WITH ALL WHEELS ON USE
OUTER LINE.
WITH STEEL TANDEMS OFF USE
CENTER LINE.
WITH ALCOA TANDEMS OFF USE
INNER LINE.

# PROCEDURE FOR INITIAL CHECK OF REAR WHEEL ALIGNMENT

1. Drive the coach straight ahead for about 8 feet on a reasonably level surface.

2. Select the lug nut behind the hub on the rear tandem that will mount the laser so that the beam will cross near the horizontal center of the hub, aiming forward. Loosen the nut and mount the laser instrument loosely.

3. Select the lug nut forward of center on the front wheel and near center horizontally. Loosen the lug nut and mount the reflector finger tight. (blade vertical facing laser)

4. Turn on the laser and adjust vertically until it strikes the reflector, then tighten the nut finger tight. Adjust the laser horizontally with the adjuster screw on the instrument until it centers on the correct reflector line.

5. With the long window blade check to see that the front wheel is straight ahead by holding the blade against the front wheel behind the hub and in line with the laser beam. The beam should pass through the window and strike the appropriate line on the reflector blade. Adjust the steering and laser until it does line up.

6. Mount the short window blade in front of the hub on the forward tandem in a location where the beam strikes it.

7. Adjust the laser so that the beam centers on the window of the short blade. Hold the long window blade against the leading tandem behind the hub, on the lug nut surface of the wheel, and where it intersects the laser beam. The beam should pass through both windows if the arms are straight. If you have a bent arm, wheel alignment cannot be accomplished until the arm is straightened.

8. With the beam centered on the mounted window, check where the beam strikes the blade on the front wheel. Measure from the center of the beam to the center of the appropriate line on the reflector. Each sixteenth of an inch of tow represents .003" (three thousanths inch) of shim to correct.

9. HOW MUCH IS TOO MUCH?
According to the latest service bulletin that I am aware of, G.M. specifications would allow more than five eighths inch error using the this, or a string method. With this much error you will experience excessive tire wear, especially on the leading tandem. On the other hand, if you are within about ¼", you should probably leave as is. (¼" = .012" shim)

10 Before adding shims to correct alignment, check and eliminate all other contributing factors to alignment:

A. Wheel bearings
B. Bent arm
C. Worn pins and bushings
D. Loose donut of worn thrust bearings
E. Loose bogey mounting bolts

11. Final check before adding shims:
If, in your initial check with wheels mounted, you have indication that shims are required, set the coach up on blocks ahead and behind the bogey, so that you have access to the six bogey mounting bolts. Remove both tandems and block up the two arms to their approximate ride height. Remount the laser instruments to the hubs. If you have steel wheels, take your reading from the center line of the reflector mounted on the front wheel. If you have Alcoa wheels, use the inner line. (these differences represent the thickness of the wheels). Center the laser thru the window of the blade attached to the leading tandem so that it strikes the blade attached to the front wheel. Calculate the shim thickness and proceed to install it.

12. Installing the shim stock:
Loosen the two bolts where the shim is to be installed and also the two inner bolts. (underneath) Install the pressure bolt tool on the end of the arm and raise the arm until it lines up with the pressure pad to be mounted off the top of the frame. Support the with a jack or block. Apply pressure until the bogey moves sufficient to install the shim. Release the pressure and take a new reading with the laser to confirm that you have made the right amount of correction. When satisfied with your correction, tighten the bolts and make a final check.

## TO STRAIGHTEN A BENT ARM:

Block up the coach sufficient to have access to the six mounting bolts. Remove both tandems. Lay a straight edge across the face of the hubs to confirm that the arm is bent. A 4 foot length of ½ inch square steel tubing makes a good tool for checking as you straighten. If the tube is slightly warped, you can usually straighten it by blocking both ends and pressing in the center. Lay the straight edge across the top of two lug bolts on each hub and fasten with two lug nuts on the straight armed hub. Support both arms at the level necessary to install the pressure bolts and pads near the top of the frame. It is not necessary to remove the shock absorber. On the straight arm, adjust the pressure bolt just finger tight, and use it as a monitor to make sure the you are not flexing the frame. If you have only one pressure bolt, clamp some kind of a sensor to the straight arm. Measure and note the gap between the straight edge and the hub on the bent arm. Apply pressure on the bent arm until it moves approximately ¼ inch past straight. Move the straight edge up and out of the way. Using a ball peen hammer, impact the bent arm several times. across the bottom and front side. Release the pressure and measure your progress with the straight edge. You will need to repeat this procedure five to ten times, and you will get the feel for it as you progress. Once the arm is straightened, follow the procedure for checking alignment with wheels off.

## TO ADJUST CAMBER:

G.M. recommends 0 to 1 degree of positive camber for the rear suspension. Positive means the top leaning out. Too much camber causes excessive tire wear on the inner or outer edges of the tires. Camber guages are available from J.C. Whitney and other sources.

To insert the necessary shim to adjust camber, with the coach on blocks and wheels removed, loosen the two top bogey mounting bolts. Install the two pressure bolts and pads near the top of the frame and apply pressure to each until space opens sufficient to insert the required shim. Remove the pressure bolts and re-tighten the bogey bolts and re-check the camber.