

## HINTS ON TRACK LAYING AND POINT BUILDING

**Use in conjunction with video content from the Autumn weekend.**

Unless you are modelling a prototype the most important thing is planning. Sketch out your plans and work the layout in your mind. Know what traffic would have been in the area and accommodate it. See if it is easy to shunt; can locos run round a train if it's a terminus. Only when you are happy that it will work, and then commit yourself to laying out full size plans.

Quite often when receiving plans of a layout I'm asked to build, I find that it will be difficult to operate. If I hadn't questioned the plans some customers would have never been happy with the operation.

I always use C&L templates myself, due to the chairing information they contain. I do get to work on "Templot" plans supplied by customers; all I do is to add the necessary information onto the plan. Of course C&L plans can be curved if you wish by cutting most of the way through the plan in several places to allow whatever curvature you require.

Having perfected the plan, I then build the points on the bench. If there are several points close together they are usually built in one piece. This allows all the timbering and sleepers to be interlaced correctly. Especially if I am going to lay the track, I extend the point from the crossing into plain track beyond the sleeper interlacing. This makes life a lot easier when it comes to laying the track as the interlacing has already been achieved.

Many of you will know that I always use thin based track. So much so that I have my own track base in "O" gauge which will give me a three bolt or GW two bolt chairs. Turnout timbers are ABS from sheet which is laser cut into strips.

When building points I always start by cutting rail to roughly the correct lengths; then I make up the VeEs. Most folks nowadays use the C&L common crossings which I build for C&L, but I make the crossings up as I go. Not that their CCs are not good it's just that especially if making up a string of points the Vee needs to be longer than supplied. Sometimes I have a M of rail on the Vee as electrically I don't need any breaks. This also makes the assembly stronger.

Always start with the main stock rail which can be straight or slightly curved if necessary. Load the correct chairs omitting the slides at this stage and only put two chairs where the check rail comes. Trim the inside of chairs where required with a chisel according to the template; [this is why I have to put information onto a template if it's not C&L]. Check with a mirror to make sure this rail is straight, or if curved that the curve is even.

Next comes the Vee; gauge this with gauges and make sure the nose is one third of the way back from the edge of the timber. If using a ready made CC make sure it's gauged all the way along. Next step is to prepare the curved stock rail. Mark with a pencil slightly back from the end of the blade position towards the toe. Make a slight bend in the rail here towards the hand of the point; this is to accommodate the blade. Curve the rail with your fingers so it is roughly the same as the template and an even curve. This prevents stresses later when removed from the template.

When this has been chaired up and trimmed cement just **the first two chairs** at the toe using two gauges. Next cement **just the chairs that can be gauged from the Vee or crossing; leave the others free**. Add the wing rails if not using a made up CC making sure they are gauged correctly. This is the hardest thing to get right in point construction. The wing rail knuckles must be opposite each other on a centre line through the Vee. I always use a slide chair with the end chopped off under the nose of the crossing to represent the crossing chair.

Next come the blades; I always use C&L machined blades as it's important that they are an exact pair which is almost impossible by just filing some up. **These have been machined both side so need to be straightened up so the inside running rail is straight with all the machining on the back.** I usually dress up with a file to put the radius back on the rail top and take away any sharp edges. The slide chairs can be cemented to the straight stock rail and just the first one on the curved side. Present the straighter blade first which should just sit on the whole of the first slide chair. Cut to length and chair up trimming all that is necessary on the outside to clear the stock rail chairs. Cement the blade down; I use a plastic fishplate between the blade and the wing rail for alignment and electrical insulation. Using a single ended gauge the loose stock rail can now be cemented closing it up to the blade so it is an intimate fit. The rest of the curve should form naturally but check with a mirror to make sure it is a smooth curve. The second blade will need straightening where it has been machined and then curved to match the template. This is prepared as before and added being gauged from the curved stock rail. Again the machining of the blade should fit intimately against the straight stock rail.

Lastly the check rails. Cut to length and bend up then add three chairs. Chop the ends off the chairs and they should fit in the gaps left in the stock rail chairs. When dry, cosmetic half chairs can be added to fill the gaps.

Tie bars of choice are added and if not using a made up CC, wire links are soldered on the underside of the crossing and also the blades to the stock rails. I usually just cut the amount of template away to access the soldering positions but keep the templates in situ until I am about to lay. At this stage I

spray paint all the point and track in a sleeper colour and clean the top of the rail when dry.

### **Baseboards are the next consideration.**

Over the years I have built and worked on hundreds of different baseboards. I favour a soft wood frame and crossmembers supporting a good quality ply top. Other tops such as MDF do not have any mechanical strength and can sag in time. Fancy ply frames are great, but there always seems to be pieces of wood underneath when you need to get to something or install point motors etc. If the layout has been planned in advance it should be possible not to have any supports where they will get in the way later.

If joining boards the top should be constantly flat; a 1mm step is not permissible. Ramps or gradients should be made by cutting and bending the surface ply not by adding bits to the top.

**The following method of track laying is not everyone's cup of tea but commercially I cannot spend the time doing it any other way. I would still be ballasting layouts built 20 years ago following the conventional deep ballasting, plus using several more tons of ballast.**

Once presented with a sound surface, I cover the whole area where the track will be with 3mm foam. On to this the track and points are laid out dry with everything in the correct position. Registration marks are made with a ball point to show where everything sits. The centres of the tie bars are marked. Any shoulders are cut using a new blade and the track as guide and the excess foam removed.

Once all this is done the track is carefully lifted in pieces so as not to disturb its alignment too much. 15mm holes are cut in the centre of the tiebars; 20mm squares of foam are cut and then put over the holes. After cutting around with a knife the damaged piece of foam is removed and the hole cleaned up; the new piece of foam is glued in its place. If the tiebar positions have been marked with a large cross a small slot can be cut out in the middle of the new piece to allow the operating wire from the point motor to come through later. If there has been any shoulders cut I would add the excess at this stage.

Once the excess is dry and vacuumed, track laying is the next step.

Have everything around you; the ballast; a brush; a clean vacuum cleaner ["Henry" without the bag is ideal; not an upright with an impeller] and your PVA builders adhesive. [Not wood glue]

Ballast collected is reused but it's best to have quite a bit spare so you don't have to keep emptying the cleaner.

It is probably easier to lay the track in stages if you are not used to it. Usually the main clutch of points are laid first. Mark around their extremities to show where to glue is going to go; avoid marking where any other track will be going later.

Paint glue onto the marked area just thick enough to see any registration marks through it. Use a good quality brush and paint down any shoulder without covering the cess. Place the points in position and check with a mirror that they are straight or the curve is smooth. Using staples tack the point in position so it is flat; I use the gun but it may be safer to tap each staple in with a pin hammer.

When happy with the positioning pour ballast over everything and lightly use a brush to spread it evenly. Within minutes vacuum the excess off using a nozzle on the top of the rail; don't touch the ballast. This should leave you with a perfectly ballasted piece of track. Anything which is a bit lumpy can be tamped down gently with a dry finger.

If track is added dry to all the tails the total alignment can be checked with the mirror. Leave this to dry over night; you will have an hour or so to keep checking alignment before the glue sets. The rest of the track can be added in the same way. The main thing to remember is not to put any glue on to ballast already in situ, butt the glue up so there are no gaps and you should not see where the join is.

A note on ballast; I use a limestone from "Geoscenics" which is to my own spec. Most model ballast is far too large or too small. The spec is that it should pass through a 2in hoop so work out the scale size. They will supply the particulate size I use if asked.

The limestone is coloured with emulsion paint watered down a little and just stirred in until I achieve to colour I want.

A couple of tips for the glue brush. When you think you have washed it out, leave it to soak overnight and see what comes out. The alternative is a solid lump in the morning. Don't use cheap brushes they are impossible to use with the glue and especially getting a smooth edge on any shoulder. I have been using the same brushes for years.

Happy track laying.