

This is not a "stand alone" product. It simply provides multiples of the components that would otherwise take much time and expertise to scratch build. The signal parts are designed to be used in conjunction with working or dummy heads, which are available from several manufacturers, notably Roger Murray.

There are sufficient components for two plain post signals and two with landings, four shunt signals, two sizes of theatre indicators and three stencil indicators. In addition, the fronts for 12 equipment boxes are included.

For the signals, you will require

Posts, 1/8th round brass tube. K&S No. 127 or similar.
 Mounting sockets, 5/32nd round brass tube. K&S No. 128 or similar, to take the above.
 Planking, Styrene strip 0.5 X 1.5mm. Evergreen 123 or similar.
 Safety rail posts, 0.7mm brass wire.
 Safety rail, 0.45mm brass wire.
 Signal ladder, Mainly Trains MT154 or similar.
 Styrene sheet, 2.0mm for mounting theatre indicators, stencil indicators and shunt signals.

For the equipment boxes you will require

Styrene sheet to provide the depth of the boxes 0.5, 1.0 and/or 2.0mm
 Embossed styrene 1mm planking for the back and sides.
 Styrene sheet for the tops 0.375 or 0.5mm.
 Styrene strip for the support legs 1.0mm X 1.0mm or 1.5 X 1.5mm. Evergreen 142 or 153.

There may be other materials mentioned but these are normal modelling items, adhesives and odds and ends of plastic and brass strip.

SIGNALS

The signals are best mounted in a length of tube fixed into a hole in the layout baseboard. They should not be permanently fixed as it is advisable to pull them out and lay them flat during layout maintenance. The wires on working signals should be of sufficient length so that this can be done. If you plan to build a number of signals it is best to make a few jigs. These will help during construction in keeping everything aligned and the parts consistent.

- Jig 1. A piece of 18mm softwood with a number of 1/8th holes drilled accurately at right angles.
- Jig 2. A grid of pins set out as the holes in the platform are arranged. (See sketch 1)
- Jig 3. A spacer to fix the height of the guardrail at about 16mm.
- Jig 4. A piece of styrene sheet cut at the angle of the signal ladder.

Post

The length of the piece of 1/8th tube for the post will depend on the planned height of the signal. This should take into account where the signal is to be located on the layout and whether it can be sighted by the 4mm scale driver. Add to this the depth that the post will go into its socket. This should be sufficient to ensure it is upright and stable. The full depth of Jig 1 above (18mm) is sufficient. Finally for signals having landings which carry theatre indicators or shunt signals etc. there may be a need for a short projection above the landing on which to mount the signal head.

For a platform mounted signal the total may be, for example 65mm, made up of 18mm for the socket, 42mm from the base to the signal landing (if present) and 5mm for the head mounting stub. Remember also to allow for the height of the signal head itself. Each signal should be carefully designed to suit its location.

The bottom of some working signal heads can be made to fit over the 1/8th tube if the top end of the tube is slightly chamfered. Otherwise work out the mounting method for whichever head is to be used before proceeding.

Base

The smaller bases (part 1S) should be used for plain post signals and the larger (part 1L) for those with landings or short brackets.

Open out the rings (part 2) with care whilst they are still in the fret so that the tube will just pass through. Open out the chosen base in the same way. Put the tube into one of the holes in the jig and fit first the base and then one of the rings over it.

Make sure that the base and the ring are flat down on the jig. Check the fit of the angled supports (part 3S or 3L) in the slots to ensure that the verticals lie against the signal post, fettling the bottom if required. Solder the four supports in place.

Landings

The landings (part 4) may be used as they are, or shortened at the half etched line. The choice of size will depend on what additional equipment the signal is to carry. Some of the guardrail post locations will vary according to the size of the landing. Refer to sketch 1 and use pattern 'A' for the shorter one and 'B' for the longer, drilling out the alternative holes 0.7mm for the rail posts accordingly. Open up the hole in the landing to pass the tube.

To establish the height of the signal head mounting stub, a short piece of tube can be inserted into one of the holes in jig 1 of such a length that when the signal is inverted and inserted into this hole the correct height is achieved. Fit a ring (part 2) over the post then fit the landing. The signal will be 'handed' so ensure that the landing is the right way round. Check from the front before proceeding. Invert the signal and fit it into the blocked off hole. The post will be less stable now so alignment is more critical. The post must be at right angles to the landing in both planes and the landing and base must be parallel. Tack solder the tube then check the alignment again adjusting if necessary. When satisfied, solder the support bracket (part 5) to the underside of the landing and the post.

Guardrail

The posts for the guardrail are made from 0.7mm brass wire. Cut a 25mm length of wire for each upright and bend about the last 3mm to a right angle. File off the long ends to a blunt point so that they can pass through the holes but only open them up if absolutely necessary, as the fit should be as tight as possible. Feed each upright through the hole and solder the short end under the landing. Do not place the short ends of the uprights across the position where the ladder is to be soldered. When all of the uprights are in place carefully adjust them so that they are vertical in both planes.

Refer to sketch 2. Using the uprights as a guide, or using jig 2, form the rail to shape from 0.45mm brass wire. Form the safety loop around a 5mm diameter former which, allowing for the slight spring in the wire, will give an 8mm diameter loop. Make the first bend so that the safety loop is 6mm deep. Make the rest of the bends checking the fit to the uprights at frequent intervals. Note that the bends do not always correspond to the uprights as the rail continues past them a short way before changing direction.

Using the spacer (jig 3) solder the rail across the uprights. Solder above the rail to avoid excess on what will be the visible part of the guardrail. With all the joints completed, cut off the excess wire and clean up any excess solder and the cut ends of the wire.

Ladder

Bend a short section of etched ladder to a right angle and solder it under the landing in line with the post. Adjust the angle with Jig 4. Most ladders had a support strap from the post to the ladder uprights. This should be made from thin brass strip about 0.75mm wide and placed high enough that no one would walk into it in the dark (!)

At this point the soldering is completed so the assembly should be carefully but thoroughly washed in order to remove the flux residues.

Planking

The planking for the landing can be made from the 0.5 X 1.5mm styrene strip and fixed with super glue.

Theatre indicator

Two types are supplied, the smaller represents the single and the larger the two digit ones. Form the hoods (parts 6S or 6L) by bending the angled sides to right angles. The double half etched lines will produce the 'curved' shape at the top naturally without the need to bend each line individually. Cut a piece of 2.0mm thick styrene sheet to represent the screen and fix in place at the very back with super glue. The assembly can be mounted directly onto the landing or standing on legs from styrene strip or strip brass. This latter arrangement will be required if the indicator is mounted above any other equipment such as a shunt signal.

Stencil indicator

The stencil indicators (part 7) may be split and reassembled into as many multiples as required (see sketch 3) They should be mounted onto an oversized piece of 2.0mm thick styrene sheet which, particularly where a stack of stencils is required will help in the alignment. Fix with super glue and when hard, cut and file off the overhanging plastic. They should be mounted on the landing as for the theatre indicators.

Shunt signals

The shunt signals (part 8) should be mounted on 2.0mm thick styrene sheet and the excess cut and filed down to the profile of the etch. Note that where a shunt signal is associated with a running signal the lower left hand lamp is blanked off. Blanking plates (part 9) are provided.

Track circuit diamonds and plunger indicators

The diamonds (part 10) and plunger indicators (part 11) can be mounted in several positions. The particular circumstances should be considered for each individual signal. For mounting directly to the post an adhesive such as Micro Krystal Klear can be used which gives some allowance for adjusting the alignment during fixing.

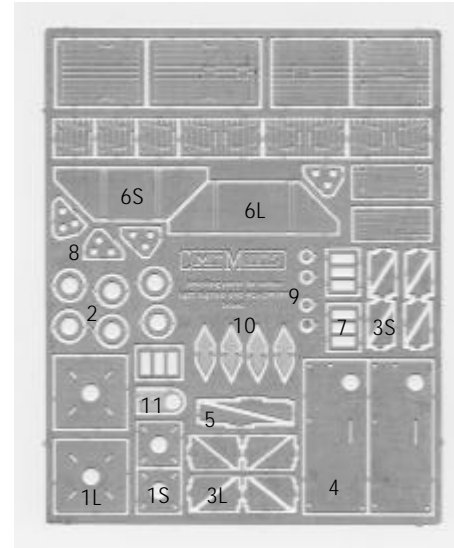
EQUIPMENT (OR RELAY) BOXES

A selection of eight box fronts is provided, some of the smaller ones in multiples. They represent a number of types of box and although modelled predominantly on the Midland and Western Region styles no doubt they can be used on other regions. It is best to study photographs for their appearance and locations. As the use of electricity for both signalling and point operation increased so did the numbers of these boxes. As a general rule there is at least one per signal or point.

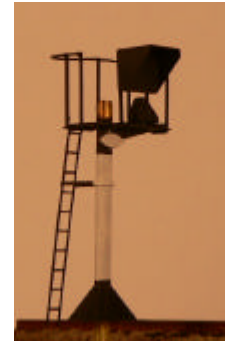
Refer to sketches 4 and 5. The fronts should be mounted on styrene sheet using super glue. The thickness can then be increased to the desired dimension by the addition of further layers of styrene sheet fixed with a solvent adhesive.

The back and sides can be clad in embossed 1.0mm planking styrene sheet and trimmed to size. Most of the boxes had shallow sloping roofs and some had pitched roofs. With the side and back planking fixed in place the top of the box should be filed down to give a shallow slope towards the back, and a rectangle of 0.375 or 0.5 mm styrene sheet attached for the roof. Pitched roof types should have an extra layer of 1.0mm styrene sheet fixed to the top and filed to a triangular profile. Two pieces of 0.375 or 0.5mm sheet can then be fitted and as a final flourish a short length of 0.5mm plastic rod fixed along the top to represent the ridge.

The cast concrete posts, which support several types of box, can be represented with 1.0mm or 1.5mm square strip. These legs were usually fixed to the sides of the box and usually not on the centre line. There were also some boxes with horizontal supports either under or across the back. In all cases the cables emerging below the box should be modelled. They can be represented by copper or brass wire curved to give the impression that they are coming from cable ducts on or under the surface. A study of photographs is vital if the box types are to be modelled with reasonable accuracy.



Tall signal showing left hand platform, shunt signal and 2 aspect stencil indicator



Short signal showing right hand platform, shunt signal and small theatre indicator

