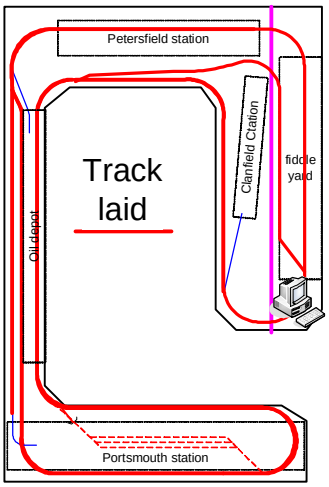
12: Reliability Improvement



Again, no new track this month!

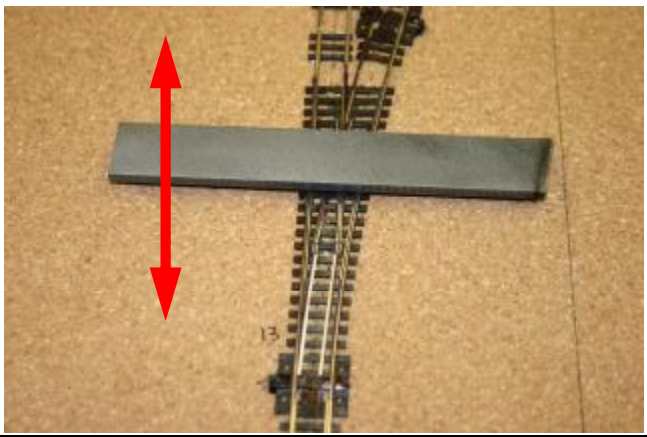
OK, so we have a computer, a long run of double track main line, a fiddle yard and quite a few trains. As I've explained, I don't want to add more track until the computer control side and the coupling system have been sorted out. RR&Co v& isn't released yet.

But there is a lot more to do in the meantime! Most trains run reliably around the railway, but one or two problems do occur. Some work needs to go in to sorting those problems out, so why not start now?

Track Improvement

The track has been considered by many visitors as "well laid". But one operation I'd never done was "draw filing" to get the rail heights through the points constant. This would improve running reliability, and also improve power pickup through pointwork.

Draw filing is simple. It requires a fairly coarse file cut down in length to fit. Mine is a 2nd cut file from B&Q, and I used an angle grinder to cut off the tang. Use some kind of marker pen to blacken the rail tops. Lay the file ACROSS the track as shown, and file ALONG the track as shown with the file kept flat. NEVER file across the track. Then keep filing till all the black has gone.



It didn't take very long to go around the whole railway and do that. Now the rail should be uniformly flat everywhere.

I have noticed that some wagons still "lurch" when going through some points. This may mean they are now grounding on the plastic base. A junior hacksaw blade can be used to scrape away plastic, but I haven't tried that yet.

Rolling Stock Improvement

The obvious other area for improvement is to the rolling stock itself. Most of my trains run very reliably through all the pointwork. Unfortunately the Dapol Voyager does not: it derails almost everywhere. It was bought for a small demonstration railway and doesn't strictly belong to me: but if it isn't run it will be unlikely to function when it's next used for demonstration, maybe a year from now. Interestingly, on the demonstration railway with 9" radii bends it runs fine!

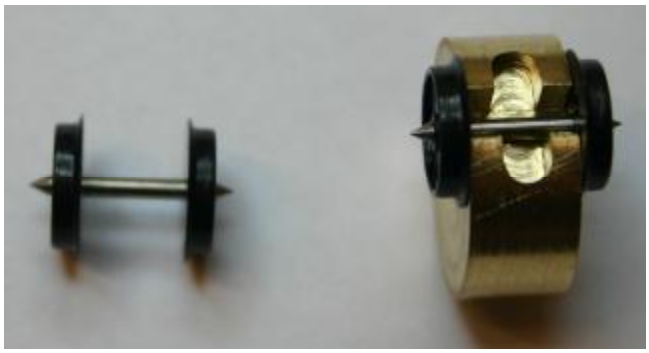
I added a little lead weight to each Voyager non-powered car. Lead sheet is readily available from DIY stores for roof flashing; one roll from there will meet a lifetime of model work. This improved behaviour a little, but not completely.

One of the bogies was not free to turn properly. When I removed the bodyshell, its movement was being blocked by the pickup arrangement. There are small horizontal phosphor bronze strips above the bogies; one of these was too wide and had not pushed fully in. after some trimming it lay flat and the bogie turned freely.

I was recommended to get a "back to back" gauge: problems like this are often caused by wheelsets being out of gauge. With a proper gauge, the wheels can be adjusted for correct wheel spacing. I read somewhere recently that no manufacturer has an absolutely reliable way to set wheel spacings.

Use of the gauge is simple. Offer it up between the wheel flanges: it should be a comfortable fit with no "slack". If there is significant movement, it points to oversize wheel spacings; if it won't fit in they are undersize. To make adjustments, the wheel needs to be removed from the model and

adjusted by pushing or pulling until it fits (see photo).



Armed with a suitable gauge it was time for some measurement! Most of the locos and rolling stock were fine, but the Dapol voyager had wheel spacings probably 10 thou oversize. In comparison with every other vehicle on the railway they were huge!

Every Voyager axle was removed, and all wheels were pushed inwards. They have a central plastic spacer that sets a minimum size, and that spacer seems to be very slightly too long. I've adjusted all down to minimum but there is still a little slack.

As at right now its behaviour is far better but not perfect. The centre unpowered car is now the one that comes off the rails; clearly it still needs more work.

I've also had some issues with my Eurostar: for a while I thought its decoder was dead. It would coast to a halt, then run off again. But it was observed that *it always did this in the same positions on the railway*. That must, surely, be pickup related. With thoroughly cleaned track the problem goes away; but half an hour later it does it again. I'm wondering if the model is, really, picking up correctly from all axles.

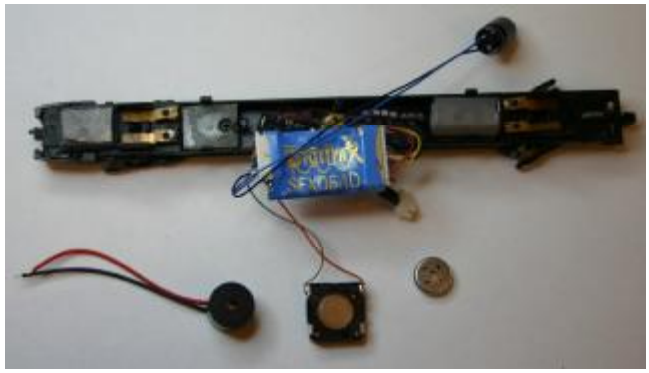
Adding a Sound Decoder

What kind of madness was this? N gauge sound? Any why wait till 4 days before Warley before installing it?

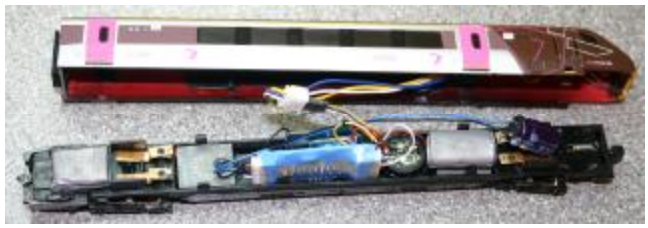
A common view is that sound decoders don't fit N gauge models. Not universally true, because you can buy US models with on-board sound. However, a multiple-unit train has a lot of space in the non powered units. I decided to fit a Digitrax SFX064 to the Voyager. However rather than following the Dapol suggestion (using the unpowered central car) mine would go in the end car, and also operate the lights.

The first challenge was to modify a "dummy" decoder plug to act as a 6 pin plug. (I've since found the correct connectors for this…) This was then soldered onto the SFX064 decoder wiring harness, turning it into a plug-in decoder.

I had 15mm speakers (centre in the photo). One of these was araldited upright into the car, and the decoder fitted around it. With a few drilled holes in the bottom, sound could get out, right?



In practice the decoder was very quiet and couldn't be heard over the mechanical noise from its own motor. I've since replaced the speaker with a 10mm speaker (bottom left in the photo) mounted onto the base; the loco shell then acts as a baffle.



As shipped, the decoder has a US sound; changing a CV selects "generic diesel" sound. I was able to get a UK horn sound as a .WAV file. The Digitrax "soundloader" program does allow sound compilation & reprogramming, but for some reason it didn't seem to "take" the programming. Again, don't try to do this 15 minutes before the public walk into the hall at Warley!

Sound's OK as a proof-of-principle; but I think there is a long way to go in my use of it!