Section XIII

WHEELS AND TIRES

SERVICE BULLETIN REFERENCE

NUMBER	DATE	SUBJECT	CHANGES

WHEELS AND TIRES
DATA AND SPECIFICATIONS

Models	C-67	C-68	C-69	C-70
WHEELS				
Type		Steel Disc—(Wire Wheels Special)		
Rim		Drop Center—Safety Wheel		
Size	15x 5.5 in.	15x 5.5 in.	15 x 6 in.	15 x 6½ in.
Flange	K	K	L	L
No. of Bolts to attach Wheel	5	5	5	5
Bolt Hole Circle—(Diam)	4½ in.	4½ in.	5½ in.	5½ in.
Bolt Size	½-20	½-20	9/16-18	9/16-18
TIRES				
Type		Super Cushion Tubeless		
Size	7.60x15	8.00x15	8.20x15	8.90x15
Ply	4*	4*	4*	4*
Tread		Deluxe Ribbed		
TIRE PRESSURE				
Pounds—Cold	24	24	24	24

*6 Ply—Optional

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WHEELS AND TIRES

GENERAL INFORMATION

Tubeless tires are supplied as standard equipment on the 1955 Chrysler Cars, with the exception of those cars equipped with wire wheels. Difficulty in sealing the rim and spoke connections makes it impractical to apply tubeless tires to this type of wheel.

WHEELS

1. SAFETY-RIM WHEELS

Refer to Figure 1. These wheels are designed to provide added protection in case a blow-out or rapid deflation of a tire occurs. The safety feature is a raised portion of the wheel rim between the flange and well. This raised portion tends to hold the tire in place even if rapid deflation should occur.

2. TIGHTENING WHEEL HUB BOLTS

Tighten the wheel hub bolts evenly while tire is off the ground. Lower tire to ground and tighten the bolts securely. **Make sure these bolts are tight.**

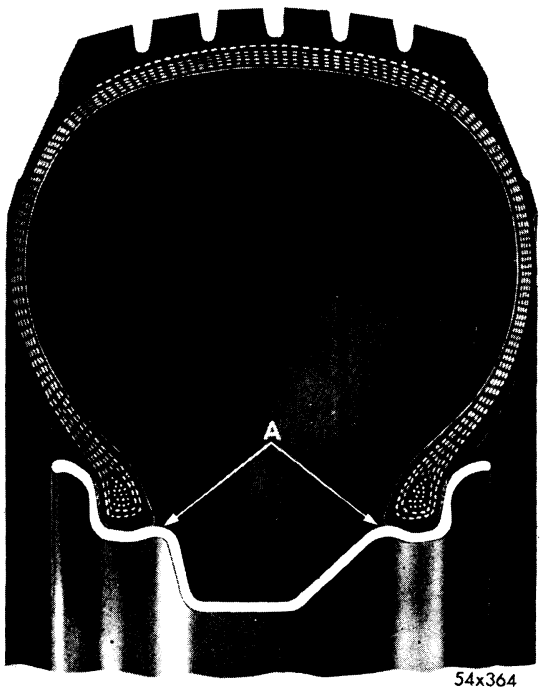

Fig. 1—Safety Type Rim

A—Raised rim section

3. CARE OF WIRE WHEELS (CAR SO EQUIPPED)

The wire wheels are also of the Safety-Rim type. Wash the wheels frequently with clean, cold water. A soft brush with a wooden handle may be used. The wheels can be cleaned with MOPAR Chromium Polish and coated with MOPAR Chrome Protector, if the car is driven in areas where salt is used on the highways. It may be necessary to true up the wheels occasionally by adjusting the spokes, if car is subjected to severe service.

4. STATIC ELECTRICITY

Sometimes static electricity may be built up in the tires and cause noise in the radio or cause a slight shock when the outside door handle or other metal parts of the car is touched. Tire Static Suppression Powder to eliminate this condition is available through MOPAR Motor Parts Corporation.

Service the tires as follows. Assemble injector, pour contents of one envelope into injector tube and replace cap. Insert injector needle into valve stem as far as it will go. Apply air pressure through injector to force the powder into the tire. Inflate tire to proper pressure. Repeat procedure at all tires, including the spare.

5. CHECKING WHEELS FOR ECCENTRICITY

Dismount the tire and test with wheel mounted on brake drum. Position dial indicator on firm surface to prevent deflection. With the anvil of indicator bearing on the inner tire bead surface of the wheel (Fig. 2), slowly rotate the wheel and note the total runout. Repeat the check on the outer bead surface. Mark the high and low spots and the amount on the wheel. If radial runout of wheel exceeds .045 inch, replace the wheel.

NOTE

Do not check runout on the outside of the wheel rim since this method can easily give a false reading.

6. CHECKING WHEEL FOR WOBBLE (LATERAL RUNOUT)

Before checking a wheel for wobble (lateral runout), make sure the tire is properly mounted. Mount a dial indicator on a firm base, with anvil of indicator resting against the flange of wheel. Spin the wheel. If lateral runout is more than 1/8 inch (.125 inch), straighten or replace wheel.

7. BALANCING WHEEL AND TIRE ASSEMBLIES

Proper balance of wheel and tire assemblies promotes smoother steering action and is a safeguard against vibration and front end shake. Refer to Figures 3 and 4.

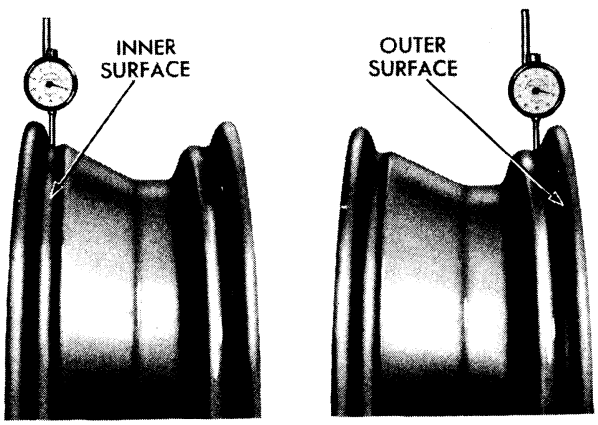

Fig. 2—If Radial Runout Exceeds .045 Inch, Replace Wheel

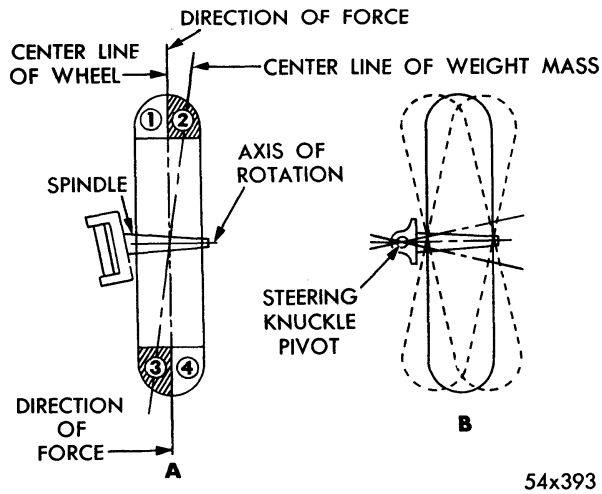

Fig. 3—Unbalanced Wheel and Tire Assembly

A—Weight unevenly distributed in relation to centerline of wheel
B—Wheel wobble or shimmy

(1) **To check front wheels for balance,** place jack under center of front of car and raise both front wheels off the floor. **Do not place jack under lower control arms as this will tend to minimize vibration.** Remove caked mud or tar from wheel so that balance condition will not be affected.

(2) Use a spinner that will rotate wheel at a higher rate of speed than that encountered in actual highway driving. Place crumpled cloth or towel on front fender above center of wheel. Spin the wheel up to high speeds. The wheel will jump up and down and vibrate if it is out of balance. If assembly is in balance, there will be no vibration of the cloth or towel at any speed of the wheel.

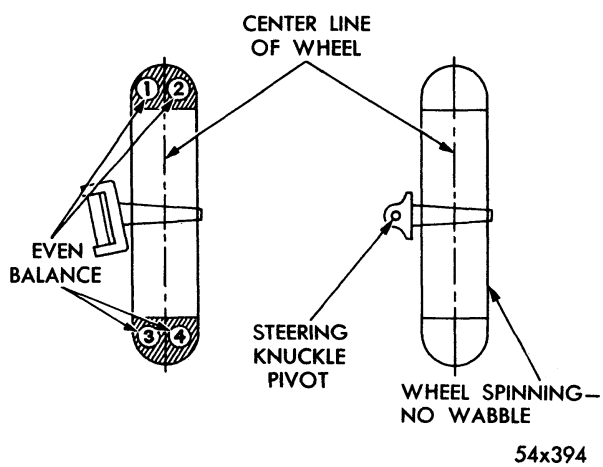

Fig. 4—Balanced Wheel and Tire Assembly

(3) If assembly is out of balance, mount on master drum of wheel balancer to determine the proper location and amount of weight needed, or wheel balancing equipment, which checks balance with wheel on car, can be used. With this type of equipment, the balancing mechanism is clamped to the wheel assembly. When the location and size of weights needed to balance wheel is determined, divide the amount and attach half of weight to inner rim of wheel and the other half to the outer rim.

(4) **To check the balance of rear wheels,** place jack under frame side rail about 12 inches forward of the rear spring front hanger. Raise one wheel at a time off the floor. Place a crumpled cloth or towel on fender above wheel. With the engine running and the transmission in direct drive, spin the wheels through speed ranges of 20, 30 and 40 miles per hour. **Do not exceed 40 miles per hour on the speedometer.** The balance is correct if the cloth or towel does not vibrate. If wheel and tire assembly is out of balance, check with wheel balancing equipment and attach weights as needed.

TUBELESS TIRES

8. DISMOUNTING TIRES

Remove wheel cover, loosen wheel hub bolts and raise wheel with jack. Remove the wheel and tire assembly, the valve cap and core, and deflate the tire. **When dismounting Tubeless Tires, do not use hammer or tire irons to loosen the sealing bead from flange.** If tire cannot be forced from rim with "foot pressure", use a commercial type bead breaker.

Make sure the tire irons do not have sharp or burred edges and use them with care to avoid pinching the tube (if so equipped), or damaging the sealing beads (Tubeless Tires). Start removal of outside bead at the valve, taking small "bites" with the irons. (Remove tube, if so equipped, or protector flap if dismounting tire from wire wheel.) Complete removal of tire in the usual manner.

9. TUBELESS TIRES

The Tubeless Tires provide longer tire life and added protection against blow-outs and punctures. A puncture can be repaired by using the repair plugs and other materials in the Tubeless Tire repair kit. For puncture repair procedure, refer to Paragraph 13. Since a puncturing object in a Tubeless Tire will not necessarily cause a leak, added puncture protection is made possible. In most cases, a nail or other object may remain in the tire without the tire going flat. Additional protection is also made possible because there is no inner tube to chafe and blow out.

10. MOUNTING TIRES

a. Wire Wheels (Conventional Tires)

Coat tire beads or raised portion of rim next to tube well with liquid soap or soft soap. Inflate tube sufficiently to round it out. Insert wheel into tire. If color mark is on sidewall of tire, make certain it is at the valve stem. Inflate

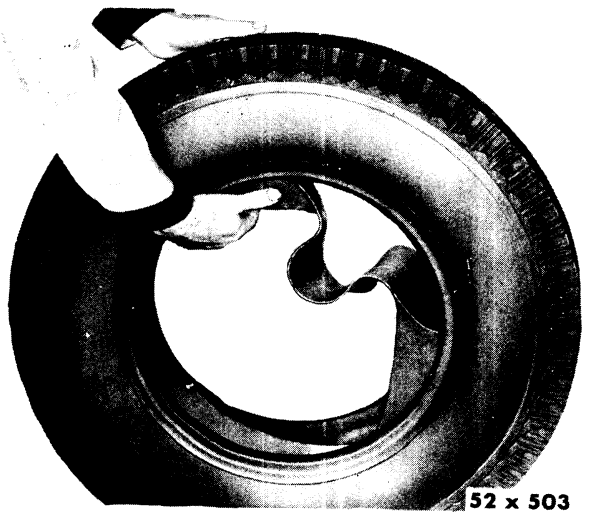

Fig. 5—Installing Tube Protector Flap in Tire (Wire Wheels Only)

tire, making certain that it is concentric on rim so that the beads will snap into place on rim flange. When installing tire on wire wheel, make sure the protector flap is installed in tire to cover the tube (Fig. 5).

b. Tubeless Tires

(1) Clean rim flanges and bead seats with wire brush or steel wool. Install valve stem from inside the rim, with the rubber step washer in place on valve. Install metal washer (cupped side down) and the hex nut on the outside. Tighten hex nut until rubber washer has expanded to the same size as the metal washer. **Do not tighten further. This will not improve the sealing and the rubber washer may become excessively distorted.** Make sure the valve core is removed.

(2) Apply MOPAR Ruglyde (or mixture of 12 parts water and one part liquid soap) to the tire beads to facilitate mounting. Mount the inside and outside beads in the usual manner. **Make sure the tire irons do not have sharp or burred edges and work with care to avoid damaging the tire beads.**

(3) After tire is mounted on rim and with the valve core out, apply a blast of air. If the beads do not contact both bead seats sufficiently to hold the pressure, spread the beads by constricting the centerline of the tread with a tire mounting band (Fig. 6) or a rope tourniquet (Fig. 7). To make tourniquet, use one or more turns of rope around the tire, depending upon the size of rope. Tighten by twisting rope with tire tool. At the same time, pound on the tread at various places to evenly distribute the tension.

(4) When the tire beads have moved out to contact the bead seats, inflation will take effect, and the mounting band or rope tourniquet can be removed. **Be sure to release tension on the mounting band or rope tourniquet when inflation takes effect and before pressure begins to build up.** Install valve core and inflate tire to recommended pressure. Test tire and wheel assembly for leakage.

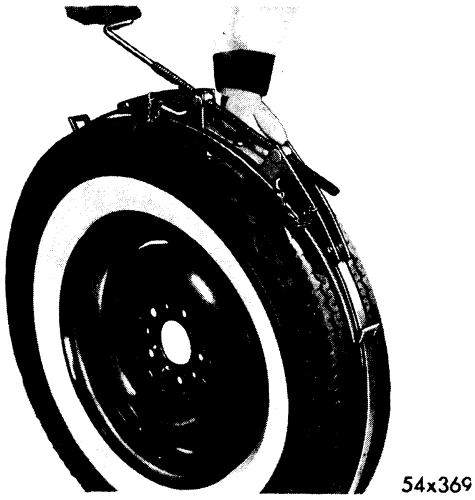

Fig. 6—Constricting Centerline of Tire with Mounting Band

11. TESTING THE TIRE AND WHEEL ASSEMBLY FOR LEAKAGE (TUBELESS TIRES)

NOTE

When testing for leakage, do not remove tire from rim.

Examine tire carefully for puncturing object. If tire is flat, inflate and listen for fast air leak. But, if air leakage is slow and cannot be heard, submerge assembly in water test tank and check for leakage.

If test tank is not available, apply soap solution, covering the surface of tire, the valve stem and the juncture of the tire and rim flange. A slow leak will be indicated by an accumula-

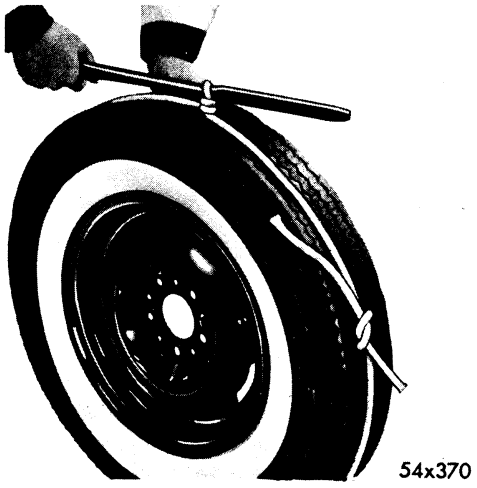

Fig. 7—Constricting Centerline of Tire with Rope Tourniquet

tion of soap bubbles. If the leak is fast, the air may blow through the soapy film, and bubbles and foam will not be formed. If no foam appears, re-apply the soap solution and watch for large bubbles.

12. LEAKAGE CAUSES AND CORRECTIVE METHODS

a. Simple Puncture

Repair as outlined in Paragraph 13.

b. Valve Leak

This type of leak is usually indicated by bubbles at the valve stem and hex nut after soap solution is applied at this point. Attempt to correct leak around valve stem by tightening the hex nut. If this does not correct the leak, dismount tire and replace the rubber washer. Make sure that the rim is clean around the valve hole. If a "snap-in" type rubber valve leaks, it must be replaced.

c. Rim Leaks

If the leak is at the top of the rim flange (between the flange and tire bead), mark location of leak on tire and rim and dismount tire. Conditions causing rim leakage are as follows:

Rusty Rim . . . Remove rust with scraper and finish the operation with wire brush or steel wool. Apply MOPAR Rubber Cement to tire and rim flange thickly. Mount tire to rim while cement is still wet.

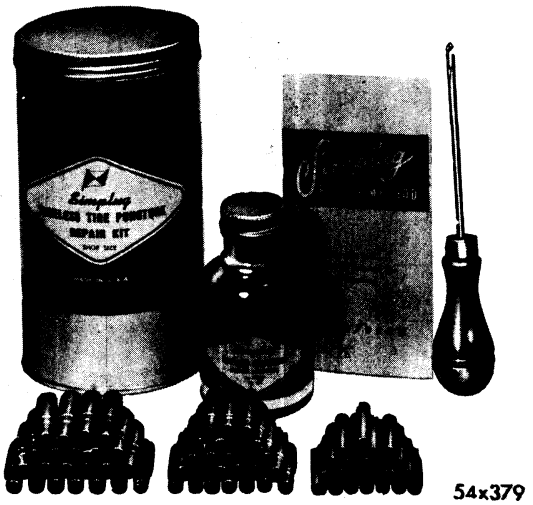

Fig. 9—Tubeless Tire Repair Kit

Foreign Material Embedded In Sealing Grooves Of Rim . . . Remove with wire brush or screw driver blade (Fig. 8). Apply MOPAR Rubber Cement thickly to the cleaned area and mount tire while cement is wet.

Bent Flange . . . Inspect flanges of wheel to determine if they are bent. A bent flange can be straightened if damage is not too severe.

Cracked Welds . . . Cover weld area with soap solution and check for pin hole leak. If leak is evident, replace wheel.

Heavy Rim Weld . . . A slow leak may result if rim weld has not been dressed down. Use a good, flat file to smooth off the weld in the flange area. Apply MOPAR Rubber Cement in the area to help make the seal.

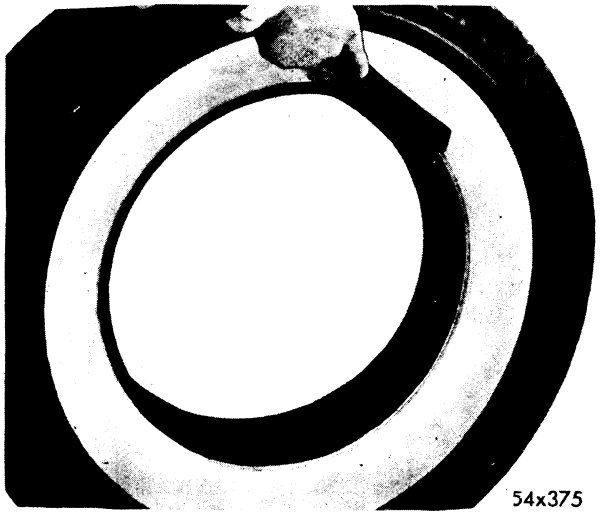

Fig. 8—Cleaning the Sealing Grooves

Fig. 10—Removing Puncturing Object

Fig. 11—Lubricating Puncture with Cement

Cracked Rim . . . A rim seldom cracks unless it has been welded or badly overloaded. Install a new wheel. **Do not try to repair a cracked rim.**

13. REPAIRING PUNCTURES (TUBELESS TIRES)

a. Tire On Wheel (Outside Method)

Simple punctures can usually be repaired with tire mounted on wheel, using the items in the repair kit (Fig. 9). The operation can best be performed when the tire is flat. But, it can be accomplished while tire is inflated.

(1) Remove the puncturing object (Fig. 10). Dip the needle inserting tool in the cement provided in repair kit and carefully probe in the hole to determine its direction (Fig. 11). After direction of hole is determined, continue to probe until the rubber around the hole is well covered with the cement.

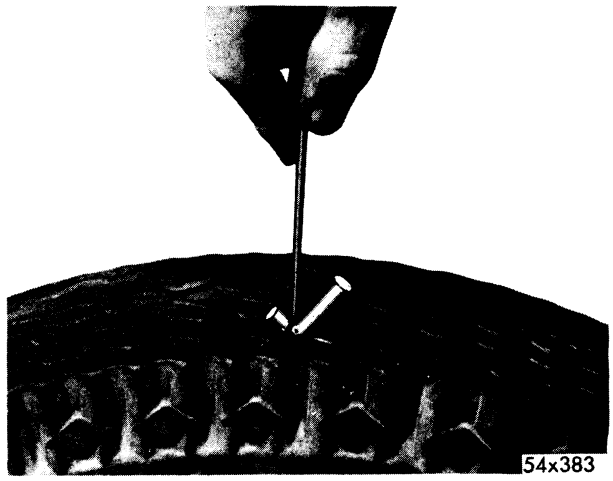

Fig. 13—Inserting Needle and Plug in Puncture

CAUTION

If the needle appears to be blocked, do not force it into hole. Otherwise, an additional hole may be made and the two holes will be difficult to seal. Twist and turn the needle to find the hole if needle does not insert freely.

(2) Select a repair plug according to the size of the hole. The repair plug should have a diameter about twice the size of the hole because the soft rubber will stretch when inserted with the needle. Roll the small end of the repair plug into the "eye" of the needle, 3/8 inch from the end of the plug (Fig. 12).

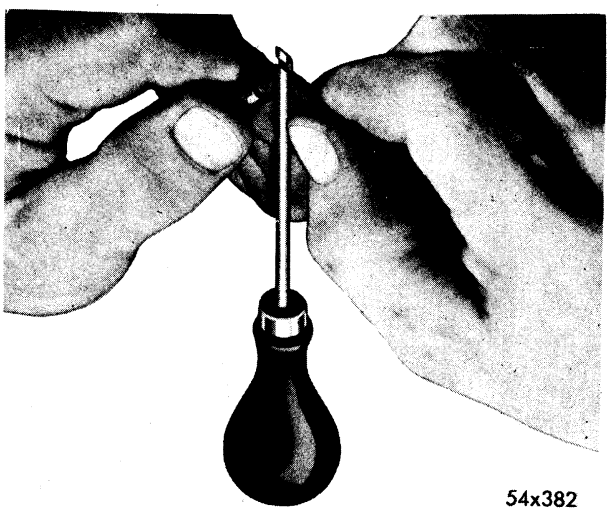

Fig. 12—Installing Plug in Needle

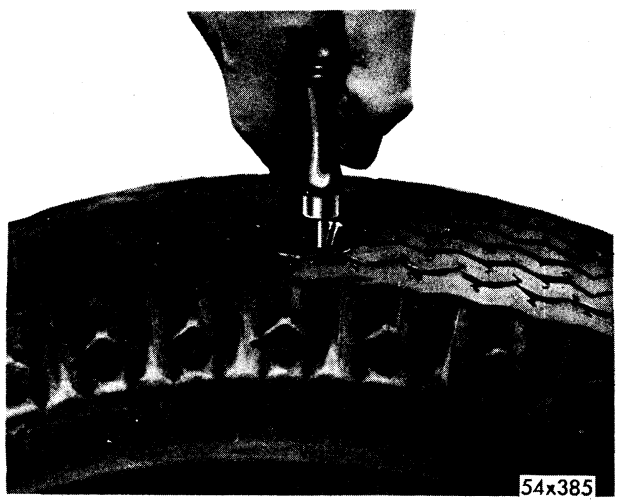

Fig. 14—Needle and Plug Fully Entered in Puncture

Fig. 15—Plug and Needle in Puncture (Sectional View)

(3) Dip the repair plug and needle into the cement and immediately insert in the hole with a firm, steady motion. If needle appears to be blocked, do not attempt to force it and the repair plug into the hole. Otherwise, additional damage may result. Carefully locate the direction of the hole and insert needle until short end of repair plug snaps through tire (Fig. 13, 14 and 15).

(4) Pull needle straight out of hole. As this is done, the plug will automatically unhook from the needle. Trim the plug about 1/8 inch above the tread of tire. Refer to Figures 16 and 17. Inflate tire, check for leakage and tire is ready for use.

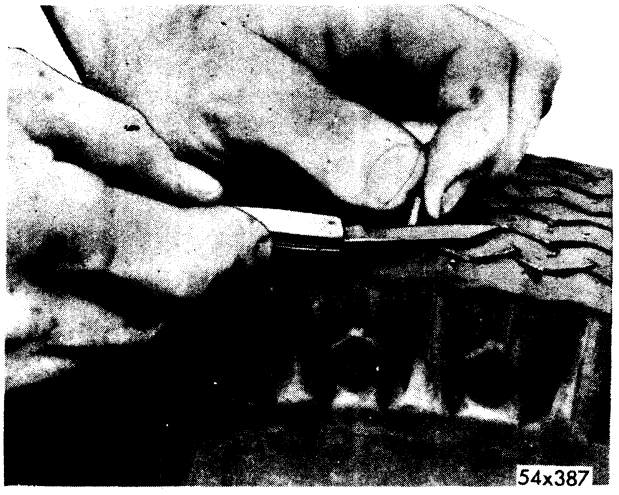

Fig. 16—Trimming Plug Approximately 1/8 Inch Above Tread

(5) The portion of the plug which protrudes slightly above the tire tread will wear down to the tread surface. The portion of the plug inside the tire will not affect normal operation.

b. Tire Off Wheel (Inside Method)

(1) When the tire has been punctured by an irregularly-shaped object, a slow leak may occur at the repair after an attempt has been made to seal the opening with a repair plug, as outlined in **a.** above. If such is the case, dismount the tire and repair as follows.

(2) **Preparation** . . . Remove tire from rim and place in a spreader. Trim the inside end of repair plug flush with the liner and buff the liner approximately one inch around the puncture. Leave the repair plug in hole to keep moisture out of the tire fabric. If a repair plug was not available, work a little extra repair gum into the hole before applying the patch. **It is not necessary to use cement to obtain good adhesion.**

(3) **Equipment** . . . Two types of equipment—the Match Patch and the Electric—are available for curing inside patches. The Match Patch, or powder burning type, depends upon the heat resulting from a slow fire. The Electric type has a "fuse" plug that automatically cuts off the power when the curing is completed. "C" clamps are used with both types of equipment to apply pressure during the curing process. **All inside patches used must be Hot Patches.**

Fig. 17—Repair Plug Correctly Installed

(4) **Applying The Patch** . . . Peel the strip from the rubber patch on the metal curing plate and center it over puncture. Follow instructions provided with the equipment used, apply pressure and cure the patch.

14. REPAIRING THE TREAD AND CARCASS

(1) Make sectional reinforcement, tread and sidewall repairs in the manner recommended for conventional tires (tires with tubes), with the following exceptions. Seal the patch and the buffed area of the liner with a 1/32 inch layer of cushion gum (Fig. 18).

(2) Before curing the repair in a section mold, apply a coating of tire and air bag lining cement to the serrated sealing grooves on both tire beads, over the area that will contact the bead plates. When the lining cement has dried, apply a coating of cold patching cement over it and let it dry.

(3) On white sidewall tires, apply a one inch strip of 1/16 inch gauge, white sidewall repair gum which prevents staining of the sidewalls of the tires (Fig. 19). These strips prevent distortion of the sealing grooves on the beads of the tire due to heat and air pressure during the cure.

(4) When prepared as described above, the strips can easily be pulled out after the tire has cooled (Fig. 20). The lining cement must be removed with a wire brush. The white sidewalls can be cleaned with buffing discs.

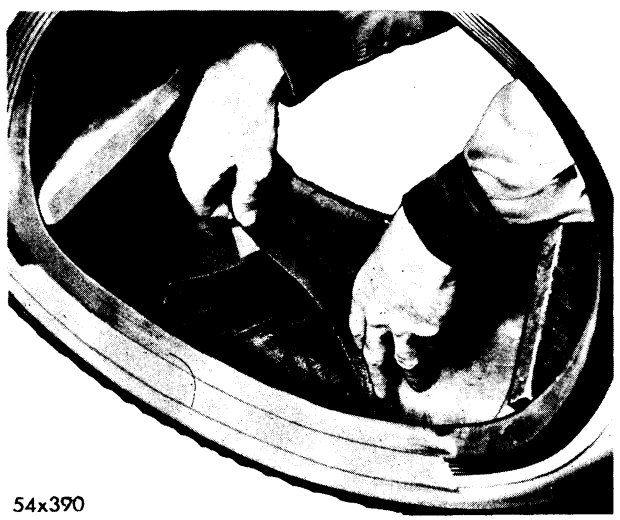

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Fig. 18—Sealing Liner with Gum

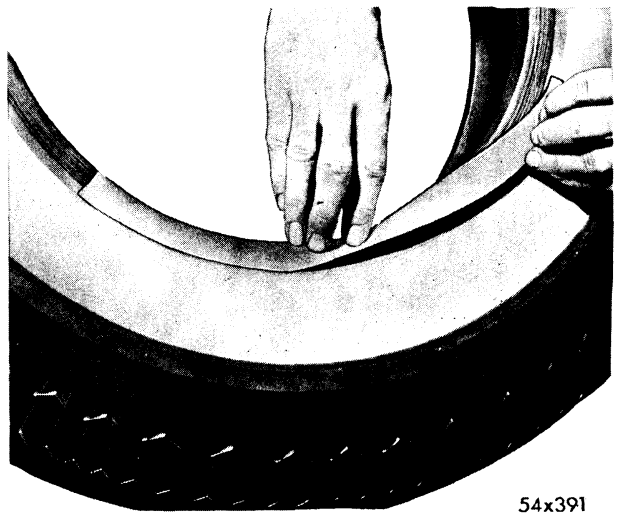

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Fig. 19—Covering Sealing Grooves

15. RETREADING TIRES

Tubeless Tires can be retreaded in the same manner as conventional tires (tires with tubes). Either the collapsable rim type curing tube, or the road rim type curing tube may be used. It is not necessary to protect the sealing grooves on the tire beads. The heat of the retreading cure is not sufficient to distort the sealing rings.

16. CHECKING TIRES AND WHEELS FOR LATERAL AND RADIAL RUNOUT

a. Radial Runout

(1) Radial runout is the difference between the high and low points on the tread of a tire. A tire with an abrupt change in radial run-

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Fig. 20—Removing Protective Strips

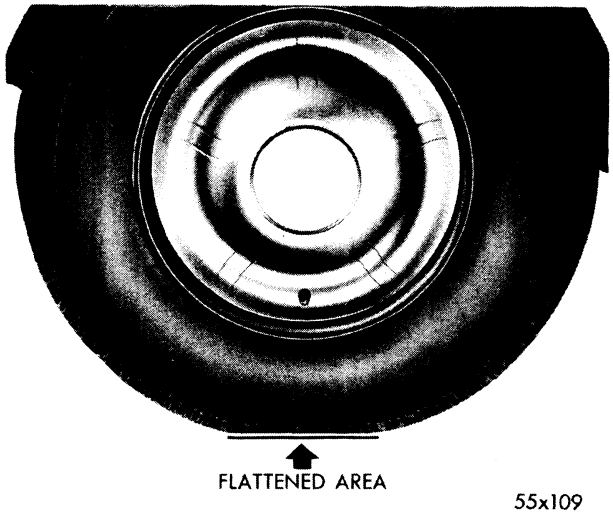

Fig. 21—Flattened Tread of Tire

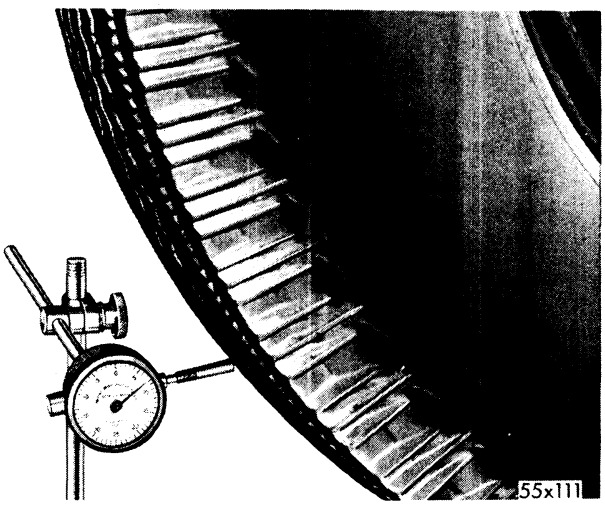

Fig. 23—Measuring Runout with Dial Indicator

out is more likely to cause tire thump than one on which the runout change is spread over a large portion of the tread.

(2) If a car has been standing for any length of time (Fig. 21), it should be driven for at least 5 miles to permit the tires to reach normal operating temperature and round out before the check is made. Otherwise, the flattened tread area where tire contacts floor may register as much as .030 inch lower than the area on either side of it. Check all tire and wheel assemblies, including the spare as follows:

(3) Raise car from floor with jack or lift. Mount a dial indicator on a firm surface so there will be no deflection. A dial indicator reading .100 inch may be used. Coat tire tread with soap solution so anvil of dial indicator will have smooth surface to bear against (Fig. 22). Measure radial runout at either of the center road ribs of the tread (Fig. 23). Slowly rotate the tire and note the high and low spots. Mark the highest spot on tire with "H" and the lowest spot with "L". Using the lowest spot (L) as a base, rotate tire to highest spot (H), marking the total reading at highest spot (H) in thousandths of an inch, such as .045 inch.

(4) If there are more than one low spot and one high spot on the tire, mark them where they occur in thousandths of an inch. These

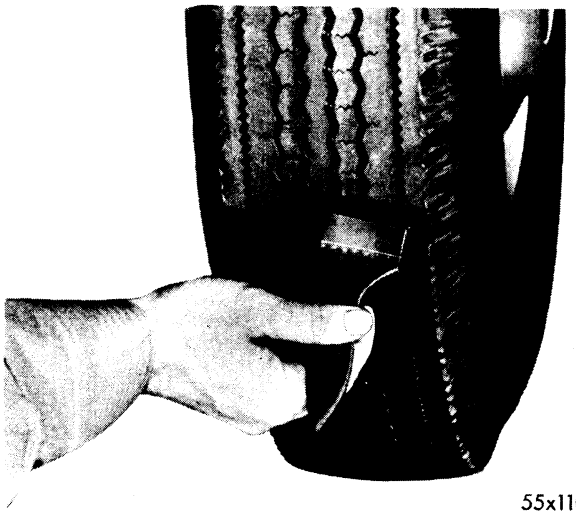

Fig. 22—Coating Tread with Soap Solution

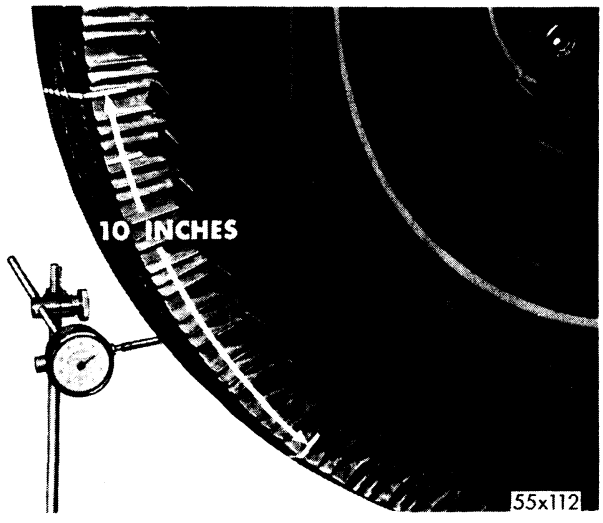

Fig. 24—Replace Tire if Runout Exceeds .050 Inch within 10-Inch Travel of Tread

markings will make it possible to determine whether or not a tire has sufficient runout in a limited area to justify replacement.

(5) A tire with runout in excess of .050 inch within a 10 inch travel of the tread should be replaced (Fig. 24). However, a total runout of .080 inch (Fig. 25) can occur without tire performance and tire life being affected.

b. Lateral Runout

Lateral runout should not exceed 1/16 inch (.0625). Mount the dial indicator so that the anvil will bear on the sidewall of the tire just below the rib (Fig. 26). **Do not place anvil on the wheel rim.** If lateral runout is excessive, check for the following causes: tire improperly mounted, bent or damaged flanges on the inner or outer section of wheel rim.

17. CLEANING WHITE SIDEWALL TIRES

NOTE

At the factory, a protective, water-soluble coating is applied to the sidewalls of white sidewall tires. This can be removed by washing the sidewalls with water only. Do not use gasoline or a wire brush to remove this coating!

A good kitchen cleanser and a stiff brush can be used to clean the sidewalls of white sidewall tires. Do not use gasoline or any kind of brush (wire, metal, etc.) that will scratch the sidewalls.

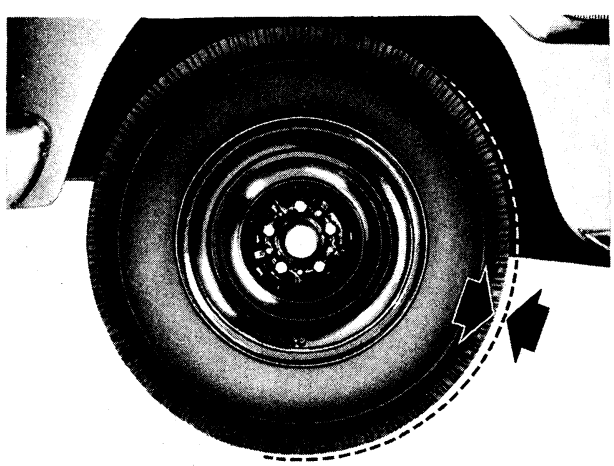

Fig. 25—Total Runout of .080 Inch Can Occur without Affecting Tire Performance

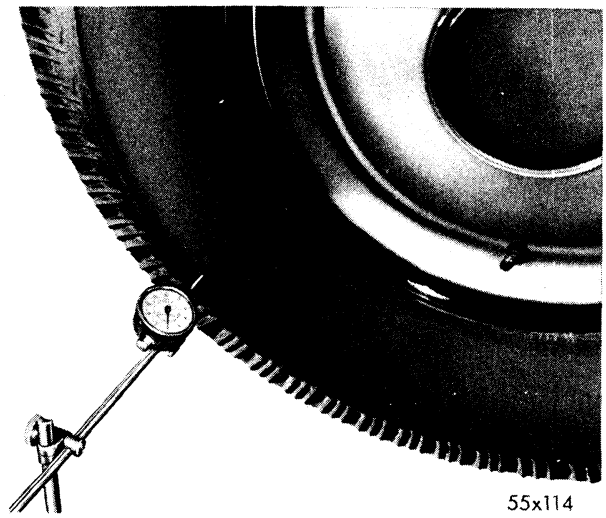

Fig. 26—Mounting Dial Indicator to Check Lateral Runout

18. RECOMMENDED TIRE PRESSURES

The tires must receive the proper care to insure maximum tire life. After tire pressure is checked, always make sure that the valve caps are tight. Under-inflation contributes to wear and causes excessive heat. Over-inflation causes excessive strain and as a result, the tire is easier to break or bruise. **Tire pressure should be checked at least once a week and adjusted to conform with the pressures listed below.**

24 pounds is the recommended COLD tire pressure.

27 pounds is the operating pressure for city driving. The tires, when checked on a car that has been driven at normal speed in the city, should have a built-up pressure of at least 27 pounds, summer and winter . . . 3 pounds over the cold tire pressure of 24 pounds.

29 pounds is the normal operating pressure for high speeds. The tires, when checked on a car that has been driven at high speed, should have a built-up pressure of at least 29 pounds, summer and winter . . . 5 pounds over the cold tire pressure of 24 pounds. Otherwise, the tires are under-inflated. **Never bleed built-up pressure in a tire.**

NOTE

Always use an accurate gauge when checking tire pressure. An inaccurate gauge can be in error as much as two or three pounds, which is approximately 10 per cent of the recommended tire pressure.

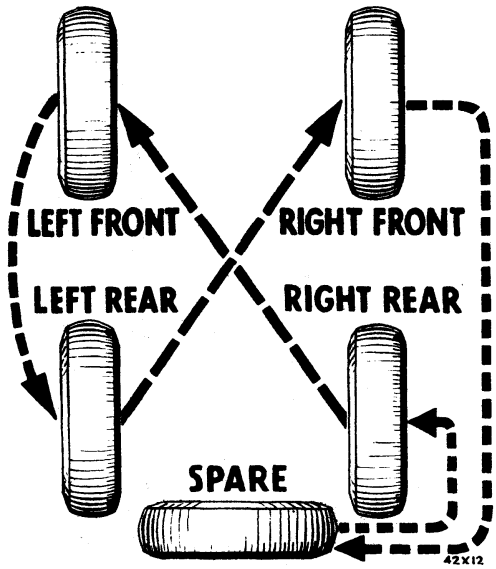

Fig. 27—Tire Rotation

19. TIRE ROTATION

Rotating tires at regular intervals of 3,000 miles is the only known method of controlling certain types of tire wear. Consequently, it is recommended that the tires be rotated at this mileage interval, as indicated in Figure 27. Tire life can be increased as much as 25 per cent by regularly rotating the tires, including the spare.

20. TIRE THUMP

Tire thump is a pounding action that occurs each time a tire causing this condition rotates. Tire thump is always evident at speeds below 45 miles per hour on a smooth road and is usually restricted to a small speed range. If the thump is slight and difficult to detect, the condition may be considered acceptable and tire life will not be affected.

When checking for cause of tire thump, inspect all tires, for uneven wear and make sure the beads of all tires are properly seated in the wheel rims. Inflate all tires to 50 pounds pressure. This will eliminate or reduce thump, if it is due to tire irregularities.

Drive the car on a smooth, blacktop road. If the thump still occurs while the tires are inflated to 50 pounds, the condition is being caused by factors such as, brake drum circle eccentric in relation to center line of axle; wheel retaining bolt circle eccentric in relation to the wheel rim, large patch in tire (Tubeless Tire), or boot in tire (tire with tube). However, if thump disappears when tires are inflated to 50 pounds pressure, make the following test.

Inflate all tires to 50 pounds pressure. Then, deflate one tire to 27 pounds and drive car on smooth, blacktop road. If thump appears, the deflated tire is at fault. Repeat test until all tires, including the spare, have been checked. Only one tire at a time should be deflated to 27 pounds pressure for testing. Reinflate the tire already tested before proceeding to the next tire. **If the thumping tire or tires cannot be detected by this test, consult a representative of the tire manufacturer.**

NOTE

Sometimes, a thumping tire will operate satisfactorily when changed from one side of the car to the other. This changes the direction of the tire's rotation. In severe cases of tire thump, it may be necessary to replace the tires in question.

SERVICE DIAGNOSIS

21. TIRE WEAR

Possible Causes:

a. Tires improperly inflated.

b. Failure to rotate tires at the recommended interval.

c. Incorrect toe-in or toe-out.

d. Incorrect camber.

e. Wheel wobble.

f. Worn king pins.

g. Sustained high speed driving.

h. Driving around corners too fast.

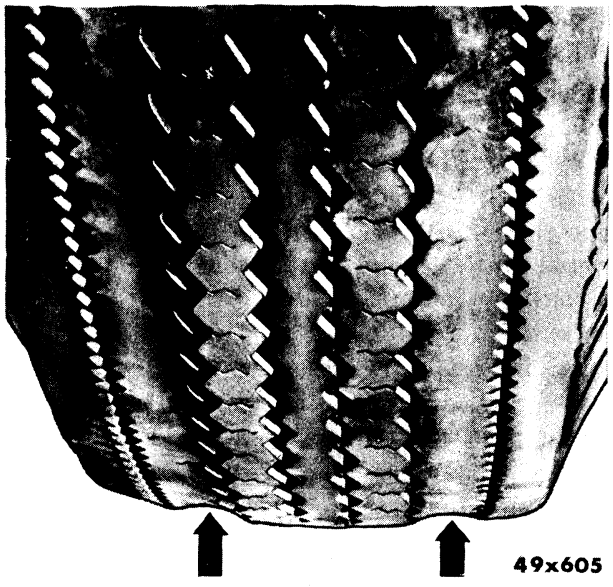

Fig. 28—Under-Inflation Wear

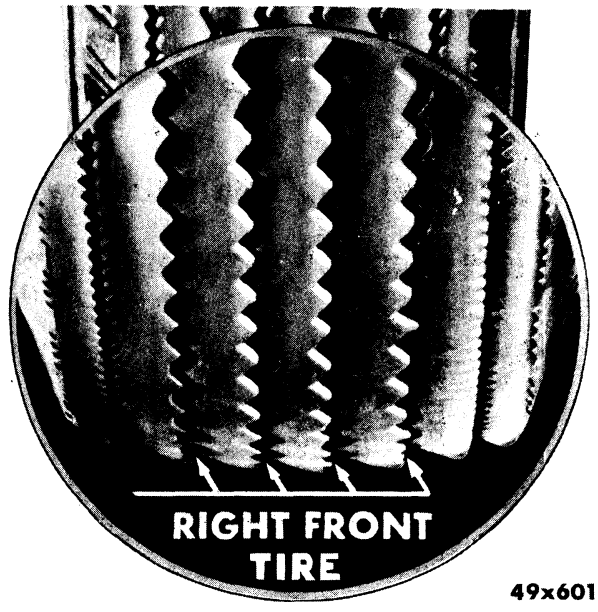

Fig. 30—Toe-In Wear

Remedies:

a. Inflate tires to proper pressure recommended in Paragraph 18. Refer to Figure 28. When tires are under-inflated, excessive wear occurs at the two tread ribs next to the inner and outer shoulder ribs. Wear occurs at center of tread when tire is driven over-inflated.

b. Spotty wear (Fig. 29), usually becomes evident on front tires when tires are not rotated every 3,000 miles.

c. Refer to Figures 30 and 31. Excessive toe-in or toe-out of front wheels affects the rate of tire wear more than any other factor. For corrective measures, refer to Section 1, Front Wheel Suspension.

d. Refer to Figure 32. Excessive positive camber will develop noticeable wear on the outer ribs

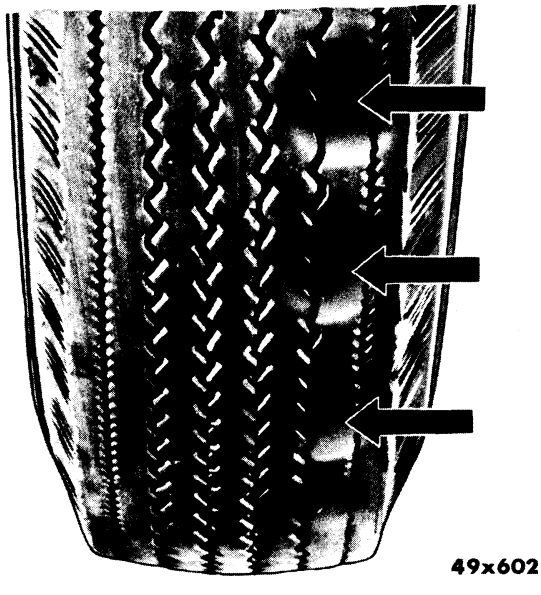

Fig. 29—Spotty Wear

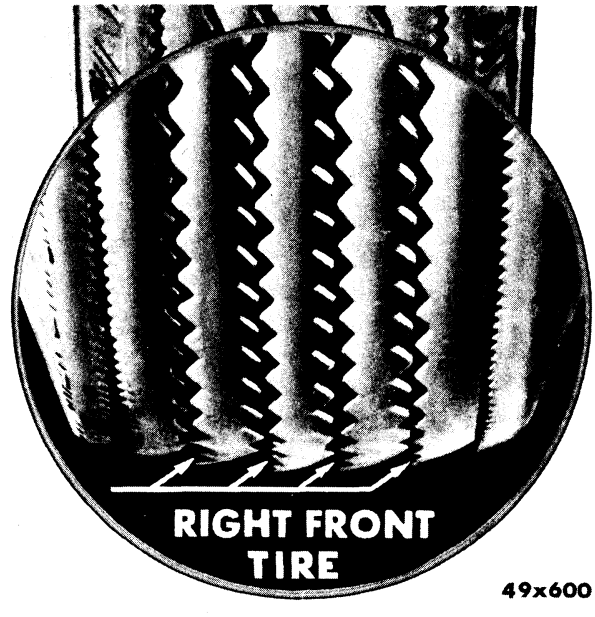

Fig. 31—Toe-Out Wear

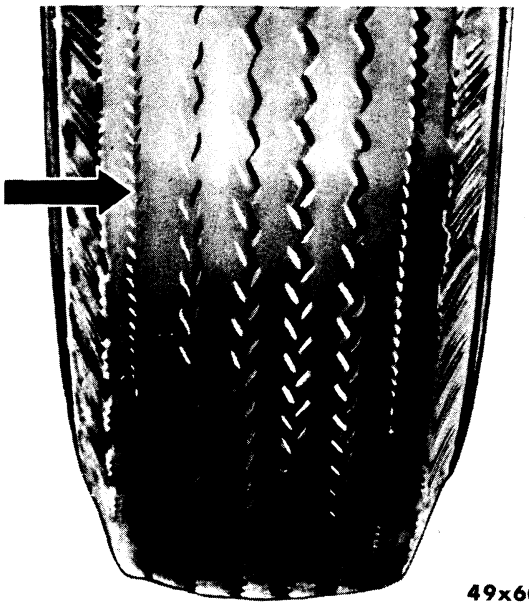

Fig. 32—Camber Wear

of the tires. Excessive negative camber will result in noticeable wear on the inside ribs. For corrective method, refer to Section 1, Front Wheel Suspension.

e. Straighten or replace wheel.

f. Replace king pins and bushings.

g. Advise owner to avoid sustained high speed driving.

h. Advise owner to avoid driving around corners too fast.