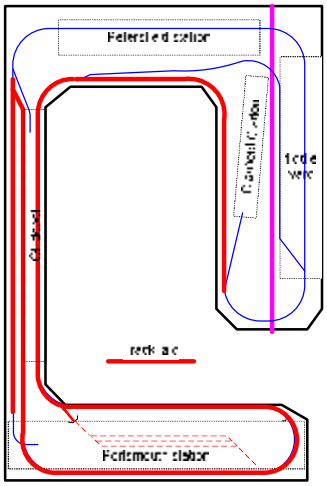
6: More Track Laying



Design Update

The CAD update is done; there's now a track comes out from the fiddle yard to which a further track module could be added. In the process I've also changed the fiddle yard layout. It used to be 4 roads + 1 siding in each direction; the idea was that the siding could be used to take stock on and off the railway. Now that there are 2 reverse loops, and a train can change direction from either main track, there's only a need for one track for train addition and removal. Now the fiddle yard has 5 loops in each direction, with the one at the edge spaced apart a little for access.

Track Laying

We seem to have made good progress this month, with around 25 feet of track in each direction added, plus three junctions. It leads to an impression that it may be possible to finish it after all…..

Firstly, the track from under Portsmouth station up to the junction near Petersfield was added. The junction itself went in, followed by the uphill run to Portsmouth. This was all then wired and tested before proceeding.

This weekend I've added the track from the junction in front of Petersfield, around the inside of the layout up to the junction for Clanfield.

Wiring the track involved a lot of time under the layout. Not a good time for the creeper to snap in half, especially as I was on it…

Wiring Junctions

This month has seen three junctions involving crossings added to the railway. It is appropriate to look at how the crossings are wired, because it isn't obvious.

Firstly, if you use "Insulfrog" crossings then no particular wiring problems arise. The two crossing tracks are electrically isolated, and are simply fed with different track feeds. Good points: simple; no wiring difficulties. Less good points: I found that the wheel flanges shorted across the tracks at the extremity of the frog, causing the power to trip out.

Accepting therefore the advantages of "Electrofrog" points there is then the question of how to feed power to them. Essentially as shipped there are 4 separate regions that need to be powered, and each has a "dropper" wire already attached. The way power is fed to the two frogs depends on which direction a train is running through the crossing. But how do you know?

There are three solutions I can see:

1. Detect train presence using occupancy detectors and use that to decide direction of running.
2. Use a DCC "autoreverser" to feed the frog power. This essentially detects the direction the instant the train hits the frog, and swaps it if wrong.
3. Use the setting on the point running into the crossing to decide if a train will be on the "crossing" track.

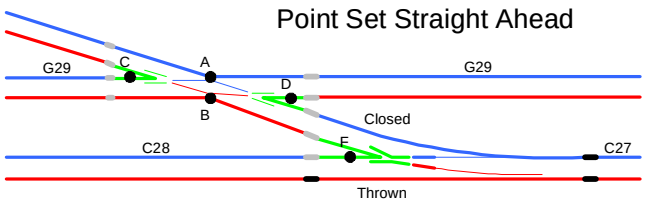
I've used the latter approach. It does mean that for "normal" running through the crossing the point needs to go back to its "straight ahead" position on the other track. As an added complication, we have separate power zones and block detected sections for each piece of track: so more relays are needed than the minimum.

What's then needed is one or more relays that are operated depending on the setting on that point. No problem – the point motors have switches for just that kind of reason. Normally that switch would have driven the point frog, so one extra relay contact is needed.

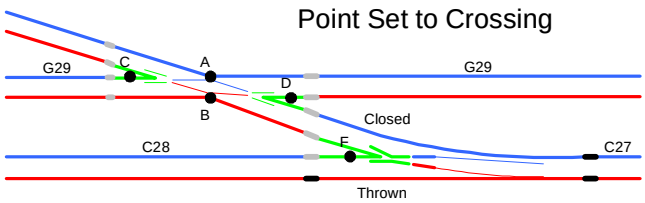
Wiring the Relays

The next task is to work out what relay connects which signal to where. This is actually quite straightforward, once you've drawn a diagram and a table.

The trick is to use a diagram to understand what needs to connect where. On my railway the power feeds are coloured red and blue; in this junction the two lines are on "C" and "G" zones, so the red and blue tracks for the two main lines are actually separate signals. This is as complicated as you will ever face.



When the point is set straight ahead, the point frog "F" needs to be connected to zone C blue. A and B need to be zone G detector 29 blue and red respectively. C and D need to be zone G detector 29 blue and red respectively.

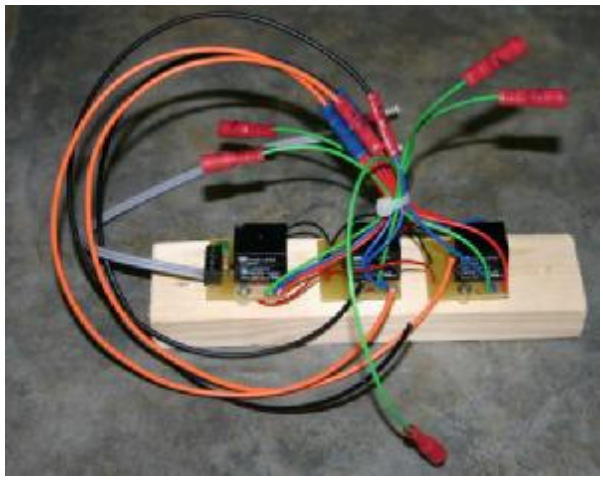


When the point is set to cross, the point frog "F" needs to be connected to zone C red. A and B need to be zone C detector 27 blue and red respectively. C and D need to be zone C detector 27 red and blue respectively.

That's the problem solved. Decide that the relays coils will be energised when the point is crossing: in this case "CLOSED". Then all you need is a table.

Track Segment	When Point **Thrown** Relay not energised	When Point **Closed** Relay energised
F	C27 blue	C27 red
A	G29 blue	C27 blue
B	G29 red	C27 red
C	G29 blue	C27 red
D	G29 red	C27 blue

That turns out to be 5 relay poles for just one jnuction! Nearly there – now they just need to be assembled.



Three DPDT relays, on three PCBs. The whole lot was assembled onto a small wooden batten and wired up and tested on the bench before installation. It was then tested on the railway, making sure all detectors and zones were correctly wired.

Rolling Stock Update

Locomotive	**Decoder**
Kato Eurostar	DN163K0B
Farish class 94xx 0-6-0 PT	DZ123
Farish class 08 shunter	TCS M1
Farish Class 47	DZ123
Farish class 66	DZ123
Farish class 159 DMU	Not yet!
Thomas the tank Engine	Not yet!

No progress or updates in the engine shed this month! Two decoders still to fit…

Next – the fiddle yard, when funds allow!