



"Traffic cop" along desert speedway sits in airplane seat on 12½-ft. tripod. He has red signal light to warn drivers of impending mishaps.

# Gunning the Hot Rods

By Andrew R. Boone

**B**ILL BURKE is an Alhambra, Calif., welder; Don Francisco, a city fireman. They're not sure just what their car is: it has the chassis and running gear of a Ford roadster, a Mercury engine, and a body made from the wing tank of a P-38 fighter plane. They put it together themselves, and in it Burke recently whizzed along a stretch of the Mojave Desert at 149.75 miles an hour.

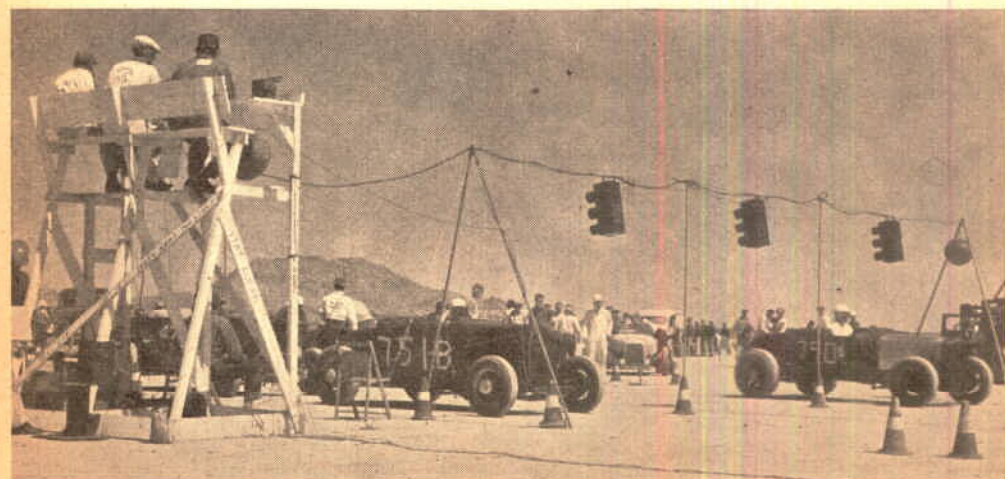
That's the current record of the Southern California Timing Assn., at whose speed trials every week end some 250 hybrid jalopies like Burke's go screaming over the hard, smooth bed of El Mirage dry lake. It won't stand long if the drivers of these hot rods—as they're called—keep on thinking up new tricks to streamline a racing car and jazz up its engine.

Many of the drivers are ex-GIs who learned how to doctor engines while repairing jeeps, tanks, and airplanes at bases in a dozen countries around the world. In the last year they have added an average of about 10 m.p.h. to the top speeds of their patchwork racers.

To keep pace with their growing numbers and their steady push toward the 150-m.p.h. mark, the association has installed an elaborate speedway traffic system and an electronic timer that clocks the cars over a measured quarter-mile course to 1/1,000 of a second.

And after the hot rods hit 150?

"Up to 160—we hope," says Wally Parks, club secretary. He figures that dream may come true this year—or next.



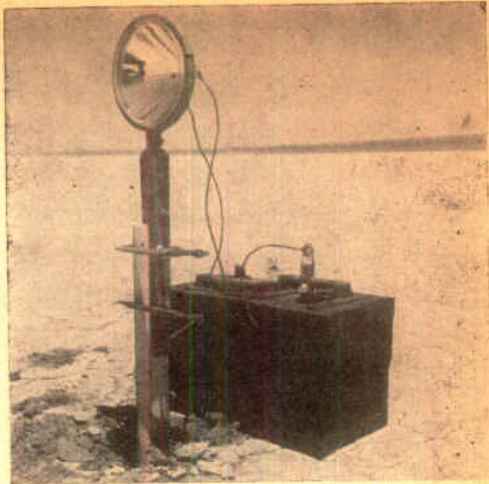
Starting lights flash red, amber, and green signals in succession to send cars out of three lanes at 20-second intervals on 1¼-mile approach to their carefully timed runs through speed trap.

As many as 250 hot rods may make 500 starts on a week end. Starters get reports by phone from patrol judges and timers, and direct cars to the starting line by a loudspeaker system.





**Electronic stop watch**, calibrated to 1/1,000 of a second, times hot rods during speed runs. Shown with the apparatus is man who designed it, J. Otto Crocker, a San Diego bank technician.



**Clock starts** when car breaks beam from spotlight (above) to photoelectric cell at start of 1/4-mile course. Breaking a second beam at finish line stops clock, which then shows elapsed time.



**Hot rod is started** by towing it with another car. Towline is attached to right front axle with airplane seat strap that can be unhooked while in motion by a tug on cord running to tow car.



**Rear-engine speedster** gets a push start. It has 1937 Cadillac V-8 motor mounted on the body of a 1923 Dodge roadster. Streamlined nose is a war-surplus wing tank cut in half.



**Radiator is eliminated** to sharpen nose of this model. Instead, it has a 10-gallon water tank behind engine. Car is drained after each run and takes an hour and a half to cool off.

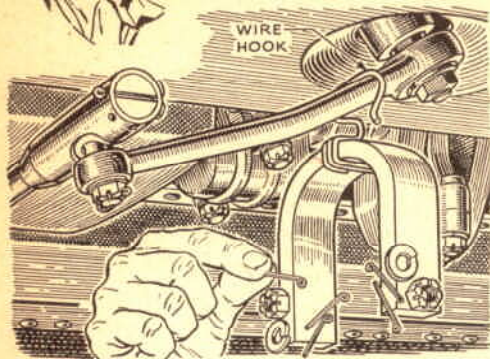


**Half the hot rods** now burn alcohol instead of gasoline. This one carries its 5-gallon supply in an aircraft oxygen bottle. At better than 100 m.p.h., car gets about two miles to a gallon.



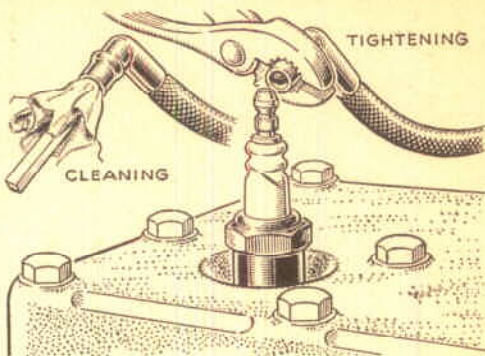


## Hints From the Model Garage



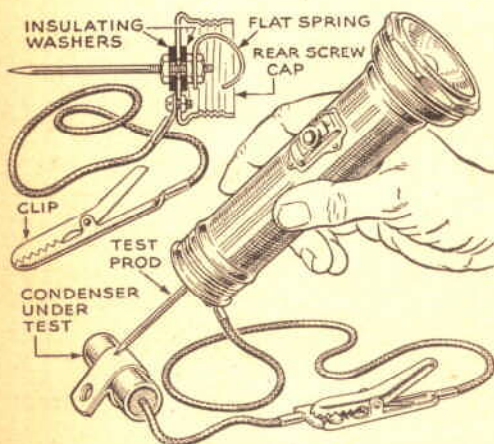
### Magnet Holds Small Parts.

When you're working under a car, hook a permanent magnet nearby. As you remove nuts, cotter keys, pins, or small parts, just stick them to the magnet. P. R. Wilson, of Brooklyn, Ont., says this is a help when you replace the parts. They're right there when you want them, and they don't pick up grit.



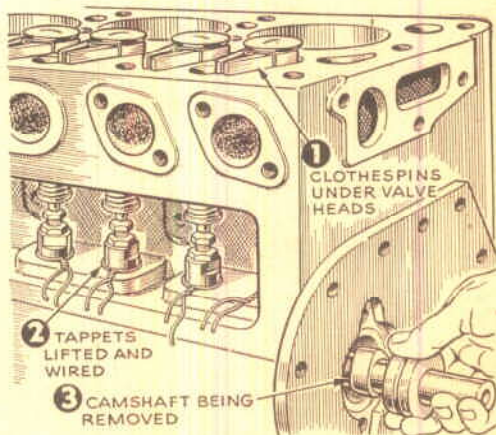
### Dirty Cap Causes Miss.

On high-compression engines, mysterious low-speed missing or bucking may sometimes be traced to poor electrical contacts in the high-tension leads. According to Frank Tobin, of Manhattan, N. Y., cleaning out and tightening the plug caps will often cure skips seemingly caused by defective plugs.



### Flashlight Tests Circuits.

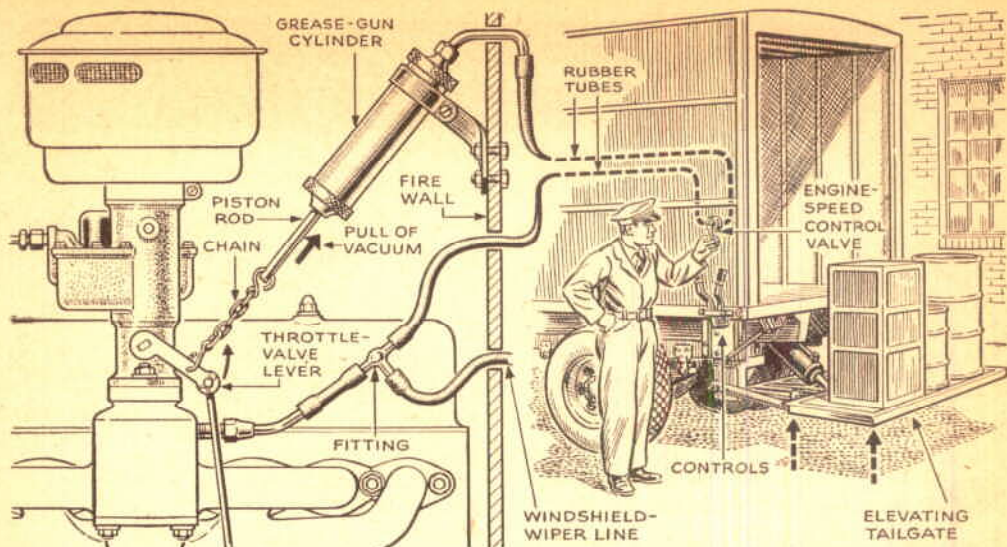
A flashlight with a metal case makes a good continuity tester. Rufus P. Turner, of New Bedford, Mass., rigged this one. The test prod is a 3" brass rod threaded for 6-32 nuts and insulated from the cap by fiber washers. The other lead runs directly to the cap. In use, the bulb lights to indicate grounds and shorts. No light shows on an open circuit or an unshorted condenser.



### Clothespins Wedge Valves.

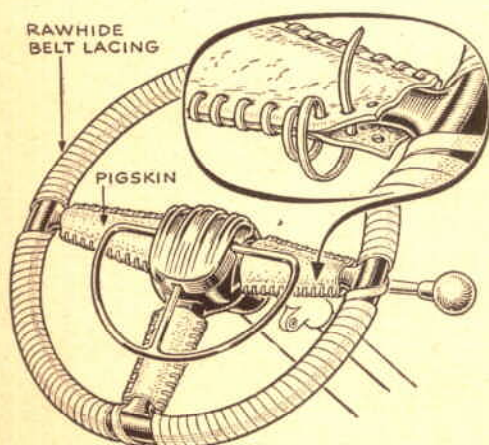
Here's a time-saver in removing the camshaft of an L-head engine: Instead of removing the valves, springs, and tappets, just raise each valve spring with a valve-spring lifter and wedge a clothespin or piece of wood under the valve head. Then lift and wire each tappet up out of the way. The thrustplate then can be removed and the shaft pulled out. Kaiser-Frazer Corp. suggests this.



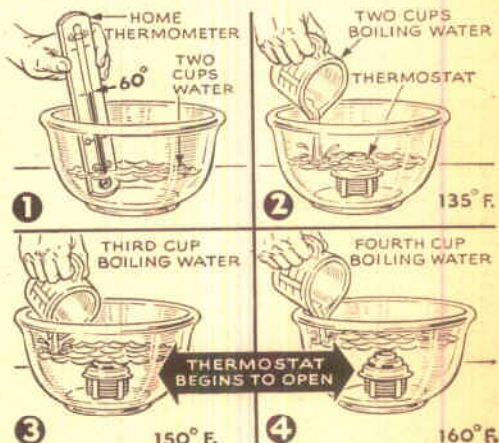


**Vacuum Runs Remote Throttle.** Powered by a take-off from the engine, an elevating tailgate takes a lot of labor out of truck loading. Mike Walt, of La Porte, Ind., says he had trouble with flexible-cable rigs varying engine speed from the back of

the truck, so he built this vacuum-operated remote control. The cylinder is an 8" grease gun and the lines are windshield-wiper hose. A two-way valve opens the throttle, or in second position bleeds air into the cylinder, letting the throttle-closing spring take over.



**Glove for Steering Wheel.** You can lend your car a custom-built touch by wrapping the rim of the steering wheel with rawhide thongs and lacing pigskin covers on the spokes. Leather not only has a good feel to begin with, but its texture generally improves with use. Cut the spoke covers as wide as the combined width and thickness of a spoke, and use a darker lacing on the edges.



**Checking Thermostats.** If you don't have a high-temperature thermometer, you can test auto thermostats with an ordinary one, using a method suggested by Roy Howell, St. Albans, N. Y. Put 2 cups of water at 60 deg. in a bowl with the thermostat, and quickly add 3 cups of boiling water for about 150 deg., 4 cups for 160 deg., 5 for 168 deg., 6 for 174 deg., or 7 for 178 deg. Car manual gives opening point.





# How I Blow Snow Away

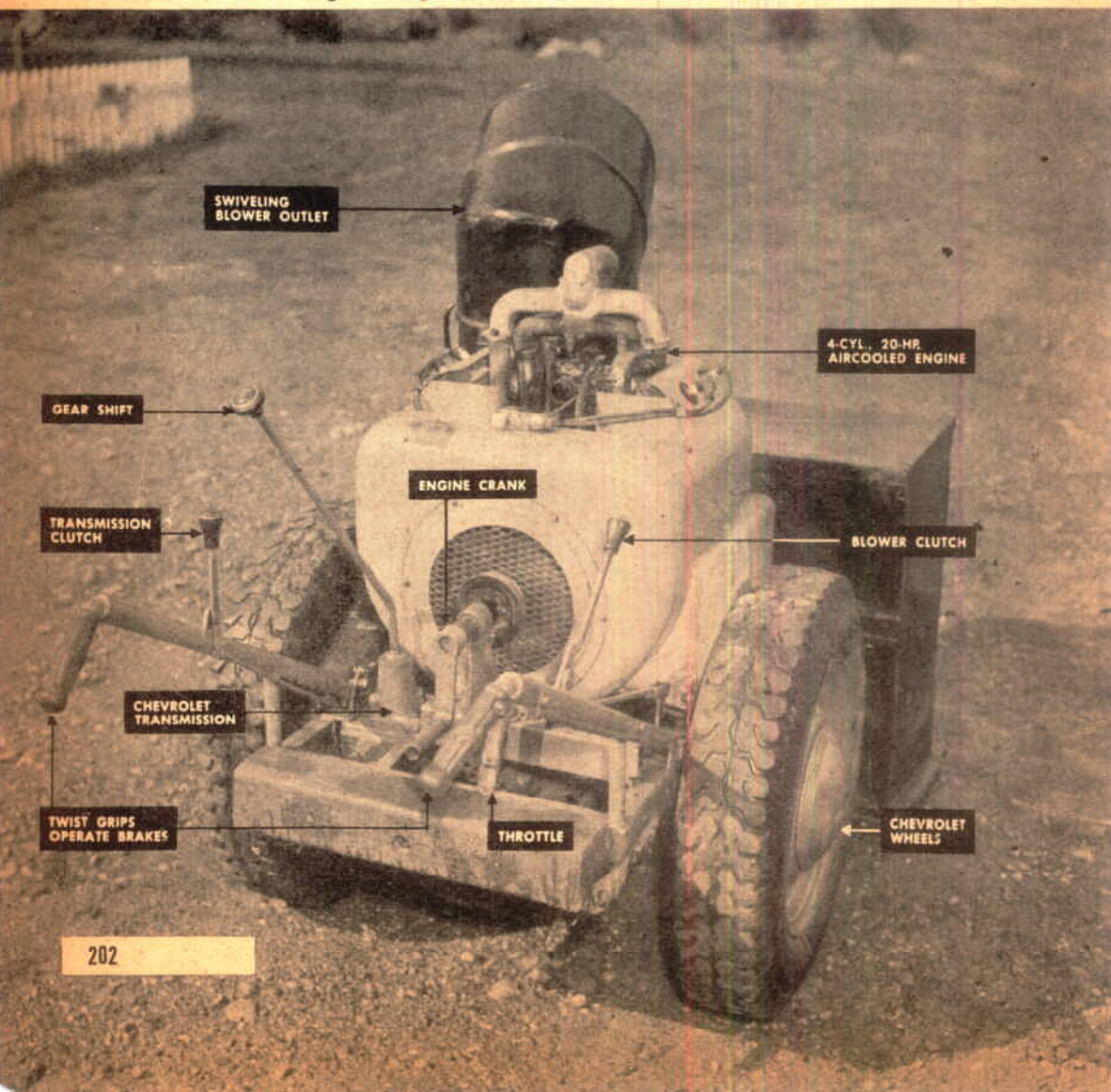
**By Paul Walker, Jr.**

*PS photos by Hubert Luckett*

**In action,** my homemade plow blows path 42 in. wide through snow up to 36 in. deep. It throws snow 40 ft. Chains improve traction.

**Convenient controls** make the plow easy to operate. A disk clutch lets me disengage blower at will while another clutch permits shifting the transmission into desired gear. Engine has a

governor, but I prefer to hand-feed the gas because there are times when it must be shut off quickly. The 900-lb. plow is steered by applying brake to inside wheel on a turn.





**B**LOWING snow off sidewalks and drive-ways beats shoveling it any day. It's easy—now that I have my rotary snowplow.

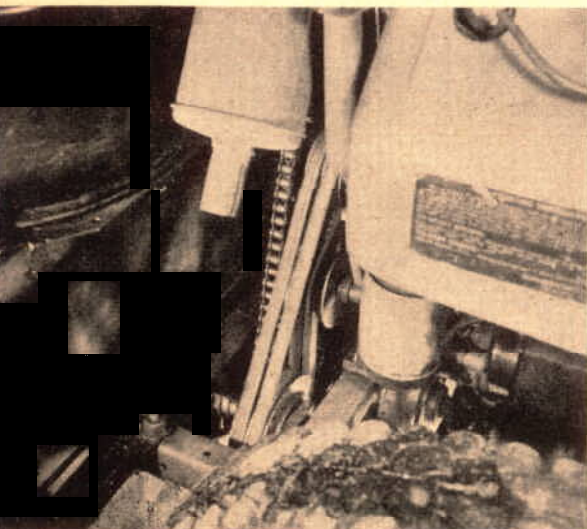
In building it, I cut down an old Chevrolet rear end so the wheel distance, center to center, was 32 in. I also reversed the unit to bring the drive into the differential from the rear. Then I mounted a 20-hp. Wisconsin engine on a channel-iron frame.

A  $\frac{3}{4}$ " roller chain drives the blower, the sprockets giving a four-to-one reduction from engine speed. When necessary, a dry-disk clutch on the fan shaft allows me to disconnect the blower. To propel the plow, two  $\frac{3}{4}$ " V belts operate a pulley and dog

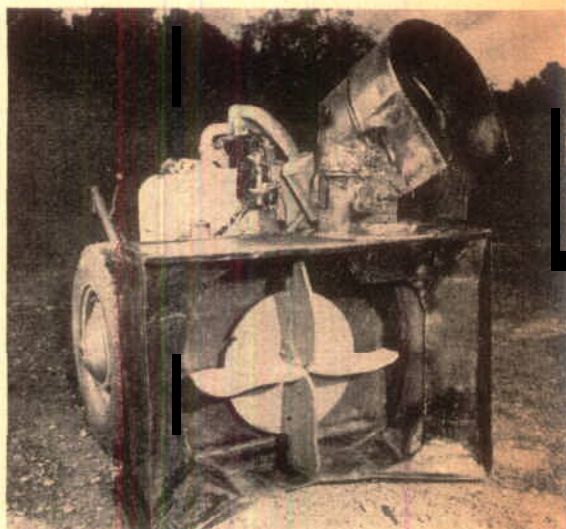
clutch on a shaft running back to the transmission. There's a two-to-one reduction at this point. From the transmission, power goes to the axle, with a five-to-one reduction, by sprockets and a roller chain. Low seems to be the best plowing speed—about 2 or 3 m.p.h. Engine speed must be kept at about 2,400 r.p.m. to throw snow well.

The brakes are applied individually. Turning the twist grip operates a rod inside the hollow handle and a linkage at the lower end. Handles were made of pipe.

Later, I expect to adapt the unit for use as a garden tractor. For that reason, the blower was made detachable. END

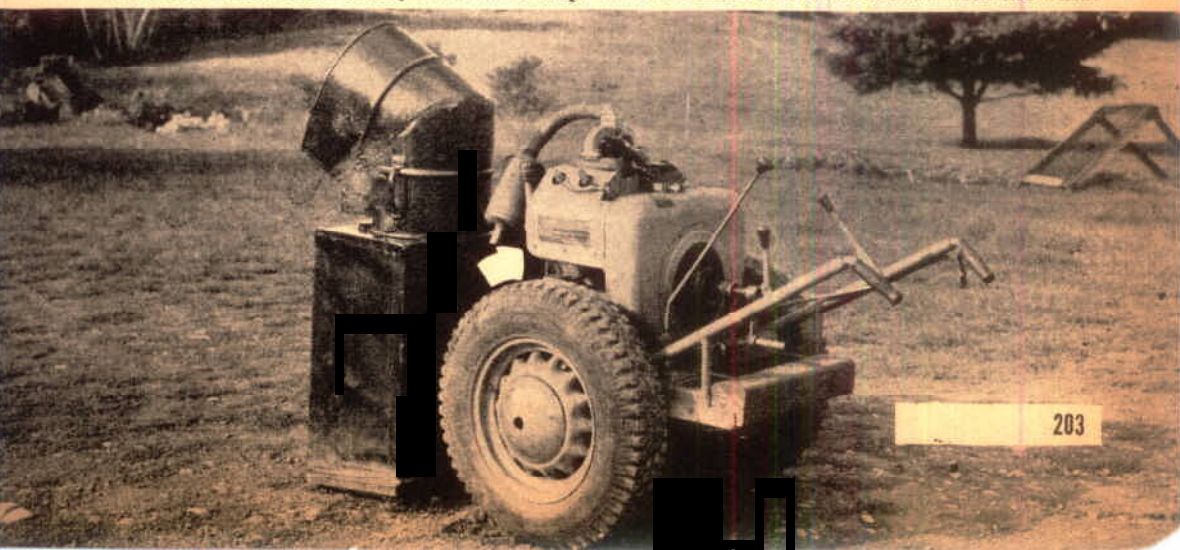


Power take-off at front of engine (arrow below) drives blower and propels plow. Roller chain turns blower, and the two V belts turn shaft running back to the Chevrolet transmission.



Blower housing is 30" high, 42" wide, and 18" deep, welded from 1/16" sheet steel reinforced with  $\frac{1}{2}$ " angle iron. The 24" blower, cut and welded from  $\frac{1}{2}$ " plate, has a 2"-diameter shaft.

The snow outlet turns in any direction except to rear. This lets me shoot snow with the wind.

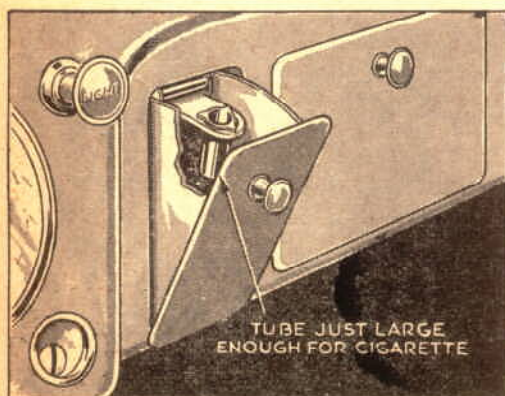
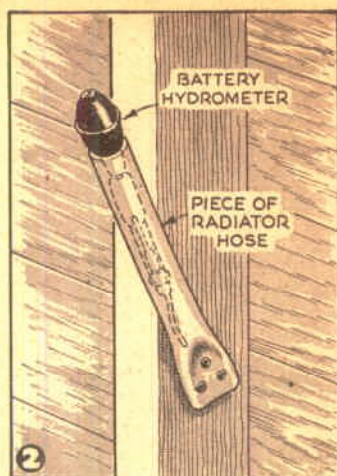
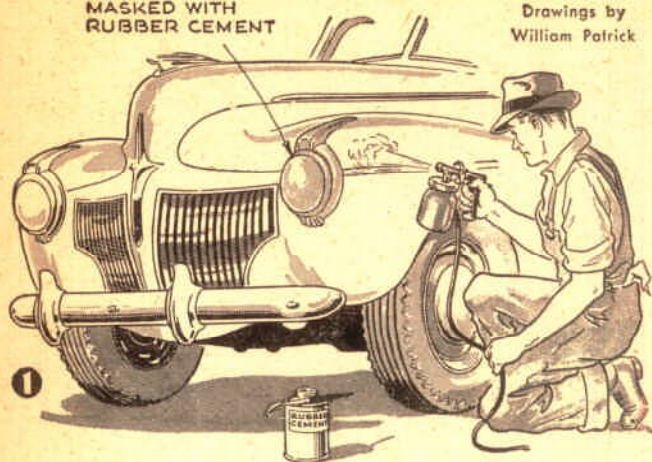




# IDEAS FOR MOTORISTS

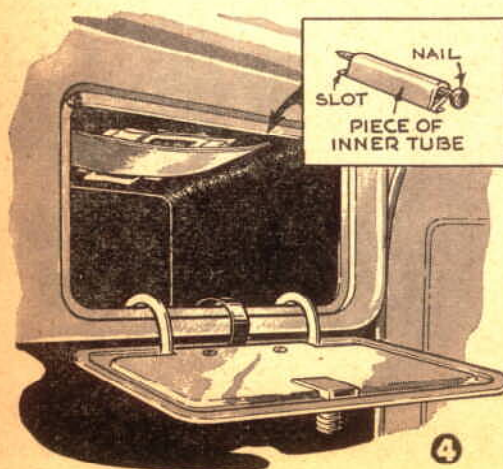
MASKED WITH  
RUBBER CEMENT

Drawings by  
William Patrick



**1 MASKING CHROMIUM TRIM** on your car in preparation for a paint job may be difficult with the customary tape. Some of the brightwork may be hard to reach, and some may be so narrow as to make tape awkward to handle. Paint these places—or all the trim, if you like—with ordinary rubber cement. This material peels off easily along with paint sprayed on it.

**2 YOUR BATTERY HYDROMETER** can be kept in your garage without danger of breakage if you enclose it in a short length of discarded radiator hose. Nail the hose by one end to a stud, letting the upper part project at an angle, as shown in the drawing, and insert the hydrometer.



**3 AUTOMATIC EXTINGUISHING** of cigarettes, instead of letting them smolder in the bottom of the ash receptacle on your dash, is possible with the addition of a short metal tube the diameter of a cigarette. Drill the extinguishing bar in the ash receptacle for a tight fit, flare the upper end of the tube, and press the tube into the hole. A lighted cigarette inserted in the tube will go out. It will be pushed into the ash receptacle when the next butt is inserted.

**4 REGISTRATION PAPERS** and road maps can be kept conveniently away from other items when held at the top of a glove compartment by a piece of old inner tube. Slot the fiber top of the compartment, slip the doubled end of the tubing through, and hold it with a nail as shown.



# Motorcycle Cops Show How to Ride 'Em

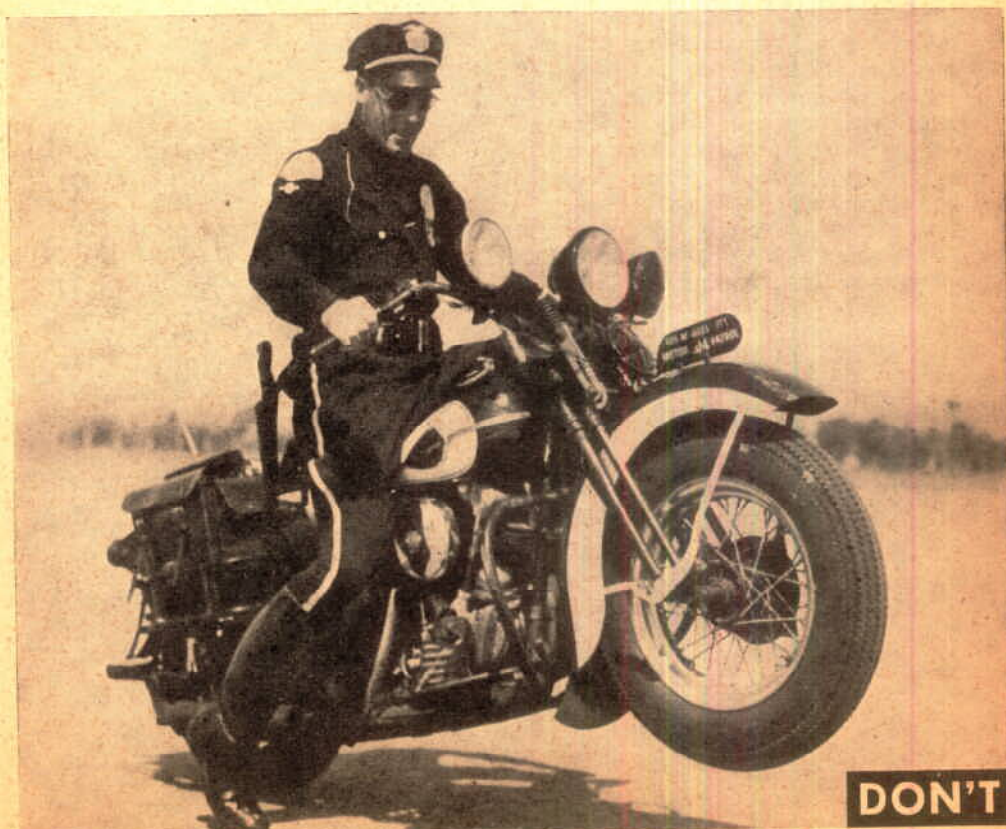
By Tom Cameron

IF YOU'RE learning to ride a motorcycle, the policemen who patrol your streets and highways could give you some valuable pointers. Chances are these men are just about the best riders in the community. Because of the nature of their work they have to be. And it's likely this ability was not won through trial and error, for many police departments give their men a course in riding before sending them out.

One that has won acclaim for the thoroughness and success of its motorcycle

training program is the Los Angeles Police Department. Out of many years of experience, embracing use of machines from the old one-lungers to the four-cylinder speedsters of today, the instructors there have evolved detailed "do" and "don't" procedures. The "don'ts" come first:

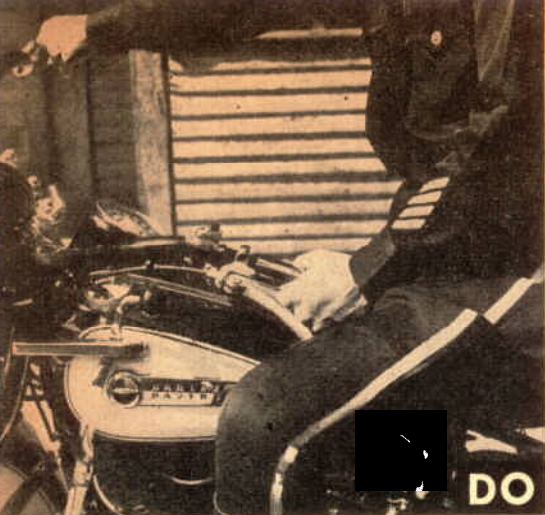
**Don't be a throttle hound.** This is the designation for one of those chaps who opens and closes the throttle in quick sequence to create the window-rattling bursts of sound that irritate the rest of us. Such a practice



**DON'T**

Never let in the clutch suddenly. If you do, the motorcycle will leap forward, unseating you.





**Swing out your knee**, allowing the handlebar to turn when you must cut sharply to one side.



**Never lock yourself in** by sitting forward on a single seat in this way to carry a passenger.

is hard on the motor, causes backfires, and damages the valves, wristpins, rings, and the bearings.

Don't forget to put the sidestand in retracted position before starting the engine. The stand has a knuckle that keeps it extended. If you try to make a left turn with the stand sticking out, you may be dumped.

Don't let in the clutch suddenly. If you do, and open the throttle at the same time, your steed may unseat you.

Don't try to turn left with your left knee inside the handlebar. This locks you in. You might not be able to disengage the clutch, and you may lose control.

Don't ride double in such a way that you must sit forward on the seat to accommodate the passenger. This also locks you in.

Don't try to "rack up" your motorcycle when parking. This means turning out and sliding the rear end around to halt—you hope—at right angles to the curb or parallel to another motorcycle. If the rear wheel hits an oil spot, scrap of paper, a patch of sand, or a puddle, you may crack up.

Now here are some "do's":

When stopping for more than a minute or two, switch off the engine. It's air-cooled, and if permitted to idle it will heat up—as well as run down the battery.

When stopping, put the shift in neutral, with the clutch engaged. If you leave it in gear with the clutch disengaged and use the throttle, the clutch may drop in—and you'll take off without intending to. Also, if you try to start the motor with the clutch disen-



**Keep your right hand** up close to the front of the throttle at all times. This will give you

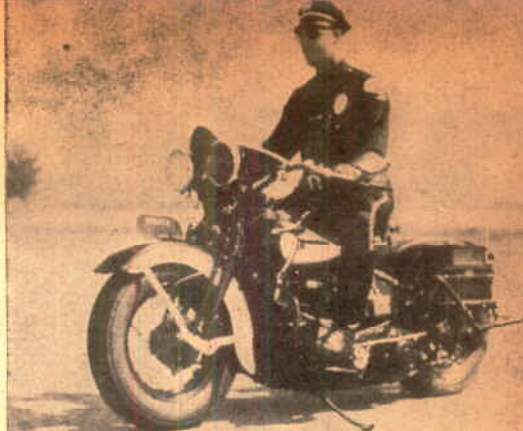
greater stability on the motorcycle, as well as provide more certain control of the speed.





**DO**

**Deflate the tires** to about 12-lb. pressure if caught by rain. This lessens risk of skidding.



**DON'T**

**With the stand extended**, this rider is heading for a fall—just as soon as he turns to the left.

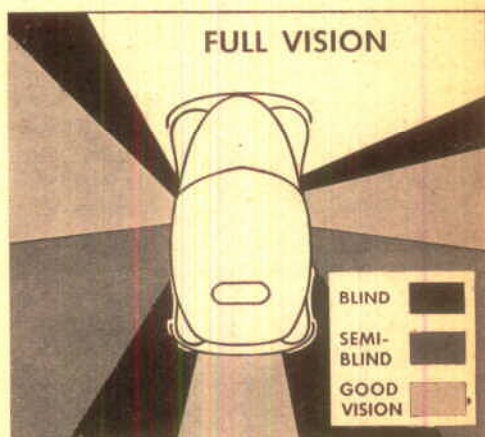
gaged, you'll have no compression against which to thrust. Consequently, when you stamp on the starting pedal, your foot will hit the ground hard and you may injure yourself.

Keep both hands (particularly the throttle hand) well forward on the hand grips. This gives better control and increases stability.

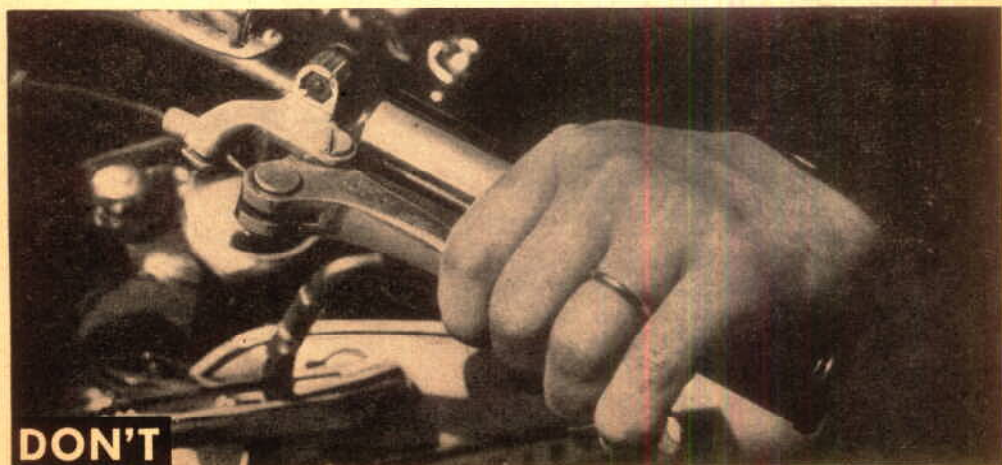
If you're caught out in the rain, stop long enough to deflate your tires from their normal 18 lb. to about 12 lb. This decreases the danger of skidding.

If you must ride through sand, turn only a few degrees at a time. Don't lean, or you will spill.

Watch every car driver like a hawk. There are blind spots where he can't see you—as the accompanying chart shows. **END**



**The blind spots** of a car are dangerous places to ride in; a driver won't know you're there.



**DON'T**

**When the hand brake** is applied suddenly on a turn, the rear wheel may slew ahead, causing

the rider to spill. It's best to use it only while traveling in virtually a straight line.