GROUP 22

WHEELS, BEARINGS AND TIRES

CONTENTS

DATA AND SPECIFICATIONS

Models	SC-1	SC-2	SC-3	SY-1
WHEELS				
Type		Steel Disc		
Rim		Drop Center—Safety Wheel		
Size	14 x 5½K Town & Country 14 x 6K	14 x 5½K **	14 x 6K Town & Country 14 x 6½K	15 x 6L
No. of Wheel Nuts		5		
Wheel Nut Torque		65 Ft.-Lbs.		
Stud Hold Circle	4½"	4½"	4½"	5½"
Stud Size	½"-20	½"-20	½"-20	9/16"-18
TIRES				
Type		Super Cushion Tubeless		
Size	8.00-14 Town & Country 8.50-14	8.00-14 ***	8.50-14 Town & Country 9.00-14	8.20-15
Ply		4 Std.		
TIRE PRESSURE—COLD				
Pounds—Rear	22 Town & Country 24*	22 ****	22 Town & Country 24*	24
Front	24 Town & Country 22	24	24 Town & Country 22	24

*With Town and Country fully loaded, increase rear tire **COLD** pressure to 28 pounds.
**SC-2—300H High Performance 15 x 6K Wheel.
***SC-2—300H High Performance 7.60 x 15 Tire Size.
****SC-2—300H High Performance 24 psi front and rear.

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The safety rim wheel has raised sections between the rim flanges and the rim well (Fig. 1). Initial inflation of the tire forces the beads over these raised sections. In case of a blowout, the raised sections tend to hold the tire in position on the wheel, thus permitting the driver to maintain better control of the vehicle until it can be brought to a safe stop.

Tubeless tires have a uniformly smooth bead contact area in order to form an air seal with the wheel rim. Any foreign matter, accidentally forced between the tire bead and rim, may cause an immediate air leak or the formation of rust which would eventually cause an air leak.

CARE OF TIRES

A protective, water soluble coating is applied to the white sidewalls of tires at the factory. Wash the sidewalls with water **only,** to remove this coating. **DO NOT USE GASOLINE OR OTHER SOLVENTS. DO NOT USE A WIRE BRUSH.**

After the car is in service, the whitewalls should be cleaned with soap or non-abrasive cleaners and (if necessary) a soft bristle brush.

Each time the car is lubricated, the air pressure of all tires should be checked to the following specifications. They should also be inspected for damage and embedded foreign matter at the same time.

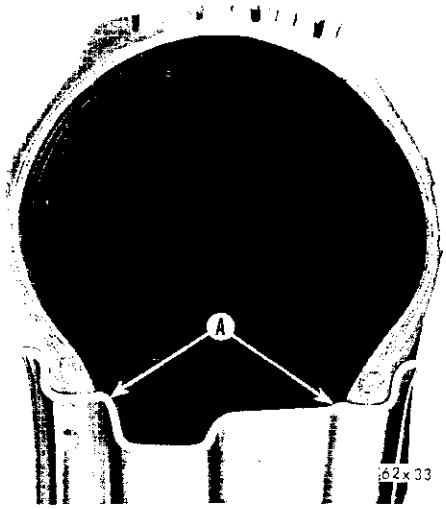

Fig. 1—Safety Type Rim

TIRE PRESSURES

Models	Cold Pressure Front	Cold Pressure Rear
Newport (Except Town & Country) ..	24	22
Newport (Town & Country)	22	24*
300	24	22**
New Yorker (Except Town & Country)	24	22
New Yorker (Town & Country)	22	24*
Imperial (All Models)	24	24

*Town & Country fully loaded, increase rear tire air pressure to 28 lbs.

**C-300H 24 p.s.i., front and rear.

TIRE ROTATION

With the increased road speeds and faster cornering, abnormal tire wear may exist on certain wheels. By rotating tires regularly, the tires that show the abnormal wear may be placed in another location where the rotation of the wheel is reversed. This will tend to correct the wear pattern and lengthen tire life. Tire rotation should be done at 4,000 miles when new and rotated every 8,000 miles thereafter.

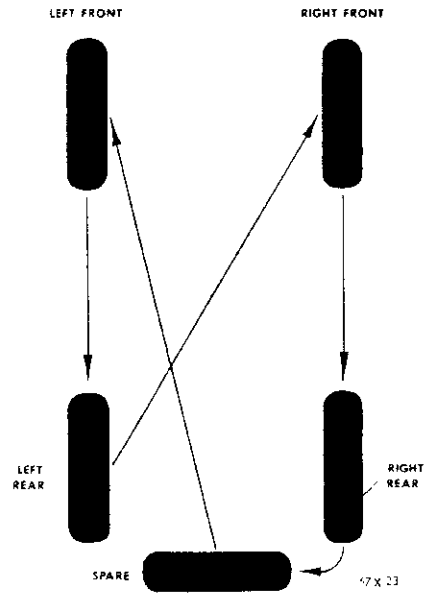

Fig. 2—Tire Rotation

Spare tires age and deteriorate almost as much as tires in use therefore, the rotation (Fig. 2) including the spare tire should be done periodically according to recommendations in order to obtain maximum life of all tires.

WHEEL BALANCE

Static balance is equal distribution of the weight of the wheel and tire around the spindle, in such a manner that the wheel assembly has no tendency to rotate by itself, regardless of its position. A wheel that has a heavy spot is statically out of balance, resulting in a "hopping" or bouncing action.

A wheel and tire, to be in dynamic balance, **must** first be in static balance and also be in balance from side to side when the wheel is at right angles to the axis of rotation. A wheel not in dynamic balance tends to wobble or shimmy.

Correction for static unbalance is made by first finding the location of the heavy spot, then adding sufficient weight to counterbalance it at a location opposite the heavy section. A dynamic balancer is then used to add equal and opposite weights on the inside and outside rims to produce a smooth running wheel at all speeds.

CHECKING WHEEL AND TIRE RUNOUT

Wheels and tires may be checked for both radial and lateral runout. Radial runout (eccentricity) is the difference between the high and low points on the tread of the tire; while lateral runout is the "wobble" of the wheel and/or tire.

Prior to checking wheel and tire for runout, the face of the hub at the mounting bolts should be inspected and checked for runout. The hub should be free to rotate but tight enough to prevent wobble. The car should be driven a short distance before the check is made so that "flat-spotting" of the tire from being parked, does not affect the runout measurement.

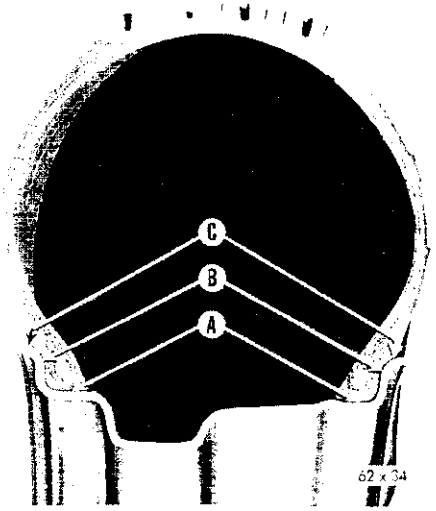

Fig. 3—Runout Checking Areas "A" and "B"

Place a dial indicator against the tire tread face and rotate the wheel slowly to check radial runout. This should not exceed .060 inch. Position dial indicator against side of tire to check lateral runout readings. If radial runout exceeds .060 inch, mark the relative location of the tire on the wheel. Remove the tire and check wheel radial runout at point "A" (Fig. 3). Radial runout at this point on the wheel should not exceed .050 inch. If wheel has less than .050 inch runout, reinstall tire at 180° to its original location on the wheel and recheck runout. If radial runout still exceeds .060 inch, the tire must be replaced. Place a dial indicator against the side of tire in position to check lateral runout (wobble of tire and wheel assembly. Position dial indicator against side of tire to check lateral runout. The dial indicator should be attached to a firm base so that it will be held steady while taking the runout readings. If lateral runout is indicated to be in excess of .100 inch, mark the tire and wheel to show original location. Remove the tire and check lateral runout of wheel at point "B" (Fig. 3). If wheel runout does not exceed .050 inches, reinstall tire and wheel at 180° to its original location and recheck lateral runout of the assembly. If runout still exceeds .100 inch, or if tire is lumpy, replace tire. If wheel runout exceeds .050 inches, it should be trued-up or replaced.

CAUTION

Under no circumstances should point indicated by "C" be used for checking runout as this metal has been sheared in the manufacturing process and as a result is not an even surface.

REPAIRING LEAKS

In case of slow air leakage, the puncturing object may be seen or the escaping air can be heard. At times, it may be necessary to apply a soapy water solution to the tire or to submerge the tire and rim in water in order to locate the leak.

Leaks, between the tire and wheel, require the removal of the tire. Leaks in the tire can often be repaired without removing the tire, using the rubber plug method as follows:

(1) Remove the puncturing object from the hole.

(2) Carefully probe the hole to determine its size and direction as well as to clear out any foreign matter.

(3) Using the repair needle, thoroughly coat the hole with cement.

(4) Select a repair plug at least twice the diameter of the hole.

(5) Roll the small end of the plug into the eye of the needle, 3/8 inch from the end of the plug.

(6) Dip the plug and the needle in the cement and immediately insert it in the hole in the tire. When the small end of the plug snaps through the tire (Fig. 4) it will pull out of the needle as the tool is pushed to full depth.

(7) Remove the repair needle, then cut off the plug 1/8 inch above surface of the tire.

DISMOUNTING AND MOUNTING TIRES

Any tools used for dismounting and mounting tires must be smooth, free from sharp edges or projections which could damage the tire.

a. Removal

(1) Remove the valve core and completely deflate the tire.

(2) Carefully force both tire beads over the safety raised rim section, into the drop-center section.

NOTE: Tire Bead Breaker, Tool C-3455A should be used to force the tire beads over the raised rim section. However, the car jack may be used as an alternate method. See Figure 5.

(3) While holding one bead in the center section, pry the other bead off the wheel. Remove the remaining bead to complete the removal.

Fig. 4—Plug and Needle Inserted in Tire

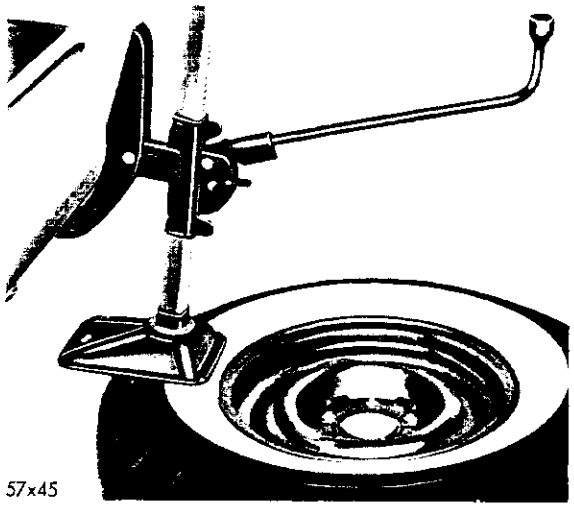

Fig. 5—Removing Tire with Car Jack

b. Cleaning and Inspection

(1) Eliminate any rust inside the wheel rim and any roughness in the butt weld in the tire contact area.

(2) The sealing areas of both tire beads must be smooth and uniform.

c. Installation

(1) Apply a mild soap and water solution to both tire beads.

CAUTION

Do not use gasoline or any inflammable solvent on the tire beads.

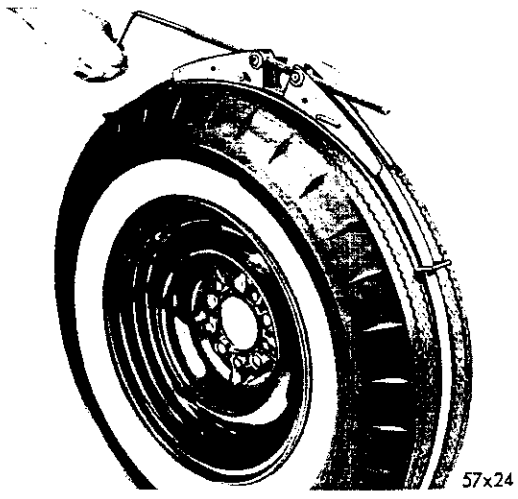

Fig. 6—Expanding Tire Beads (Mechanical Tool)

(2) Place one bead over the rim of the wheel, working the entire bead into the low section of the rim.

(3) Place the other bead over the wheel rim and work the entire bead into the low section of the rim.

(4) While applying the air through the valve stem, strike the tread sharply with a rubber hammer to force both beads outward over the raised rim section. It may be necessary to use bead expander Tool C-3440 (Fig. 6) or a rope tourniquet (Fig. 7).

(5) When both tire beads are fully seated, adjust air pressure to specifications.

FRONT WHEEL BEARINGS

Front wheel bearing lubricant should be cleaned out and new lubricant used at 32,000 mile intervals or at time of a normal brake reline. Depending upon the manufacturer, short fiber wheel bearing lubricants contain either sodium or lithium soaps, either of which is satisfactory. Since the two types do not mix satisfactorily, lubricant should never be added to that already in the bearings.

a. Removal

(1) Remove the wheel cover. Remove grease cap, bearing adjusting nut, and slide the wheel, hub and drum assembly off the spindle.

(2) Drive out the inner oil seal and remove the bearing cones.

b. Cleaning and Inspection

(1) Clean the hub and drum assembly and the bearings in kerosene, mineral spirits or other similar cleaning fluids.

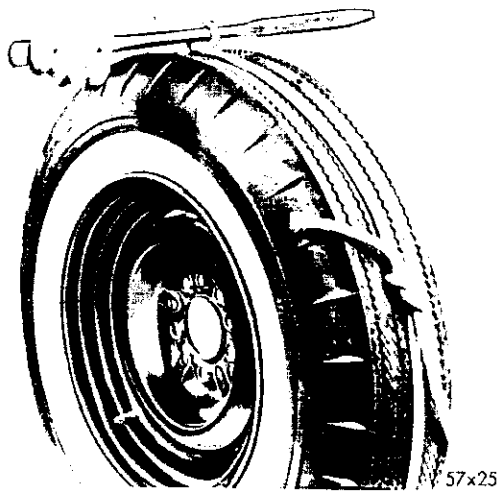

Fig. 7—Expanding Tire Beads (Rope Tourniquet)

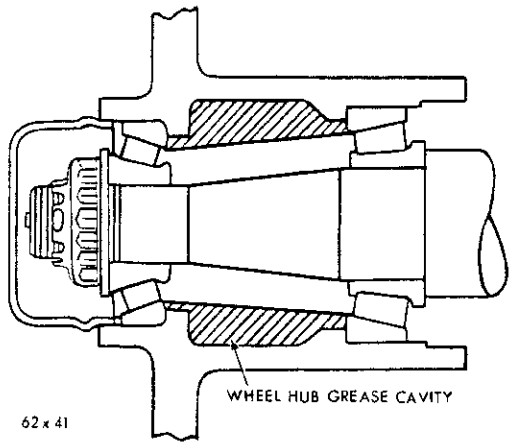

Fig. 8—Fill Cavity with Wheel Bearing Lubricant

(2) Examine the bearing cups for pits, brinell marks or other imperfections. If cups are damaged, drive them from the hub with a soft steel drift positioned in the slots in the hub.

(3) Bearing cup areas in the hub should be smooth, without scored or raised metal which could keep the cups from seating against the shoulders in the hub.

(4) The cones and rollers should have smooth, unbroken surfaces without brinell marks. The ends of the rollers and both cone flanges should also be smooth and free from chipping or other damage.

c. Installation

(1) If the bearing cups were removed, start the

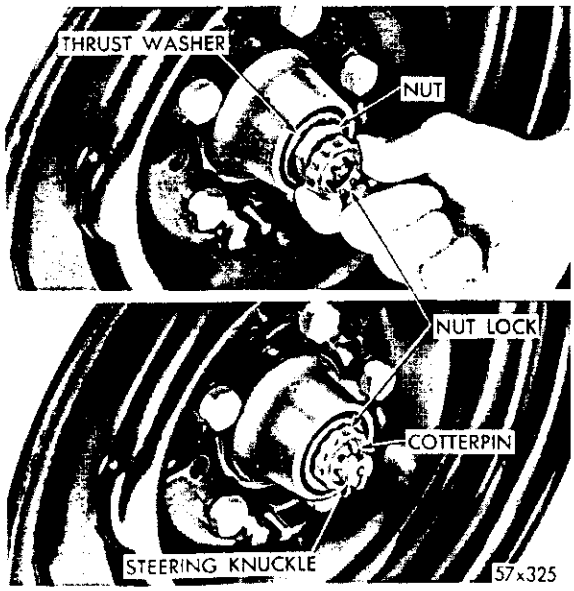

Fig. 9—Adjusting Front Wheel Bearings

new cups into the hub evenly, driving them flush with the hub using a soft steel block and hammer. Seat the cups against the shoulders in the hub, using a soft steel drift and hammer.

(2) Fill the hub cavity with wheel bearing lubricant, as shown in Figure 8. Lubricant should be even with inner diameter of bearing cups.

(3) Force lubricant between bearing cone rollers or repack with a suitable "Bearing Packer".

(4) Install inner cone and a new oil seal with lip of seal facing inward. Use a wood block to drive seal flush with the end of the hub.

(5) Clean the spindle and install the wheel, hub and drum.

(6) Install the outer bearing cone, flat washer and adjusting nut.

d. Adjustment

(1) Tighten the wheel bearing adjusting nut to 90 inch-pound torque while rotating the wheel.

(2) Position the nut lock on the nut with one pair of slots in line with the cotter pin hole (Fig. 9).

(3) Back off the lock and adjusting nut to the next slot.

(4) Install the cotter pin.

NOTE: The resulting adjustment should be zero to .003" end play.

(5) Clean the grease cap, coat the inside with wheel bearing lubricant (do not fill) and install.

SERVICE DIAGNOSIS

Condition	Possible Causes	Corrections
Side Wear (Figs. 10 and 11)	(a) Outside (all wheels) excessive cornering speed.	(a) Driver instructions.
	(b) Outside (Front) excessive positive camber.	(b) Adjust camber to specification.
	(c) Inside (Front) excessive negative camber.	(c) Adjust camber to specifications.
	(d) Outside and inside—under inflation or vehicle overload.	(d) Inflate tires to specified pressure and check vehicle for overload.
Center Ribs Wear (Fig. 12)	(a) Over-inflation.	(a) Adjust tire pressure to specifications
Sharp Rib Edges (Fig. 13)	(a) Inside edges—excessive toe-in.	(a) Adjust toe-in to specifications.

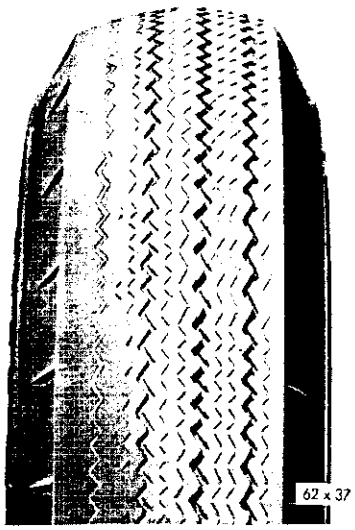

Fig. 10—Camber Wear

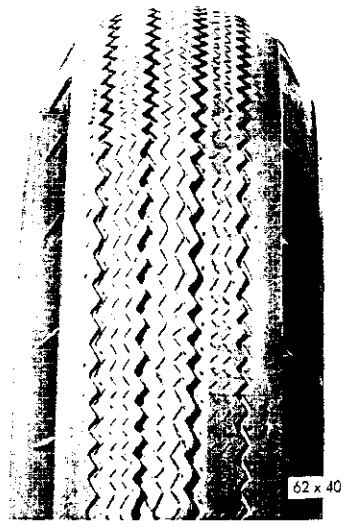

Fig. 11—Under-Inflation Wear

Fig. 12—Over-Inflation Wear

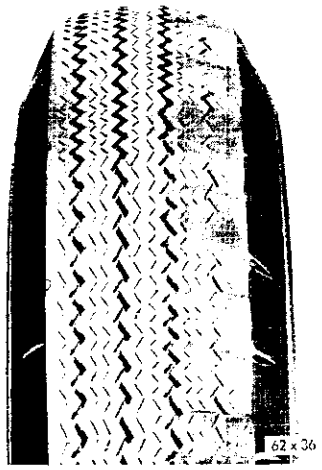

Fig. 14—Spotty Wear

SERVICE DIAGNOSIS—CONT'D.

Condition	Possible Causes	Corrections
	(b) Outside edges—excessive toe-out.	(b) Adjust toe-in to specifications.
	(c) One tire sharp inside, opposite tire sharp outside—bent arm or knuckle.	(c) Inspect for bent arm or knuckle, replace parts as required.
Abrasive Roughness Across Tread	(a) Excessive cornering speed.	(a) Driver instructions.
Heel and Toe Wear	(a) High speed driving.	(a) Driver instructions.
	(b) Severe use of brakes.	(b) Driver instructions.
Uniform Spotty Wear (Fig. 14)	(a) Lack or tire rotation.	(a) Rotate tires at 8,000 mile intervals or more frequently if required.
	(b) Wheels out of balance.	(b) Balance wheels.
Irregular Spotty Wear	(a) Wheels out of balance.	(a) Balance wheels.
	(b) Under-inflation.	(b) Inflate tires to specified pressure.
	(c) Loose or worn parts.	(c) Inspect front suspension for worn parts replace as required.

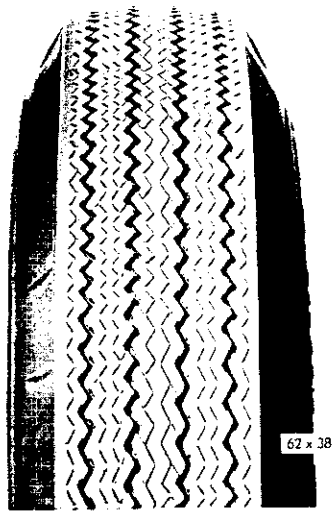

Fig. 13—Toe-In or Toe-Out Wear