

### HOW'S SHE HITTING?

By ISRAEL KLEIN  
(Science Editor, NEA Service)

There is a way in starting a cold engine in winter that saves fuel and marks the experienced motorist. It is quite simple and it's easy to remember.

Very little fussing with the choke, or the throttle, is necessary. The engine won't stall under the circumstances and there will be no undue strain on it.

The reason why the throttle should not be advanced any more than part way is because the choke control furnishes the added fuel while the same amount of air is allowed to go into the mixture. This is true in the case of most carburetors. If the throttle were advanced all the way and the choke used in addition, the engine would be getting too much fuel and there would be a great deal of waste. The engine would start, however, but the throttle would have to be closed immediately with the spark lever and the choke. Otherwise, the engine would be overflooded with fuel and balk.

Here are the directions:

Throw the spark lever back almost to the limit of the retard position. Advance the throttle a little, but not all the way. Pull out the choke button all the way. Then press the starter button.

As soon as the engine has started, push the choke control halfway back, advance the spark and let the engine warm up with the choke in the halfway position until it operates smoothly.

With the throttle keeping the engine going a little faster than idling and the choke control halfway out, the combustion chamber walls will become heated sooner than under ordinary run-

ning conditions and so enable the fuel to burn more thoroughly. When this occurs the throttle can be pushed back to idling and the choke control on the dash also pushed in.

Generally, it should be remembered, the choke should be out only so long as is required for the engine to run without stalling. As soon as this is possible, the choke should be pushed back to its normal position. Thus there will be no waste of fuel.

The air that is taken into the fuel mixture by the carburetor is warmed up quickly by its passage alongside the exhaust manifold before entering the carburetor. This in turn permits the fuel mixture to become volatilized sooner and so leave little to be wasted.

As a result, the warming up process nowadays is much shorter than it was a year or more ago.

One important point should be remembered in this connection: Too much choking will result in an overflooded carburetor, besides an overflow in the cylinders. This not only causes much of the unburned fuel to flow down into the crankcase and dilute the lubricating oil, but it allows whatever water there is in the fuel to collect in the bottom of the carburetor.

When a cold snap comes along, this water residue freezes and then there is trouble in starting. The frozen water clogs up this important element, keeps the fuel from coming in and maintains this situation until it is thawed down and drained out.

That's a job for the auto mechanic, or a nasty one for the motorist.

The judicious use of the choke, therefore, is essential.

### Shocks Absorbed In Various Ways

A better understanding of the way cars are designed to handle shocks from rough roads helps materially in leading a motorist to decide what sort of ride he prefers. Most people have only a vague idea of why they like the riding qualities of certain cars and why they do not like that of others.

It is obvious that when a car goes over a hump in the road or into a chuck hole the shock has got to be absorbed in some way or other by the car. This shock absorption may be concentrated or drawn out into installments, or, to put it another way, may be a sharp jolt or a series of gentle disturbances of the car.

Some people prefer to "have it over with," as in having a tooth pulled. Others like to sway up and down and take their shock in easy doses. Thus we have cars that appear to ride hard and those that ride soft, with a great variety of compromises in between.

### Be Sure Starter Used Long Enough

While it never pays to keep your foot on the starter button for any length of time in trying to set a stubborn engine into operation, it is even more risky to touch the button for too brief a period.

If the engine is given only a quarter or half turn it is apt to backfire. Not only is this dangerous from the fire standpoint, but if the driver happens to touch the starter button again before the engine comes to rest a tooth or two may be chipped off the starter or flywheel gears.

Usually if a driver is in the habit of touching the starter briefly he follows with a second touch, or perhaps makes the starting process a series of brief spells of cranking. It is as if he knew instinctively that one touch of the button would not be

### Test First U. S. Rocket Auto



Experiments are now being conducted at Santa Monica, Calif., with the first Rocket Auto to be constructed in America. Lou Moore, noted racing driver, is conducting the road tests and is shown above inspecting the rear mechanism of the unique car. Rockets discharged through the holes visible in the top picture propel the racer along the beach at Santa Monica as shown below.

enough to start things going.

When all drivers cranked their own they were careful to avoid a half turn of the engine. A backfire meant a broken arm. Today it may mean a broken starter or flywheel gear.

Glands may come—and glands may go—but monkey business goes on forever.

Only 12 states require examinations of all auto drivers, through the authority of their drivers' license laws, reports the American Automobile association. This enforcement is optional with the proper officials in six other states.

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### Use Reverse Gear When Car Parked

If the car is parked downhill in the forward direction does it make any difference whether the gears are left in low or reverse?

Many owners puzzle over this and technical discussion, it probably will simplify matters for everyone to say that the car is safer when left in reverse, regardless of how it faces on a hill.

Reverse is the lowest gear of the car, and that permits the engine to exert the most effective braking power.

You will argue, however, that when the car is facing downhill and the gear is in reverse the weight of the car, should the emergency brake fail, would force the engine to reverse its ordinary direction of rotation. You may ask if an engine has compression in reverse direction?

It is difficult to visualize an engine running backward, but it should be easy to recall that the power stroke of any piston becomes a compression stroke when its direction is reversed.

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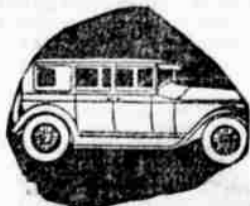
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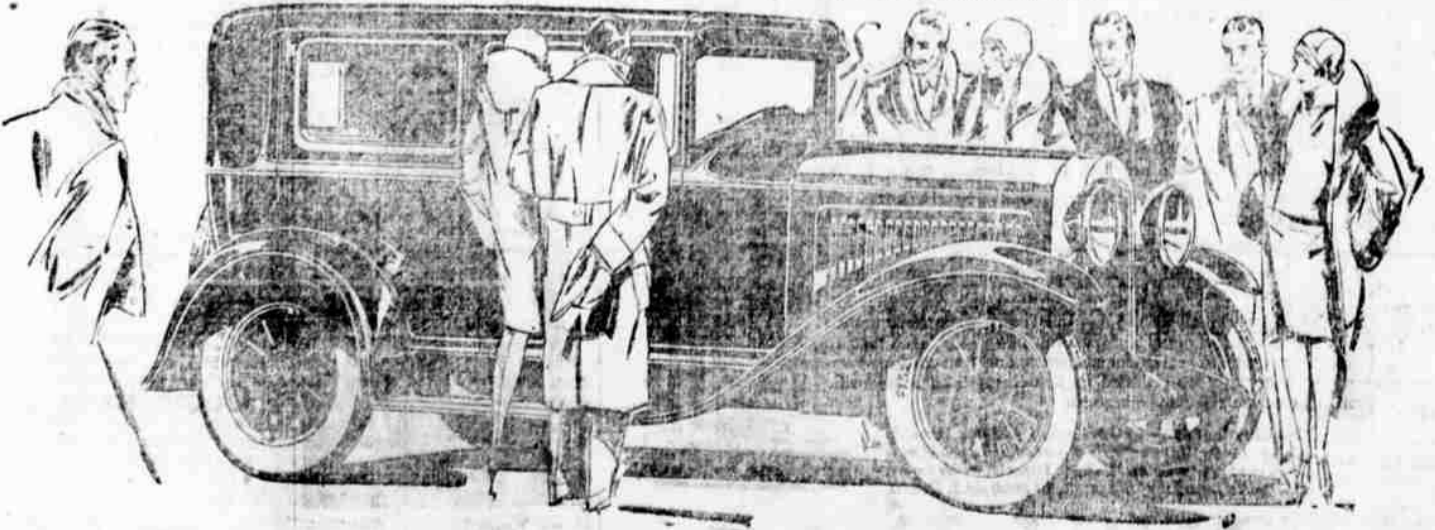
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