

# IN THE AUTOMOBILE WORLD



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## OVER ONE-HALF OF ROADS IN PROVINCE ARE NOW SURFACED

Ontario Has Not Built Main Roads First, But Has Started in Stimulating Municipal Effort in Work of Township Road Betterment.

By W. A. McLean, Deputy Minister of Highways, Province of Ontario.

Optimism may reasonably be felt with respect to road conditions in Ontario. The public of Ontario have persistently deplored their "bad roads." Incessantly has this complaint been sounded. It has become characteristic of Ontario citizens. Any other note brings a shock of discord to those whose one thought of the roads has been from the viewpoint of adverse criticism. The motive is good—that of uplift. Yet, while talking of bad roads, let us see what has been accomplished with respect to good roads:

Cement concrete pavement..... 118

Total surfaced roads..... 27,117

The foregoing schedule, referring to roads in the open country, means:

(1) That more than half (about 55 per cent.) the road mileage of the Province is surfaced in some degree.

(2) That Ontario has a vastly greater mileage of improved and paved roads than all other Canadian provinces put together.

(3) That few, if any, States have an equal record of surfaced mileage over which vehicles can travel in generally at all seasons of the year.

Approaching Better Standards.

The gravelled and macadamized roads in many cases are not of the best, and much is to be desired with respect to their maintenance. Nevertheless, a persistent co-ordination of forces is, with

Miles.	
Gravel roads in Ontario.....	23,166
Broken stone roads (macadam).....	3,385
Broken stone roads with tar carpet coat.....	266
Bituminous penetration pavement.....	139
Asphaltic concrete pavement.....	43

steady acceleration, approaching better and still better standards.

The majority of the States and some of the provinces commenced their "good roads" effort by building the main roads first. Ontario started at the other end, with a view to stimulate widespread municipal effort in the work of township road betterment.

In some instances, practically all the roads have been gravelled. In others, where material was scarce, there is still a very limited mileage and much remains to be done.

Ontario has seriously lacked what others first undertook—a continuous system of main roads. The effect has been that motorists, in attempting long journeys, have been discouraged with the disconnected local roads of Ontario as compared with the long mileage of main roads in the Eastern States.

Gives Maximum Service.

The provincial highways system of Ontario, however, is rapidly revolutionizing the situation. It is a system of main roads, leading through every county of the province, and connecting the larger centres of population. Largely following the main arteries of pre-railway days, it is at the same time giving a maximum of service to the farming districts through which these highways pass.

Work on these provincial highways; connected scheme of well built roads is now within measurable distance of completion. The worst portions are being dealt with first. Permanent grades, culverts, bridges, foundations, sufficient to carry heavy motor truck traffic, are being provided. By the end of the present year, 1922, a much improved situation will be achieved; and by the end of 1923, Ontario will have a splendid and profit-producing asset in her system of main highways, if present plans are carried out.

Full Benefit Will be Felt.

By means of this system of main highways, the full benefit of the work of past years will be realized. From the provincial highway, over the county roads, and thence to the gravelled township roads, all parts of rural Ontario may be reached on a network of surfaced roads, permitting a degree of highway traffic such as favors few parts of the American continent.

To-day one may motor to Ottawa or to Windsor in reasonable comfort. There may be a few detours, but every detour means that better roads are being built.

States and provinces, with much less reason, are proud of their roads. Why not Ontario?

A monthly inspection should be made of the brake rods and connecting parts. Clean off all the accumulated dirt and rust, so that they will act as freely and efficiently as possible. Apply a half-and-half solution of kerosene and lubricating oil, and the brakes will work easier and better.



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## HINTS FOR THE MOTORIST

by **ALBERT L. CLOUGH**  
Editor Motor Service Bureau Review of Reviews  
The Air-Bound Fuel-Tank

Liquid Won't Flow From The Spigot, Unless The Bung Is Loose

NO GASOLINE can flow from the fuel tank to the vacuum-tank of the carburetor unless air can freely enter the tank to take the place of the gasoline, and for this reason fuel tanks, other than those of the pressure type, must always be open to the atmosphere. A small hole, drilled through the filler-cap, is the usual provision for admitting air pressure, although sometimes the gasoline gauge is fitted loosely enough in the tank to give the required vent. If it happens that the vent-hole becomes stopped up, as may happen from mud splashing over the rear tank or dust collecting heavily upon it, gasoline will cease to flow to the vacuum-tank as soon as the rarefaction produced by the flow from the tank equals that existing in the intake-manifold and, in the case of a gravity main tank, it will cease very soon after the obstruction of the vent-hole. With the latter type of tank, located under the front seat, it sometimes happens that cloth or waste is accidentally placed over the filler cap and is pressed down hard enough by the cushion and passengers to close the vent-hole enough at least to make the fuel flow uncertain—possibly to stop it entirely. One of the first things to make sure of, when fuel feed interruptions occur, is that the tank is "getting vent."

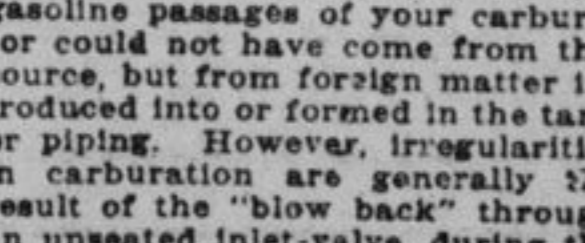
### UNSEATED INLET-VALVE



J. M. S. writes: I find that one inlet-valve of my engine has had no stem clearance and that it is heavily carbonized. I have had trouble caused by the clogging of my carburetor with small flakes of carbon. Could these have come from the deposits on this inlet-valve?

Answer: Obstructions in the gasoline passages of your carburetor could not have come from this source, but from foreign matter introduced into or formed in the tank or piping. However, irregularities in carburation are generally the result of the "blow back" through an unseated inlet-valve, during the compression and power strokes.

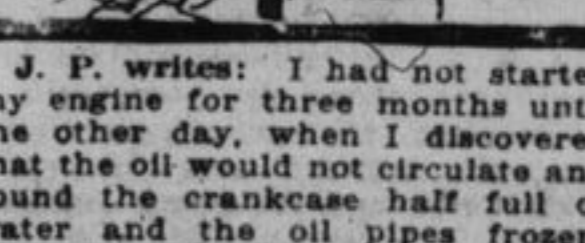
### WATER IN THE CRANKCASE



J. P. writes: I had not started my engine for three months until the other day, when I discovered that the oil would not circulate and found the crankcase half full of water and the oil pipes frozen. How did the water get into the crankcase? I can find no leaks.

Answer: A leaky cylinder head gasket permits water from the jacket spaces to run down the cylinders into the crankcase. A crack in a cylinder wall also lets water in. A leaky water pump also lets water mix with the oil.

### "GRABBING" CONE CLUTCH



L. G. E. writes: The cone clutch of my car troubled me so much by grabbing that I had a new leather facing put on, but this has not cured the difficulty. I have applied neatfoot oil to the leather, but feel that perhaps I should run it dry at first. Can I wash the oil off with gasoline? What can I do to make this clutch take hold easier?

Answer: The springs provided under the lining are supposed to secure gentle engagement, and you may find that they have lost their strength and should be replaced. Are you sure that the rivets, which fasten the leather to the cone, are countersunk sufficiently so that they do not strike the flywheel surface and cause trouble? Is the thickness of the band uniform so that it contacts evenly all around? If not, you may have to have it trued off. Neatfoot oil is the best dressing to keep the leather pliable and in a condition to give easy action. Applying gasoline to the band will make it hard and dry and aggravate your trouble.

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.

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## INTERESTING NEWS FOR CAR OWNERS

THE MONARCH BATTERY COMPANY, Limited, have established a factory in Kingston. It will pay all car owners to have their dealers demonstrate the Monarch Battery or call at the factory and get full particulars.

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# Studebaker NEW BIG-SIX

It is Here!

The New Studebaker Cars, now on display, insure a continuance of Studebaker leadership in motor car VALUE.

In the New BIG-SIX you get the wonderful performance of its 60-horsepower motor, the roominess of its seven-passenger Studebaker-built body, its unusually easy gear shifting, and steadiness on the road at all speeds.

There is distinctiveness of appearance in its beaded edge body, tailored top, massive head lamps, graceful cowl parking lamps, and

clear-vision, one-piece rain-proof windshield.

But basically, the New BIG-SIX is the same dependable car that contributed much to making 1921 a Studebaker Year.

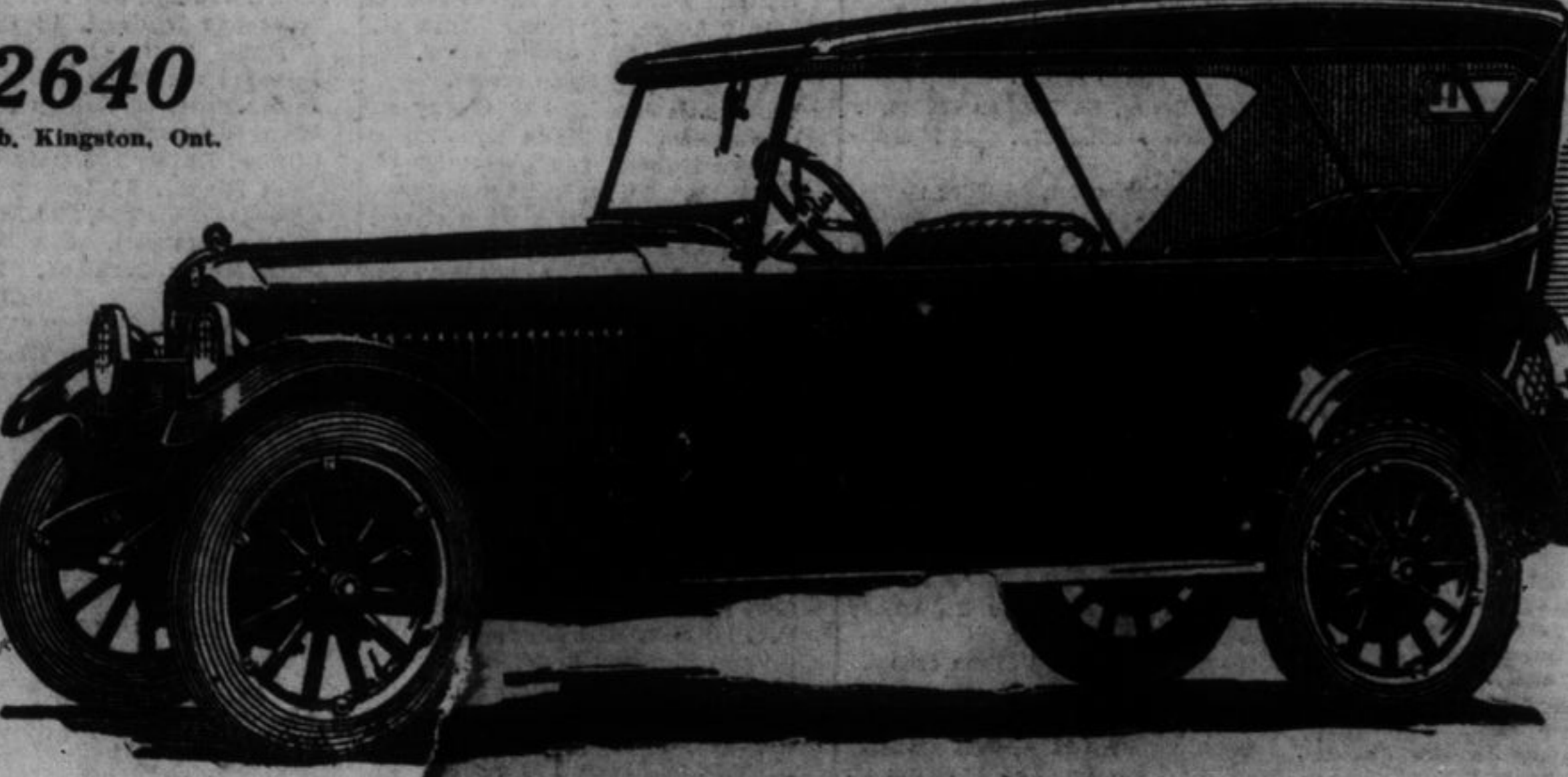
If you pay more than the price of the New BIG-SIX you may buy more weight, but it is impossible to get finer materials or better workmanship. Its light weight and the use of the highest quality materials, contribute in making the New BIG-SIX the greatest 7-passenger automobile value on the market today.

- Look for These Features in the New Big-Six
- 60-H.P., 3 1/4 x 5-in. motor with detachable head.
  - Dry plate disc clutch which makes the shifting of gears unusually quiet and easy.
  - Intermediate transmission.
  - A new seven-passenger body mounted on a sturdy chassis of 126-in. wheelbase, with heavy beaded edge, graceful cowl, large and higher hood; built complete in Studebaker plants.
  - New one-piece rain-proof windshield that gives greater vision. Windshield wiper. Cowl parking lights, miniature of headlights, in corners of windshield.

- Cowl ventilator, operated from dash. Courtesy light on driver's left. Tonness light with extension cord.
- Massive and artistic headlights with improved deflecting and diffusing lenses.
- Deep, luxurious cushions upholstered in hand-buffed genuine leather. Large plate glass window in rear of tailored top.
- Tool kit in pocket on left side of driver, locked with same key that fits transmission lock and ignition switch.
- 33x6 1/2-inch cord tires.

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