

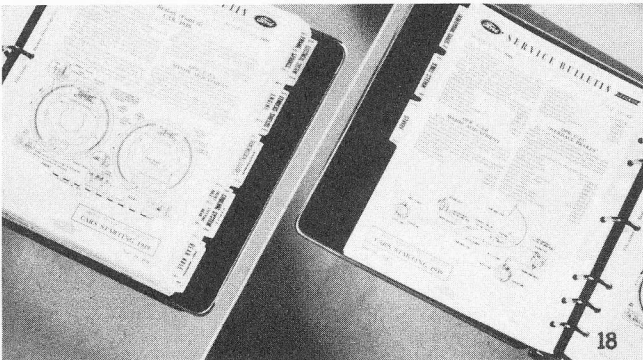


HYDRAULIC BRAKES



FLOORMAN: New exchange brake shoes cost approximately seventy-five cents each, whereas the drums cost approximately seven dollars and a half each for the rear ones, or about twenty-eight dollars for the set.

OWNER: Well, if my shoes are apt to cut the drums, replace them.



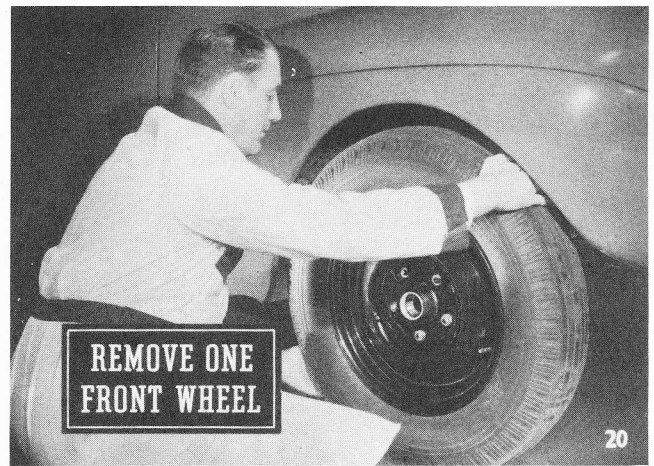
FLOORMAN: Three times out of four, a minor adjustment is all that is needed; nevertheless we cannot take the chance of adjusting brakes that should be replaced. The procedure we use has been worked out to protect both our reputation and your interests.

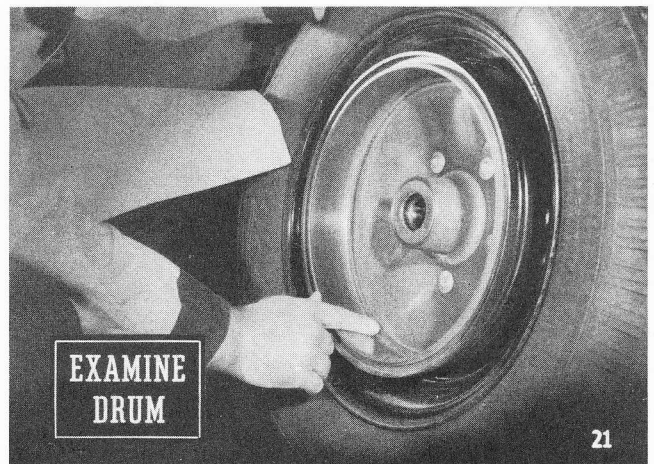
**PASSENGER CAR
HYDRAULIC BRAKES
OPR. C-2-A
MINOR ADJUSTMENT**

19

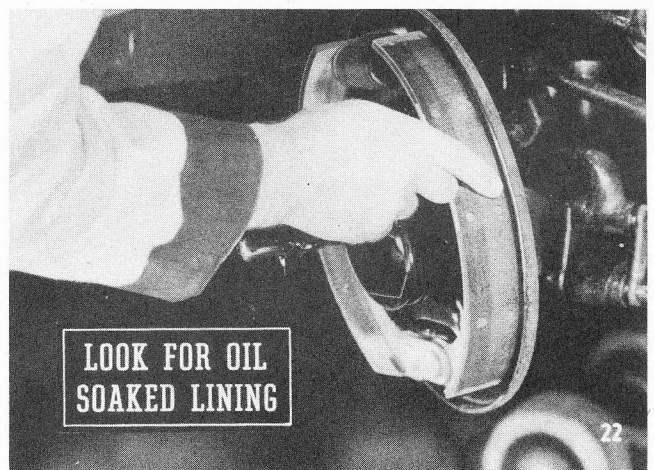
Here's the procedure he has been telling this owner about. A minor adjustment for these brakes consists of those operations necessary to compensate for normal lining wear and will reestablish the pedal reserve.



Jack up the front of the car or truck and remove a front wheel for inspection of the brakes. This requires only a few minutes of time and will remove the possibility of attempting to adjust brakes that should not be adjusted.



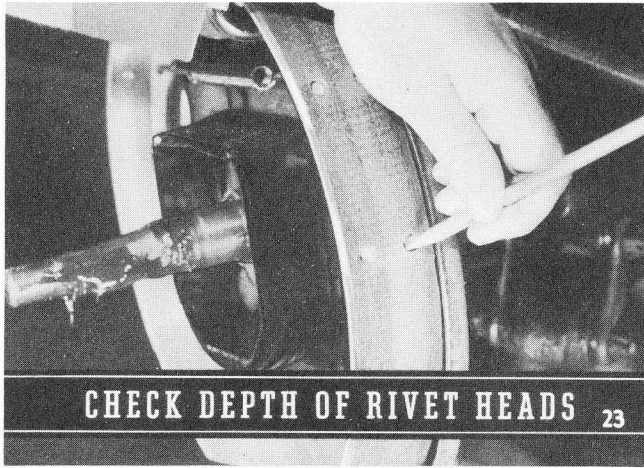
Examine a brake drum. If one is scored, it is a good plan to remove all drums to determine if any will require replacement.



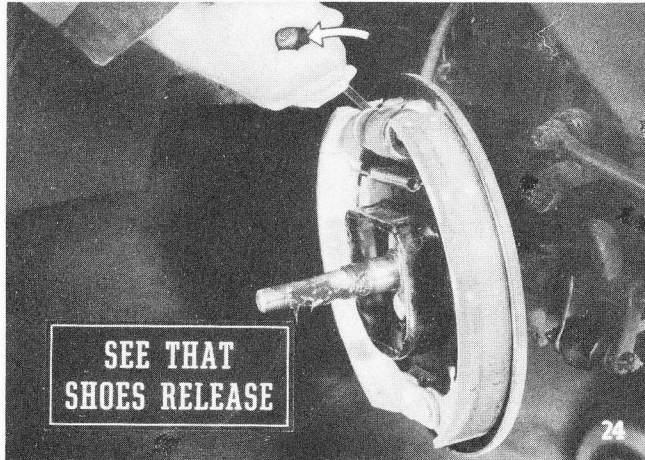
Examine the brake lining. Do not attempt to adjust brakes if linings are oil-soaked or badly worn.



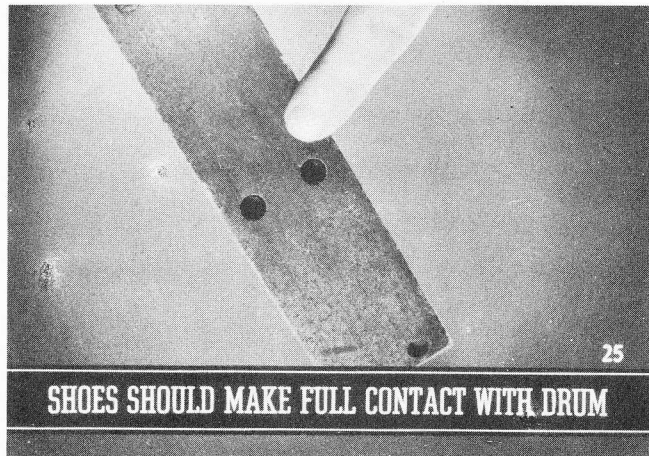
SERVICE INSTRUCTION



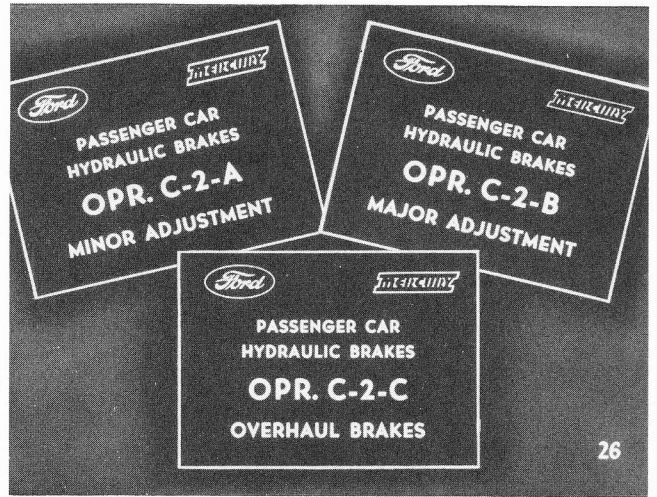
Check the depth of all rivet heads below the surface of the brake lining. If the rivet heads are closer than 1/32 of an inch from the braking surface, linings should be replaced to prevent scoring of the drums.



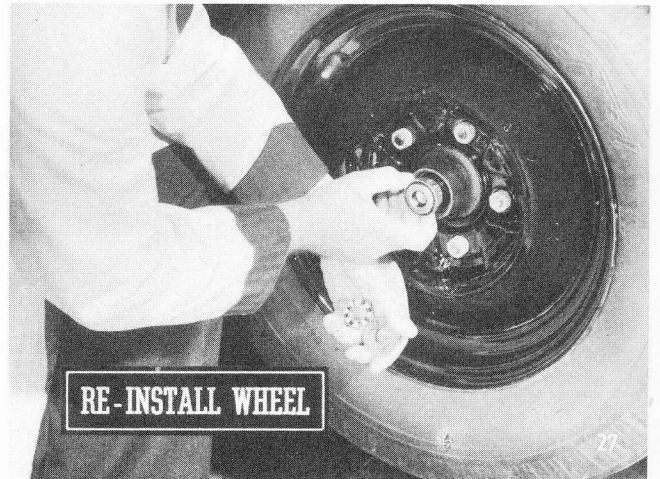
Expand the brake, and observe the action, noting particularly whether the shoes return to their correct release position.



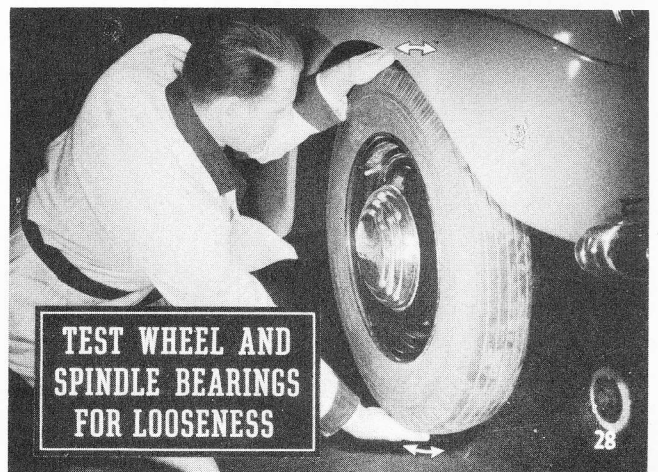
Examine the lining to determine if the shoes are making full contact on the drum.



From examination of the brakes at one wheel, recommend one of the following operations: Minor Adjustment; Major Adjustment; Brake Overhaul.



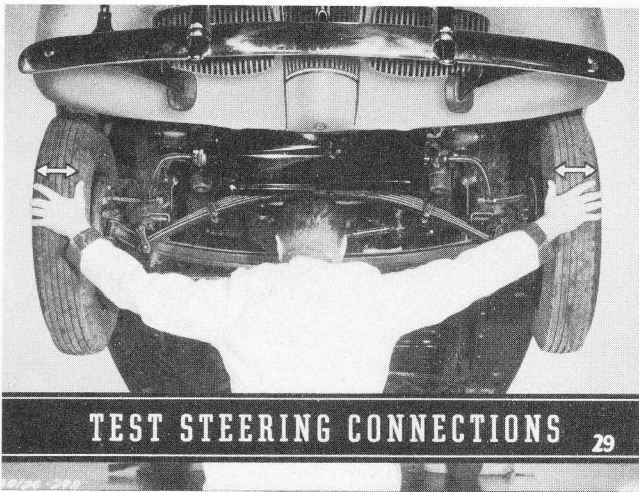
To continue with the Minor Adjustment, reinstall the wheel and run the car on a free wheel type hoist or set the car on four horses.



Test the front wheel and spindle bearings and

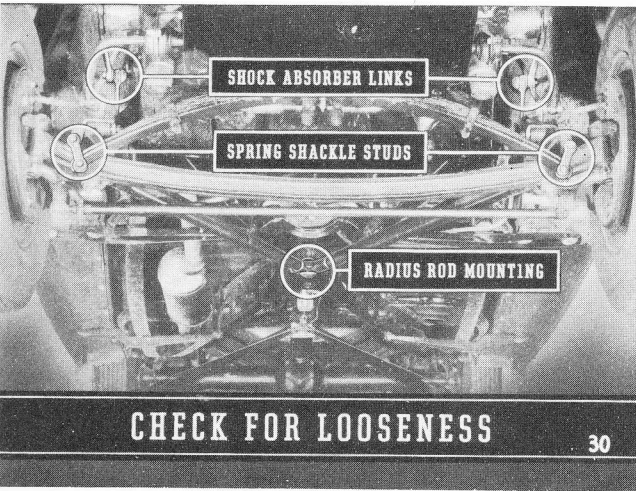


HYDRAULIC BRAKES



TEST STEERING CONNECTIONS 29

steering connections for excessive looseness.



CHECK FOR LOOSENESS 30

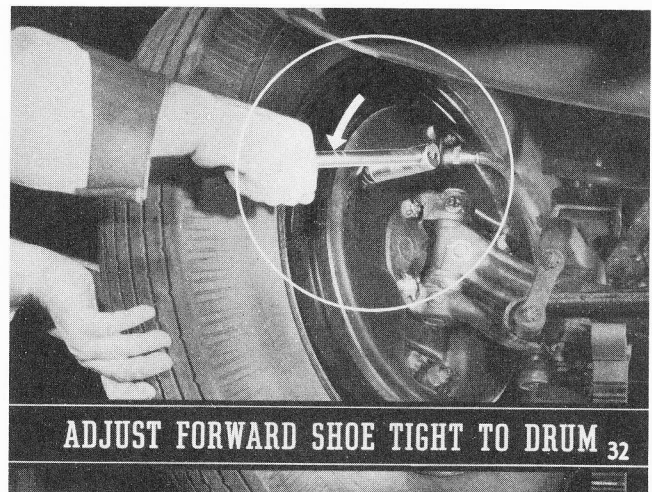
Check spring shackle studs, shock absorber links and radius rod mountings for play.



PEDAL AND LEVER WORK FREE

31

Make sure the pedal and hand lever work freely and that the linkage snaps back sharply when the pedal and hand lever are released.



ADJUST FORWARD SHOE TIGHT TO DRUM 32

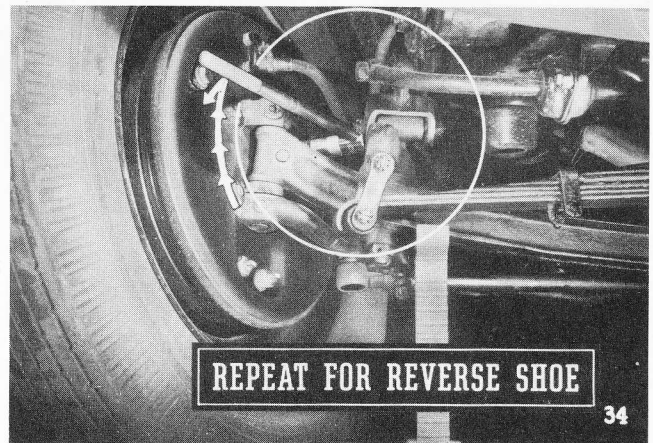
With the wheels installed and free of the floor, turn the cam for the forward shoe until the shoe is tight against the drum.



ESTABLISH MINIMUM CLEARANCE

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Then just barely move the cam back until the wheel turns freely by hand. Because this is a cam adjustment the slightest movement will establish clearance. No set amount of clearance is specified for these brakes as the least amount possible is the most desirable.



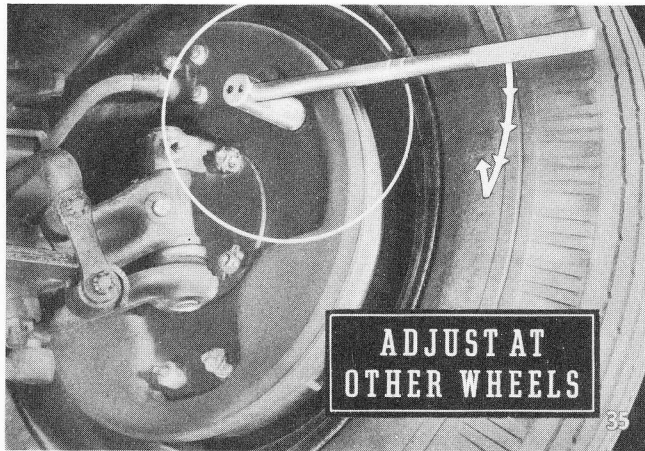
REPEAT FOR REVERSE SHOE

34

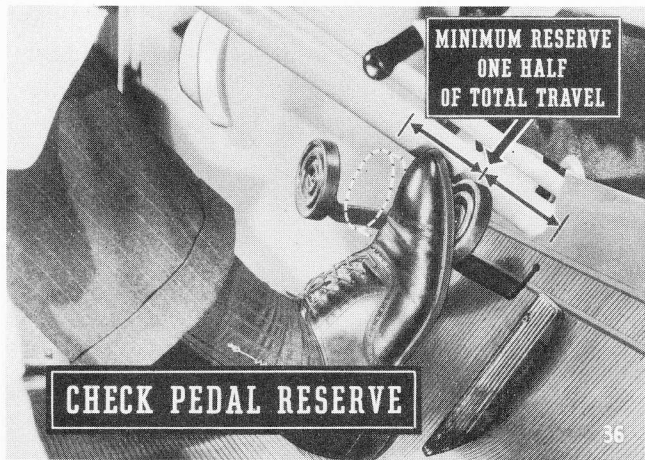
Make the same adjustment on the reverse shoe.



SERVICE INSTRUCTION



Adjust both shoes at the other three wheels.



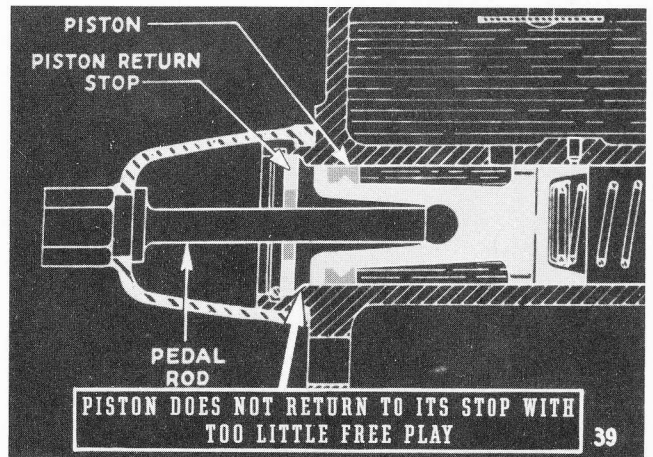
Now check the pedal reserve. If the pedal reserve is less than half of the total travel distance but feels firm, the clearance is still excessive; repeat the previous operations, being more careful in backing off the cams. If, however, the pedal feels spongy, there probably is air in the hydraulic system and bleeding will be necessary.



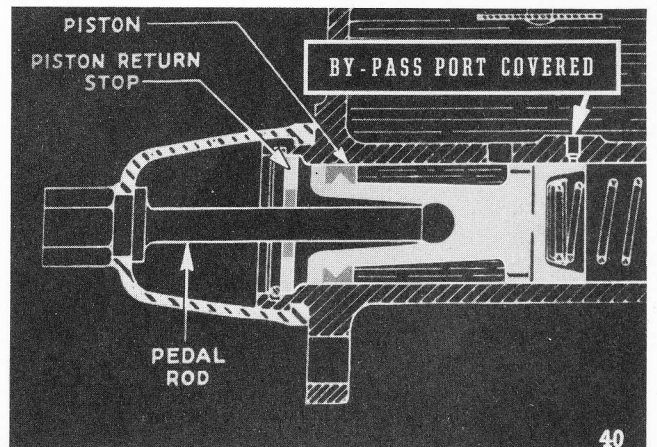
Check the free play of the pedal. The correct adjustment is when the pedal has from one-quarter inch to one-half inch free movement measured at the pedal pad.



The adjustment of the pedal rod is important on all units equipped with hydraulic brakes, in that excessive free play of the pedal represents a loss of pedal reserve.



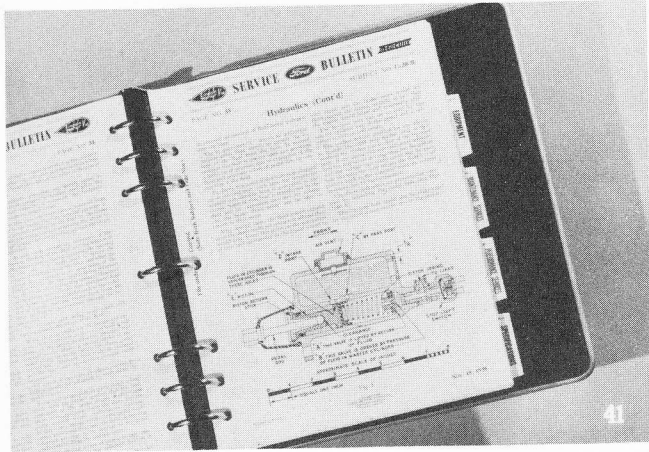
On the other hand too little or no play at the pedal pad might result in the master cylinder piston resting on the pedal rod rather than on the stop provided.



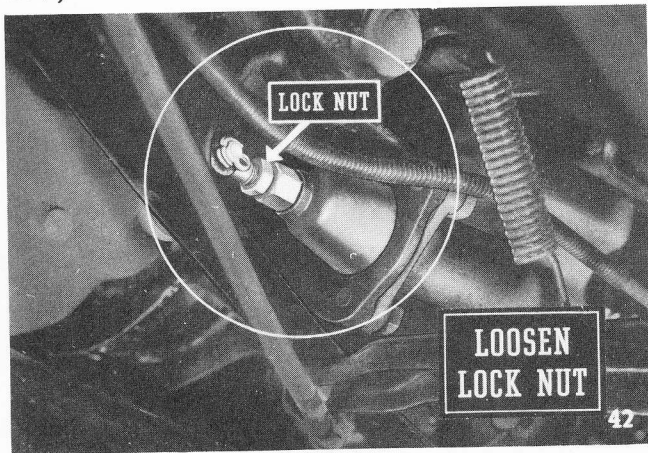
This would mean that the release position of the master cylinder piston would be toward the rear and there would be a possibility of the rubber cup covering the by-pass port.



HYDRAULIC BRAKES



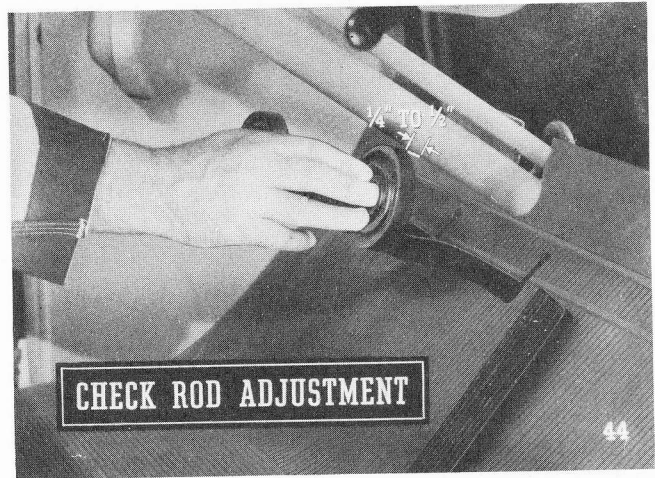
This would have the effect of causing the brakes to seize as outlined in the Service Bulletin under Subject C-20-B.



It is not necessary to remove the clevis pin from the pedal rod in order to adjust the pedal play on any of the models. First loosen the lock nut on the pedal rod.



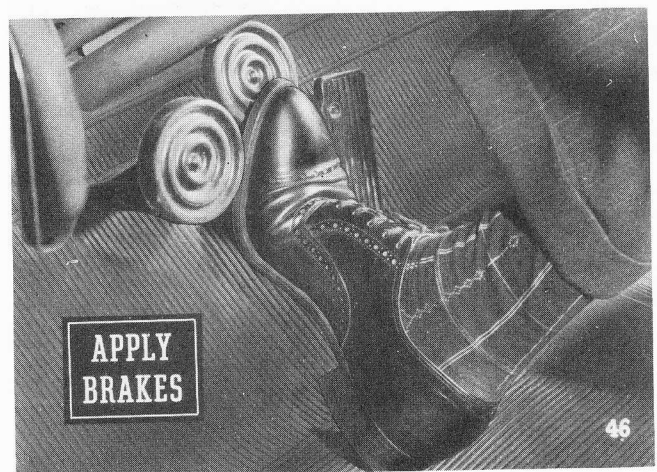
Adjust the length of the pedal rod by turning the back section of the rod until the correct amount of clearance is obtained. This can be determined by feeling the free movement of the pedal while you are still under the car. Retighten the lock nut.



As a final operation, check the free movement you have established at the pedal pad. This free movement should be not less than one-quarter inch—and not more than one-half inch—at the pad.



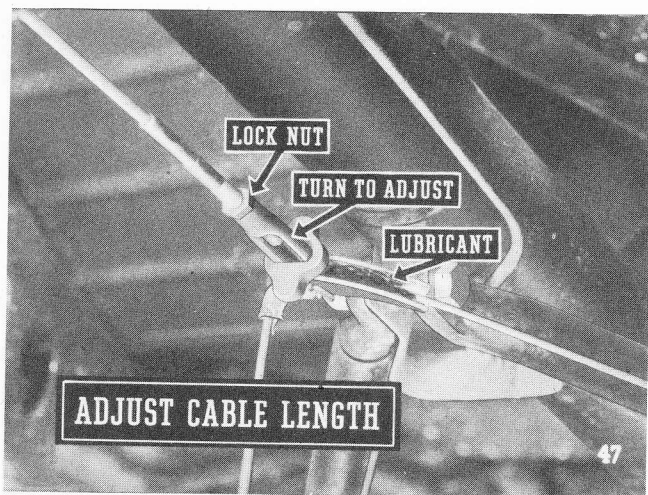
To check the hand brake, set the hand brake lever in full release position.



By means of a pedal jack or with an assistant, apply just sufficient pressure to the brake pedal to hold the rear brake shoes firmly against the drums.



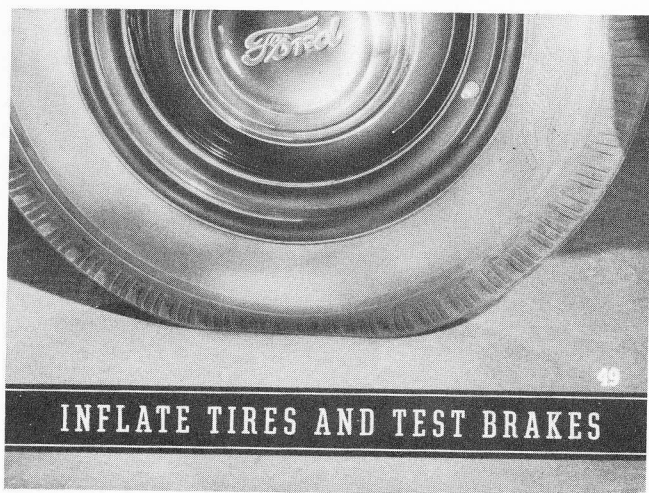
SERVICE INSTRUCTION



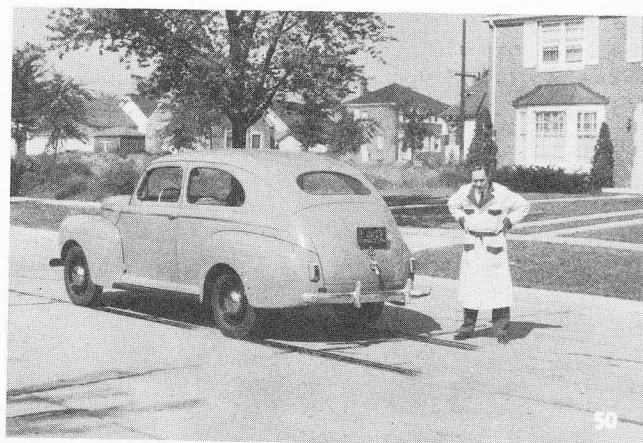
Take up all slack in the hand brake cable and adjust.



Adjustment is correct when, with the foot brake applied as above, a one-half inch movement of the end of the hand brake lever is possible before all slack is taken up.



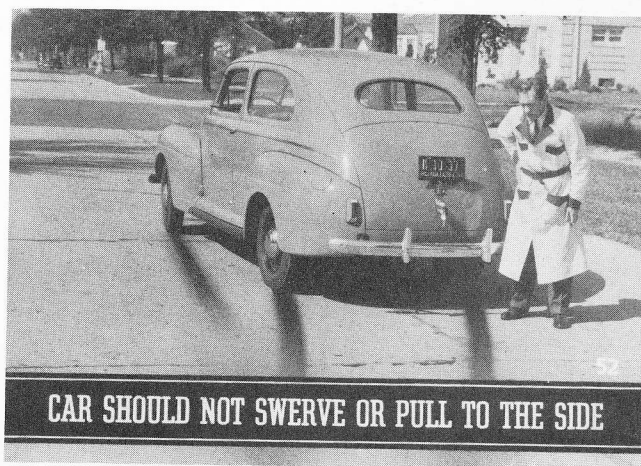
You are now ready for a road test. Make sure all tires are properly inflated and make several stops on clean, dry pavement.



Make an emergency stop from a speed of twenty-five miles per hour. All four brakes should be equal; this can be determined by the marks made by the tires on the pavement.



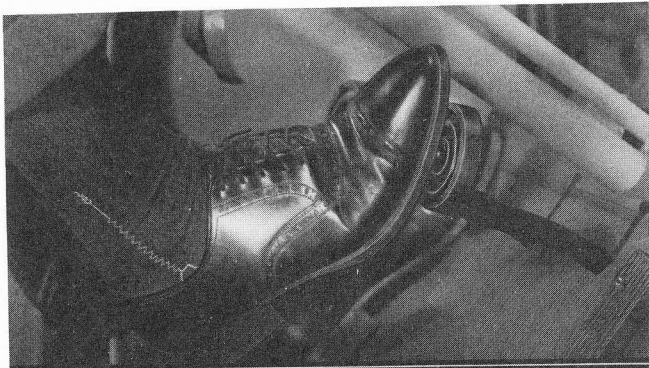
The condition of the tire tread is an important factor and a perfect adjustment is impossible if one or more of the tires is worn smooth or if the inflation pressure is incorrect.



During the foregoing tests, the car should not swerve or pull to either side, nor should the brake pedal have the feel of "pulling away" from your foot.

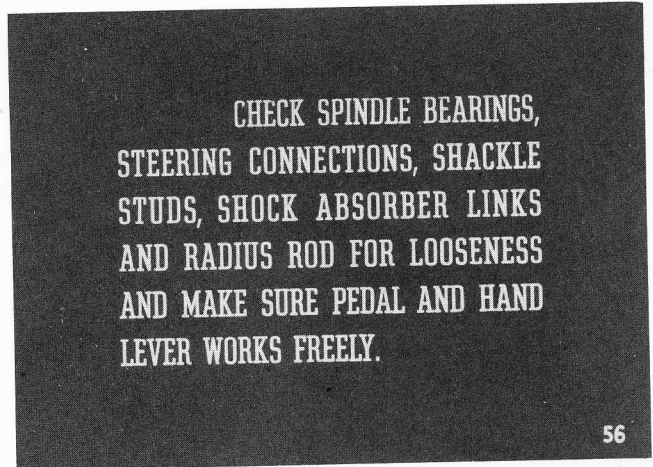


HYDRAULIC BRAKES



PEDAL SHOULD SNAP BACK 53

The brake pedal should have a "live" feel, that is, it should snap back when the foot is removed. This completes the minor adjustment procedure.



CHECK SPINDLE BEARINGS, STEERING CONNECTIONS, SHACKLE STUDS, SHOCK ABSORBER LINKS AND RADIUS ROD FOR LOOSENESS AND MAKE SURE PEDAL AND HAND LEVER WORKS FREELY.

56

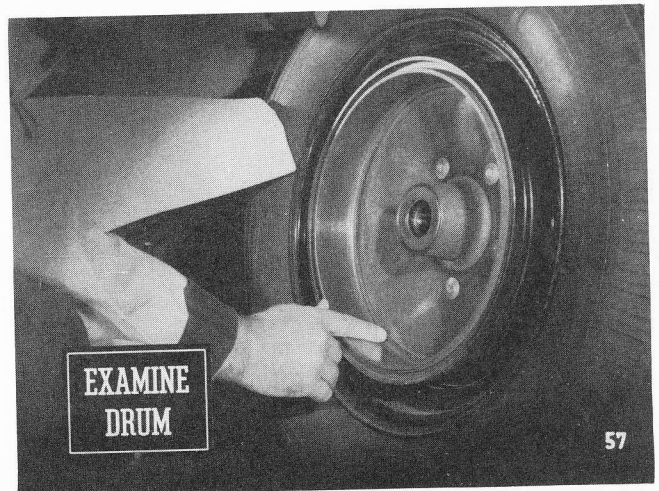
Check spindle bearings, steering connections, shackle studs, shock absorber links and radius rods for looseness and make certain the foot pedal and hand lever work freely.

**PASSENGER CAR
HYDRAULIC BRAKES
OPR. C-2-B
MAJOR ADJUSTMENT**

54

When from an examination of the brakes or from their performance on the road, it is apparent that a minor adjustment will not suffice, a Major Adjustment should be made. A Major Adjustment of these brakes consists of the following operations which should be performed in the order given.



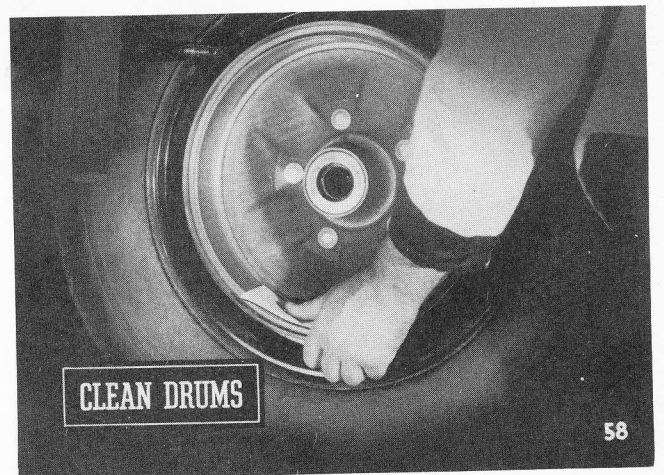
**EXAMINE
DRUM**

57

If the drums are badly scored, or are run out of true excessively, satisfactory brake operation will not be possible.



REMOVE ALL WHEELS 55



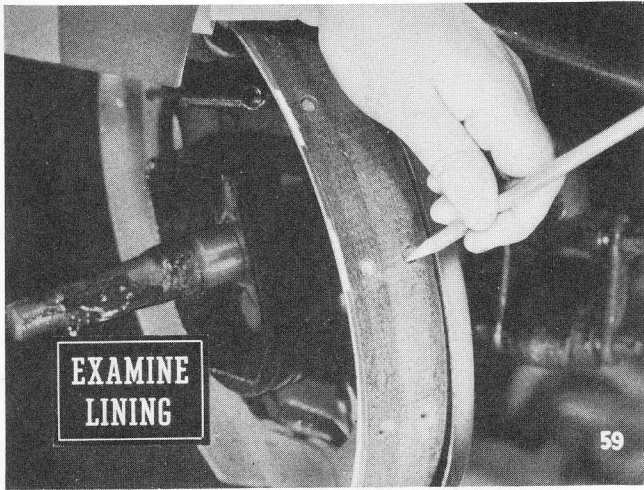
CLEAN DRUMS

58

Clean the brake drums thoroughly, using kerosene and fine sandpaper if necessary.



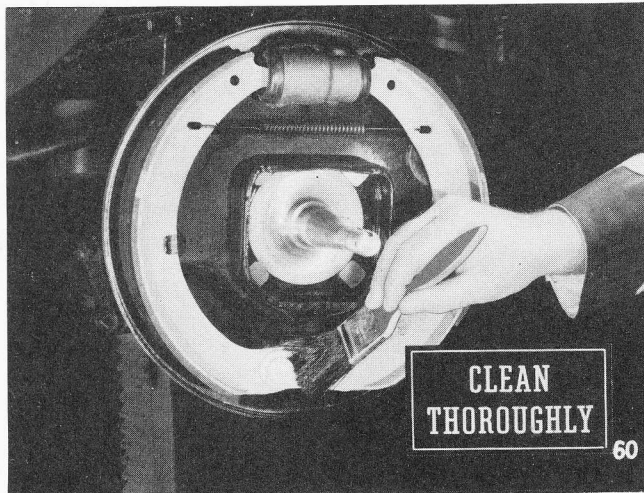
SERVICE INSTRUCTION



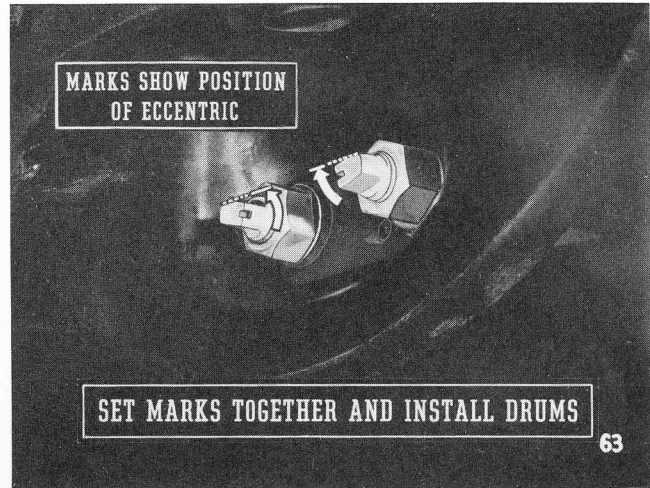
If brake linings are worn to within one thirty-second of an inch of rivet heads, or if they are oil-soaked, they should be replaced.



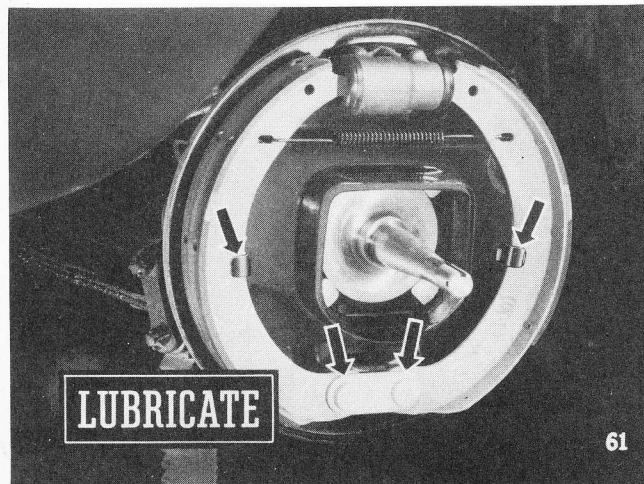
Turn the cams so as to obtain maximum clearance.



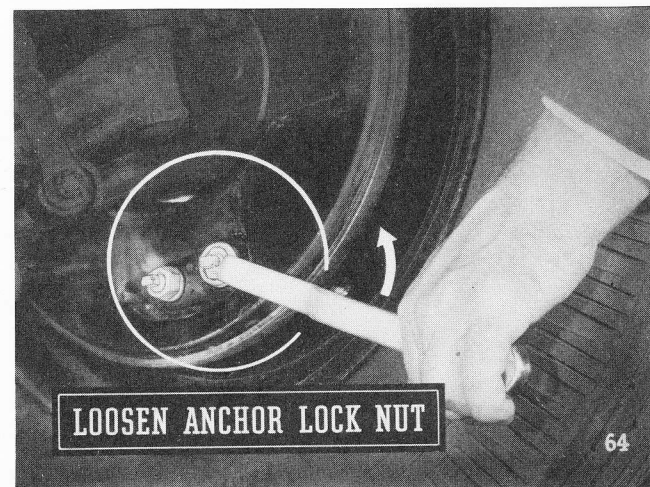
Clean the entire brake assembly thoroughly.



Each anchor pin is provided with a mark on the tang which locates for you the high side of the eccentric. Set the eccentric so that these two marks are toward each other as shown. Then install the drums.



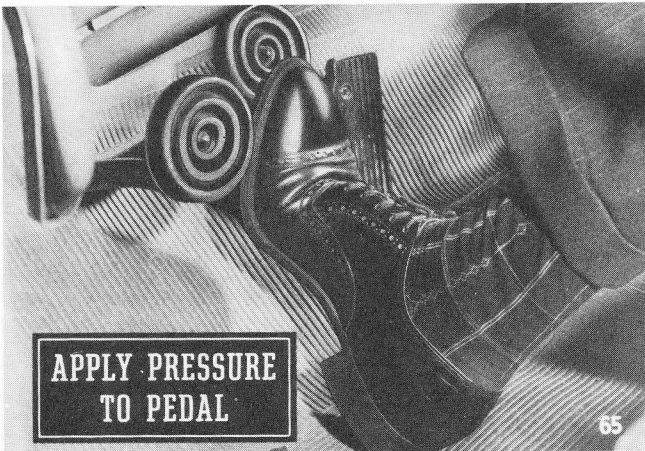
Lubricate all moving parts at frictional points using special lubricant M-566 sparingly.



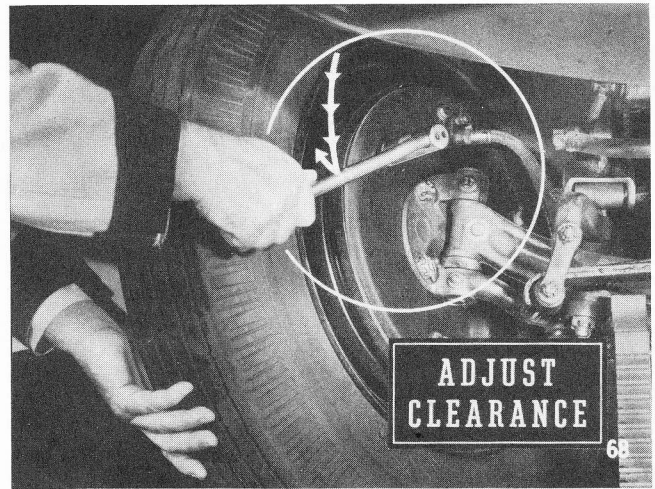
Loosen the anchor lock nut.



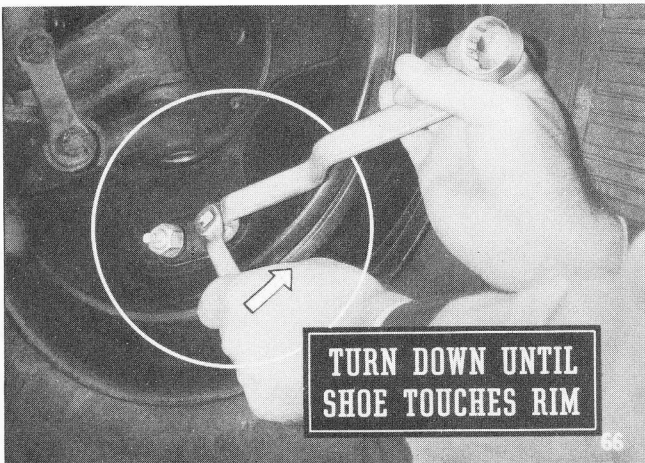
HYDRAULIC BRAKES



Apply twenty-five to thirty-five pounds pressure to the foot pedal. This pressure must be maintained throughout the adjustment.

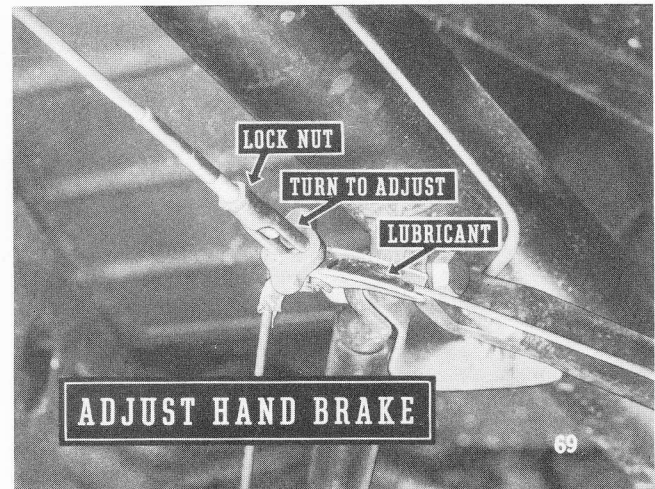


Adjust the upper ends of all shoes with the cams, holding clearance to a minimum.

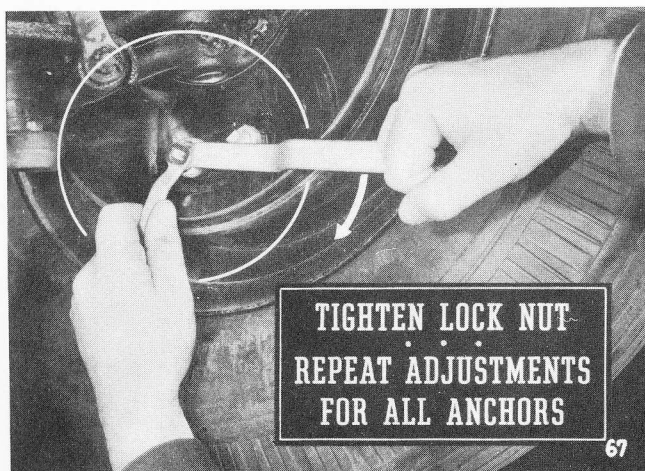


Using a wrench with a three-inch handle, turn the mark on the anchor down gently until you feel the shoe touch the drum.

(Long Wrench No. 075000XA—Short Wrench No. 2626A)



Adjust the hand brake as previously directed if required.



Tighten the lock nut, making sure that the anchor is held firm as the nut is tightened, so as to not change the setting. Repeat this anchor adjustment at all wheels.



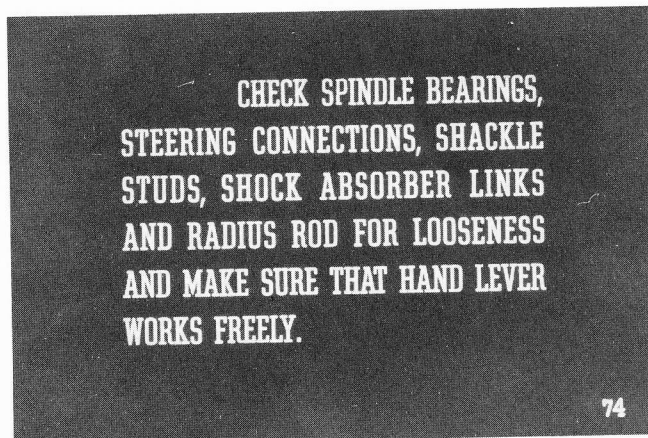
Adjust free play of pedal so as to have from one-quarter to one-half inch if required.



SERVICE INSTRUCTION



Test the adjustment on the road. This completes the major adjustment procedure.



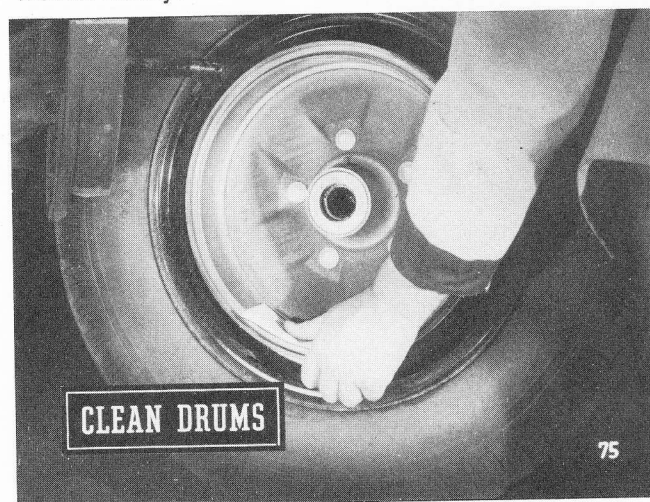
Check spindle bearings, steering connections, shackle studs, shock absorber links and radius rod for looseness and make sure the hand lever works freely.

**PASSENGER CAR
HYDRAULIC BRAKES
OPR. C-2-C
OVERHAUL BRAKES**

72

When the linings are badly worn or for any reason require replacement, or if work is required that is not covered by the Major Adjustment operations, the following procedure should be used to overhaul the brakes.



Examine and clean the brake drums thoroughly, using kerosene and fine sandpaper if necessary.



Remove all brake drum and wheel assemblies.



Before removing the brake shoes, install wheel cylinder clamps on the wheel cylinder pistons so as to prevent the entrance of air into the cylinder when the tension of the brake shoe retracting spring is removed.