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Correct Diagnosis Saves Time and Money

TIRE NOISE

One of the easiest methods of cutting down on Warranty and Policy expense, comeback expense and customer dissatisfaction is by accurately locating trouble before starting to work.

Accurate diagnosis is simply a matter of using a process of elimination to mentally ferret out the cause of complaint. It is easy to say "I think it is so and so, let's replace it." After the new part or assembly is installed and the trouble still persists, the customer is disgruntled and the shop is still faced with the job of making the correction. The job has now cost twice as much to repair due to an incorrect diagnosis made the first time.

We have cases where a steady thump is heard at all times when the car is in motion. This thump starts out slowly and increases in speed as the car is driven faster. It is usually most noticeable at 30 miles per hour. Careful analyzing will tell you the noise occurs each time a wheel turns over.

A defective wheel bearing could not sound the same because there are several rollers in these bearings and any defect would make a noise of much higher frequency. When a wheel makes one revolution, each roller has made several and all rollers have passed over any given point in the races, thus a wheel bearing noise is faster and would be classed as a grinding or humming noise at 30 mph.

The noise cannot be in the drive shaft because the drive shaft is turning approximately four times as fast as the wheels.

The differential pinion or the pinion bearings cannot cause this type of noise since they rotate at the same speed as the drive shaft. If it were a chipped tooth in the differential ring gear, the noise would be evident at low speeds, in reverse, and also when on a jack. A chipped tooth is also more of a harsh metallic knock.

Loose wheel bolts cause a noise of higher frequency because of their number. This gets us down to the wheels and tires and, since a loose rim on a wheel will cause a squeak and not a thump, we have the tires remaining. This is where the trouble must lie.

Jack up each wheel and check for flat spots on the tires. If none are found inflate all tires to 55-60 pounds of air and again road test the car. If the thump is not now noticeable, deflate one tire at a time down to the proper pressure of 24 pounds. When the thump is again noticed, the last tire deflated must be the offender.

The car should then be taken by the dealer to the tire distributor for that particular make of tire for adjustment. No amount of work on the car will in any way diminish this noise and by the process of elimination the correct diagnosis can be made at the time of the first complaint. The tire companies are fully aware of this problem and are anxious to cooperate.

How To Assemble A Front Seat Cushion

22nd and 23rd Series Eights

Premature sagging or "breaking down" of front seat cushions usually is caused by improper positioning of the pad support, the omission of hog rings used to hold the various pads in place, or sprung or bent members of the seat frame assembly.

The following paragraphs describe the build-up procedure for a front seat cushion of the semi-luxury type which does not incorporate a foam rubber pad. The disassembly procedure is not covered since it consists of operations which are quite obvious even to those not familiar with trim work.

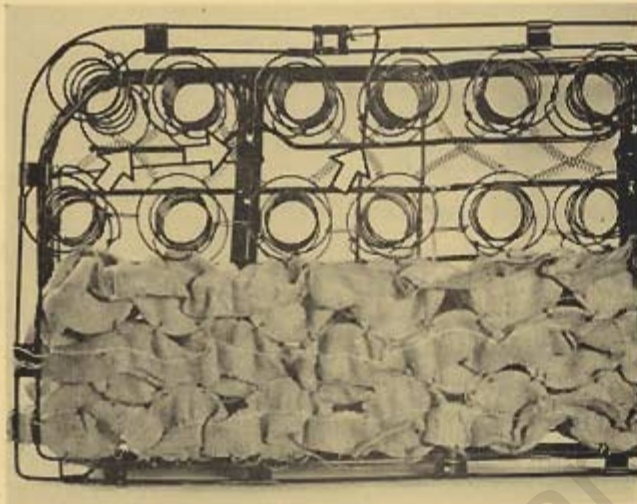


Fig. 1

After the seat cover and the pads have been removed, the seat frame assembly should be checked and sprung or bent flanges, rims, or strainers should be straightened if they do not follow their normal contour. The coil spring cross ties, indicated by the arrows in figure 1, should be attached to the seat coils as shown.

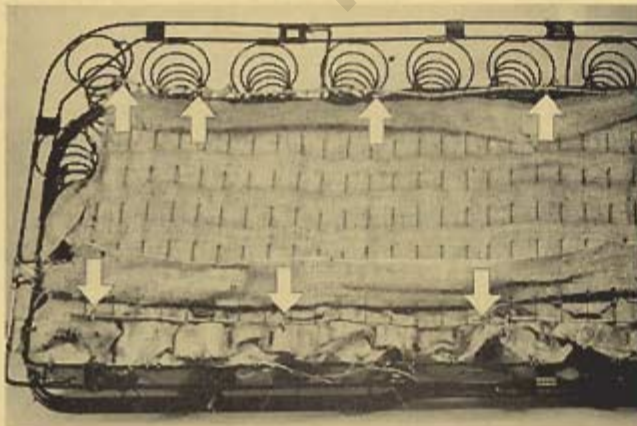


Fig. 2

Figure 2 shows the support pad with the edges folded back and the manner in which the pad cords

are hog-ringed to the seat coils. Figure 3 shows the location of the rings used to hold the pad in place. The front cord is ringed to the rear of the front coils while the cord at the rear is ringed to the front of the rear coils. Seven rings are required at the front and six at the rear. After the pad is centralized, the pad cords should be hog-ringed at each corner and the intermediate rings should be evenly spaced using 5 intermediate rings at the front and 4 intermediate rings at the rear.



Fig. 3

The next step is to locate the spring pad in its proper position as shown in figure 4. When the pad is properly positioned, the seam at the rear of the pad is directly above and in line with the inner rim of the frame as indicated by the arrows. Positioning the pad in this manner will provide the proper amount of pad overhang at the front of the cushion. The overhang at each end should be equal.



Fig. 4

The spring pad then should be hog-ringed as shown in figure 5. The burlap backing should be

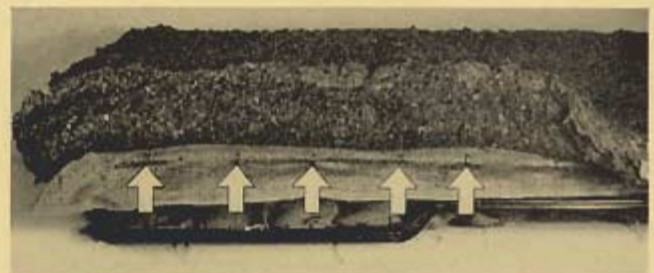


Fig. 5

pulled tightly around all sides and ringed to the frame outer rim placing a ring opposite each coil.

The upper pad now is laid over the spring pad and this pad should be centralized so the overhang on all sides is equal as shown in figure 6. This pad is not hog-ringed to the spring assembly.



Fig. 6

The seat cover then should be drawn over the padding and the frame assembly and centralized. Figure 7 shows the cover centralized. You will note that the first tack is driven at a point in line with the seam in the front of the cover and that the distance from the seam to each end of the frame is equal.

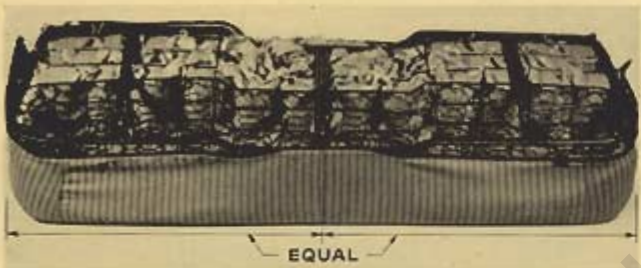


Fig. 7

The cover listing wires now should be attached as shown in figure 8. The eye at the rear of the wire should be ringed to the second wire of the rear coil while the forward end of the listing wire is ringed to the third wire of the second row coil as indicated by the arrows.



Fig. 8

The cushion build-up is completed by tacking the edges of the cover to the tacking strip beginning at the center of the cover and working toward each end. The tacks should be spaced approximately 2 inches apart at the straight sections and 1 inch at the corners.

Front Seat Cushion Pad for Semi-Luxury Type Cushions

A fibrous plastic seat cushion pad now is available for Service and may be installed in 23rd Series Eight and 22nd Series Eight and Deluxe Eight front cushions.

This pad consists of many curled plastic threads or fibers bonded together with latex rubber to provide a degree of comfort which compares favorably to the comfort found in a foam-rubber padded cushion. The resiliency and "come back" characteristics of this pad also compare favorably to a foam-rubber pad to hold cushion sagging and cover wrinkling to a minimum.

Prior to installing this new pad, the cushion should be built up as shown in figures 1 through 5 in the article "How to Assemble a Front Seat Cushion," in this issue. The underpadding then will be properly positioned and hog-ringed.

The fibrous plastic pad now should be placed over the cotton spring pad and the rear of the pad should be hog-ringed to the outer rim of the seat frame. When performing this operation, ring through the plastic pad and also through the cotton pad and burlap backing. Rings should be installed opposite each rear spring coil as indicated by the arrows in figure 1.



Fig. 1

The pad then should be ringed at the front, the rings passing through the plastic pad, the cotton pad and the burlap. These front rings should be attached to an intermediate coil wire of the springs as shown in figure 2. A ring should be used at each coil.



Fig. 2

The next step is to separate the upper half of the upper or "topper" pad from the lower half. This can be done simply by pulling the cotton apart to form two pads which will be one half the thickness of the original pad. One of the pads may be discarded. The other pad should be placed over the fibrous plastic pad and positioned so that the overhang on all sides is equal.

The cushion build-up is completed as described and as shown in figures 7 and 8 in the previously mentioned article in this issue.

The fibrous plastic pad is carried under part number 414818—Front Seat Cushion Spring Pad "Tapat-co."

Static Electricity and Tube Failures

Recently there has been an increase in complaints of static from those parts of the country where hot, dry weather was prevalent and cases of tube failures have undoubtedly come to your attention. Why there should be this sudden surge of static is a mystery. We, therefore, feel you would appreciate some comments on this subject by a leading tire manufacturer.

There are four distinct and objectionable manifestations of static electricity in automobiles:

1. **Shock Static:** A heavy shock received by a person on the ground touching a door handle. An electrostatic charge has been built up on the car and is grounded through the body.
2. **Seat Static:** A charge built up on the driver or a passenger by sliding across certain types of seat covers. Subsequently touching the ignition key or any other metal part results in a shock when the electrostatic charge is thereby grounded.
3. **Car Radio Interference:** A disagreeable crackling, popping or buzzing in the radio caused by static sparking between casing and tube or between casing and road surface.
4. **Static Tube Cracking:** Small holes in crown or sides of tube.

Car static was a problem before the war and was not confined to any make of car, tire or tube. This is still true. Also, the cure, developed and proved out in service in the 1930's, is still available and still eliminates the complaints—with the single exception of "Seat Static." There the only positive remedy is a change to a different seat cover material or direct grounding of the seat covers themselves to the body or frame.

The more serious condition is static cracking—more properly static *burning*—of tubes. A flat occurs. The repair shop finds a small hole in the crown or side of the tube; diagnoses it as a nail puncture (although no nail is found through the casing) or as "foreign substance" in the tube wall which has worked out and left the hole.

He puts on a patch and the next day another flat occurs at a different point.

The cause is ozone generated by static sparks between tube and casing. A concentration of this gas at any one point quickly eats a small hole through the tube whether it be butyl, neoprene, GRS or rubber.

The introduction into the tube of Static Eliminator Powder *eliminates* the static charge that causes sparks to jump, as well as clearing up radio reception and shock. We urge dealers to check all tubes on a car where one has failed from static cracking and apply the powder to *all* tubes on the car.

Static Eliminator Powder and Powder Injector are now available at Zone Parts Warehouses.

The price of the Anti-Static Injector, part number 410447 is Dealer Net \$.72, Suggested List \$1.20. The Anti-Static Powder Kit (sufficient for 5 tires) part number 410448 is Dealer Net \$.24, Suggested List \$.40. The powder kits are packed 12 kits to a box. The usual charge for installing the powder in 5 tires is \$2.50 to the customer.

Checking Oil Consumption

When a complaint of high oil consumption is received, the dealer should make a thorough check of the car before any work is done to definitely determine whether or not consumption is excessive. The customer should be asked to stop in at the dealer's service station at regular intervals to have his oil checked.

As an example the customer may say that he must add one quart of oil each time he buys gasoline. He may be adding oil when it is not necessary. He may be adding a quart of oil when actually a quart will bring the level in the crankcase above the full mark on the dip stick. When the oil level is above the full mark the excess oil is very quickly thrown out or burned.

There have been cases in which the customer has been shown that his oil consumption was not excessive after bringing the car to the dealer for all oil level checks.

If the owner complains that he is using a quart of oil each three hundred miles, fill his crankcase to proper level and ask that he return after three hundred miles to have it checked. If the oil level is not down to the point where a quart is required, do not add oil. Ask that he return after two or three hundred more miles for a second check. In this way the dealer will know exactly the actual oil consumption.

If the consumption figures out to be one quart in six hundred miles the customer must only purchase two quarts of oil between 2000 mile changes. When he reaches 1800 miles and the level is down one quart there is no need of adding oil if he is going to change at 2000 miles.

The rings being used in current cars are designed to give better oil economy at high mileage than the rings which have been used in the past. As a result these rings require a somewhat longer or more severe break-in. For this reason some engines, which are broken in slowly, use some oil at low mileage but dry up as the engine becomes thoroughly broken in.

If this method of determining actual oil consumption is used, we believe that there will be fewer service rings installed in cars with low mileage.

Windshield Wiper Repair Kit

We have received several inquiries from Dealers for a kit of parts for repairing 22nd and 23rd Series Packard Windshield Wiper Motors.

A renewal parts kit has now been made available.

410708—Windshield wiper motor renewal parts kit (Models 2201-02-06-11-13-22-26-32-33-40) (Trico No. 4100-A)

410709—Windshield wiper motor renewal parts kit (Models 2301-02-06-13-20-22-32-33) (Trico No. 4164-A)

The kits include all parts that could possibly be needed for the repairing of one of these units.