## USA TRAINS

# F-3"A" & "B" Units

Due to the manufacturers coupler mounting this is a challenging conversion, both for the original pedestal mount and body mounted couplers.

## "G" scale use a #831 coupler for pedestal mounting or for body mounting use a #787 for the pilot and #830 for the rear of the "A" unit and #830 for both ends of the "B" unit. #1 scale use #1831 pedestal mounting or #1787 and #820 body mounting.

### "PEDESTAL"

Invert the locomotive and place on a soft surface to avoid scratches or damage. First remove the original couplers. Assemble the #831 coupler according to the instructions. Place the #831 onto the pivoting arm of the pedestal, the pivot arm should fit evenly into the slot of the #831's draft gear box. Secure with the original screw.

The problem with the pedestal mount is the couplers pivot too far when the locomotive pushes cars. This will cause the locomotive to actually push against the cars body or diaphragms and may create various other problems. To keep this from happening you will need to fabricate coupler "stops" on each side of the coupler to keep it from pivoting too far.

One idea we used was to make two "L" shaped pieces of sheet metal approximately 1/16" thick that attached with the pedestal mounting screws. These have to be stiff enough to keep the couplers from pivoting, so keep this in mind when choosing the material you use. Each modeler may have their own ideas of how to solve this or some may not bother and then avoid backing their F-3s up as much as possible.

The other challenge is the pilot mount that has a dummy coupler mounted without a pivot piece on the pedestal. Using a #831 coupler the draft gear box is within the edges of the opening and has very little room to pivot so a pivoting piece may not be necessary.

To mount the #831 coupler to the pilot pedestal you need to fill the slot in the draft gear box with a strip of .080" thick plastic shim stock to make a flat surface. Remove the dummy coupler by removing the pedestal screws and turning the assembly over and removing the pivot screw and slip the dummy coupler out the opening. Do not replace the pedestal until you make sure the coupler fits properly. Place the .080" shim in the slot of the draft gear box, mark the shim through the rear hole of the draft gear box and drill and tap a hole through the shim for a 6-32 screw. You may need a washer on the end of the screw to use on the underside of the pedestal. Slip the screw through the bottom of the pedestal and thread the shim over the screw down to the top of the pedestal, thus holding the screw in place. Reattach the pedestal to the floor of the locomotive. Slip the coupler through the opening of the pilot and over the screw. Secure the coupler with a 6-32 hex nut. Check the coupler for the correct height and if it too high you can add a shim to the .080" shim in the draft gear box.

If you desire the coupler to pivot a little, make the .080" shim about .100" longer than the slot of the draft gear box and drill a tiny hole for the wire centering spring. Then instead of tightening the coupler leave it a little loose, just enough for the centering action of the wire spring.

With the pedestal mounted couplers on the rear of the "A" unit and both ends of the "B" unit the locomotive will negotiate 2 foot radius curves with the coupler in coupled or delayed position, coupled to a short box car. The pilot needs a 2 1/2 foot radius track for this mount.



#### "BODY"

Invert the locomotive and place on a soft surface to avoid scratches or damage. First remove the original couplers and the complete pedestal mount. For a more solid mounting than the pedestal you need to fabricate shim-blocks (as a platform) large enough to mount #830 couplers at the correct height. If you use the #1 scale #820 coupler, add about 1/16" to the height of the platform to compensate for the difference in coupler heights.

The platforms for the rear of the "A" unit and both ends of the "B" unit will be the same size. If you use a platform for the pilot it will need to be slightly taller and will use a #787 coupler (the #787 is a #836 coupler in a #831 draft gear box).

You can make the platforms from various materials such as hardwood, plastic, or metal. We machined ours from aluminum but the choice of material is up to the individual modeler.

Make the platforms for the rear of the "A" and both end of the "B" units 1 25/64" long 53/64" wide and 35/64" tall. The platform for the pilot is the same width and height as the others but 53/64" tall. After you have made the platforms place one of the pedestals on the block lengthwise along the centerline and mark the locations of the mounting holes, then measure them to be sure the holes are the same distance from the edges on each side. You can countersink the holes so you can use the original screws and holes in the floor or you can drill the holes the same through the block and use long screws, though you may have to use rather long screws for such a length. The object is to have as secure a mounting as possible.

Next you need to shorten the draft gear box of the #830 coupler to have clearance for the trucks. Place the lid on the box and use a hobby or razor saw and cut off about 13/64" from the rear of the box. Trim the eyelet off of the end of the coupler shank. Assemble the coupler per its instructions.

Secure a platform in the locomotive, place the coupler assembly on the platform along the centerline and check the clearance of the rear of the box and the knuckle. Mark the platform through the side holes of the box, they should be just in front of the platform mounting holes about 9/64" from the front edge and 3/16" from the side edges. Drill and tap the coupler mounting holes for a 2-56 screw or leave untapped for a #2 wood screw.

This also applies for the pilot platform except that you don't need to trim the end of the draft gear box and the holes for the #787 coupler are along the centerline.

If you do not wish to use a body mounted platform on the pilot you can now use the pivot piece from the other pedestals and mount a #831 as previously mentioned.

After you install the couplers check them for the proper coupler height, function, and clearance then make any necessary adjustments.

The platform body mount will allow the locomotive to negotiate 4 foot radius curves when coupled but not in delayed position. If you notch out the sides of the draft gear box (allows more coupler swing) it will negotiate a 2 1/2 foot radius curve.

Also, be aware of the rubber diaphragms, on tight radius 'S' curves and switches they will bypass each other but snap back into place on the return. This may cause undue wear on the diaphragms.

