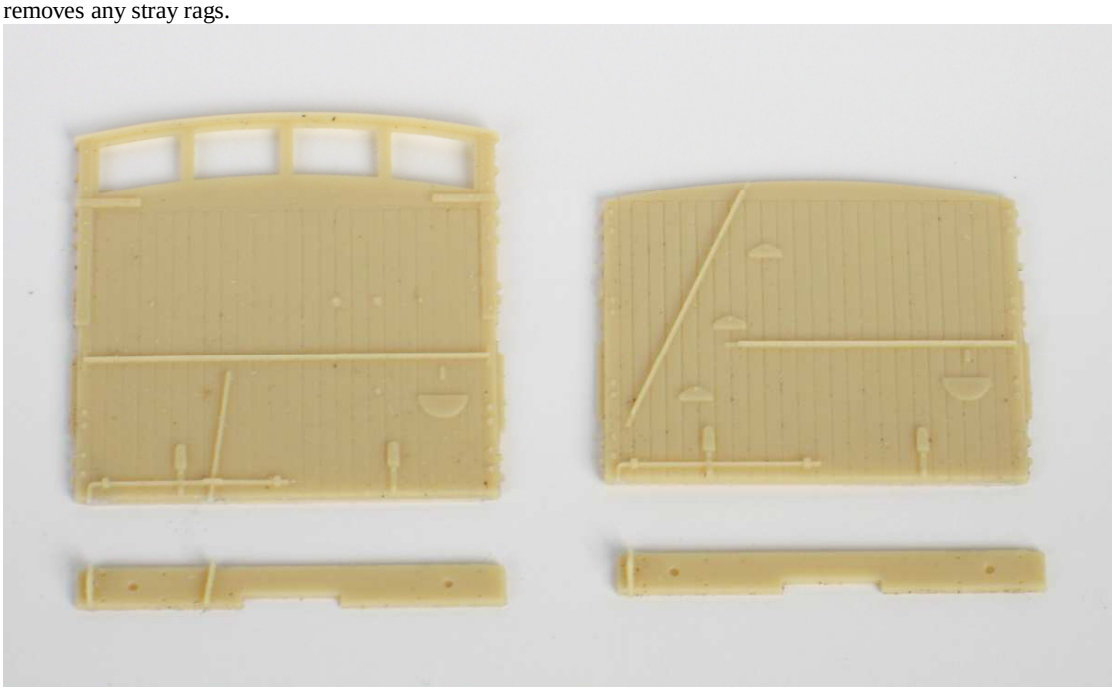
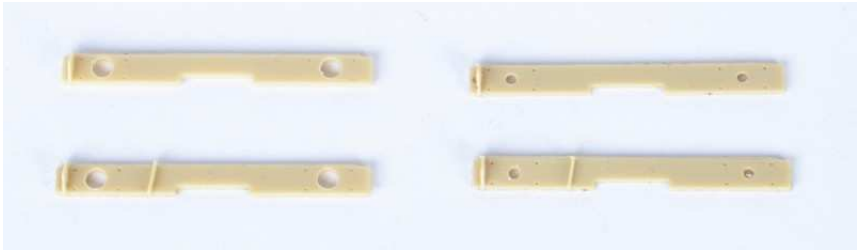
Adding Buffers to the SEM Z van

Throughout the 1930s, ‘40s and early ‘50s the Victorian Railways carried out a program of conversion of rolling stock to auto’ couplers, with a particular emphasis on goods rolling stock. By 1957 this program was deemed to be complete, buffers were removed from the goods vehicle fleet and shunter’s steps were bolted to the left hand end of the headstocks. For whatever reason, the fleet of Z vans escaped this program of buffer removal and it was not until long travel draft gear was fitted to an individual Z van, being recoded ZL in the process, that the buffers were removed. Most of the remaining Z vans that were not converted to ZL were withdrawn and scrapped by the mid 1960s. Because they were fitted with dual automatic and screw couplings, the ZP vans retained their buffers for their entire lives, being recoded as ZD in the mid 1970s. All of this means that any Z or ZP vans operating on a model railway set in the 1950s up to the mid 1960s should either be fitted with buffers, or be coded as ZL. It should also be borne in mind that the first Z vans to be converted to ZL were the four wheelers and it was not until the early ‘60s that significant numbers of six wheel ZL vans appeared. Fortunately it is not too difficult to fit buffers to the Z van kit and suitable investment cast brass buffers are also available. Most Z vans used the ‘standard’ buffers with a tapered housing, but six wheel vans numbered 582 – 626 were fitted with IZ buffers when built in 1928-29

Because the underframe of the finished model needs to be painted black, whereas the body is either wagon red for a Z van or passenger car red for a ZP, painting is simplified if the headstocks are separated from the ends. The first step is to use a sharp knife to score across the groove between the headstocks and the body on each end moulding, including a cut through the uncoupling lever and the air pipe moulded on the cupola end. Bend the headstocks away from the end and back again and the headstocks should snap off from the end. The break is not quite as clean as when polystyrene sheet is cut by this method, but a couple of passes with a large file soon removes any stray rags.

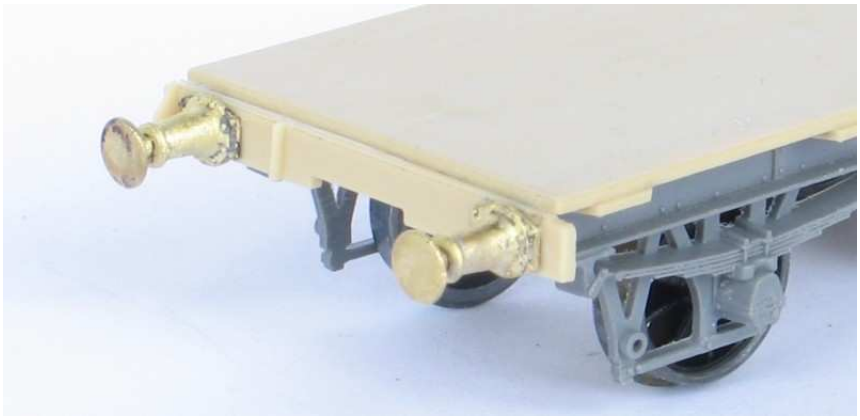


Put the corresponding parts back together on a flat surface and check that they fit together neatly, with the same small gap between the end and the headstock that the moulding started with. The headstocks feature moulded relief that represents the holes where the buffers were once attached, so it is a simple matter to use the central mark in each pattern to drill, by hand, 1.0mm holes for the buffers. If building a ZP, which was fitted with locomotive buffers, or a van fitted with IZ buffers, the holes will need to be 2.0mm, to suit the larger spigot on the back of these castings.



The underframe is assembled as for a standard kit, although leave the side steps off until later, as they are rather fragile. Once the cement has hardened, rub each end of underframe over the sanding board that was used to remove the draft from the top edges of the side sills. This will ensure that the ends of the side sills are flush with the ends of the floor. Also assemble the sides and ends of the body, to form an open box. If the model is to be fitted with 'standard' tapered buffers or locomotive buffers, cement a small piece of 0.040" square polystyrene strip to the floor in the area where the couplers will be attached.

Once these two sub-assemblies are completed, place the body on the underframe, with the body located by the brackets projecting from the edges of the floor. Make sure the body is orientated the correct way around and offer up the appropriate headstock beneath each end. When the detail on the headstocks lines up with that on the body, apply a small amount of solvent cement behind each headstock to attach it to the floor moulding. Now remove the body, so there is no possibility of accidentally attaching the body to the underframe. Once the cement has hardened, cut each buffer casting from its sprue, so there is just a short spigot remaining behind each casting, which will locate in the holes drilled in the headstocks. Attach the buffer castings with super-glue or contact cement.



Because the flange at the base of each buffer projects above the headstocks, a small crescent shaped divot needs to be cut in each end at each buffer location with a 4mm chainsaw file. Each crescent should be about three boards wide and centred under the fourth board from each corner, but check the fit of the body against the underframe as work progresses.

To attach the body to the underframe I followed the approach used by Graeme Brown on his four wheeled van, described in the August 2000 AMRM. Cement a piece of 1.5mm polystyrene sheet, 10mm x 30.5mm, inside each end of the body, spaced 0.8mm up from the base of the sides.

The buffers aren't sprung, so each coupler will need to be spaced out from the face of the headstocks, to allow the models to operate on curves down to about 60cm radius. For the Z van with standard wagon buffers glue a piece of 0.030" x 0.040" Evergreen strip behind the lip on the top of the Kadee No58 coupler box. For a ZP use 0.040" x 0.060" strip. This step will not be necessary if using IZ buffers.

Cement the couplers to the underframe. Once the cement has hardened, use a 2.0mm drill to drill through the central hole in the coupler draft gear box and through the floor.

Now position the body on top of the underframe and use the 2.0mm drill to mark the position of the holes in the underside of the pieces of polystyrene glued in the body earlier. Drill 1.6mm holes on these marks and tap the holes M2. The body can be secured to the underframe with M2 x 8mm screws.

The rest of the construction is as per a standard Z van.