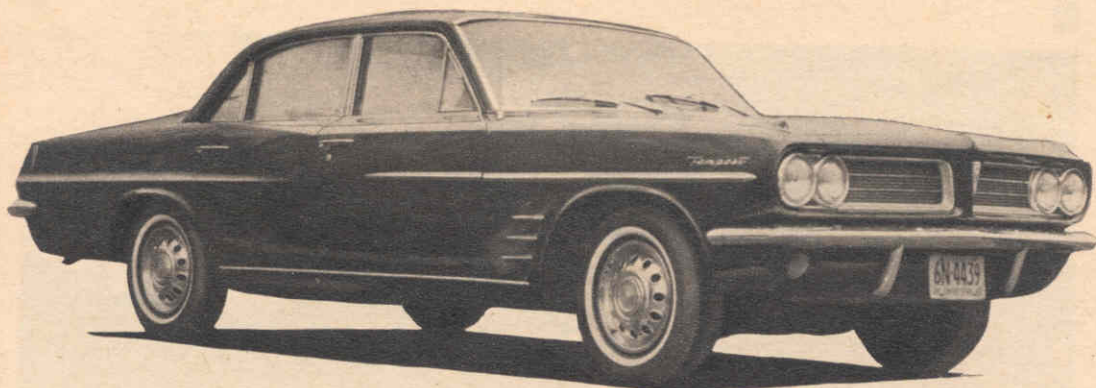


THE TEMPEST...



In just three years the Tempest has stormed its way to success. Here's why the '63 model is likely to be the most popular one of all.

By Frederick C. Russell
Member, Society of Automotive Engineers

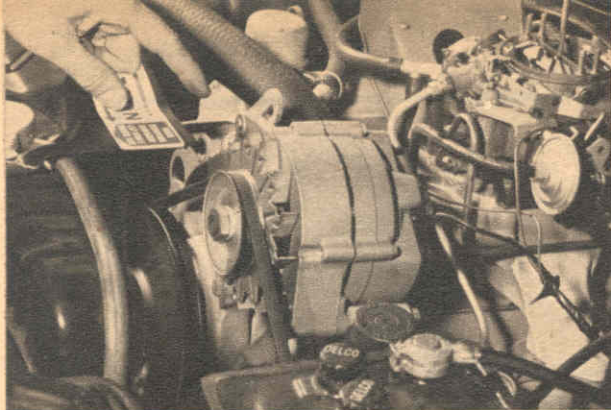
FROM its wide-track wheels to its rear-mounted transmission your *Tempest* is loaded with proven innovations. This year's model features such additions as the Delcotron alternator, self-adjusting brakes, suspension changes to improve roadability, and new optional automatic transmission.

Both the in-line, slanted four-cylinder and the V8 engines have overhead valves. Three options are offered with the four-cylinder job. Two of these carry the single barrel carburetor, 8.6 to 1 compression ratio version that develops 115 hp. The 10.25 to 1 ratio produces 120 hp when used with the synchromesh gearbox or 140 hp with the two-speed automatic. The same engine with a four-barrel carburetor system develops 116 hp at 4,800 rpm. An optional V8 engine delivers 260 hp at 4,800 rpm for either of the gearboxes. *Tempest* offers no overdrive, but you may

select the optional four-speed synchromesh gearbox with the 3.09 to 1 economy rear axle ratio.

In figuring garage accommodations the 112-inch wheelbase *Tempest's* overall length is only 194.3 inches. Like its big brother, tracking is wider. The front tread measures 57.3 inches while the rear is 1.2 inches over last year's figure at 58 inches. A revised rear suspension includes a lower control arm shaped like an L to provide the bottom seat for the coil spring. This arm has a transverse leg which attaches to the differential with a rubber-bushed hinge. Parallel with and extending toward the rear wheel, the other arm joins the side rail of the body. Because of this arrangement, all parts of the suspension stay in the same plane as it swings through its arc. That means improved handling. No lubrication is needed for this suspension.

For the front-end suspension, however, the *Tempest* will require (every 12,000 miles or six months) greasing of



THANKS to the Delcotron alternator the battery charges even at idle if necessary.



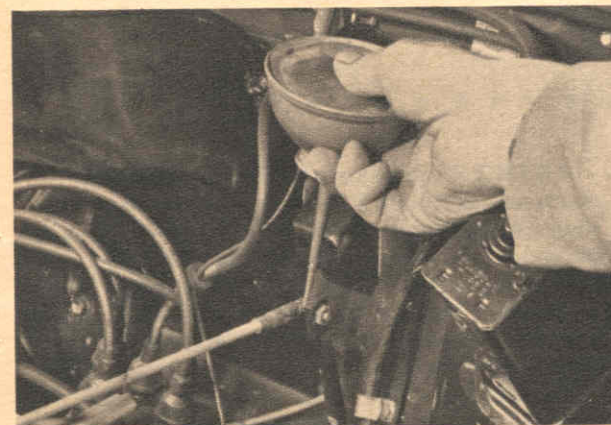
TEMPEST now has wide track wheels that greatly improve roadability and handling.



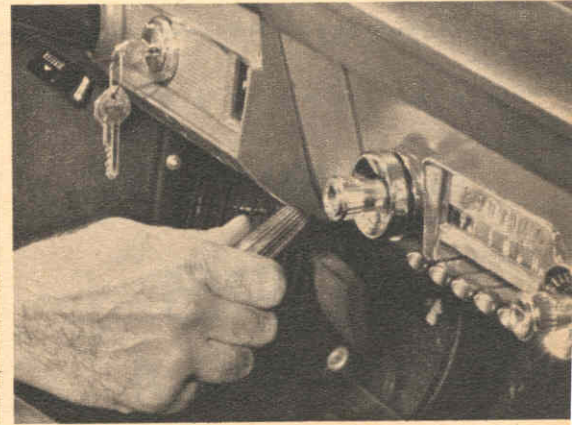
THIS GAUGE indicates the charging rate of the '63 Tempest's Delcotron alternator.



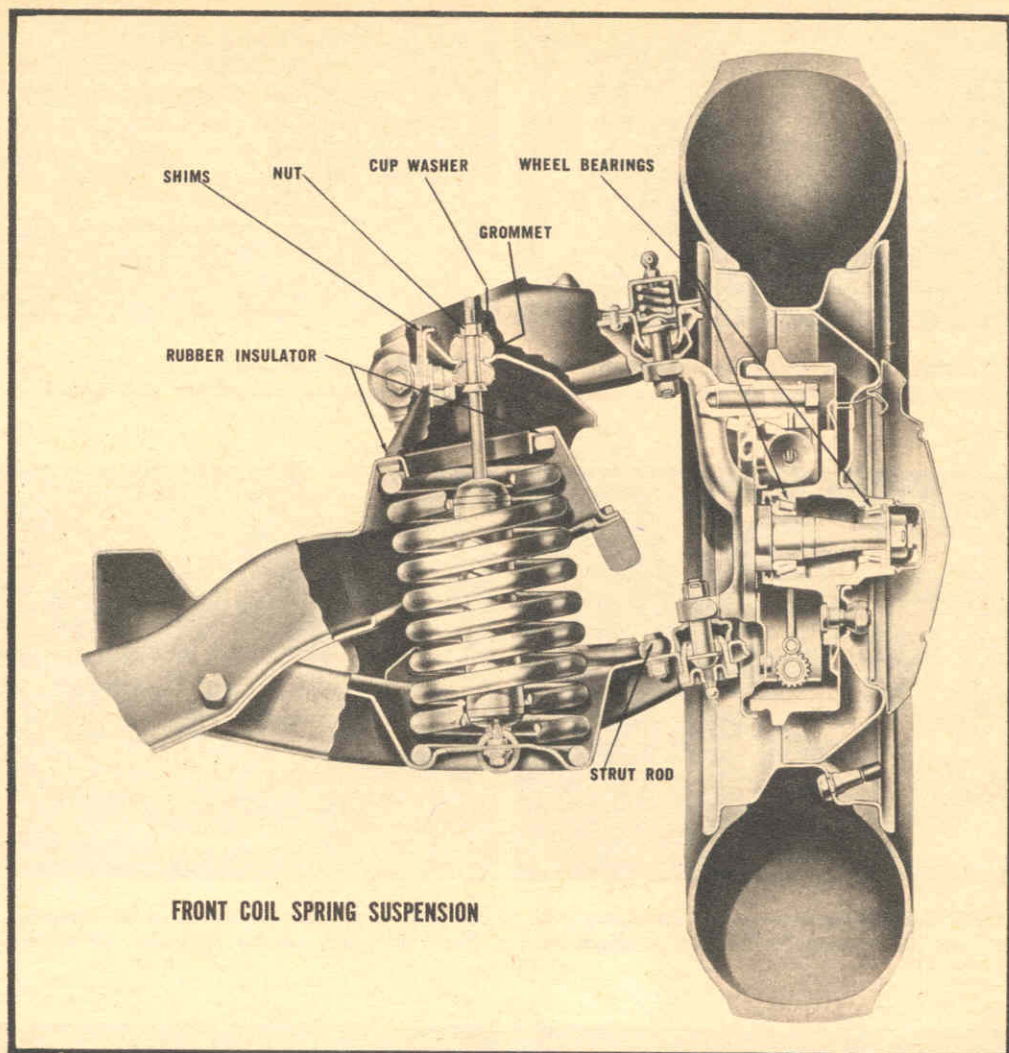
NEVER jack your Tempest at its bumpers. Place the jack at the "dimple" as shown.



USE engine oil to lubricate accelerator linkage. Don't oil the carburetor linkage.



THE TEMPEST with two-speed automatic shift is set at PARK by moving lever left.



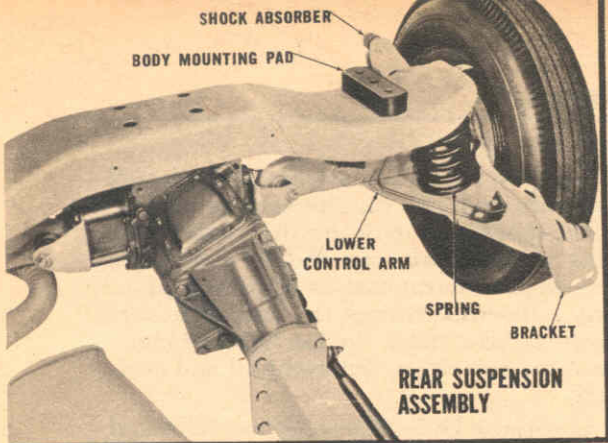
FRONT COIL SPRING SUSPENSION

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SERVICE TIPS FROM DETROIT

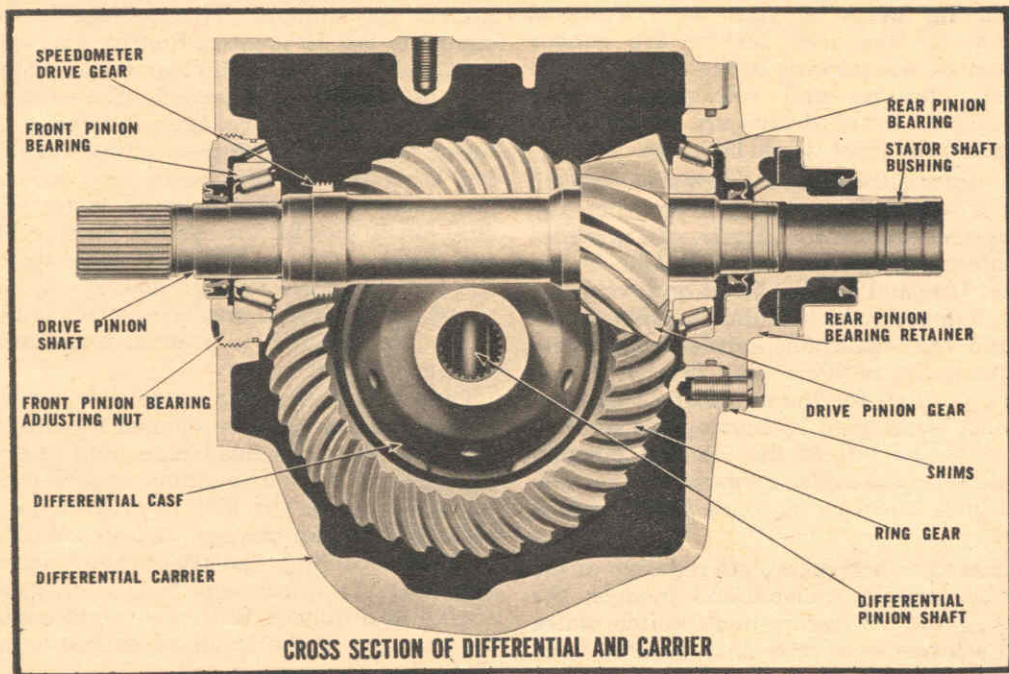
All 1963 Studebakers have alternator electrical systems. It is very important that the battery polarity is not reversed. If this should occur the system will be damaged. When using a charger or booster battery be certain that the connections are positive to positive and negative to negative.

To minimize the possibility of the distributor turning from its original setting, Ford has put a new clamp in production. The Part No. is C3AZ-12270-A. It may be installed on 1962-3



the upper and lower ball joints. But Pontiac suggests relubrication at 6,000-mile intervals for severe operating conditions. Include in this attention the Pitman arm of the steering system.

Engines have a manifold heat control valve which must be kept free if warm-up is to be normal and if excessive preheating of the mixture is to be avoided. If the valve tends to stick, try squirting on a solution of graphite in alcohol. [Continued on next page]



Ford car and truck engines.

Delayed hot starting can be improved and carburetor gum formation retarded on all '62 Chrysler and Plymouth models. This is done by drilling vent holes from the outside of the throttle body into the throttle bores. The carburetor must be removed for this operation. Use a No. 36 drill.

A 45° elbow fitting available as Part No. 199218 is being installed on 1963 Studebaker Larks and Cruisers equipped with disk brakes and wind-

shield washers. The fitting prevents the stop light switch terminals from interfering with the windshield washer jar. The part may be installed on older models by removing the stop light switch and installing the fitting in the master cylinder. Then install the stop light switch in the fitting.

High speed driving in hot climate may cause choke thermostat coil distortion on 1963 Dodges with 383 cu. in. engine and two barrel carburetor. A new choke, Part No. 2463159 fixes this.

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With the single-barrel installation the integral fuel filter should be replaced every 12,000 miles and cleaned twice yearly. When replacing the valve for the positive crankcase ventilation system (every 12,000 miles or annually) don't forget to clean the combined crankcase ventilation air intake and oil filler cap as needed. Driving in dusty areas will increase the frequency of this essential attention.

Among parts of your 1963 *Tempest* which do not need service are rubber bushings, the parking brake cable (which needs cleaning and relubricating only when rear brake drums are off for service) and the front wheel bearings.

Unique is the word for *Tempest*. Typical is the fuel system which, even when the gauge registers E for Empty, still provides a safety reserve of 2 to 3 gallons in the tank. Unusual are the front end compression bumpers which contain a rubber compound that maintains softness regardless of temperature. This year *Tempest* has a Park position for the automatic transmission. It is obtained by moving the selector lever to the left of the Neutral position while on the *Le Mans* job with a console you push down on an extra lever marked Park.

There has been complete redesign of the two automatic transmission models, the one for the V8 having more clutch plates and a larger converter than for the four-cylinder car. Because these transmissions are all fluid in Low as well as in High no external adjustments are needed. You can kick down the accelerator pedal to obtain extra acceleration below a speed of about 45 mph. Use Low for descending steep grades but only at speeds below 40 mph. If you are traveling faster than this, and you need extra engine compression, use the brakes to lower the speed to 40 mph and then put the selector lever in Low. You can't start the engine by pushing, so carry jumper cables! You can use these to get a "crank" from the battery of another car. Remember to connect the negative terminal of one battery to the negative of the other, and positive to positive. A series hook-up will damage the electrical system.

Tempest uses a red warning light for oil pressure and also for the cooling system. Since there is no indicator dial to show engine temperature, you should make sure the engine thermostat is operating properly, otherwise there's the risk of undercooling. Also, check the fan belt and make sure the engine has sufficient oil and coolant.

If you use GM ethylene glycol inhibited coolant you need not drain off the cooling system for summer. This coolant is designed to last 12 months. Pontiac also recommends flushing with clear water at the end of the draining period. However, if regular ethylene glycol type antifreeze solution is used, the company advises draining after the winter season and to use corrosion inhibitor with fresh water. Be sure not to overfill the system. Keep coolant level not more than one inch above the radiator core. Pontiac doesn't recommend use of alcohol antifreeze. This is because the engine is standard-equipped with a 180° thermostat.

Only the valve on the inside right corner of the radiator need be opened for draining. There's a hex-head pipe plug at the right side of the four-cylinder engine (one on each side for the V8) to provide complete draining for storage purposes. With a heater the cooling capacity of the standard engine is 12.6 quarts and for the optional engine 20.5 quarts. With air conditioning the capacity of the standard engine is increased to 13 quarts.

The ignition timing for all the *Tempest* engines at hot idle (with the vacuum line disconnected and the manifold opening covered) is 6° BTDC. Distributor dwell angle is 31-34° for the four-cylinder engine and 28-32° for the V8. All engines have a distributor point gap of .016 inch and all plugs take a gap of .033 to .038 inch.

Tempest brakes are adjusted by merely backing up the car and applying the brakes firmly. There is no take-up of shoe clearances if none is needed. Models with the 326 cu. in. engine are equipped with cast iron finned brake drums.

In the 1963 differential there are larger rear bearings and a stronger case and

[Continued on page 126]

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cover. Increased diameter axle shafts are used to help reduce noise. If the differential teams with the standard three-speed gearbox, it will take 6.3 pints of lube whereas with the four-speed box it takes 7.15 pints. With the automatic only 3.3 pints are needed because the automatic unit itself requires 4 pints.

To take care of the higher torque output of the new V8 engine, Pontiac designed a new propeller shaft, this being used on the four-cylinder models as well. The spline diameter is increased and the number of splines increased by 12 per cent. Propeller shaft universal joints are not used.

For added power and efficiency the *Tempest* four engine heads have cavities of different shape and depth. This provides an ideal air-fuel pattern of mixture burning. (Shorter flame travel and increased "quench" areas—if you want the technical facts.) In the positive crankcase ventilating system, crankcase fumes are drawn from the push rod cover to the intake manifold with a hose and check valve.

Pontiac warns that spotting of the paint may follow careless use of washing compounds. They recommend washing with cold water out of the direct rays of the sun and always after the sheet metal surfaces are cool. *Tempest's* Magic-Mirror finish is an acrylic lacquer, so make sure that when you are faced with the job of removing road oil or tar that you use a cleaning agent intended for this type of finish. Your *Tempest* should be polished and waxed at time of delivery and every four months thereafter. Use only neutral soap and water for cleaning those rubber floor mats. Suds of non-alkaline soap and lukewarm water are best for interior trim. You can have an engine tachometer as a factory-installed item in the instrument panel and incidentally the radio is transistorized.

If your pride and joy is a convertible it will have a retaining cable running through the top side material to reduce top noise. Never use a metal scraper on the plastic rear window. A little warm water on a soft cloth is the ticket here. For cleaning the plastic window use a soft cotton

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cloth moistened with water to remove dirt and dust. Then wash and wipe dry with a slightly moistened clean soft cloth.

Wheel nuts turn *clockwise* on the *left* side to loosen, and *counterclockwise* on the right side of the car. The jack must be lined up with the "dimple" beneath the car's body. There's a dimple at the front and rear rocker panel of the body on each side.

Pontiac still recommends tire rotation at 6,000-mile periods. For the four-cylinder sedan tire pressures should be 22 pounds all around. Increase this to 24 pounds for the front tires on the V8 sedan. Load limit for the *Safari* wagon is 1,200 pounds.

With reasonable attention to the car's specific needs your life with the 1963 *Tempest* should be truly high, wide-track and handsome. •



SIMCA 1000, new Chrysler import, boasts rear-mounted engine, transaxle drive and a new four-speed transmission. It's the first here since Chrysler bought control of Simca.

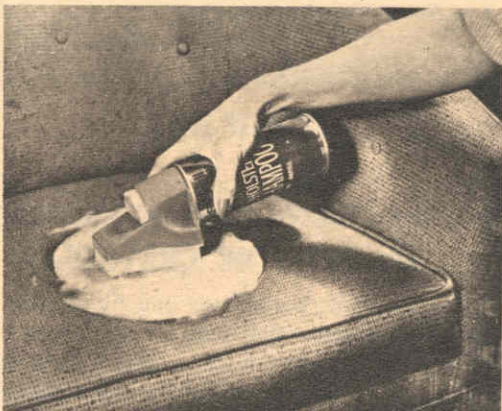


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UPHOLSTERY SHAMPOO in an aerosol can is a new development of Bissell, Inc., Grand Rapids, Mich. The foam disappears, then user brushes or vacuums loosened dirt off fabric.

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