

## Look beneath the body...

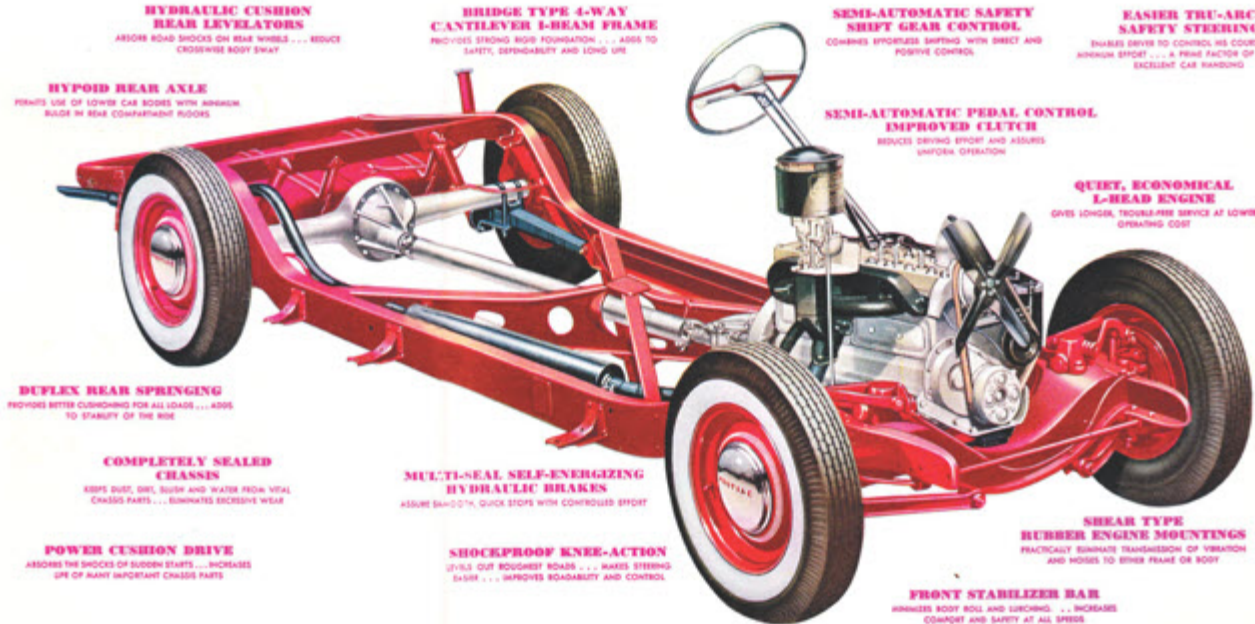


**STAMINA AND DEPENDABLE LONG LIFE** are two Pontiac characteristics which have been built up through the years and which have given Pontiac an enviable reputation among owners and the public at large. To learn how Pontiac has gained and strengthened these characteristics, it is necessary to look beneath its beautiful "Torpedo" bodies and concentrate attention on its structural elements.

For 1941, Pontiac has two chassis, one for the De Luxe "Torpedo" series with a wheelbase of 119 inches, the other for

the Streamliner and the Custom "Torpedo" lines with a wheelbase of 122 inches. In both chassis, of course, the Six and Eight engines are interchangeable.

On this page many of the highlights of Pontiac's superb mechanical structure are spotted and described briefly. On the next page some of the more important are described at greater length. It will pay you to spend a few moments reading about these Pontiac fundamentals of design. To them is due much of the credit for Pontiac's surpassing value.



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**FRONT STABILIZER BAR**  
MINIMIZES BODY ROLL AND LURCHING... INCREASES COMFORT AND SAFETY AT ALL SPEEDS



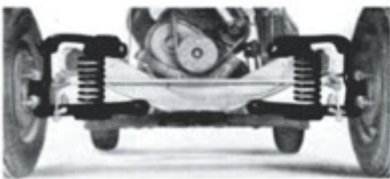
EASIER TRU-ARC SAFETY STEERING



PONTIAC'S CLUTCH MECHANISM



THE FRONT STABILIZER BAR



SHOCKPROOF KNEE-ACTION



BRIDGE TYPE 4-WAY CANTILEVER I-BEAM FRAME



HYDRAULIC CUSHION REAR LEVELATORS



POWER CUSHION DRIVE



MULTI-SEAL SELF-ENERGIZING HYDRAULIC BRAKES



THE HYPOID REAR AXLE

## The De Luxe "Torpedo" Series 119" WHEELBASE WITH SIX OR EIGHT-CYLINDER ENGINE

In the new De Luxe "Torpedo" Sixes and Eights, Pontiac has surpassed all previous efforts to provide fine-car quality, size and performance at prices which any new car buyer can afford. Five handsome body types are included in this series—the Four-Door Sedan, Two-Door Sedan, Business Coupe, Sedan Coupe and Convertible Sedan Coupe. Both the Sedan Coupe and the Convertible Sedan Coupe seat six passengers. All body types are longer, wider and roomier than the bodies of the corresponding series for 1940. In exact figures, the wheelbase is increased two inches, over-all length three inches. Front seats are two and one-half inches wider and rear seats one inch wider. Carb height floors are used in all models, with concealed running boards replacing the type formerly used. All five body types have spacious luggage compartments. In the sedans, spare tires are carried upright at the right of these compartments, while in the

coupes the "spares" lie flat beneath a luggage floor covering the entire trunk area. And, of course, all body types are infinitely more beautiful and more luxuriously fitted than their predecessors in the 1940 line. The new front end appearance, described earlier, keynotes the beauty of this series and blends in with the "Torpedo" styling of the bodies to make these Pontiacs living pictures of active grace. Inside the cars, the smart new instrument panel and garnish mouldings combine with soft, smooth upholstery to create a restful, inviting atmosphere. Performance of the De Luxe "Torpedoes" is fully as remarkable as their beauty and luxury. Either as sixes or as eights, these Pontiacs exhibit faster getaway, higher top speed and greater power—and all this, while maintaining Pontiac record gas and oil economy. All in all the De Luxe "Torpedo" series represents a new high in value for buyers of low-priced cars.



**THE NEW INSTRUMENT PANEL** is a feature of all Pontiacs for 1941. On the curly maple finish panel, all instruments and switches are grouped at the left directly ahead of the driver. The instrument and ignition key light switch has been moved to a convenient position above the instrument cluster. At the right is an electric clock, standard on Super-Streamliner and Custom "Torpedo" models, but offered as an accessory at extra cost on all other models. In the center is a radio which is an accessory at extra cost in all models.



Above, the conveniently located ash-tray receptacle. Below, the handy glove compartment.



**ROOMY TRUNKS**, large enough to accommodate many pieces of luggage, are provided in all Pontiac body types for 1941.

IF YOU CAN AFFORD TO OWN AND OPERATE ANY NEW CAR YOU CAN AFFORD A PONTIAC

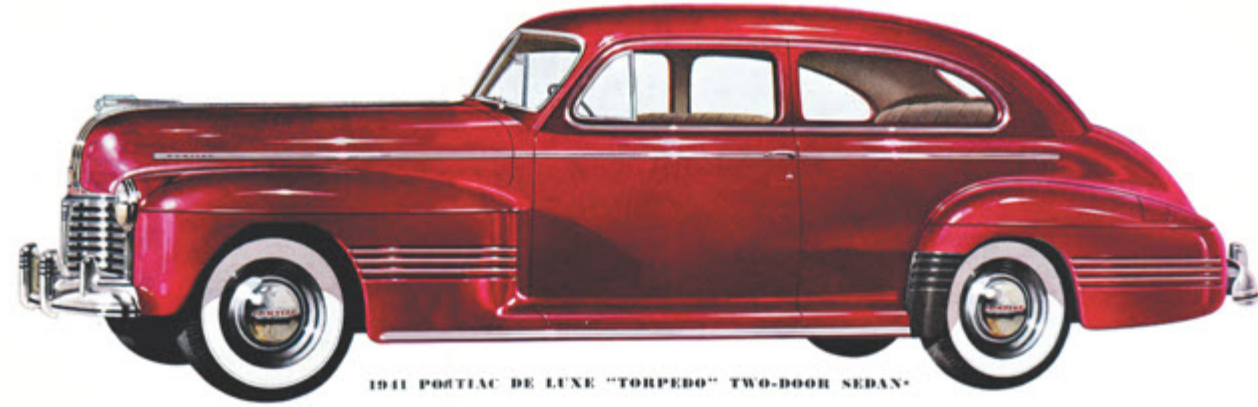


1941 PONTIAC DE LUXE "TORPEDO" FOUR-DOOR SEDAN

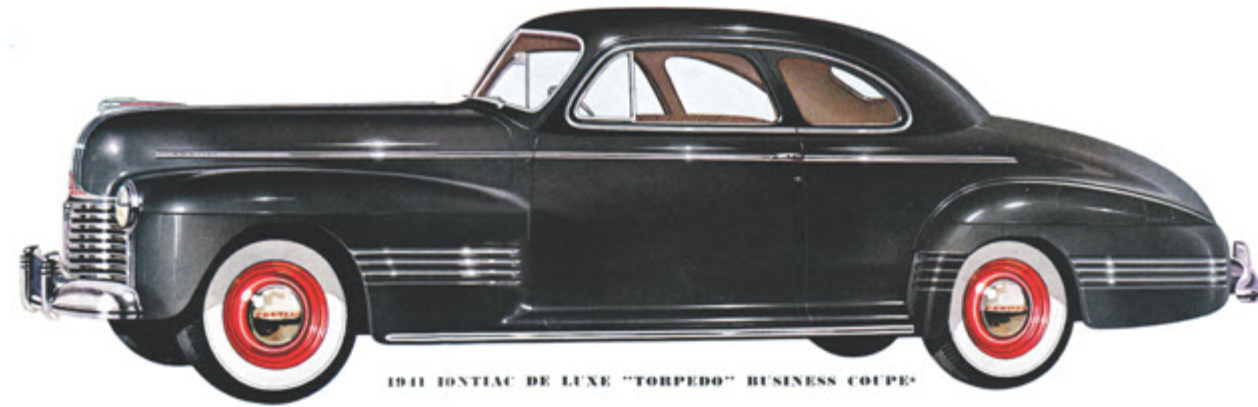


1941 PONTIAC DE LUXE "TORPEDO" SEDAN COUPE





1941 PONTIAC DE LUXE "TORPEDO" TWO-DOOR SEDAN\*



1941 PONTIAC DE LUXE "TORPEDO" BUSINESS COUPE\*



1941 PONTIAC DE LUXE "TORPEDO" CONVERTIBLE SEDAN COUPE\*



A MORE CONVENIENT JACK is part of the equipment of the 1941 Pontiacs. It simplifies tire changes.



A SHELF FOR SMALL PARCELS, behind rear seat, is one of many conveniences provided in the new Pontiac coupes. Shoppers, especially, like this feature.



A POWER OPERATED TOP is a new feature of the Pontiac Convertible Sedan Coupe. The action is controlled by a button on the dash while the driver remains seated.

IF YOU CAN AFFORD TO OWN AND OPERATE ANY NEW CAR YOU CAN AFFORD A PONTIAC

The Streamliner "Torpedo" Series 122" WHEELBASE WITH SIX OR EIGHT-CYLINDER ENGINE

"Torpedo" styling has been given a totally new interpretation in the Streamliner "Torpedo" series which consists of a Four-Door Sedan and a Sedan Coupe, both illustrated on the opposite page. In creating the Streamliners, Pontiac engineers made full use of aerodynamic principles of design. They shaped top and back panel in one sweeping curve with no break to impede the flow of air over and away from the car. Front fenders were streamlined into the body and both front and rear fenders were decorated with speed lines of flashing chrome. Conventional running boards were eliminated, to be replaced by the enclosed type. Door hinges were concealed. In fact everything possible was done to give these cars the smooth, unbroken lines and surfaces which aircraft designers seek in the skyliners which they create. The style of the Streamliner bodies forms a happy combination with the new Pontiac front end—one apt to cause

considerable excitement wherever this car appears. The over-all effect is modern to the minute and expressive of swift, agile performance. Needless to say, with either the six or eight-cylinder engine, the Streamliner lives up fully to the promise its appearance gives. Interiors of the cars in this series are surprisingly spacious. Their floors are curb height and there is ample head and leg room to accommodate six-footers or better. Seats are wide and deep and conducive to complete relaxation. Both Streamliner models are upholstered in a fine quality of fabrics, and appointments follow an attractive design. In addition to the two models described thus far, there are two Super-Streamliners, built to the same exterior design. The Super-Streamliners are fitted with extra-fine quality upholstery and carpets, Foam Sponge Rubber seat cushions, an electric clock, a flexible steering wheel and a folding center arm rest in the rear seat of the sedan.



SPARE TIRES are carried upright in the side of luggage compartments in the sedans as illustrated below. An idea of the amount of luggage space can also be gained from this view.

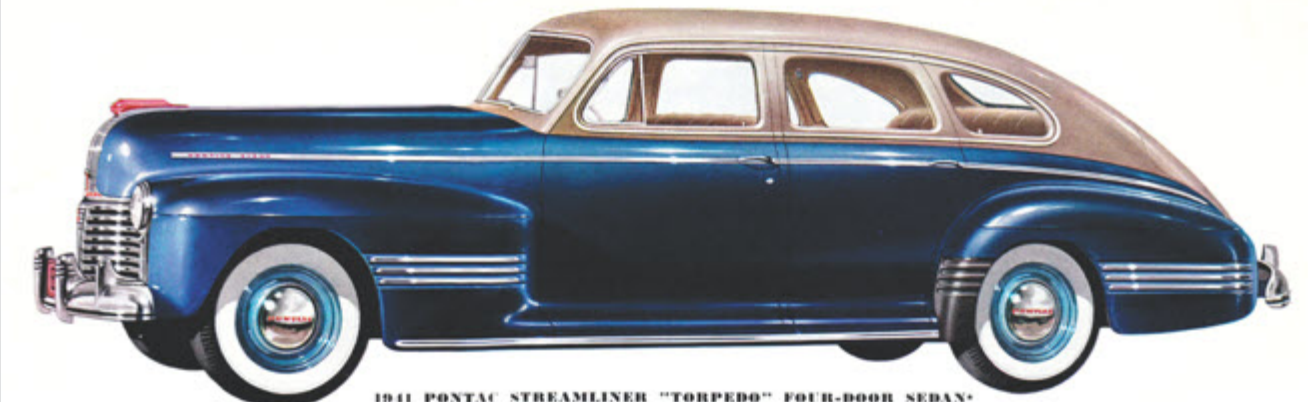


REAR WINDOWS in the Streamliner and Super-Streamliner Sedans and Sedan Coupes are attractively shaped to conform to the curved line of the tops. Note the chrome moulding which circles windows.



EXCEPTIONAL ROOMINESS for six passengers is provided in the Streamliner and Super-Streamliner Sedan Coupes. The back of the front seat is recessed for extra knee room.

IF YOU CAN AFFORD TO OWN AND OPERATE ANY NEW CAR YOU CAN AFFORD A PONTIAC



1941 PONTIAC STREAMLINER "TORPEDO" FOUR-DOOR SEDAN\*



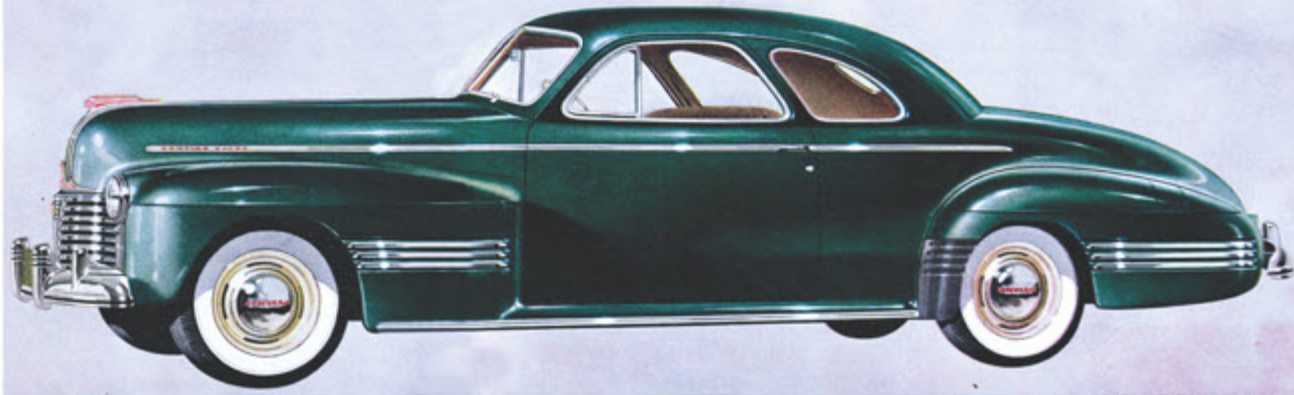
1941 PONTIAC STREAMLINER "TORPEDO" SEDAN COUPE\*



## The Custom "Torpedo" Series 122" WHEELBASE WITH SIX OR EIGHT-CYLINDER ENGINE

Here, in three stunning body types, are the aristocrats of the Pontiac line for 1941. These are the successors to the original Pontiac "Torpedoes," re-styled and refined to new heights of sparkling beauty and lavish luxury. Both the Four-Door Sedan and the Sedan Coupe have been increased four inches in length and one and a half inches in width and the rear seat of the sedan has been widened a full inch. Already comfortably roomy, these bodies are now more spacious than ever. In the Custom "Torpedoes," as in other Pontiacs for 1941, floors are at curb height. However, this is the only series which offers you an option of full running boards at slight extra cost. Combined as they are with the handsome new radiator grille, hood and fenders, the Custom "Torpedoes" present a completely new appearance and one calculated to cause heads to turn in sincere admiration. An artistic use of chrome mouldings and trimmings gives them snap and sparkle and emphasizes

their graceful lines and contours. The interiors of these cars match the exteriors in beauty and good taste. Upholstery, head and side lining all employ new high-quality fabrics. Carpets are deep, soft and harmonious in color with the upholstery and trim. Seat cushions are of Foam Sponge Rubber and the rear seat of the sedan is equipped with a folding center arm rest. A flexible steering wheel and an electric clock are provided. A popular member of the Custom "Torpedo" series is the new, larger Station Wagon, accommodating eight passengers in three seats. Two of the seats are removable. The Station Wagon is offered with either standard or luxury type interior trim. The latter, at extra cost, includes Marshall springs and Foam Sponge Rubber cushions for the front seat, genuine leather and cloth upholstery for the front seat, genuine leather upholstery for the other seats and chrome finished tubular seat frames throughout.



1941 PONTIAC CUSTOM "TORPEDO" SEDAN COUPE



1941 PONTIAC CUSTOM "TORPEDO" FOUR-DOOR SEDAN

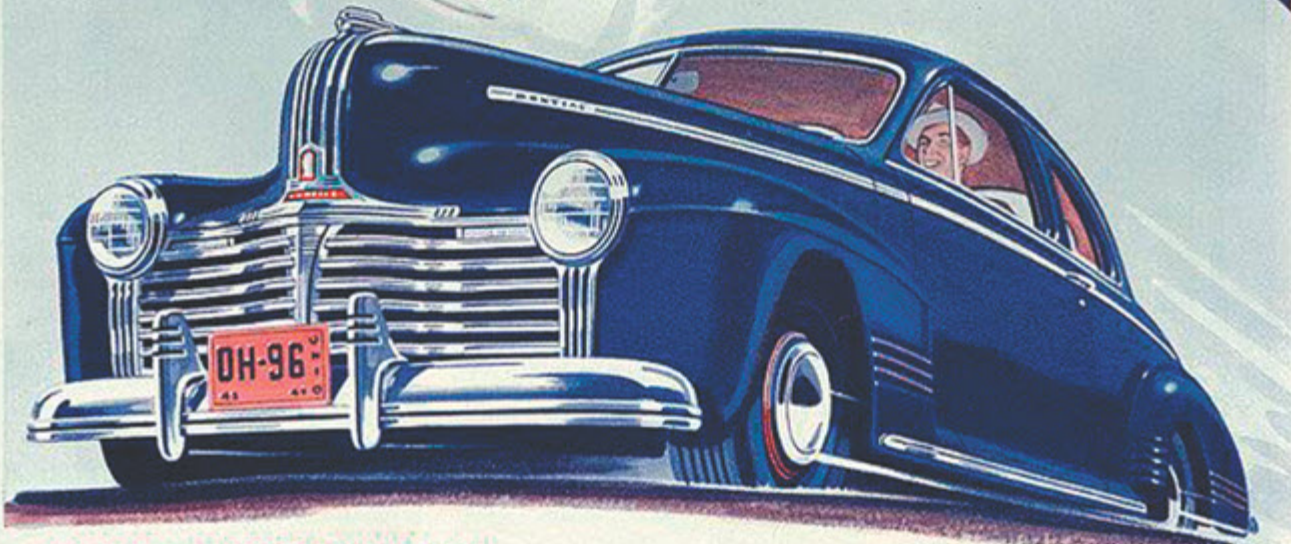


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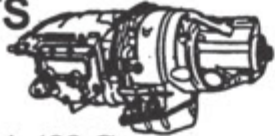
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# POP'S GARAGE



(Continued from Page 11)

"A lot—the big Cadillac V-16's, Packard V-12's and Lincolns were scrapped to get the materials to build wartime equipment. And then there was gas rationing, too," Pop continued. "We had to apply for windshield decals to be displayed in the lower right section of the windshield. Whatever your profession determined your rating. Examples were 'A' stickers for the general public, 'B'

for business owners, 'C' was used for professionals like physicians, nurses, dentists, ministers, etc., 'M' was for motorcycles and air raid wardens as well as Western Union messengers. 'T' was truck drivers, 'X' for high-mileage drivers like traveling salesmen."

"Were used-car sales controlled by the government, too?" asked Jimmy.

"No," Pop replied. "At first they considered it, but due to Americas' united effort, it wasn't needed. Parts were very hard to get. The mechanics of the day were 'true mechanics,' keeping the cars on the road by filing and re-filing points, sand blasting spark plugs, keeping everything greased, but some things the mechanics just couldn't help with. Rubber was in short supply and many had to make it through the war with one set of tires. Japan had taken over 90% of the world's natural rubber source in Indochina. To meet the emergency, America developed synthetic rubber substitutes.



"We can't forget 'Rosie the Riveter,'" Tom said.

"Absolutely not," Pop agreed. "When the men left for war, the women came in to the factories—almost 19 million women helped to build planes, trucks, Jeeps, ships and munitions. The aviation industry was the greatest increase in female workers."

"What did each factory build?" Jim asked.

"A general overview would be, GM produced bombers, fighters, aircraft engines, tanks (Buick Hellcats) armored vehicles, ammunition and machine guns. Ford built B-24 Liberators, tanks, armored cars, Jeeps and amphibious vehicles. Studebaker built heavy trucks and engines for the B-17 Flying Fortresses, Packard built and improved the V-12 Rolls-Royce Merlin aircraft engines for the P-51 fighters and produced engines for PT boats. Nash built aircraft engines and propellers, Hudson built aircraft wings and parts for the B-29 Super Fortress bombers, Chrysler tanks, Dodge trucks, tugboats and marine engines."

"It was a time in America where we came together, not only to win a war, but to make it possible for the world to be free. We should always keep that part of history alive," Jim said.

"During the war, did any of the factories have time to develop new ideas for postwar cars?" Tom asked.

"Absolutely, although it was necessary to get permission to use wartime plant production time to work on new cars. Many would meet informally at someone's house and work out ideas like Buick's gun sight hood ornament, port holes, Cadillac's fins, many automotive designers thought making the cars relate to the returning servicemen would help to sell cars. GM's Harley Earl took his design team to an air field during the war and the twin-fuselage P-38 fighter planes inspired the rear ends on the new postwar '48 Cadillacs with their all-new tail fins!"

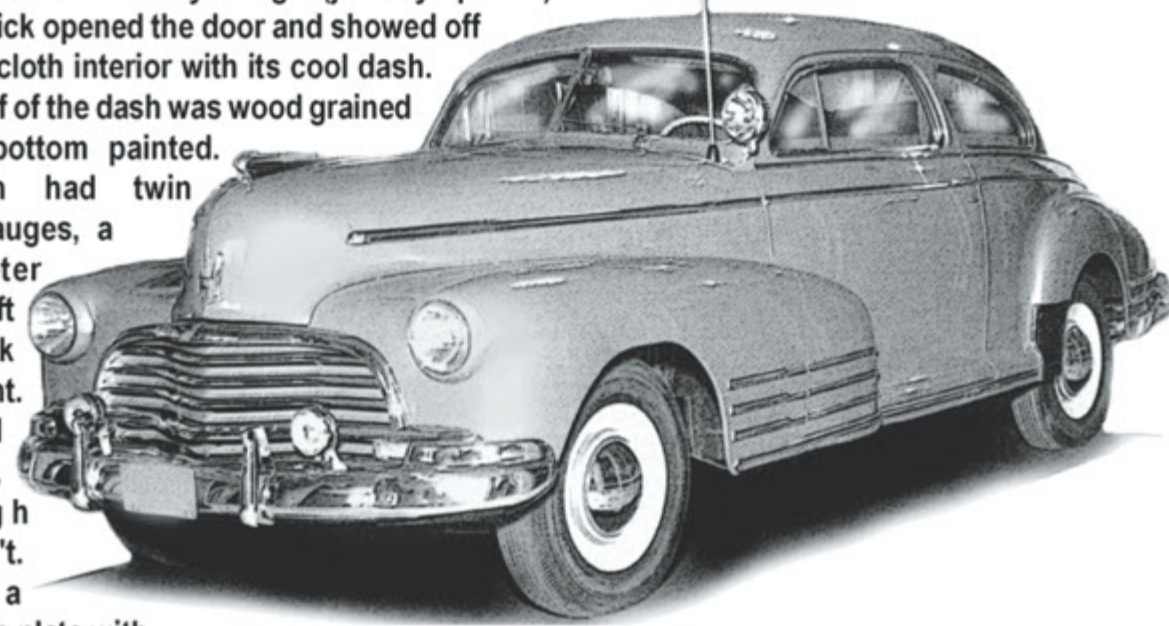
Just then, Rick pulled in with his '46 Chevy—a Dove Gray 2-door coupe. As Rick pulled into Bay One, the guys gathered around the car. Rick's was a Fleet Master Aero Sedan, optioned out with fog lights, spotlight, bumper ends and deluxe hood ornament. It also had whitewall trim rings. These were used by Chrysler, GM and Ford after the war. They were round, white plates that covered the rims, giving the illusion of the impossible-to-get whitewall tires. They covered the rim and were held on by clips and dog dish hubcaps.

As Rick was showing the car, he said, "In '46, the model lineup was renamed with Style Master replacing the Master Deluxe and the Fleet Master replacing the Special Deluxe. The Aero Sedan was the fastback and the Sport Master Sedan was the notch back."

Rick opened the hood to show the tried-and-true straight six—a 216 CID introduced in 1937 that would continue through 1953 in one model. "It's a tough old engine," he said. "A four-bearing crank with 90 horse power. What's interesting about this engine is its lubricating system. It's not a fully pressurized oiling system. The main bearings are pressurized, but the connecting rods were oiled using an oil trough built into the oil pan that had spray nozzles that squirt a stream of oil at the connecting rods, which are equipped with dippers and they supply oil to the rod bearings. The rod bearings are made of babbitt cast integral with the rod and can be adjusted for wear by removing copper shims placed between the rod cap and connecting rods. This allows specific oil clearance to be maintained. I don't use an oil filter on these old 216's. I think they need all the unobstructed oil flow they can get (just my opinion)."

Then Rick opened the door and showed off the brown cloth interior with its cool dash. The top half of the dash was wood grained with the bottom painted.

The dash had twin circular gauges, a speedometer on the left and clock on the right. Rick's had a radio, although many didn't. They had a radio delete plate with a "bow tie" emblem in the center.



"It's really a nice example of Chevy's first postwar cars," Pop said. "Is all well with her?"

"Most everything, Pop," Rick answered. "The lights have started flickering."

"Have you checked all connections and made sure all the fuses are seated properly?"

"Yes, I have, Pop. The problem started when I put in a new head light. The head light socket has its original cloth covered wire."

"Let me look at the wire connections at the head light you replaced."

Pop saw something in the wire covering that would cause the flickering problem.

*Do you know what it was?*

*(Answer on Page One)*

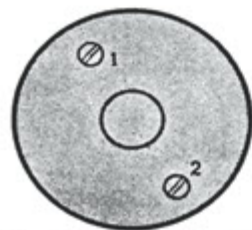


While we usually concentrate on late '30's, '40's, '50's and '60's cars, our readers have mentioned to us the difficulty in finding technical information about their '20's and early '30's cars. WE have manuals going back into the teens, so we are happy to share that information our readers have asked for.

# Generator Charging Adjustments

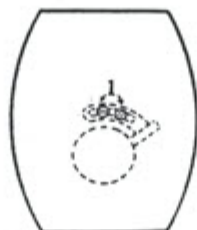
ON the following pages is shown the method of adjusting the generator charging rate on practically every make of motor car. With the third brush type of generator output regulation it is well to bear in mind that moving the brush in the direction of the armature rotation increases the charging rate and moving it

against the direction of rotation decreases the output. On 6-volt batteries the charging rate for summer should be 8 to 10 amps. For winter, 15 to 18 amps. On 12-volt systems these figures should be 3 to 5 and 8 to 9 amps, respectively.



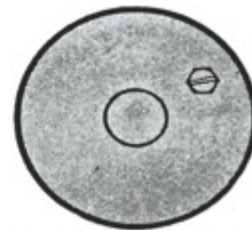
Not necessary to loosen Cover Band. Loosen bottom locking screw (b) and adjust by turning top screw (a). Relock.

Dodge Early 1926



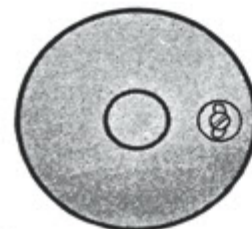
Loosen cover plate. Loosen two screws in third brush arm one or two turns. Increase or decrease length of arm. Tighten screws. Reseat brush with OO sand paper.

Cadillac 1924-25



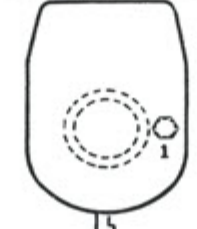
Not necessary to loosen cover band. Shift third brush by turning hex. headed screw.

Graham-Paige 619, 629, 835, 1928



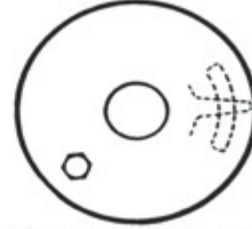
Not necessary to remove cover band. Remove small plate on end housing. Loosen small locking nut and adjust by moving stud in slot. Relock.

Vellie Early 1925



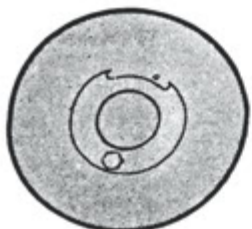
Loosen cover plate. Loosen third brush plate adjusting screw 1 one or two turns. Shift plate by hand. Tighten screw.

Buick Stan. & Master 1925



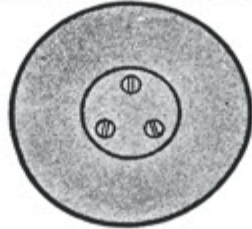
Loosen cover band. Loosen hex. headed locking screw which releases brush mounting plate. Shift third brush by means of extension handle. Relock.

Pierce-Arrow 33 1927



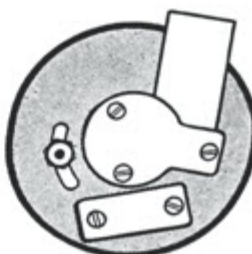
Not necessary to remove cover band. Loosen hex. head locking stud. Shift plate by hand. Relock.

Hudson 1925  
Hudson Early 1926



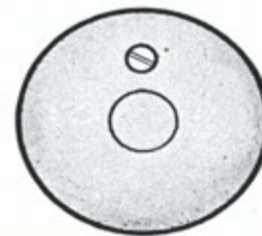
Loosen cover band. Loosen the three screws in the bearing retainer plate (on commutator end of generator) one or two turns. Shift third brush mounting plate by hand. Tighten screws.

Durant 1925  
Durant 1926



Not necessary to loosen cover band. Loosen hex. nut and move in slot. Relock.

Hupmobile E 1925  
Stutz (early) 1927



Loosen cover band. Loosen locking screw which releases brush mounting plate. Shift by hand. Relock.

Auburn 8-63, 8-88 1925  
Auburn 1926  
Auburn 1927-28 (All Models)  
Auburn 1929-30 (All Models)

Buick 1927-28  
Buick 1929-30

Chandler 6 & 8 1927  
Chandler 1928 (All Models)

Chevrolet 1926  
Chevrolet 1927-28  
Chevrolet 1929-30

Chrysler B 1925  
Chrysler 58-70 1926  
Chrysler 1928-30 (All Models)

De Soto (All Models)  
Dodge 1930

Elcar 1926 & 27  
Elcar 1928-30

Erskine 1928  
Gardner 8A, 1925-26  
Gardner 1927  
Gardner 1928-30

Hudson 1929  
Kissel 1927  
Kissel 1928-29

Locomobile 90, 8-66 1927  
Locomobile 8-70 1928

Marmon L 1927  
Marmon 68, 78 1928-29  
Marquette 1929-30

Moon 6-72 8-80 1928  
Nash Spec. 1927  
Nash Spec. 1928

Oakland 1927  
Oakland (All Am.) 1928-30

Oldsmobile 30E (Later) 1927  
Oldsmobile F-28 1928-29

Packard 1928-29  
Peerless 6-91 1928  
Plymouth 1928-30

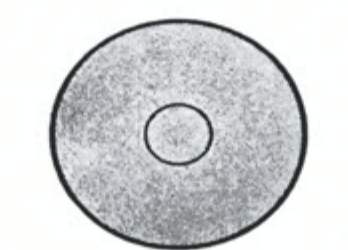
Pontiac 6 1926-27  
Pontiac 6 1928-29

Reo Flying Cloud 1927-29  
Roosevelt 1929-30

Studebaker (All Models) 1926  
Studebaker late 1927 and 1930

Stutz late 1927  
Vellie 77-88 1928  
Vellie 60 1926-27  
Vellie late 1925

Stutz late 1927  
Vellie 77-88 1928  
Vellie 60 1926-27  
Vellie late 1925



Loosen cover band. Shift third brush by hand. Mounting plate held in any position by friction clamp washers.

Ajax 1926  
Cadillac 341B

Durant (All Models) 1928-30

Essex (Late) 1926  
Essex 1927  
Essex 1928-30

Falcon-Knight 1928  
Flint 1926-27

Hudson (Late) 1926  
Hudson 1927-28

Hupmobile 6 1926-27  
Hupmobile 8 1926-27  
Hupmobile 6 & 8 1928-30

Jordan 1926  
Jordan 1927  
Jordan RE & JE 1928-29

LaSalle 1928-29  
Nash 1926

Nash Light & Adv. 1927  
Nash Stand. & Adv. 1928-29

Oldsmobile 1926  
Overland 91 & 93 1926

Peerless 1926  
Peerless 6-60, 6-80, 6-90 1927-29

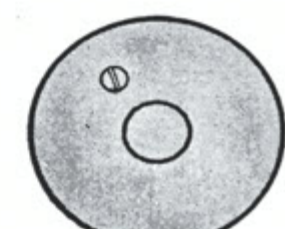
Star 4 & 6 1926  
Star 4 & 6 1927

Stutz BB 1928  
Vellie 50 1927  
Vellie 66 1928

Whippet 1927  
Whippet 4 & 6 1928-30

Whippet 4 & 6 1928-30  
Willys Knight 66, 70 1926  
Willys Knight 66-A, 70-A 1927

Willys Knight 4 & 6 1928  
Willys Knight 56 1928-29



Not necessary to loosen cover band. Shift brush by turning small screw over oil cup.

Chandler 1925  
Chandler 1926

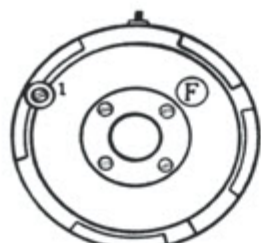
Cleveland (Early) 1925  
Cleveland 1926

Dupont 1926  
Dupont 1927

Locomobile Jr. 8 1926  
Reo 1925  
Willys Knight 66

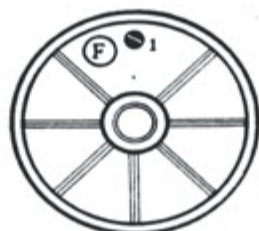
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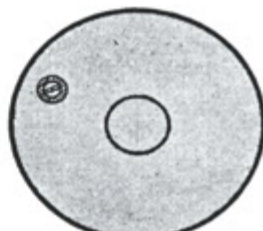
Remove cover cap. Shift third brush by turning adjusting screw 1.

**Franklin Airman 1928-29  
Packard 6 & 8 1925**



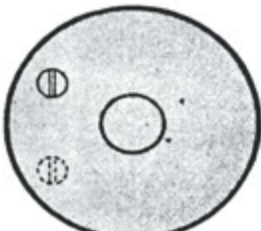
Not necessary to loosen cover band. Adjusting screw 1 moves entire brush rig. Third brush cannot be moved without changing position of main brushes.

**Dodge 1928 (All Models)  
Graham-Paige 1928-30**



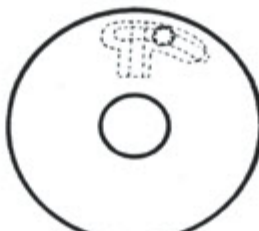
Not necessary to remove Cover Band. Loosen screw in center of knurled nut. Adjust by turning knurled nut. Relock.

**Franklin 1925  
Franklin 1926  
Franklin 1927**



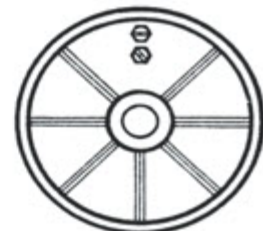
Loosen cover band. Loosen flister head locking screw to left of oil cup. Shift third brush by hand. Tighten screw.

**Auburn 1923-1925  
Chevrolet K 1925  
Paige 1925  
Stutz 1925**



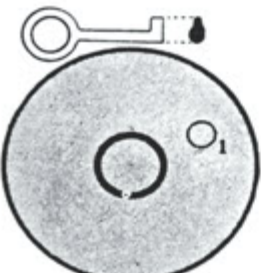
Loosen cover band. Loosen hex nut which clamps brush mounting to end housing. Shift by hand. Relock.

**Flint 1925  
Overland 1925  
Star 1925**



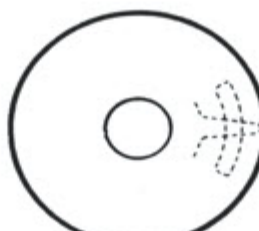
Not necessary to loosen cover band. Loosen hex head lock screw. Shift third brush by turning other hex head adjusting screw. Relock.

**Dodge late 1926  
Davis 92 1927  
Diana 1927**



Not necessary to loosen cover band. Insert special Bosch wrench thru hole above oil cup. Shift by turning wrench. Mounting plate held in position by friction clamp washers. This adjustment can be made without wrench by loosening cover band and shifting third brush by hand.

**Cleveland (Late) 1925  
Essex 6 1925  
Essex 1926  
Lexington 1926**



Loosen cover band. Loosen hex headed locking screw which releases brush mounting plate. Shift third brush by means of extension handle. Relock.

**Case Y 1927  
Cunningham 1925-26  
Davis 1925-26  
Diana 1926  
Duesenberg 8 1927  
Elcar 6-60 1925**

**Elcar 8-80 1925  
Jordan 1925  
Marmon D-74 1925  
Marmon 74 1926  
Marmon E-75 1928  
Moon A 1925-26  
Moon A 1927  
McFarlan 1926-27  
Nash 1925  
Peerless 1925  
Peerless 6-72, 69 1927  
Pierce-Arrow 1926  
Pierce-Arrow 80 1927  
Wills St. Claire 1926-27**

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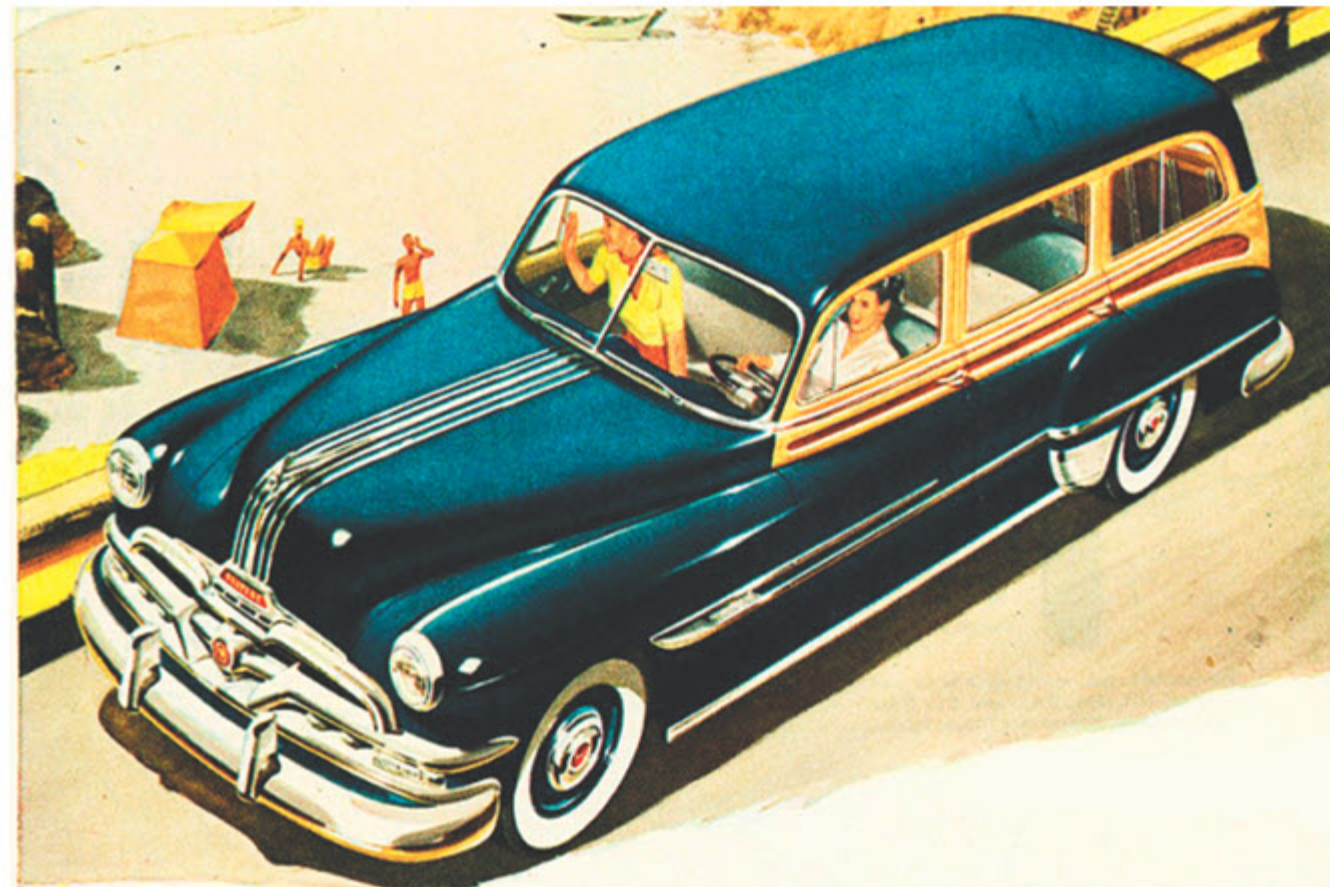
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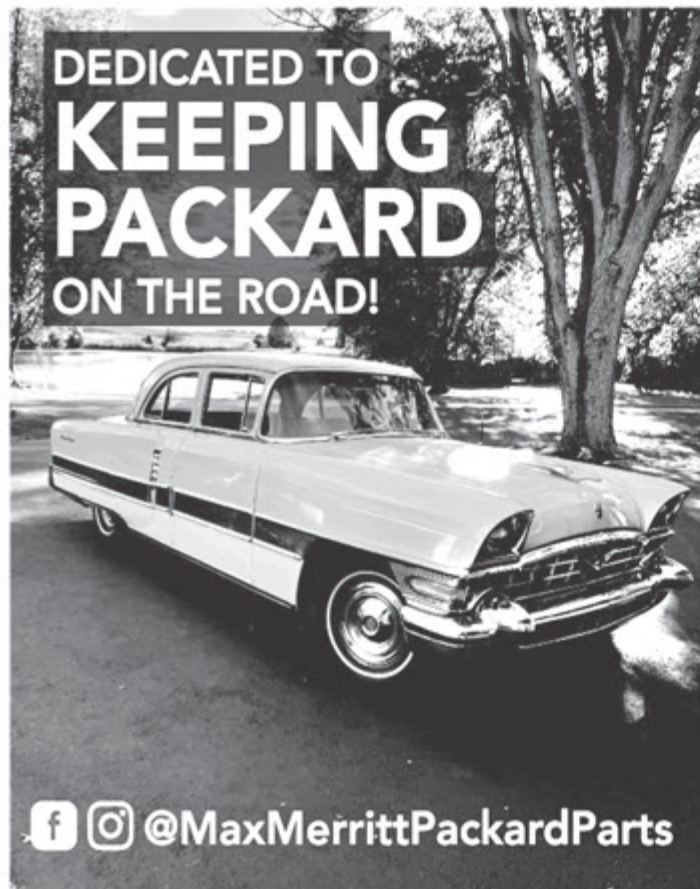
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# DRIVING OLD CARS



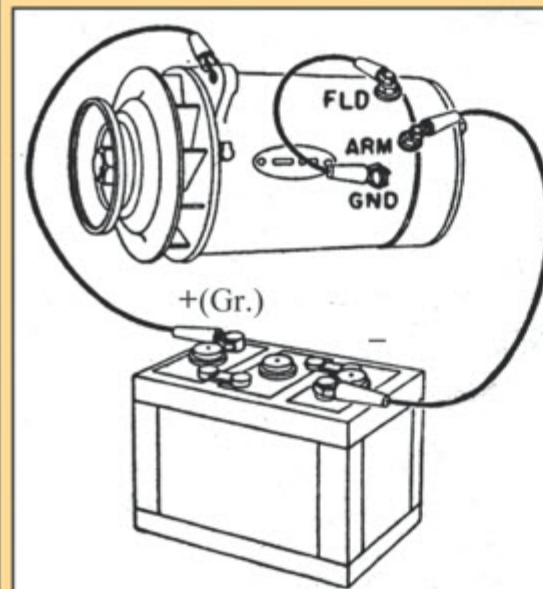
## FIXING A GENERATOR & VOLTAGE REGULATOR ON A '51 Packard COUPE

by *Bin Johnson* Publisher

**A** few months ago, you might remember I said the '51 Packard Mayfair Coupe is finished, and I will drive out the flaws and repair whatever comes up. Well, the car wandered all over the road, and I thought it was the bias ply tires (I have a set of 8:20 x 15 4.25" wide Firestone bias ply tires on it.) These have been on it several years, and sat in one place while I was restoring the car. They had flat places on them, which quickly rounded out as I drove it. I found lowering the tires' air pressure (24 lbs.) helped, but that wasn't it; it was the shocks!

I am in the middle of our next project finishing my '53 Buick Roadmaster 2 dr, and thought I would have the shocks replaced by an outside shop. I bought a new (front) set of Monroe shocks and let the outside shop do it. When I got the car back, the generator light was on. I noticed the light flickering on the way over, so I don't hold them responsible. Through 1950, Packard used an amp gauge on the dash that used the traditional (-, +) readout and in 1951 they changed to a light. There is a "red" light (Battery) that comes on in the dash and goes off when the car is started, assuring that the generator is charging. When I got the '51 back, the red light was on and stayed on(?).

I tested the generator, Delco-Remy 110745 1F1, to see if it worked, (It is a 6-volt positive ground system.) and there are multiple ways that you can check the generator: 1) Run a wire from the "Field" screw to a ground (engine block) or any good ground, and rev the engine up to 1000 RPMs. If the generator takes off and starts climbing over 1000 RPMs, it's putting out and must be disconnected quickly! The dash red light will go out when this test is done. If NO output is indicated on the dash ammeter, the trouble is in the generator, but if the ammeter shows a charge, the trouble lies in the voltage regulator or wiring. I couldn't get this test to work, so I took the generator off the car using it as a "motor." This worked! And my generator was bad. I found a rebuilt generator (no core) online. I tested it the same way, motored it, and it tested good. When the new generator was sent to me, the wire hookup Field/Ammeter screws were not positioned where they



Connections for running generator as a motor. Be sure to connect the generator with the same polarity that it will have when it is installed on the car

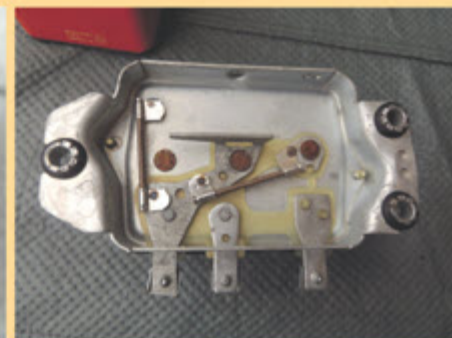
were on top of the generator as before, but now were positioned where you had to get to the wire hookups from under the car.

This is awkward, and Steve had to screw down the wires, because the convenience of top-mounted wires was now gone. When I have my old generator rebuilt, I can have them set correctly, but to change them now would have to do with removing the "front" mounting bracket and rotating it up, which could pull the wires or void my warranty, so I will have to leave them alone for now.

With the generator back on and hooked up, I still wasn't getting any charge output! I knew the generator was good, so I used my multimeter. On these old cars, I always use an analog multimeter. The digital ones are not accurate. So I set the selector on "10 Volt, DC Current" (nearest setting to 6 Volt)



and grounded one lead and put the other lead on the voltage regulator "generator" with the car running. It



showed no reading—the voltage regulator was bad! So I replaced it with an NOS one, a Delco-Remy 6 Volt positive ground, part #

**CONTINUED**



D-607 #1118828 regulator. First, I cleaned off the contact points with a point file, used black electrical tape all around the contacts before polarizing. To polarize, momentarily touch the "Bat" and "Gen" posts (not Field). The tape kept me from touching the metal casing and Field by mistake. Because the fender of the car is so high, I just didn't want to take a chance of touching the wrong leads. After the battery and generator posts were touched, the electrical tape was removed and the car now started right up and the Red "Battery" light went off as soon as the car started.

I have had generator/voltage regulator dilemmas before, such as my 1936 Packard Super 8 (gear driven generator), but I think this was more of a hassle, probably because of the height of the car. I just couldn't see the bottom of the voltage regulator, but the black electrical tape masking the metal around the "Batt," "Gen," "Field" screws did the trick. It's fixed, and with the new shocks, handles well. The new shocks are Monroe #5751, made in USA, and they were put on as follows:

#### Front Shock Absorber Removal

To remove the front shock absorbers, raise the car until there is sufficient ground clearance to permit the shock absorber to be removed through a hole in the bottom of the lower support arm. Using an offset screwdriver, insert the tool in the slot of the shock absorber upper extension. While holding the top shock absorber extension, remove the shock absorber nut washers and grommet.

From underneath the lower support arm, remove the nuts holding the shock absorber retaining bracket to the bottom of the lower spring seat and remove the shock absorber. The bracket may then be removed from the shock absorber by holding the shock absorber body in a vise, unscrewing the nut and removing the rubber grommets.

#### Front Shock Absorber Installation

Before installing the shock absorber, check the resistance of the shock absorber to determine if it should be replaced. If the shock absorber lacks resist-

ance, if there is excessive free play in its operation, or if the shock absorber is binding, install a new shock absorber.

Hold the shock absorber retaining bracket in a vise. Install the shock absorber retaining bracket on the shock absorber lower extension. Slip rubber grommet and washers on the shock absorber extension. Install the nut and tighten to a torque of 12 to 18 foot pounds.

#### Extension Grommet Retaining Nut

Extend the shock absorber and insert it in the opening in the lower support arm with the top shock absorber extension extending through the pilot hole in the top of the frame cross member. Slip the rubber grommet and washers over the extension and screw on the nut. Insert a screwdriver in the slot of the extension, and tighten the nut to a torque of 12 to 18 foot pounds. Position the retainer bracket on the bottom of the lower support arm and attach the screws. Tighten the retaining bracket screws to a torque of 15 to 18 foot pounds.

## SUSPENSION AND STEERING

### TROUBLE SHOOTING AND CORRECTIVE MEASURES

CONDITION	POSSIBLE CAUSE	CORRECTION
1. Excessive free play in steering system.	(a) Steering gear out of adjustment or badly worn.	(a) Adjust the steering gear or recondition the steering gear with new parts.
	(b) Steering connecting rod or cross tube ball joints loose or worn.	(b) Tighten the connecting rod nuts or replace the cross tube ball joints with new parts.

(c) Steering knuckle pins, bushings, or bearings worn.	(c) Replace the worn parts.
(d) Wheel bearings out of adjustment or worn.	(d) Adjust the wheel bearings to proper torque or replace them with new bearings as necessary.
(e) Loose steering gear Pitman arm.	(e) Tighten the Pitman arm nut to proper torque or replace the arm if it is worn on ball end.
(f) Loose steering knuckle levers.	(f) Tighten the steering knuckle lever nuts.
(g) Steering idler arm bearing loose or worn.	(g) Tighten the idler arm nut or replace the rubber bushings if worn.
<b>2. Hard Steering.</b>	
(a) Lack of lubrication or improper lubricant in steering gear.	(a) Lubricate the steering connections until they work freely, or change to the proper lubricant.
(b) Low or uneven tire pressures.	(b) Inflate all tires to the pressure recommended by the manufacturers.
(c) Oversize tires.	(c) Replace all oversize tires with the proper size as specified for the chassis.
(d) Steering gear or steering connections adjusted too tight.	(d) Adjust the steering gear and connections to their proper torque.
(e) Steering gear to frame misalignment.	(e) Align the steering gear to the frame.
(f) Suspension support arms bent or twisted.	(f) Replace with new support arms.
(g) Steering knuckle bent.	(g) Replace with a new steering knuckle.
(h) Frame bent or out of line.	(h) Straighten the frame.
(i) Improper caster.	(i) Adjust the caster.
<b>3. Erratic steering or swerving on application of brakes.</b>	
(a) Low or uneven tire pressure.	(a) Inflate all the tires to pressure specified by the manufacturer.
(b) Brakes incorrectly adjusted.	(b) Adjust the brakes.
(c) Brake fluid or grease on the brake lining.	(c) Use a suitable cleaner to remove the brake fluid or grease from the lining and readjust the brakes if necessary.
(d) Incorrect or uneven caster angle.	(d) Adjust the caster to specifications.
(e) Worn bushings or pins in lower support arm and vertical wheel support.	(e) Replace the worn bushings or pins with new parts.
(f) Steering knuckle bent.	(f) Replace with a new part.

CONTINUED



**4. Car pulls to one side.**

- |   |   |
|---|---|
| (g) Steering connecting rod bent or out of alignment.   | (g) Replace with a new part and reset the toe-in.   |
| (h) Front end stabilizer bar or bearing bracket broken. | (h) Replace with new parts.   |
| (a) Tire size uneven.                                   | (a) Replace the tire with one of the proper size.   |
| (b) Low or uneven tire pressure.                        | (b) Inflate the tires to the pressure recommended by the manufacturer.                    |
| (c) Brakes dragging or unevenly adjusted.               | (c) Check the brake pedal free play adjustment or adjust the brakes.                      |
| (d) Incorrect or uneven camber or caster.               | (d) Adjust the caster or camber to the proper setting.                                    |
| (e) Steering knuckle lever bent.                        | (e) Replace the bent lever with a new part.   |
| (f) Upper or lower support arm bent.                    | (f) Replace with new arms and recheck the caster and camber.                              |
| (g) Frame bent or out of line.                          | (g) Straighten the frame to proper dimensions.  |
| (h) Rear axle shifted.                                  | (h) Replace the rubber insulators between the spring and support and tighten the U-bolts. |

**5. Steering wander or road weave.**

- |                                  |  |
|----------------------------------|--|
| (a) Low or uneven tire pressure. | (a) Check and inflate all tires to the proper pressures. |
|----------------------------------|--|

**6. Steering wheel "kick" or road shock.**

- |   |   |
|---|---|
| (a) Steering gear incorrectly adjusted.                                     | (a) Adjust the steering gear.   |
| (b) Steering connecting rod ball joint spring tension incorrectly adjusted. | (b) Tighten the adjusting plug in each end of the connecting rod and then back off ¼ to ½ turn. |
| (c) Broken springs in steering connecting rods.                             | (c) Replace with new springs.   |
| (d) Worn cross rod ball joints.   | (d) Replace with new ball joints.   |
| (e) Bent steering knuckle.  | (e) Replace with a new part.  |
| (f) Worn steering knuckle pins, bushings, or bearings.                      | (f) Replace with new parts.   |
| (g) Incorrect tire pressure.  | (g) Inflate all tires to the proper pressure.   |
| (h) Wrong type or size of tires.  | (h) Replace the wrong type tires with proper size tires.  |

**7. Steering gear rattle or chuckle.**

- |   |   |
|---|---|
| (a) Insufficient amount or improper lubricant in steering gear. | (a) Lubricate or replace with the proper lubricant. |
| (b) Excessive clearance between worm and cross shaft roller.    | (b) Adjusting the steering gear.                    |

- |  |  |
|--|--|
| (c) Badly worn or damaged steering gear parts, preventing proper adjustment. | (c) Replace all badly worn and damaged parts and readjust. |
| (d) Excessive clearance at steering rod connections.                         | (d) Tighten the connections or replace the worn parts.     |
| (e) Steering gear (pitman) arm loose on cross shaft.                         | (e) Tighten the pitman arm to the proper torque.           |
| (f) Excessive looseness in idler arm on idler bracket.                       | (f) Replace the worn parts.                                |
| (g) Steering gear loose on frame.  | (g) Tighten the steering gear to the frame side member.    |
| (h) Steering column loose at the bracket.                                    | (h) Tighten the steering column bracket.                   |

**8. Low speed shimmy (wobble).**

- |                                      |   |
|--------------------------------------|---|
| (a) Wheels and tires out of "true."  | (a) True up the wheels.   |
| (b) Bent wheel or hub.               | (b) Replace the bent wheel or hub.  |
| (c) Wheels unbalanced.               | (c) Balance the wheels statically and dynamically.  |
| (d) Low or uneven tire pressure.     | (d) Inflate the tires to the pressures recommended by the manufacturer.   |
| (e) Boot or vulcanize spot in tire.  | (e) Replace with a new tire.  |
| (f) Steering gear out of adjustment. | (f) Turn the adjusting screw on the steering gear case until the pull on the steering wheel with scale through the high spot position is 1½-2 pounds. |

**8. Low speed shimmy (wobble). (Continued)**

- |   |                                       |
|---|---------------------------------------|
| (g) Loose or worn steering rod ball joints.               | (g) Replace the ball joint ends.      |
| (h) Caster, camber, or toe-in improperly set.             | (h) Reset to the proper dimension.    |
| (i) Shock absorbers inoperative or unbalanced resistance. | (i) Replace with new shock absorbers. |

**9. High speed shimmy (wheel tramp).**

- |  |  |
|--|--|
| (a) All causes listed under low speed shimmy.                | (a) See low speed shimmy (wobble).   |
| (b) Static and dynamic unbalance of wheels (front and rear). | (b) Balance all wheels.  |
| (c) Loose or broken body bolts.                              | (c) Tighten all body bolts to the proper torque or replace the broken bolts. |
| (d) Loose engine mountings.                                  | (d) Tighten the engine mountings to proper torque.                           |

See you next month. Merry Christmas, and keep 'em driving! 🚗

Our thanks to Ron Carpenter and Steve Bailey



# OLD CAR MATCH GAME

(Answers on Page 1)

**A**

- 1. ZEPHYR
- 2. SUNLINER
- 3. CHAMPION
- 4. HORNET
- 5. EL DORADO
- 6. CHIEFTAIN
- 7. RIVIERA
- 8. TRIPLE TURBINE TURBOGLIDE (1957)
- 9. AIRFLYTE (1949)
- 10. FURY

**B**

- A-FORD
- B-PACKARD
- C-LINCOLN V-12
- D-CHEVROLET
- E-CADILLAC
- F-NASH
- G-PONTIAC
- H-PLYMOUTH
- I-BUICK
- J-STUDEBAKER
- K-HUDSON
- L-CHRYSLER



1957 "E" Thunderbird, Red ext, white int, Black soft top. 312 eng, 2x4 carb, Auto, p/steering, p/brakes, TC Radio, wire wheels and wide white wall tires. AACA JR and SR winner. **\$82,500**



1957 Ford Tbird, gun metal ext, red int, black porthole top, red softtop, 351 Windsor, 4 barrel, front disc brake, AC, p/window, Borgeson p/steering, auto, cruise control, Alum rad, full hubcaps WWW tires. 50,000 miles **\$51,500**



1957 Thunderbird white ext, red int, black soft top, p/steering, p/brakes, wire wheels, wide white wall tires, 3 spd OD. **\$45,500**



1969 cougar convertible red ext, white int, white convertible top, 351 2 barrel, p/steering, 3 speed, AC, very solid car, nice driver **\$32,500**



1967 Cadillac de Ville convertible, Ext Venetian blue, white int, p/ 6 way, 340 hpv8, turbo hydra- Matic, p/steering, auto climate control, cruise control, door locks, Am/FM radio, leather perforated for Extra comfort **\$31,500**



1957 Ford Thunderbird. Red ext, red int, 312 eng, Auto, P/Steering, p/ Brakes, fender skirts and radio. Runs and Drivers. Needs some work. **\$29,500.**

**64 427 Engine**  
 3x2, Aluminum headed 427, 1964 C4AE 6015-A cross bolt block, Edelbrock 6008 heads, Alum 3x2 in take mani, OEM fluid damper, harmonic balancer, Edelbrock water pump, Alum cobra oil pan. **\$12,500**

1957 Tbird white ext, red int, white porthole top, Auto 312ci 4 barrel. Runs and drives, old Restoration **\$29,500**

**Disc Brake Kit with and without combination valve**

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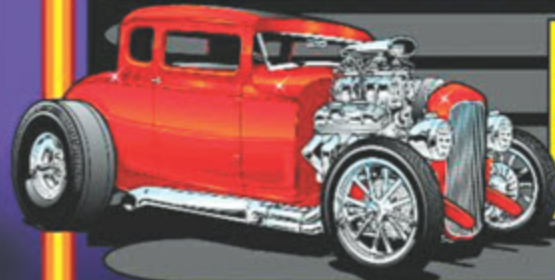
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