Converting the Hornby 61' 6" Passenger Coaches

The appearance of the Hornby 61' 6" has provided the railway modeller with a high quality, affordable and ready to run example of a popular and long lived express passenger coach. Overall, Hornby have captured their distinctive and hard-to-model appearance. Inevitably, mass production has resulted in one or two errors and simplifications in detail but, most significantly, Hornby have had to settle on a limited number of prototypes for their first run. In order to assemble a prototypical train, your rake of coaches will have to include examples not covered in the Hornby range. The MJT etched coach sides offer a means of providing those missing vehicles and the opportunity to correct a couple of glitches that crept into the proprietary models. These instructions have been added to the pack to assist modellers intending to convert the Hornby products.

The Hornby Coaches - and a little jargon busting.

The Hornby coaches come in five styles. The Brake Composite, the full 1st and Full 3rd (both 'compartment' varieties), the Buffet Car and the Sleeping Car. Importantly, and not a little impressively, they also cover the two principle under-frame types employed by the LNER and two bogie types. You will need to be aware of this before you provide your donor vehicle.

The 'turnbuckle' truss rods were fitted to early Gresley corridor stock, up until c1936. There were four truss rods per vehicle on all the 61' 6" Gresley corridor coaches. They could stretch, rather like a cable, so they were provided with screw tightening devices called turnbuckles. These sit prominently on the short length of the truss rod, between the truss post and the anchoring point on the bolster which sits over the bogie. The Hornby coaches have a simplified under-frames and have only two truss rods. The truss posts (sometimes called queen posts) have been largely omitted. The turnbuckle type lasted under many vehicles up until they were scrapped, however from c1936 (the precise date depends on the exact type of coach) the second style, a steel angle frame system, was introduced. The steel angle trussing was stronger and more rigid than the turnbuckle type so there were only two frames, on the outer edges of the floor-pan. The look of steel angle under-frames is quite different from that of turnbuckle types

Finally, there were three distinct types of bogie under these vehicles. Two were 8' 6" in wheelbase but one, a heavy duty variant, was much deeper than the other. You will need to be aware of the bogie type of your chosen prototype and donor vehicle. Heavy duty bogies were only used under sleeping cars (as they are in the Hornby range), articulated units and some catering vehicles. The third type was the 8' wheelbase Fox bogie, used under many full brake variants of this type. There were also variations in the style of battery boxes, basically older large types and later smaller types and checking prototypes is recommended.

MJT supply a range of detailing parts which cover these under-frame and bogie variations.

Removing the Hornby sides.

Separate the Hornby coach body from its bogies, under-frame and interior detail moulding. To do this you will need to prise the bogies from the under-frame by inserting a medium blade screwdriver between the coach floor and the top of the bogie mount. Don't try pulling the bogie off by grasping it on either side, you will just snap off the foot-boards! Twist the blade to 'pop' the bogie from its clip mounting. The coach body has three tabs on each side which hold it to the floor-pan. Be aware of the small details on the coach ends and roofs. It is best to remove these before you start as they are easily snapped A thumbnail behind between the body and the floor should unclip the central mounting, the other four should then pop out with a little persuasion. Thereafter the body components separate easily.

With a razor saw, cut along the inside edge of the coach ends, upwards towards the roof gutter. (Fig 1) You are cutting the end of the coach side, not the coach end so you will leave a slither of the coach sides at either end, the width of the end moulding. Use the internal glazing panel as a guide, it stops just short of the end.

Fig 1

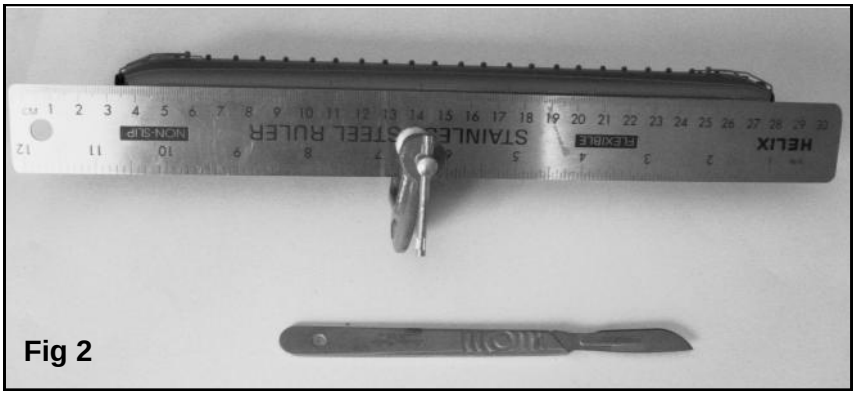

Fig 2

Clamp a steel straight-edge to the side with one edge aligned with the top of the coach side, small 'U' clamps are ideal. (fig 2) Score along the top of the side with a craft knife, just underneath the gutter line of the roof. After several strokes the side will snap off leaving the roof and end moulding intact. Don't worry about scoring the ends, this will be covered by the new sides. Clean up the cut lines with fine glass paper.

Complete the sides as per the instructions but remove about 1mm from either end of the top flange. (See Para. 4 of the instructions & figs 2 and 3 therein). These sides have the correct dimensions for the side panels and you will notice that the lower waist panel on the Hornby coaches is noticeably high. You have thus already corrected one production glitch. You may want to glaze and paint the sides at this point – some find it easier to do it this way and touch up around the edges once finished, particularly as there is no more soldering involved.

Now attend to the ends of the Hornby roof/ends shell. The ends, should be filed to measure 36 mm or 9' 0" at the widest point (see below for exception applied to brake ends and full brakes). You will need to achieve the correct profile as per figure 3, below. The Hornby coaches have not quite captured this tricky blend of 'tumblehome and tuck-under'. The thickness of the etched sides will result in a final width of 9' 3".

Attach the sides at either end first. Epoxy resin is ideal for this but gel super-glue has worked also. Then fill in above the top flange and the roof with fillets of epoxy resin. The resulting bond will hold the side very firmly. However, if you have not painted and glazed the sides, remember not to fill the slots in the top flange as they are used to retain glazing material.

Note: the brake vehicles in the range have the characteristic 'joggle' in the sides (See main instructions if relevant). The Hornby sides sit directly on the floor-pan so they allow for this. When attaching the Brake sides, which come in two sections, you will need to start from one end, preferably the passenger end, and fix both left and right hand sides and then add a partition where the sides join to support the joggle. MJT provides a brass partition but one can also be fashioned quite simply from plasticard, using Fig 3 as a template. The 'brake' end of the coach is also narrower than the 'passenger' end and you will need to file back accordingly. The width of the widest part of the brake end (less the thickness of the etched sides) is 8' 6"" rather than the 9' 0" of the passenger end. It's the same overall shape so you can always copy figure 3 and then cut and paste to remove 2 mm from the width.

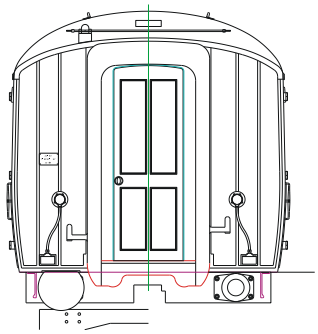

Figure 3.
An LNER 9' 3" vestibule coach end (bowed) shown at 4mm - 1 ft scale (1:76). This demonstrates the very subtle tumblehome of the coach side, the drift inwards from about the central door hinge to the roof line. This is less than 2" in real life (<1 mm in model terms) The upper coach side is not curved (Gresley glass didn't curve either!). The lower 'tuck-under' curve starts just below the hinge, about a third of the way down the grab rail, and continues to the sole-bar where the side will have drifted inwards about 3" (1 mm). If you are copying this drawing to use as a template, beware of shrinkage and distortion in photocopy machines and scanners!. Also remember the 1 mm thickness added by the two etched sides,

Replacing the sides.

If you want to use the clips from the original coach sides these can be gently prised off as they form part of the glazing panels. You can isolate the clips and glue them to the inside of the new sides. You may prefer to fashion clips of you own from scrap brass to hold the coach sides to the floor-pan and prevent bowing in the centre.
It is quite likely that your roof vents are now wrongly located. The MJT sides come with a roof plan which shows where roof-mounted equipment should be located for each individual side. Remove any offending vents and replace with suitable alternatives. MJT part no 2940 is suitable.

Finally, if you are using the Hornby coach as the basis for a full brake vehicle, do remember that those coaches had a narrower body along the full length (8' 6" as opposed the regular 9' 0") and thus narrower ends as per the brake end of the passenger brake vehicles. They usually ran on 8' wheelbase Fox bogies. There were many exceptions so prototype information is vital.