2: Baseboard Construction

I've done a lot of woodwork before. I'm not good at it: but I can construct something solid, flat and hopefully stable. There's nothing "smart" about my baseboard designs; they are overengineered, heavy and crude. But I can walk on them.

Initial Construction

I had decided that the best way forward was with an "open frame" construction. A timber lattice would go everywhere at the "zero altitude" point, but a plywood top would only go where it was needed. This means that access is available through the base to hidden sections, but it also means the design must avoid mountings for upper section secured by skyhooks.

The railway is essentially free standing: it is secured to the shed walls for stability in the event of accident, but would be quite secure without it. I constructed the legs first. Many of these are made as a "plane truss" with front and back leg plus cross bracing. The legs are 35x35mm timber. They stand on adjustable feet: these are simple pivoting plastic feet with a long threaded rod, purchased from an internet supplier. They mount into a "Tee Nut" tapped into a hole in the leg.

The frames are constructed from 63x38mm timber. This is constructional timber; mine came from B&Q. Quite what it is fit to construct I'm not clear: some of the pieces would go around a right angle bend and careful selection – sighting along each piece – was needed to get good ones. My guess was that I rejected 70% of the timber before purchase: beware.

Construction was surprisingly fast. An electric mitre saw with circular saw blade cuts 90˚ joins (and any other angle, when needed) in maybe 2 seconds. All joints are screwed and glued. Construct the frame, make it flat, then let the glue set. I add thinner baseboard supports: these are 44x18mm softwood, mounted approximately every 300mm.

I used a lot of power tools: the mitre saw and an 18v cordless drill were the two key tools but I have a selection of others. Be careful: I imagine it would be difficult to fit DCC decoders minus a set of fingers.

After the glue had set, the legs were added and the frames joined together. The whole was immediately rigid.

Levelling the baseboards caused a lot of grief. Plan A was to use a rotating laser level; this was fine, except the laser line wasn't perpendicular to vertical on one plane. Thereafter a spirit level was used. At the end of a very long afternoon – and a very fed up 9 year old assistant – the baseboards were level; I'm confident they were flat within ±1mm.

Thereafter, the upper levels were added. The "main" areas were constructed as separate trusses, mostly using 44x18mm planed softwood. These are attached using brackets. Where track runs underneath them – principally the oil depot and the large station – they are hinged. All the intermediate supports for elevated track were simple joined to existing baseboard trusses, providing a "staircase". No slope is above 1:40, and most are shallower than that.

Finally, 12mm plywood was added for the trackbed. This is only used "where required" and plain lattice is present elsewhere. Scenery will eventually have to be supported somehow!

Electronics

The railway will eventually be DCC and LocoNet controlled. I planned how the electronics will power the track before proceeding.

The railway naturally has two "ends". DCC suts distributed power feeds, and I concluded there should be a booster at each end because one 5A power source may eventually be insufficient. Thereafter, by drawing out where the points, signals and power feeds need to be, the electronics can be distributed accordingly.

To make it accessible, the electronics will mount onto hinged panels. In ordinary use these will be tucked up under the baseboards, but they drop down for wiring. I ended up with a need for four such panels.

Initial wiring

For each panel, a number of DC supplies are needed for the electronics. These come from "wall wart" transformers, plugged into mains distribution strips on the shed wall. All railway power can be isolated with a single switch, and there is NO MAINS WIRING ON THE RAILWAY ITSELF.

A number of DCC and 12v power buses still need to run around the railway, together with the LocoNet cable. These run is a plastic conduit secured under the front edge.

A PC will eventually be used with the railway; I will need access to LocoNet and track power for development, and to the programming track for decoder programming. To make all this easy I've put a distribution box on the workbench.

Rolling Stock

I own by now three N gauge trains, only two of which I've fitted decoders into:

- A Kato "Eurostar", which appears to be a truly excellent product and for which a Digitrax "plug and nearly play" decoder is available. (The headlamp wiring is the exception to the P&P rule, but easily solved).
- A Farish 060 Pannier tank locomotive. This has a Digitrax DZ123 decoder, and I isolated the pickups (rather than the motor brushes) from the chassis.
- A Farish class 47 is as yet unmodified, but doesn't look hard to do