

My Project “Eyam” Update 2024/5.

For the last few years nothing seems to have gone smoothly. While the pandemic disrupted movement I have had issues with the railway room and my own health. The temperature changes in the railway room from over 26 °C down to zero, resulted in timber shrinking and expanding while the steel rails have expanded in heat and shrunk in the cold. This required adjustments to rail breaks where short circuits occurred in hot weather and in turn this results in large rail gaps occurring in the cold. The floor became sprung and track alignment was affected and eventually a new floor was placed over the old floor resulting in further track mis-alignments. All these matters will gradually have to be cured as an opportunity arises.

I had not realised that the early morning sun could reach the grassed areas at Bubnell, one scatter material bleached to a bright yellow instead of a pale straw colour so the windows were given a ultra-violet light screen to stop that occurring. This made the room darker than previously so I accelerated the layout lighting project. This is strips of LEDs in a channel moulding hung like overhead catenary over the layout. We determined that a height above track and away from the rear baseboard edge for the lights should be 80 by 60 cm. I chose daylight colour LEDs as I do not like the cool (blue tinge) or warm (yellow tinge) lighting. The colour of the models is very important to some, while I have found any colour can change in artificial light depending upon the colour tone the lighting, so to my mind the colour of railway stock or scenery will never be right for everyone all the time.



Some of the vans built, mainly from Slater's kits and others from Cambrian Models; some were heavily modified to make variations in the designs.

Many of the vans were vacuum braked and required screw couplings.

We were undertaking experiments with a laser cutter and 3D printers, these too were affected by excessive cold. In 2024 electrical continuity to some rail sections appeared to have been damaged, the cause of which is still uncertain, but we speculate these were broken joints occurring during the coldest periods. As a consequence track building is likely to be suspended in the railway room over the coldest winter periods. We had changed our soldering process of traction power wires to the steel rail, so it maybe only the older wire connections were affected, but in the future we will need to make larger holes through the baseboard, so the wires can move with the rail, if they need to.

My own health suffered during 2023 and only during spring 2025 it seems there maybe a return to a kind of normality I had become used to before. Never-the-less scenic work progressed mainly at Calver, rolling stock construction continued at around 25-40 wagons per year and some point work

was constructed for Calver North Junction the only location where the main track circuit was incomplete though there are areas where track power still needs to be installed.



The trial main island platform building for Calver in foamboard and pink paper at Calver.

The final building will be slightly different.



Part of Calver North Junction track with the road over bridge in place.

Below an early telephone call box has been installed on the over bridge.



Four more signal boxes were started, the two for large boxes for Calver and the smaller boxes for LowDale Crossing and Bubnell. The signal box entrance steps however proved an issue with the kit components being unsuitable for use on the taller signal boxes, so an etching was developed for the steps. Other etchings had been produced for the Calver such as the road over bridge girders and more etches will be needed for the island platform canopy.



Calver Station proved a more lengthy project than had been anticipated.

Based upon Water Orton Station we adapted the design and added the footbridge and second parcels lift.

The buildings are largely plastic, laser cut with etched windows and the lattice footbridge girders.

Some progress was made with the plastic coach kits. Where necessary the roofs were made to fit and lamps and ventilators were added to the low roof coach sets and some of the clerestory coaches, including the 6 wheel set. Each clerestory roof has had "window" etchings added following the Branchlines kits examples. Some of the coach bogies have been fitted with coil springs and others transverse leaf springs and about half the clerestory coaches are being fitted with their door toplights by removing the kit's moulded ventilators. We have etched fittings for the doors that need to be applied after the mouldings have been removed and all will be given sprung buffers, essential for negotiating the model (sharp than prototype) curves.



Another wagon with DIY transfer lettering.

We had an old Slaters transfer printed wagon kit where the sides were not handed but the same, so we scanned the good side and produced transfers for another, plain side. Hopefully the reduced quality does not seriously notice especially at distance.

After the first stages of the Calver Station were finished we pondered for a while about the main island platform buildings that would be located on a curve. A trail design was constructed in foam board for these buildings. We were not sure how a canopy could be made, but by using templates, paper and reference to prototypes a design has been developed and this building has now been started.

The latest design for wagon and coach screw couplings has finally been approved and has been fitted to some wagons. More will be needed for both non passenger coaching stock (NCPS) and the coaching stock that is being constructed. This includes a laser cut steel bottom link which has been produced as previous soft iron bottom links were able to be distorted and detach themselves from the rest of the coupling. I prefer the magnetic loop, loose couplings as now somewhat older and no longer exhibiting a layout, but I can still easily derail stock using a coupling stick with a hook end. Corridor coaches however will need special treatment as fitting prototype couplings to them makes it almost impossible for me to couple two coaches together - normally the stock's coupling would be used on motive power so only vacuum and steam heating pipes get in the way for that task.

One issue with the coaches was the need for oval buffers; eventually a tool for their production was developed as around 120 oval buffers will be needed. There are several sets of coaches are close coupled sets and for them a close coupling has been developed using a short shackle and a short buffer body has been procured for those sets, but one issue that remains to be implemented is a means of stopping the buffer heads rotating. We have tested the close coupling system on the tightest running line curve and determined that oval buffers – as fitted to the prototype coaches – will be essential for successful operation.



The tool for shaping round buffers into an oval shape was laser cut with packing pieces etched in brass.

The last of the main line track point work was started at Calver North, but was temporarily curtailed by a hospital stay followed by immobility for some months – I broke my right femur stacking some logs in a fireplace. Since then point work construction has been restarted but we had some issues with making the required crossings. These will be largely 1:8 acute and obtuse crossings. It was the obtuse crossings that caused the biggest problems; I will need 8 in the initial stage for double slips and at least as many later. Eventually I found working upside down and from the check rail to the running rails was the easiest construction option for soldering the crossings together to make one item without melting the plastic chairs used for the track.

I have started to look at signalling needs and decided where appropriate single post up and down home signals would be best. As a result components for signals have been added to the etched parts requirement. I am still uncertain about illuminating the signal lamps so all posts needed to be hollow for electrical wiring, just in case. Until these are fully tested they will remain off the AMBIS price list while I build up a supply of components.

Since we have had some issues with electrics I felt that experimenting with battery powered stock was worthwhile. An old EM locomotive with a solid white metal chassis has been converted, but during this process the axle size needed to be changed from $\frac{1}{8}$ in to 2mm diameter to fit in a new gearbox. Of course there was a hitch, I bored out a bush just a little too much and messed up the quartering that will now need gluing to fix in place, without gluing the axle in the bearing. When this is done I will be able to test run stock before the track is wired to the train control system.

The other major issue has been turnout operation. After Albert Park Junction track was finished I decided to take operation "underground" so all other switch blades are connected to though baseboard cranks. However due to my medical issues working under baseboards now ranges from impossible to difficult, so most point operation has been seriously delayed.

With the other delays including waiting for a long time for some transfer lettering I decided whether or not the stock was needed for the train sequences I would try to finish all those partially built items that had been building up over years. This includes quite a number of white metal wagon kits that can be quite heavy. In fact one, a Nu-Cast MR motor car van is so heavy it will need new sides and these need rows of louveres and thick raised panelling – so that is another thing for 3D printing. In other cases, where possible, lighter materials will be substituted for the cast axle guards and brake gear. Open wagons are probably just the right weight, it is vans that can be too heavy. Other NPC's stock is made from other materials, etched kits, some old resin cast kits and I have a number of 3D printed 6 wheel vans that need a chassis. These vans from Stoke 5D were bought through



The Stoke 5D modern resin printed LMS fish/slatted milk van in a red primer with the beginnings of an etched chassis.

These are resin moulding kits from "Custom Carriage & Wagon Works" who disappeared by 1990. Unfortunately the label "meat van" comes from the fitted version courtesy of a PC wagon kit as we could not find a white version in this lettering size. Originally sold as a fitted version this kit still needs some attention - the brake rigging is missing. The fitted versions used with coaching stock appear to have been scrapped by 1905, but information on the unfitted versions used in freight trains is sparse so this could still be in existence in 1925.



From the same source another wagon that needs completion. The windows in these kits used glass moulded into the resin body. They also used resin mouldings for chassis parts that were not that successful.

Shapeways that ceased trading in 2024 so I don't know if they might resurface from another source. The other resin wagons kits are very old, from a company I have not heard of for many years and I have never seen any available secondhand. They did short runs casting in resin NPCS, all of Midland Railway stock are make very nice models.

Stock with fixed wheel bases are not usually a problem, especially bogie vehicles, but those with shorter fixed wheelbases can be. They tend to bounce off the track so I have decided as a safety measure to retrofit wheels with a deeper flange than the P4 specification to those wagons. Some of the early EM specific wheel sets do not have very wide flanges, this can be improved with reducing the root radius between wheel tread and flange but the main requirement is to reduce the overall wheel width to about 2mm so the wheels with a P4 back-to-back distance will fit between axle guards. This is going to be a task mainly for r-t-r private owner wagons where all that was originally done was to change couplings, the wheels and maybe adjust the brake blocks; I do have plenty of EMGS wheel sets to use for this purpose. As I also have some coach diameter wheels they can be similarly treated and can be used in r-t-r coaches, not because it seems necessary but just to save buying more wheels and discarding others.

Even compensated stock (I don't have any sprung wagons) can bounce off track. This is mainly because the weight of the wagon is too low and/or the centre of gravity is too far from the compensated axle, so these need to be checked and weight added to press on the compensated axle.

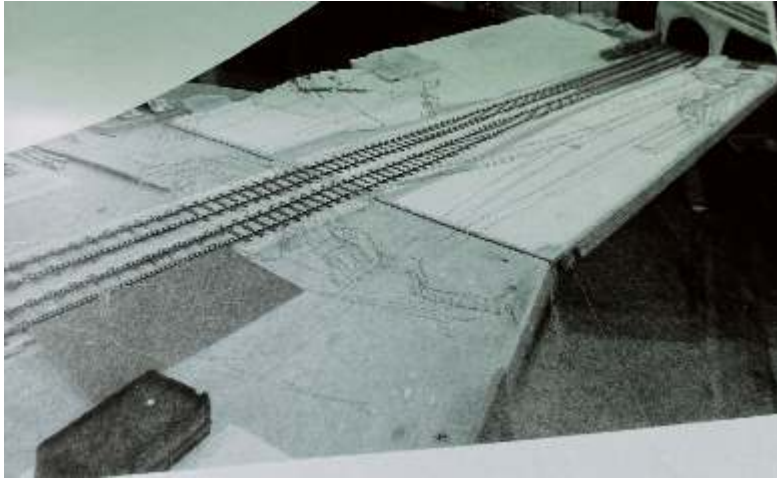


A short section of the Chesterfield line had to be relaid, this time on a firmer base than foam board affected by dampness. As a consequence the rear of the embankment slope did not look correct, so we have added a short retaining wall topped with a three rail safety fence.

Other wall copings have yet to be installed and the ground "grassed" and the main river bridge, designed, built and installed.

Before new works are started the Chesterfield line from Calver will need finishing and flattening. The flattening is required following the changes to floor levels as the floor was replaced as is fault finding in the tunnel from LowDale to Dove Holes that will require access under the Calver-Derby line that passes overhead. This maybe just gauge narrowing but until fully diagnosed we are not sure. Of course this is the most difficult area to reach on the whole layout, but this was a risk we had identified at the beginning.

Some of the time spent has been to visualise the area around LowDale Crossing, mainly on a lifting flap at the end of the station platforms. I decided to build a closed and decaying factory with rail access removed by the era of the model, from the bay platform at LowDale. Next to the level crossing will be installed a pedestrian overbridge – an old George Allan etched kit. On the other side of the railway will be a short terrace of the backs of buildings. This virtually completes the detailed design for the main railway, just leaving Treacle Lane and City Road to be planned in detail.



One way we plan scenery is from photographs. This is the lifting flap at LowDale.

With the road crossing in the foreground, with the space for an abandoned factory on the lifting flap this has been sketched on to a print of a photograph. This detail may justify the large signal box being built as additional levers would be required for the point work to the factory.

The level crossing will gain a pedestrian footbridge adjacent to the crossing.

One thing that is seriously lagging behind in the progress with motive power. My initial test locomotives have turned into a mixed bag of success and failures. The bogie diesels seem to work best from r-t-r suppliers, without compensation except those with three or four axles per bogie, that will need further attention. Similarly four coupled steam locomotives work well as do some with three axles - although these do have some form of compensation. Longer wheelbases - such as 2-8-0's have some issues with curves as far as my experiments have progressed, sometimes this seems an issue with available side play. In particular a short wheelbase tender from Bachmann has no side play in the centre axle and it keeps derailing, as does a kit built 8 wheel tender, whereas other middle sized tenders with some side play in the centre axle have not been a problem. So initially I have a number of four coupled locomotives to convert that I would expect to work well, except there are two with insufficient clearances under driving wheel splashers that have a tendency to produce intermittent short circuits and resulted in two dead decoders. Meanwhile there are the started etched Midland Railway engine kits to progress.

There is still much to do, it will take many years to make much of an impression on the job list especially where some things have to be repeated where they were not up to standard in the first place.

March 2025.