# HUDSON TECHNICAL HINTS

by George Schmidt

*GUEST COLUMNIST this month is Vernon Holt of New Jersey, H-E-T Club Tech Advisor for the 1948-54 Hudson models, and a member of the club's Garden State Chapter. In addition to his contributions to the chapter newsletter, Vernon has prepared a list of Hudson Technical Hints as a help for new members and others who have inquired, and has distributed copies in xerox form. These hints will also be of interest to* **WTN** *readers, and we are happy to publish them here. Most of them appear as originally written; in a few instances comments in brackets ( ) have added.*

THIS IS A SUMMARY of some of the points covered at Technical Sessions conducted at meets of the International Hudson, Essex, and Terraplane Club of the last fifteen years or so by Bernie Siegfried, Steve Sessions, and others. Also included are discussions of questions most frequently asked of your stepdown Hudson advisors.

The H-E-T Club and its members, including Bernie and Steve, are in no way responsible for any errors that may have been made in recording or preparing these notes, or for the content. The purpose is only to help keep Hudson cars preserved in running condition. Please send any additions or corrections to me, your current Stepdown Technical Advisor (at 45 Franklin Road, Mendham, New Jersey 079455).

AS A GENERAL RULE, keep your car original (or authentic). You will be glad you did. Also, do not throw away old parts. Almost anything can be rebuilt. Send those old "Cores," such as water pumps, fuel pumps, cork clutch discs, some brake parts, etc., to Jack Clifford or to someone else who rebuilds them. You may even get a core allowance for them.

Finally, Take your time in repairing. When in doubt, don't. Seek help from club members and from mechanics with experience with older cars.

ENGINE OVERHEATING may be one of the most common problems (more so in some areas of the country than in others, depending partly upon climate, elevation, quality of water available - and engine size). Occasionally a loose fan belt is the cause. Although they have greater power-transmitting capability, the wide thick V-belts may require more frequent adjustment than the newer narrow ones for best results. But don't overtighten them, or the generator and water pump bearings may wear badly. (If an old belt has hard glazed surfaces but is otherwise in good condition, it can often be improved by rubbing with lacquer thinner and steel wool or a rag. A small amount of good-quality belt dressing may also help. Modern-type replacement V-Belts with notches or "teeth" cut around the inside circumference are more flexible than the old solid type, but infortunately do not look original on an old car.)

If the radiator is not clogged inside or outside, and there are no leaks, the thermostat can still be a problem - even if new - if it is not of the "bypass" type with a raised top that opens to close the water passage beside the thermostat that by-passes the water right back into the engine block (and car heater). This recirculation helps warm up the engine uniformly and quickly and also the heater, but it bypasses the radiator and so unfortunately can add much to overheating problems if it is not closed off as soon as the engine warms up. If a thermostat with bypass control is not used, the bypass hole in the "gooseneck" housing should be plugged. Some gaskets with non-bypass thermostats cover this bypass hole (or a gasket can be hand-cut of sutiable material (no thinner than the original gasket) to do this. Or a gooseneck casting from one of the later stepdown Sixes, made without the bypass hole, may be used instead.)

There are many other causes of overheating, such as a collapsed radiator hose that has had the spiral wire removed from inside it. (Upper hose, if original molded type, should have this wire in place. For lower hose, one method of avoiding collapse is to use the original metal elbow with two short pieces of straight radiator hose, rather than a single-piece molded replacement hose.) In some cases, the water distributing tube from the water pump back into the engine, designed to cool the valve areas, may be plugged; or may be rusted out if it is a steel tube of the type installed around 1952.

Be sure to clean out the engine block and heater core when you have the radiator re-cored or boiled out or rodded; or the remaining crud may plug the radiator again.

WORST NEWS OF ALL is cracked valve seats which are bad enough to burn the valves and cause overheating. With the engine fully warmed up and hot, if bubbles appear at the top of a fully filled radiator with cap removed and with racing of the engine, you probably have cracked valve seats, and will probably have burned valves and missing of the engine at idle. Cracked valve seats can be repaired but another engine is usually the choice if available. The Hudson block is thermally asymmetric and does not like to be run without water! Uneven heating tends to crack the block, particularly under the exhaust valve seats. (If engine flunks the bubble test, however, check also for a blown head gasket, or (in rare cases) a cracked head.)

Be sure to use a radiator pressure cap of no higher than 7-pound rating. The 14-pound pressure caps are not necessary, and place far too much stress on the Hudson radiator, noses, gaskets, etc. (If a 3 or 4-pound rated cap is available, this may also be tried. For reliable results, any pressure-type cap should be tested after every year or two of use. However, 1948-49 Hudson (and Eights through'52) had a plain flat non-pressurized radiator cap as standard equipment, the pressure cap being available as an option. Also,Stant (Indiana), maker of most of the original radiator and gas tank caps, for years offered a replacement-type non-pressure radiator cap which, though it had a protective lower flange and safety valve similar to a pressure cap, was vented to the outside air; and this type also works well on Hudsons which do not require pressurized cooling.)

OIL CONSUMPTION is usually not a problem with Hudsons unless rings are broken orthere are oil leaks. Engines badly worn due to poor maintenance should of course be rebuilt. Today it is suggested that the best-quality #10W40 oils be used in the full-pressure lubrication systems on the 6-cyulinder engines. Some owners like to use a top-quality #20W oil in the 8-cylinder engine with its low-pressure"splasher" oiling system, since it depends more on splashing and oil vapors for lubrication. The engine should be clean inside before switching to #10W40 or any other high-detergent oil. (On the

other hand, many owners seem to have good results using a top-quality #30 straight-grade oil in these engines when there is moderate wear, although this is not best for cold-weather starting unless an electric engine heater is also used. Apparently the use of #40 straight-grade oil, originally specified for these engines in cold weather, is better avoided.)

ELECTRICAL PROBLEMS are often among the most difficult and hazardous. Either a short circuit or a loose connection can cause an electrical fire and possibly even set the entire car on fire. Either of these electrical troubles can generally be located with the help of an ohm-meter (usually included in any multimeter or circuit tester). The resistance from one end of a wire to the other, even through terminals and connections, should be very low - much less than one ohm. sometimes it is possible to help find a short by seeing a slight difference in resistance to ground from one end, compared to the other end, of the wire or circuit. The short will be closer to the end with lower resistance.

Loose or corroded terminals will become warm while in use, especially in lighting circuits. Also in addition to checking resistance across terminals with an ohm-meter while circuit is not is use, poor connections can be identified by checking voltage from suspected wire to the ground (anywhere on metal of car or to positive terminal of battery) while circuit is in use, with lights or accessories in operation. Use a voltmeter to check the voltage before and after each connection. If connection is good, the two voltage readings should be the same. (Add-on wiring for accessories such as fog, backup, or directional lights can be checked by this same method. Excessive voltage drop here between the two ends of a wire may indicate that wiring is too light for its purpose, or perhaps has some unauthorized and poorly-made splices.)

If wiring is old and the insulation is cracking and peeling, it may be a prudent idea to disconnect the positive ground terminal from the battery, even over night, until careful repairs are made or new wiring is installed. Before removing old wiring, it is wise to draw diagrams or take protographs (Polaroids are convenient) to avoid confusion later. Also, label each terminal and connector when removing. (Sometimes an old wiring harness can be safely repaired, either on or off car, preserving original appearance as much as possible, and leaving enough original good braded insulation exposed near the end of each wire to show the color-coding.)

Original Hudson wiring is color-coded throughout. Sometimes it is hard to pick up the color or pattern, but it is helpful to follow when tracing or trouble-shooting circuits. You should also use new wires in different colors (Matching the originals as nearly as possible) for replacements and repair. If you must make up your own new harness, stretch out the old harness on a 4 x 8 sheet of plywood or similar surface, with terminals stretched out and tacked in place. Then overlay the new wire and connectors. (Never use wire of lighter gauge than the original. A few special plugs and connectors (as for Drive-Master, Overdrive, etc.) may need to be salvaged from old harness and carefully re-soldered onto the new one. Some plastic plugs have a small center rivet which must be removed for access to the terminals; this can later be replaced by a #4-size screw and nut. Original in-Line fuseholders (with metal shell) can be re-used if new wire is soldered to the two "cup" terminals inside. Light sockets require "Mushroom" terminals.)

THE CIRCUIT BREAKERS which Hudson used (from F.A.Smith Company, "FASCO") are an excellent feature, but when old they can occasionally malfunction or generate resistance and heat, thus causing circuit interruption even at normal loads. Replacements are available, or a fuse block can be used instead (and is better than no protection. Old circuit breakers should at least be tested by connecting them to a dead short at battery: They should "break" in less than a second, and should resume contact just a few seconds later. It is important that every lighting and accessory circuit be connected either through its own fuse or through one of the circuit breakers; this is particularly essential for all of those circuits which are not wired through the ignition switch. In this way, the only wires which are "hot" at all times and are not protected are the main feed wire from battery cable to voltage regulator, the feed wires from there to the two circuit breakers and to the horn relay, and the short feed wires to the radio fuse and to the ignition switch. For safety, the condition and routing of these few specific wires (new or old) should be checked with especial care.)

As a final check of wiring integrity, the resistance of any wiring system that is not energized and is not partially grounded through a resistor (such as a light bulb), when it is checked against ground on car, using an ohm-meter, should be much more than 10,000 ohms or nearly infinite, unless wiring and terminals are wet.

A headlight relay is not original equipment, but it is sometimes a practical addition, especially with a 6-volt system. This relay is available from auto stores or mail order. It is energized by the light switch, and connects the headlights directly to the battery, to provide bright lights and to take the heat and stress of old original terminals, wiring, dimmer switch, etc. (If relay is fitted underhood at corner near battery, it can be installed without cutting original wiring. For best results, feed wire from battery cable to relay must be adequate (#10 gauge suggested). A protective fuse or circuit breaker may also be inserted here, unless relay has one built in. Most of these relays are double, for both high and low beams, but single ones are also available and have occasional uses - perhaps for high beams alone (which seem to need help the most), or possibly for fog or driving lights, which also neeed help in some instances.)

A 6-volt car converted to 12 volts is obviously not original, but one practical result of this conversion is that the wiring will only need to carry about half of the current or amperage that it carried at 6 volts. Of course all lights, accessories, generator, and starter should be changed (but sometimes it is necessary to retain original defroster motor, radio, dash gauges, etc., and fit each of these with a suitable dropping resistor, 12 to 6 volts).

Check condition of generator and starter brushes. Replacing these may save a large repair bill. Clean the commutators and have them undercut if necessary, and turned down on a lathe if they are out-of-round or pitted. Make sure that the field wire on the generator, or the wiring at regulator end, is not grounded out. Grounding here will cause full charge at all times, with resulting battery fluid boil-off or spillage, and eventual generator burn-out. An ammeter is not original Hudson equipment, but it is useful to have, since the idiot lights (excuse us, Teleflash Signals) on dash will never alert the driver to an overcharge condition of this kind.

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*(MORE TECH HELPS from Vernon holt in* WTN *next time.)*