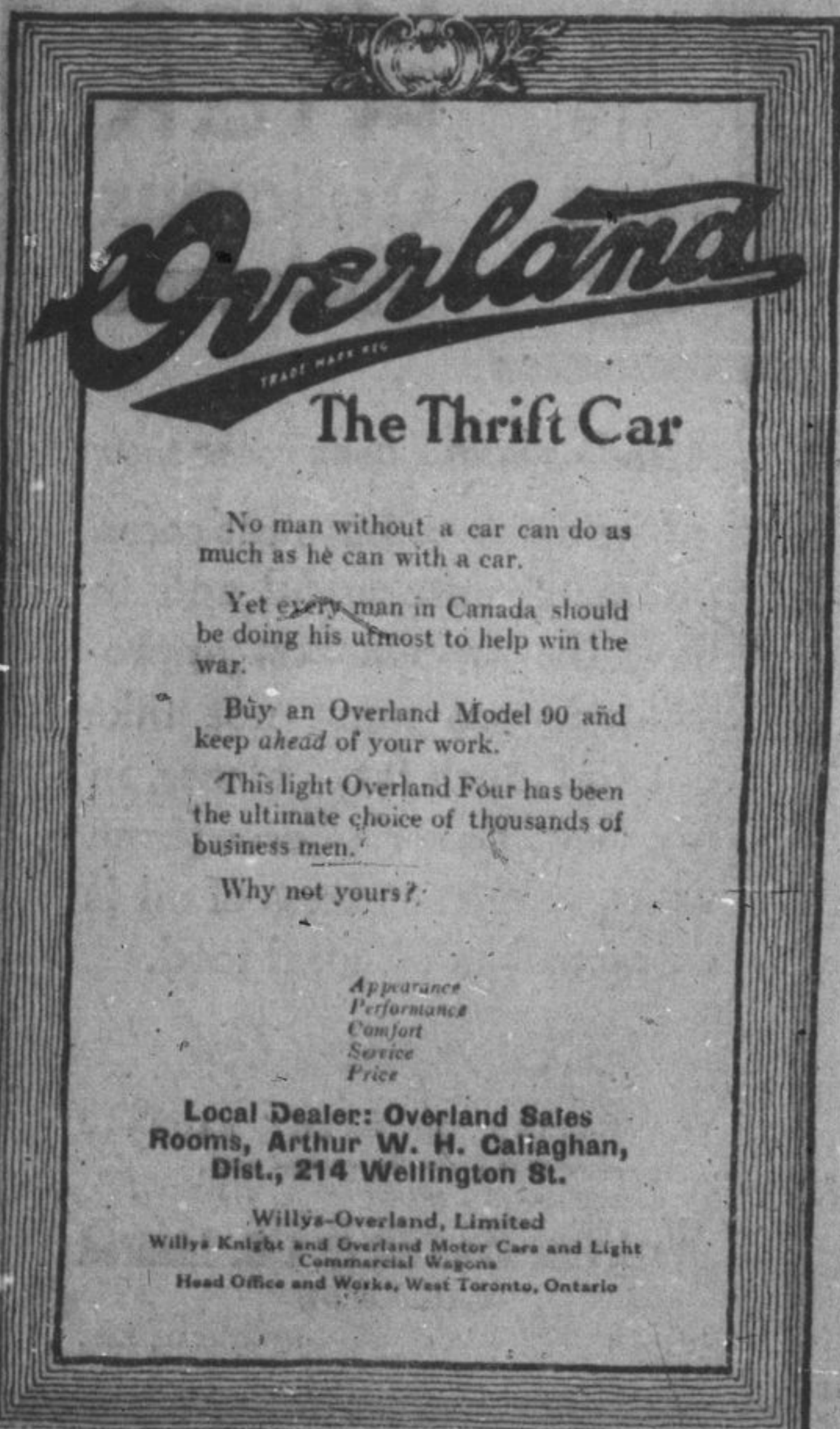
## AUTO NEWS

Rubber of any sort, matting, for instance, may be secured to metal surfaces by using a cement made by dissolving flake shellac in alcohol to form a thick syrup. Several thin coats carefully applied should be given to each surface, and the first should not be allowed to dry before another is applied.

Never allow an automobile engine to run when the car is stopped; shut it off. It is no trouble to start it again with modern electrical starting equipment. It is true it takes only a small amount of gasoline to operate a motor, yet if a record is kept the total amount of fuel wasted in this way will be staggering.

An obscure engine difficulty sometimes occurs that is manifested by a reduction of compression when the cylinders are hot, although they may be known to be tight when the parts are cold. This is caused by the expansion of the valve stems during the warming up process. Unless a proper amount of clearance is allowed between the ends of the stems and the tappets this may be enough to prevent the valves from seating properly.

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**MICHELIN**  
Twelve Tire Tests No. 9

This series of twelve tests is designed to take the uncertainty out of tire-buying.

**Tube-Fit**  
This photographic reproduction teaches an important lesson.

The tube shown was made by cementing together sections of two tubes of the same branded size—one a Michelin, the other a standard tube made in the ordinary way. This composite tube, slightly inflated, was then laid in a casing, cut in half longitudinally.

Note that the Michelin half fits the casing perfectly (because Michelin Tubes are made ring-shaped like the casing) whereas the other tube naturally wrinkles. Such tubes are easily pinched in fitting; wear thin in spots; or break, where created or folded, under the pressure of inflation and use.

In selecting tubes, therefore, it is important for you to know whether the tube is naturally straight or naturally ring-shaped. You can determine this by holding the tube up while deflated; straight tubes hang straight, while Michelin tubes, which are ring-shaped, hang in a decided curve.

Just try a Michelin and see for yourself.

Michelin Tube at Right - Ordinary Tube at Left.

Remember this: - Michelin Tubes - Ring-Shaped - All Others - Straight

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The new Gray-Dort embodies all the good features that won instant success for former models. The 4-cylinder motor is a triumph of smooth, economical speed and power. The chassis is sturdy and quiet. The springs are long. The upholstery is deep. The equipment is absolutely complete from electric starting and lighting to the tools. New lines of beauty have been given this model.

The four-passenger touring car is \$1,195; the three-passenger four-de-lux roadster is \$1,050; the Gray-Dort special, beautifully finished, and with extra details of equipment, is \$125 above the list. All prices are f.o.b. Chatham.

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