Hudsonotes

Column of Mechanical Miscellany
by George Schmidt
Mishicot, Wisc.

Getting Started

COLD-WEATHER STARTING problems, through the years, have inspired a number of special gadgets and aids, plus a few "home remedies"—some of them more effective than others. Several of these have been mentioned in past issues, including electric engine heaters (October '79 *WTN*), which are still about the most practical add-on winter starting aid for engines of all ages, wherever 120 (or 240)-volt current is available. These heaters are made in tank or "percolator" type, radiator-hose insert type, and also in versions for freeze-plug or headbolt installation . . . although the latter type, which fits in place of one headbolt or stud, is probably best avoided on aluminum-head engines; and in any case should be installed as far from valve seats and cylinder walls as possible, though near center of engine. The radiator-hose type heater, and the freeze-plug type (which fits into one of the round casting holes in block in place of the usual large welch plug) can sometimes be installed less conspicuously on a collector car than the other types, but this writer has had no direct experience with these two heater types on Hudson engines, and so would like to hear from a club member who has used them. The tank-type heater probably stresses engine least of all.

One winter starting aid of yesteryear, still quite effective on occasion, is simply a large teakettle filled with hot (nearly boiling) water. This should be poured slowly over carburetor and intake manifold (aircleaner removed), care being taken to keep water out of air horn and off all ignition parts (shield with plastic film pieces if necessary). With carb and manifold thus warmed, engine will usually start much more readily. The teakettle of hot water can also be used to quick-thaw a partly-frozen radiator, especially if it is of the typical older vertical-flow type. On these it is necessary only to pour a single narrow track of hot water slowly down outside of radiator, sufficient to thaw out one or two tubes; and with engine running, the rest of the radiator tubes will soon thaw in succession, beginning with the nearest ones.

Chilled engine oil also contributes much to winter starting difficulties, and there are tales of Bugatti and other sports-car owners patiently draining the cold heavy oil from crankcase, warming it in a pan on stove, and then pouring it back into engine for an easier start! More practically, any of the electric coolant heaters will cause some heat to spread to lower portions of engine (and even transmission) during several hours of use. Also, a small device to heat engine oil directly, fitting in place of the oil dipstick on most cars, has been available, but since its wattage is low (usually 100), it is useful mostly as a supplement. Another emergency supplement sometimes used by this writer in subzero weather has been an old radiant-type electric heater with circular reflector, placed under car and aimed directly upward at oil sump (rear of pan), and used along with small tank-type heater on engine for a few hours before starting.

If radiator and block of a collector car have been drained for winter, and later the car needs to be started in cold weather, the cooling system can be filled with hot water (from tap, not boiling) for easier starting . . . but do not forget to drain water afterward. For convenient draining on most Hudson engines, the 1/4-inch pipe plug at left rear corner of block should be removed, and a spare brass stopcock (matching the one on radiator) installed in its place. On stepdown Sixes it will fit perfectly; on Eights the brass lip (for hose) may need to be shortened to clear throttle linkage. Battery of an inactive car will not freeze unless it is discharged; but if stored at room temperature, it will produce more current for an emergency start than if it is chilled.

DIETHYL ETHER—once common as an anesthetic—is today more often found in spray-type engine starting fluids. Because of ether's strong solvent properties, tending to wash all oil off cylinder walls, it is usually combined with a light lubricant for use as a starting fluid. These fluids, like electric engine heaters, were first widely used on Diesel and other heavy-equipment engines, but now are an accepted aid for nearly all passenger-car and small engines as well, except for a very few temperamental recent models.

Some H-E-T members report that ether starting fluids are less effective on Hudson and other flathead engines than on typical overheadvalve models. This writer suggests that if fluid is used, it is best sprayed into carburetor (by a helper) while starter is being operated, rather than beforehand. Some brands of fluid have also offered an accessory bracket and extension tube for the spray can, along with a control which could be operated from driver's seat.

Water in gasoline, from condensation, is a common winter problem. Since alcohol can cause water and gasoline to mix, and thus to pass harmlessly through engine, it is included in some fuel blends, and is also sold separately for the purpose under brand names such as Heet. On an older car especially, an added trap for water droplets, near carburetor, is a further help. Fuel filters of the type authentic for Hudson, with element inside glass sediment bowl, are also effective water traps when mounted in the standard bowl-down position. If element in an old filter is not usuable, the bowl alone can still trap water and some sediment bits. This is especially important on any Hudson model using a fuel pump (such as Carter M729SZ) which has no sediment bowl; and on stepdown Eights (on which the pump's metal bowl is quite hard to reach.)

IGNITION COIL on an old car rarely fails completely at one time. More often its output drops somewhat because a few turns of either the primary or the secondary winding have shorted out, as insulation fails with age. If damage is slight, it may not be noticed until engine must be started in cold weather, or run under load at full throttle. Coil may be checked by stubstituting one known to be good, or by using the "coil tester" found at some repair shops. This tester can check coil performance cold, and then—most important—warm the coil and check it again at normal operating temperature. When connecting coil on car, note that on a positive-grounded Hudson, the positive primary terminal (+) connects to distributor points, and the negative (−) terminal connects to wire from ignition switch. For an on-car test of coil, many shops today use the ignition oscilloscope, which shows each voltage peak graphically on screen; but this test too is more reliable if coil is checked both cold and warmed up.

Sometimes a new-old-stock (NOS) coil can be found as an exact match for the original on car—for example, the unusual type used on many Hudson Sixes, with one primary terminal at top of coil and the other at bottom—but any NOS coil will need to be checked with particular care before use, since too often there has been some internal deterioration merely from the years of storage.

Some antique cars, including the Ford "T," used a "vibrating" type ignition coil, with vibrator, contacts, and adjustment screw at one end. This arrangement produced many extra wasted sparks at low RPM, and made accurate ignition timing difficult at high RPM; but it undoubtedly made for somewhat easier starting, when operated temorarily by battery (often dry cells) instead of the usual magneto, while engine was being cranked by hand. Years later, after World War II, an accessory gadget, the Schauer "Kar-Start," was offered for use on 6-volt cars. It was a small box containing a miniature winding, vibrator, and contacts, and its effect was to convert the car's ignition coil temporarily to the vibrating or repeated-spark type, for easier starting. Kar-Start could be connected manually when needed, or wired into the starter-button circuit (it was not recommended for continuous use when running). Your columnist has seen several of these gadgets, but has not tried one on a Hudson. We are hoping that a reader who has used this, or perhaps other unusual engine starting aids, will write and tell us of the results he has had.

"HOT SPOT" intake manifolds, designed to use a portion of the exhaust heat to help warm and vaporize the incoming air/fuel mixture, were found on many early cars. This was a valuable feature for quicker warm-up, and for use with fuels of doubtful volatility. The disadvantage was that with heat applied to the intake mixture at all times whether needed or not, it increased the possibility of vapor lock, pre-ignition, and similar problems; and by needlessly expanding the mixture, it reduced the amount which could

be drawn into each cylinder at wide-open throttle, thus lowering the engine's peak horsepower output.

Although some Brand X designers attempted to stabilize intake temperatures by special routing of the coolant water, the more usual method through the years has been the use of an exhaust damper or "heat riser valve," located in manifold to direct the outgoing gas (usually from half the cylinders) either through the hot-spot area, thus heating intake mixture; or else around and past it so that there is practically no heating.

Early heat riser valves were not thermostat-controlled and so had to be operated by other means. The 1917 and some other Hudsons had valve linked to choke control, thus providing heat to manifold while choke was in use. Nash and a few other Brand X's of the era had valve connected to throttle, for manifold heat at idle but not at higher speeds. A number of later cars had a separate manual heat-riser control on the dash or underhood, and on some of these it was suggested that adjustments need be made only with seasonal changes in temperature.

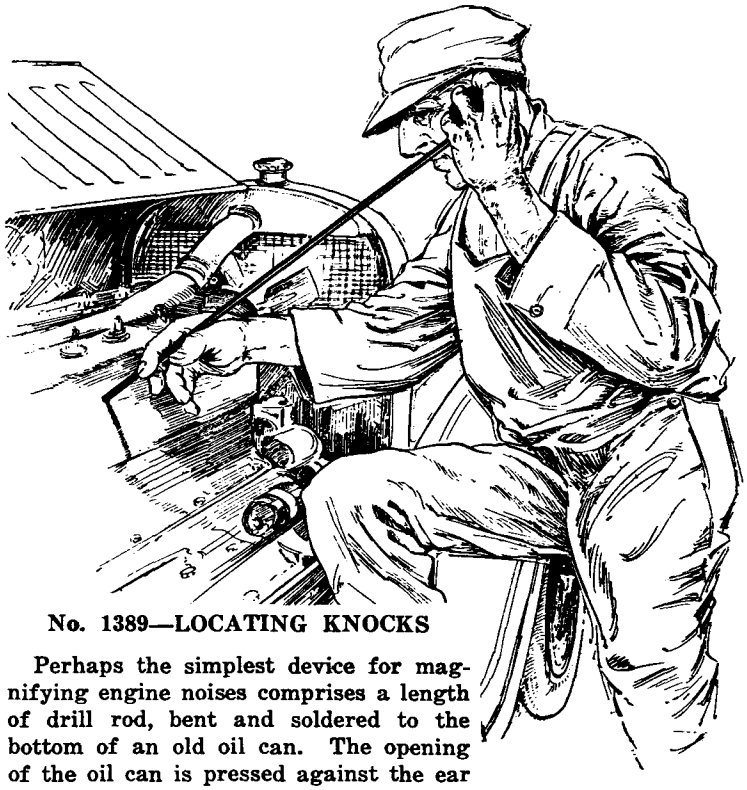
Heat riser valves with automatic thermostat control came out in the 1930's, as did automatic chokes (perhaps a reader can tell us the exact years for Hudson). Both of these devices employed a clockspring-shaped thermostat coil, designed to loosen or unwind partially when heated. Manuals indicate that 1937-38 Hudsons (and Terraplanes using the larger Six) had a thermostat-controlled heat riser valve, and this feature was continued in subsequent years. The smaller Six used on prewar Terraplane, Hudson 112, etc. had valve fitted with a manual adjustment on manifold. This was marked "S" and "W," for summer (no heat) and winter (full heat) settings, although recommended adjustment varied slightly from year to year. All postwar models used thermostatic control.

AS USUALLY designed, the automatic heat riser valve includes a horizontal shaft with damper or butterfly, and an external counterweight at one end which opposes the thermostat spring and thus pulls valve to the open or no-heat position whenever spring is sufficiently hot. The only common service problem with these valves is their tendency eventually to stick and finally to rust tight, due to the corrosive effect of the hot exhaust gases. Valve should be checked occasionally, and always kept free to turn. Any good penetrating oil can be used to loosen a stuck valve, but your columnist's choice (recommended by a former Hudson dealer) is the brand called Parts-Ease, which appears also to help retard future sticking. In addition, some carmakers (including Buick) have offered a special heat riser lubricant to help keep these valves free. Ordinary oil will burn, and should not be used here.

The automatic valve on Hudson straight-Eights is slightly different, and in its original form had been designed for manual control, as indicated by the "S" and "W" cast in manifold even on postwar models. Flow pattern and thermostat location (on top) are effective, but the vertical shaft provides no practical way of attaching a counterweight; hence these cars have a spiral return spring instead, underneath manifold. Occasionally this return spring rusts off or breaks, with the result that valve will not stay open when hot. To replace spring, it may be necessary to remove one manifold, intake or exhaust (preferably not both) for access. If a proper replacement spring is not available, a workable substitute can usually be made from a spring perhaps found in a hardware-store assortment, of approximately the same wire gauge and of the same or slightly larger coil diameter. Arrange length and tension of new spring so that it will not prevent thermostat from holding valve in the closed or crosswise position at room temperature or below, butr will hold valve wide open when thermostat is hot (or removed).

The shaft of this valve, and the bushing in cover, are made of an alloy which gives relatively little trouble with sticking, but may show enough wear with age to become slightly noisy. For best results, the two anti-rattle or friction springs—the upper one with its noose-shaped retainer, and the lower one which merely hooks around vavle shaft —should also be in place, but not excessively tight. The retainer fits into a groove on shaft; if notch is worn in retainer at this point, file it smooth and flat before reassembling.

The heat riser valve is useful because it permits quicker, smoother warmups, especially in cool weather, with less use of the choke (manual or automatic); and hence less waste of fuel (and less dilution of oil), particularly while starting out. At the other extreme—as for example when a collector car must be held at parade speed for a half-hour or more in blistering summer weather —it can help to prevent vapor lock and other problems caused by excessive heat at carburetor. The valve, when working properly, also makes for slightly more efficient combustion of fuel under ordinary driving conditions; and for fast, strenuous driving in hot weather, it moves out of the way so that the engine's volumetric efficiency is reduced as little as possible.



No. 1389—LOCATING KNOCKS

Perhaps the simplest device for magnifying engine noises comprises a length of drill rod, bent and soldered to the bottom of an old oil can. The opening of the oil can is pressed against the ear of the workman, and the end of the rod held against the engine casting. The drill rod transfers the noise, which is magnified by the oil can, the position of greatest noise being that nearest the knock.—Fred Teetor Garage and Machine Shop, Battle Creek, Mich.

AUTOMOBILE REPAIRSHOP SHORT-CUTS 1918, *Motor World*