Association of Shrewsbury Railway Modellers
March 2023 Newsletter

70000 Britannia Test Run at Beeston *Chris Kapolka*

<u>Contents</u>

Many thanks to all who have contributed. There is perhaps a wider range of topics than usual with the emphasis more strongly on the prototype, but, as always, it is a very good read.

Lent may have just started, but let's hope that the worst of the winter cold and the sky high fuel bills are behind us, and that we can look forward to the gathering spring. I take this early opportunity to wish you all a very Happy Easter.

Peter Cox

What is a Westinghouse brake? Nick Coppin

When I started my model of the Great Eastern Railway, I noticed the locos all had Westinghouse pumps, usually on the footplate or attached to the side tanks. I knew they were different from vacuum brakes but not sure how. A visit this summer to the Isle of Wight brought us close to locos with this system of braking and I am attempting to find out how they work.

The Westinghouse pump on GER 0-6-0 tank no. 87 from the NRM collection.

Photo by Alan Fell

I would be most grateful for any of you with practical knowledge of this subject to send me corrections where I have got anything wrong.

It would seem there are four systems of railway braking. The simplest is mechanical braking with a wind-down handle usually used as a parking brake. I have used this method as a stopping brake, while driving Isabel, a 2 foot gauge Bagnall 0-4- 0 saddle tank.

The next method is the steam brake. This is often used on shunting locos which are not ‘fitted’, i.e. only the loco has brakes that the driver can apply. Here a cylinder is in line with the wind-down hand brake and steam is admitted from a valve to apply a lot more braking force than could be applied by hand.

Vacuum fitted trains have a vacuum pump or ejector and vacuum chamber. Using brake cylinders attached to the brake linkage throughout the loco and (fitted) train, the vacuum ‘pulls off’ the brakes so the train can move. Air is gradually admitted to the system to reduce the vacuum and put the brakes back on. This was the system

used on much of the British railway network up to the end of steam (I think!). We saw the system in operation on the dmu we travelled in at the Telford Steam Railway at Horsehay at the July meeting. Locos and wagons and coaches in the train had to be connected by a system of pipes. These would be disconnected when uncoupling vehicles and the ends of the pipes sealed so the vacuum could be restored to allow the brakes to be pulled off. Individual vehicles have a small vacuum tank so they can ‘pull off’ the brakes if they need to be moved separately from the loco. Some wagons and brake vans might have a ‘through pipe’. They did not have vacuum brakes themselves but the pipe allowed them to be located between the loco and fitted vehicles or in the case of a brake van, the guard could apply the vacuum brakes on the train from the brake van, even though there were no vacuum operated brakes on the van..

Air brakes are now used on the modern railway and Westinghouse is a form of air brake. I well remember the sound of the compressors starting up when our Southern Region electric trains were stopped at a station. There is a video explaining this system on You Tube

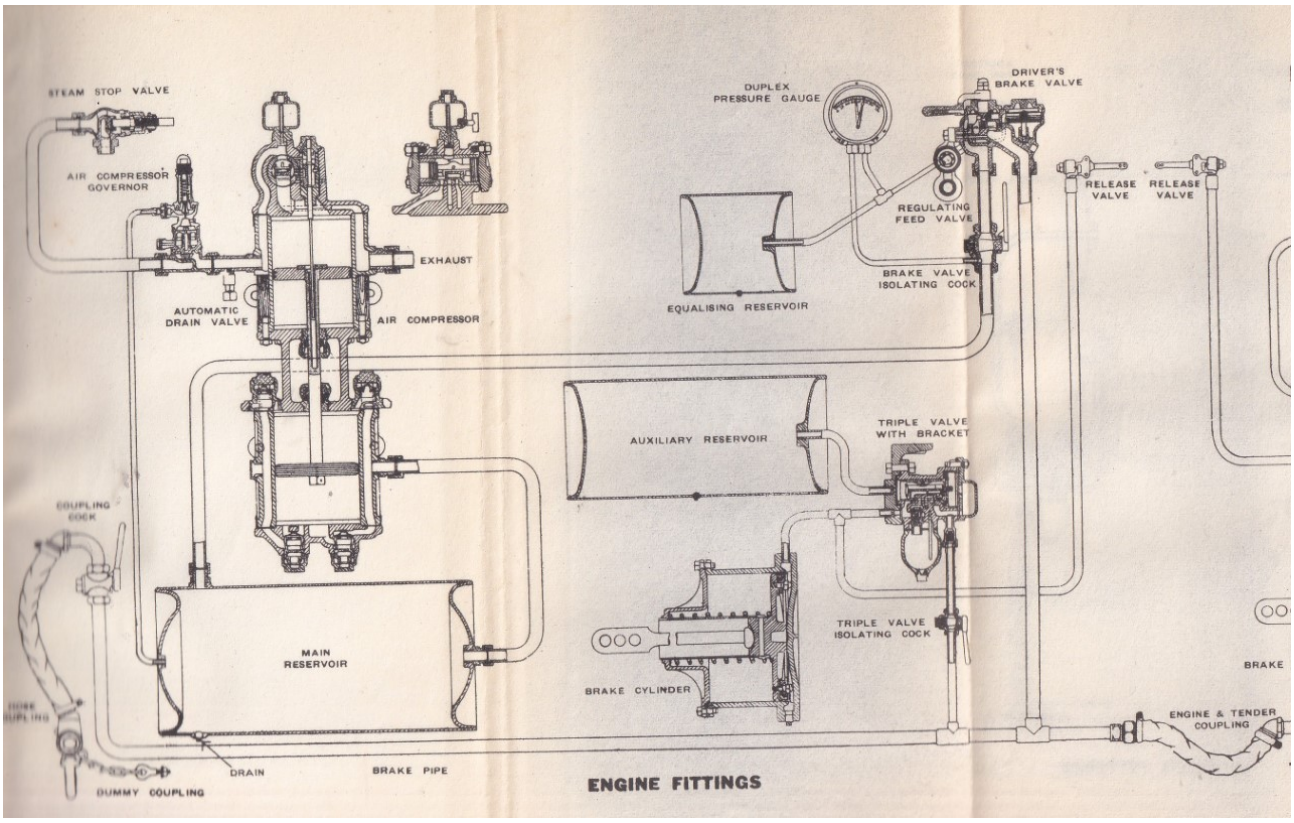
https://www.youtube.com/watch?v=iecqOtCaTXQ

Unlike the vacuum brake, air brakes used compressed air stored in a receiver (tank) to force the brakes on. In its simplest form, there would be no braking if the train broke and let the air out of the flexible pipes joining the vehicles. However, there is a valve in each vehicle and an auxiliary tank which applies the brakes to that vehicle in the event of a leak or pipe breakage. When the brakes are applied, the drop in pressure in the train pipe actuates a ‘triple valve’ which allows compressed air from the auxiliary tank into the brake cylinder, putting on the brakes.

Steam locos have a two cylinder steam air pump to compress the air. The top cylinder is steam operated from a valve and the piston is connected to the piston in the bottom cylinder which compresses the air. When the pressure of the air in the system is high enough, the steam is shut off and the pump stops. As the pressure drops, the air compressor governor lets steam back in and the pump starts up again. I did not realize that on a railway using Westinghouse brakes, the pumps would be working much of the time in the station area as the brakes were applied and released. Apparently the smog of steam and smoke that dominated Liverpool Street station in east London, was accompanied by the racket of Westinghouse pumps working almost continuously. To give you an idea of the sound, here is a Westinghouse air pump fitted to an ex GW pannier at Amersham on the Metropolitan line.

https://www.youtube.com/watch?v=uL2UG4JFcrU

As you can imagine, this is a rather simplified explanation. Here is a diagram from the LNER Locomotiveman's Pocket Book of the system on a loco.



I shall be using this diagram, along with the photo of no 87, to attach pipes to the Westinghouse pump on my model of the GE loco I am building for my 0 gauge railway. The pump came from Laurie Griffin and is nicely cast in brass. I am not using DCC but quite fancy the idea of ambient sound effects; to that end, I recorded a couple of Westinghouse pumps on the IOWSR with a view to playing them as the loco comes into the station.

The Netley Ambulance Carriage

Stephen Duffell

The Crimean war was a turning point in the care of injured service men, and the government of the day was forced to provide facilities for the treatment of the sick and wounded. Part of the response was to provide a hospital where treatment could be carried out. One such site was at Netley in Hampshire, opened in 1863 as he Royal Victoria Hospital. It as planned by a committee with little knowledge of what was required, and amendments had to be made to make it more workable. Florence Nightingale was prominent amongst the objectors to the planned construction. A pier was built into Southampton Water and patients landed there were taken by cart to the Hospital.

Between 1863 and 1899 wounded and sick arrived from where the British Empire was expanding. Countries such as India, Sudan, Egypt, New Zealand, North West frontier of India and the Khyber pass provided patients to the hospital. The South African (Boer) war sent many patients to Netley and the capacity of the hospital was exceeded. There was a lull in the activity of the hospital from 1903 to 1914, but the First World war once again overwhelmed the hospital. In the 1950's questions were raised about the cost of maintaining such an unsuitable hospital and it finally closed in February 1978.

The transport of injured and sick men from the pier or Southampton Docks was not satisfactory, and the War Office pressed for access by rail. A terminal station was opened at Netley on a branch from St Denys in March 1866, but this still did not satisfy the War Office as they required better access to Portsmouth. In September 1889 the line from Netley to Fareham was opened making a through route between Portsmouth and Southampton. There was still a distance of a mile to be travelled from Netley station, which had a platform for the Hospital to the east of the main station, to the hospital itself. It took another 10 years of delay before the news was given of a Netley Hospital branch was to be built in December 1899. The branch opened 4 months later in April 1900, and patients could now be delivered straight to the hospital. Most came via Southampton Docks as the pier was less used with the increase in size of ships carrying injured men, and the lack of deep water.

With the railway opened to the hospital and the Boer war well under way, the War Office had a need for ambulance coaches to take the sick and wounded from Southampton Docks to Netley and other hospital sites. An order was placed with the London & South Western Railway for 5 ambulance coaches. These were built at Eastleigh works of the LSWR as conversions of 48ft bogie fruit vans. Each coach could accommodate 12 cot (stretcher) cases and 12 sitting cases. It was painted French grey for the upper panels and khaki for the lower ones, and the panels picked out in yellow with a fine red line. On the side of the carriage there were two Geneva crosses with the royal arms emblazoned on the centre French grey panel.

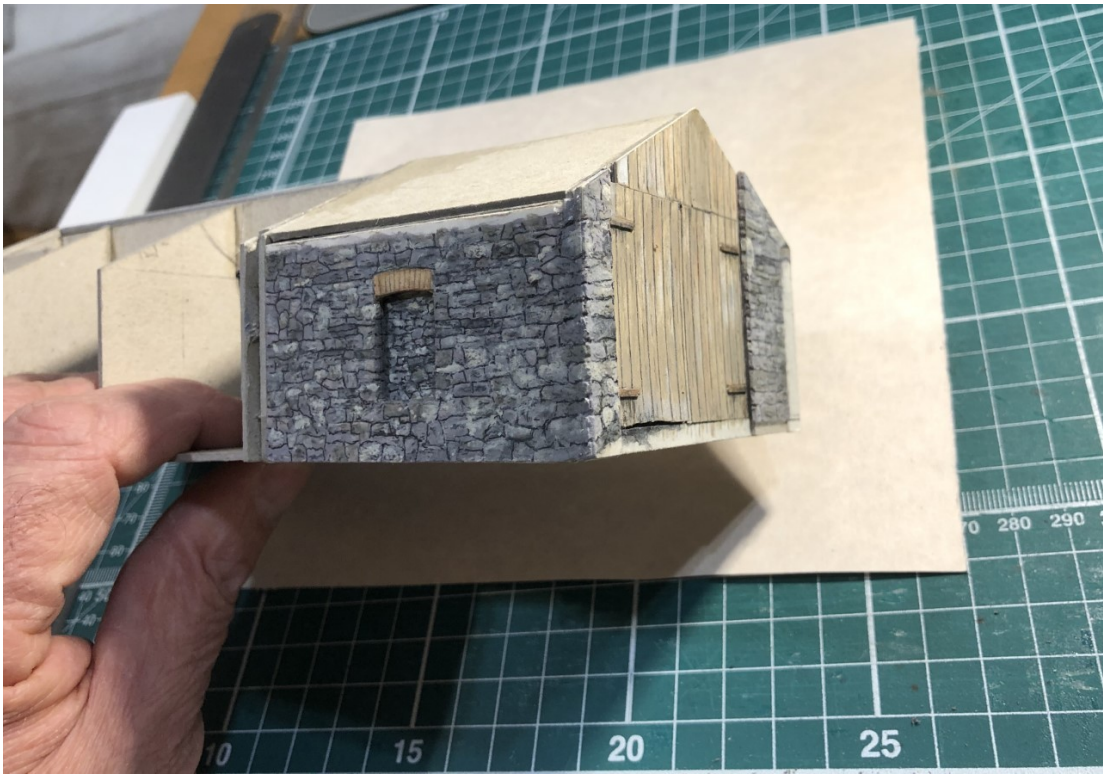
The coaches saw plenty of use in the Boer war and WW1 with only casual use after WW1. The Americans used the hospital from 1944 and various other ambulance trains and coaches were used on the branch. The Netley coaches were transferred to Longmoor where they were used as passenger coaches, first with bench seats along the sides and then with bus type seats. The last Netley coach was withdrawn in 1947.

A Netley coach in original livery

A Netley coach posing on Gavin Clark's layout Kerrin Head. The model is built from a Roxey Mouldings etched brass kit, in 4mm scale with P4 wheels

Modelling Progress (1) : Wadebridge **Chris Kapolka**

The photographs show progress on a 4mm scale project recreating the original Bodmin & Wadebridge railway workshops as they existed in 1961 adjacent to the Padstow line. It is built from card with detailed overlays on Shreddies packets. I had built dummies to ascertain dimensions from a very few photographs.



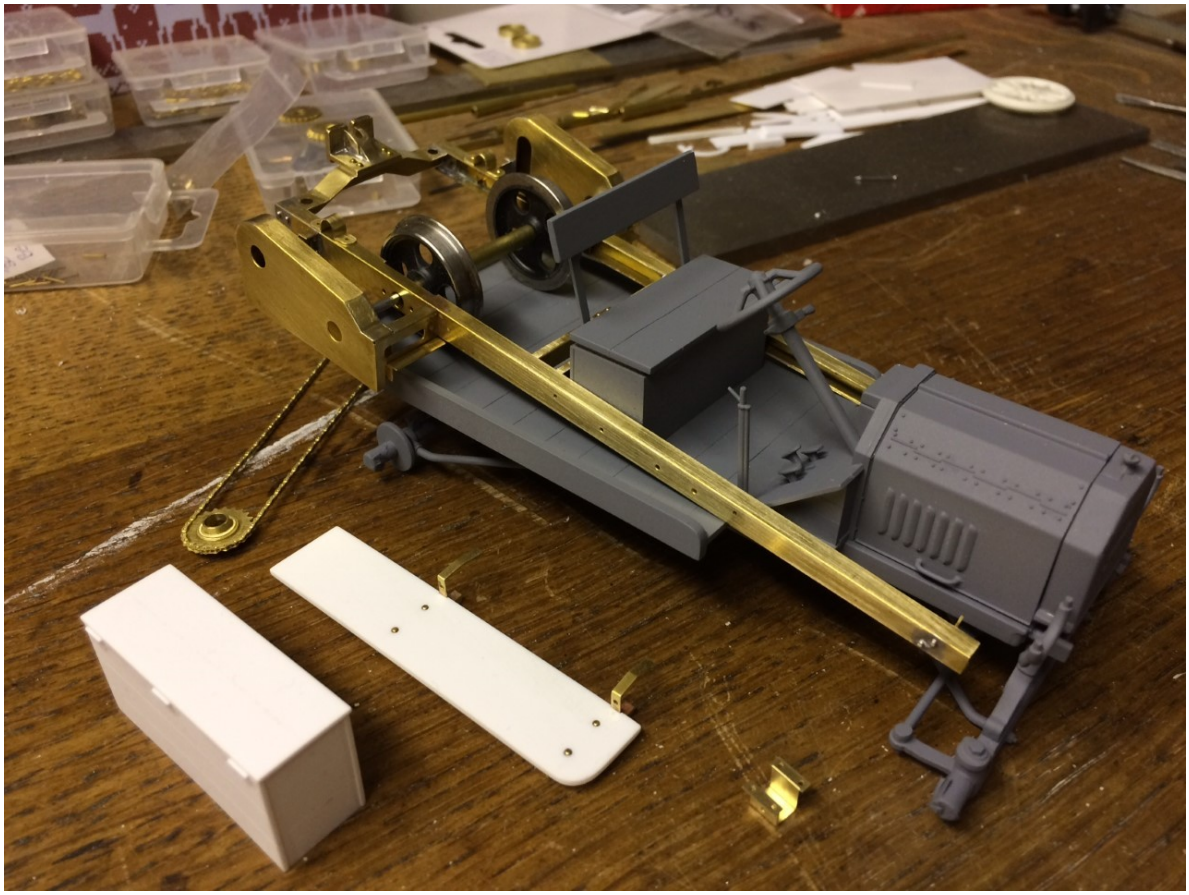
Here is the battered and evocative prototype:-

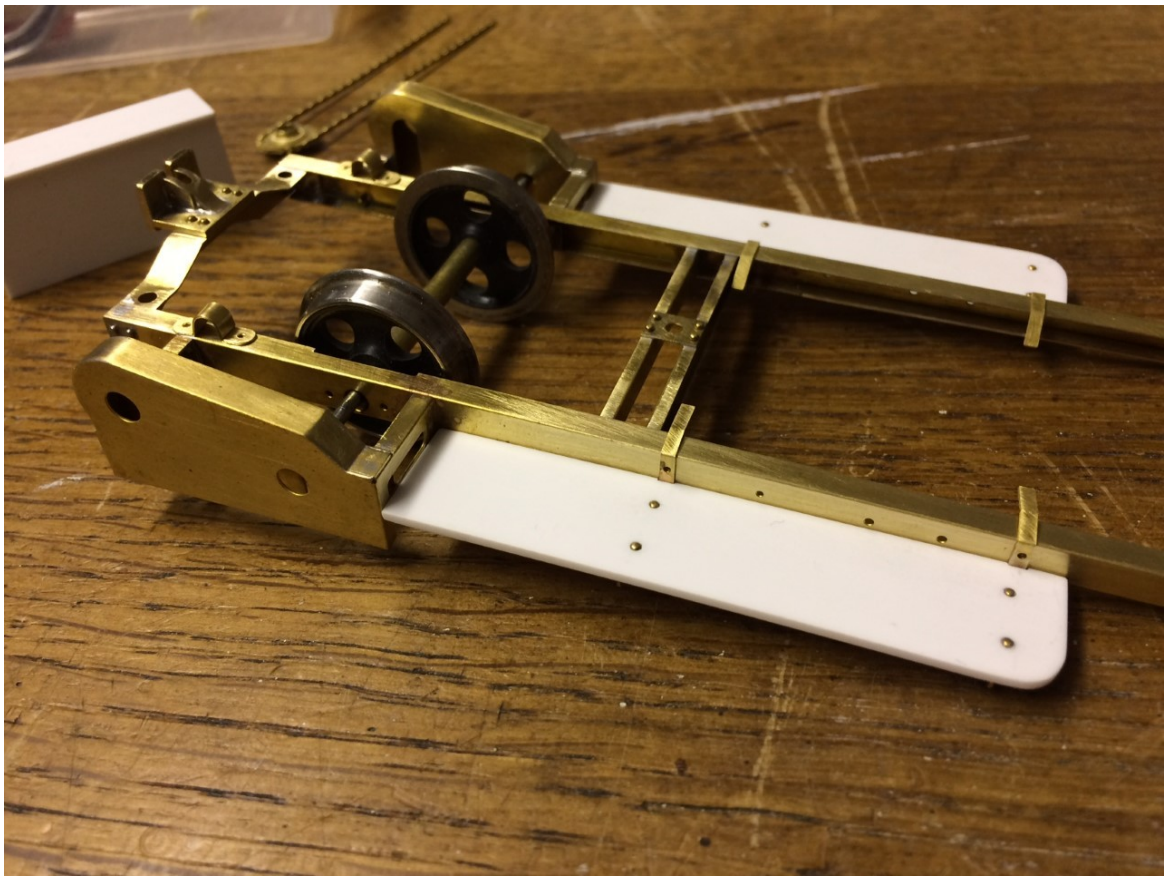
Modelling Progress (2) : Crewe Tractors - 16mm scale **Andy Vaughan**

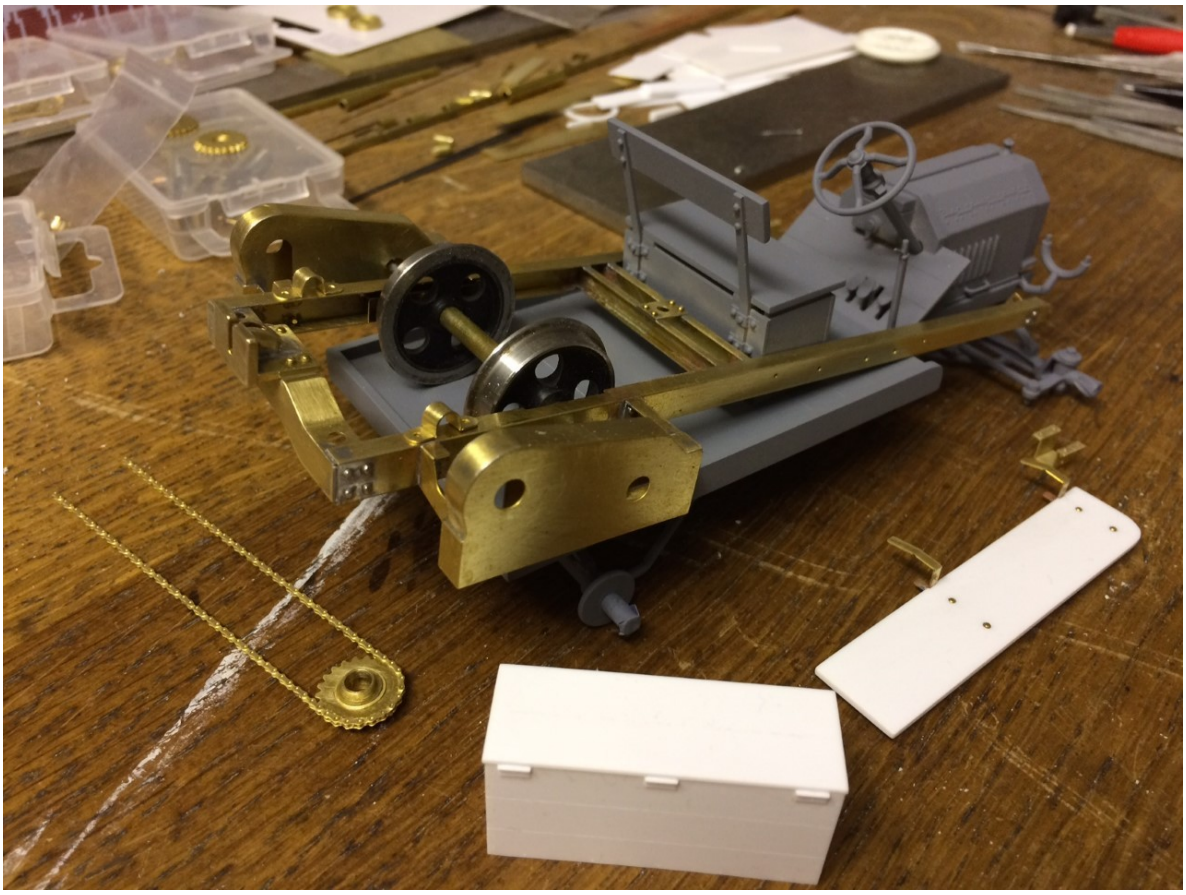
A little progress on my WW1 Crewe Tractors project – I have pushed on a bit with the road-going version in the hope that by making the ‘dummy’ set of rail chassis it will help me figure out how the rail-running version is going to pan out.

A lot of the assembly will have to be in a very specific sequence otherwise there will be bits that I will not get into it afterwards, so there is some headscratching still ahead yet.

The road-going tractor Model T Ford has now had a coat of primer, and I am making up the footboards, toolbox, brackets and faux bits of drive chain. Hopefully finished by the April meeting!







Photographs from the Welshpool and Llanfair **Vernon Larcombe**

Taking on water at Llanfair Caereinion

The shape of things to come: briquettes at Welshpool
"It's coal Jim, but not as we know it…."

Soldering for Dummies

Dave Gotliffe

I don’t know about you, but I used to avoid soldering like the plague. it seemed to me that there are two types of solderers in the railway modelling community: those that are good at it and enjoy it, and those that aren’t and don’t. I was in the latter category. I occasionally soldered a bit of connecting wire to a rail, or wired up the odd switch on a control panel, but that was about it.

The same cannot be said about the remainder of the little group at the ASRM who live in Broseley, and who have become good friends. When we meet up they often earnestly discuss the ideal wattage of soldering irons, the pros and cons of silver solder versus soft solder, the correct temperature to use for various metals, the melting points of different types of solder, the desirability of acquiring old lead-based solder and the characteristics of the myriad variants of flux. It all went over my head.

Recently I have been working on the Craven Arms Hotel at my model railway club. While the main building was with Chris Rowlatt having its roofing slates attached, I turned my attention to the surrounding roads. One item which drew my attention was the Clun Road Bridge. It was in a dilapidated state, and somebody had attached a bit of wooden-style fencing in place of the metal railings you would expect to see on a bridge of this type.

Clun Road Bridge on the Craven Arms MRC’s layout, before refurbishment.

For the past few weeks I have been refurbishing the bridge and the B4368 Clun Road beneath. I particularly wanted to replace the incongruous wooden fence on the bridge with metal railings. I couldn’t find a suitable commercial product - if there is something out there I suspect it would be prohibitively expensive in any case - so I concluded that the only solution was to make my own. As it happens, I had some 1.5mm brass rod, but I figured that the tiny surface area of each joint would not produce a strong bond if glued, which meant that I would have to solder the pieces together. Perhaps the enthusiasm for soldering by the other members of the Broseley Group was starting to rub off!

The real Clun Road Bridge – with metal railings, as you would expect.

The first step was to assemble what soldering equipment I already possessed -
a variable-temperature soldering iron from The Range (wattage unknown, temperature range unknown), a roll of “solder” (melting point unknown, type unknown – except that it’s lead free), a tub of “flux” from Wicks (type unknown) and a reel of de-soldering wire in case I bollocks it all up.

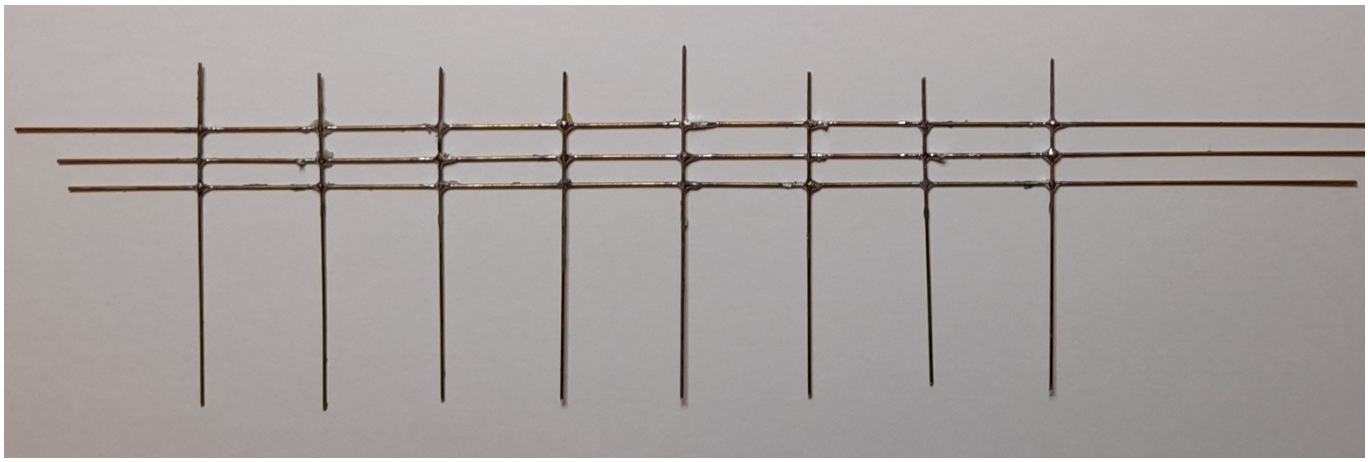
The complete soldering kit for the Amateur Solderer!

This seemed enough to make a start. I then needed to work out how to fix everything in place while the solder was applied. After some thought, I applied double-sided tape to an old cutting mat and fixed the brass rods to this – the 1cm squares on the cutting mat enabled the rods to be aligned accurately.

I applied flux to each joint with an old paint brush, then soldered each joint as carefully as possible, setting the soldering iron to its (unknown) maximum temperature and applying the soldering iron to each joint for as short a time as possible. To my considerable amazement, it all seemed to work.

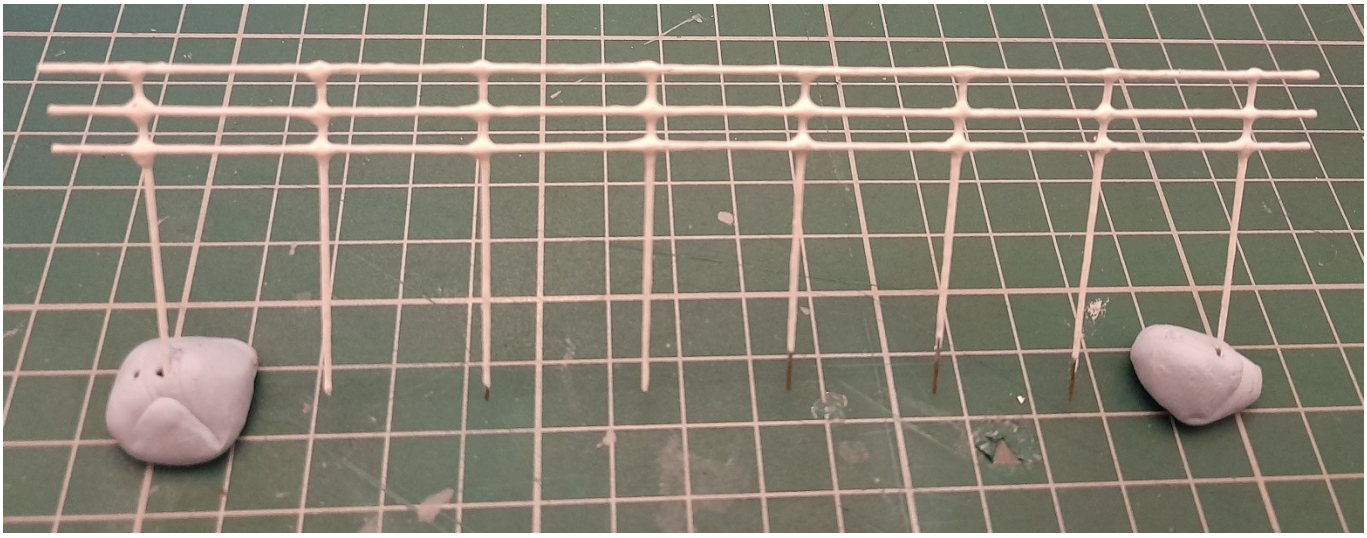
The 14 brass rods have been stuck onto double-sided tape in order to hold them in place while they are soldered together. The 1cm squares on the underlying cutting mat enable them to be positioned correctly.

The resulting joints are not very neat, due to my lack of experience and expertise, but good enough for this little project.



The finished railings, ready for filing and priming.

They were then carefully filed down, but only a little, in order to avoid weakening the joints, before being primed with two coats of Humbrol Enamel Matt Primer.



The completed railings (one of two) filed and primed.

The next steps were to apply the top coat of paint (Humbrol No. 127 – US Ghost Grey) and trim the vertical rods to the correct height. Meanwhile the main bridge structure was tidied up and painted the same colour as the railings. On the real bridge the railings are welded to the outside of the (steel) bridge trusses, but on the model the trusses are made of MDF. I therefore drilled eight 1.5mm holes with an Archimedean hand drill, through which the railings were threaded, which I hope will fix them more securely than gluing them to the outside of the MDF trusses.

The complete refurbished Clun Road Bridge. Not perfect, but looks fine from the normal viewing distance.

The refurbished B4368, showing the new Craven Arms Hotel, resurfaced and repainted road, and the Clun Road Bridge in the background – looking fine from this distance.

I found the whole project very enjoyable, especially the move outside my comfort zone to fabricating something from scratch by soldering, rather than gluing, the components together. If, like me, you have avoided soldered construction in the past, I urge you to give it a try. This has certainly inspired me to acquire a good-quality soldering iron and to research the subject in detail so that I can adopt a more professional approach to my next soldered construction project – the Eiffel Tower perhaps, or maybe the Forth Bridge…

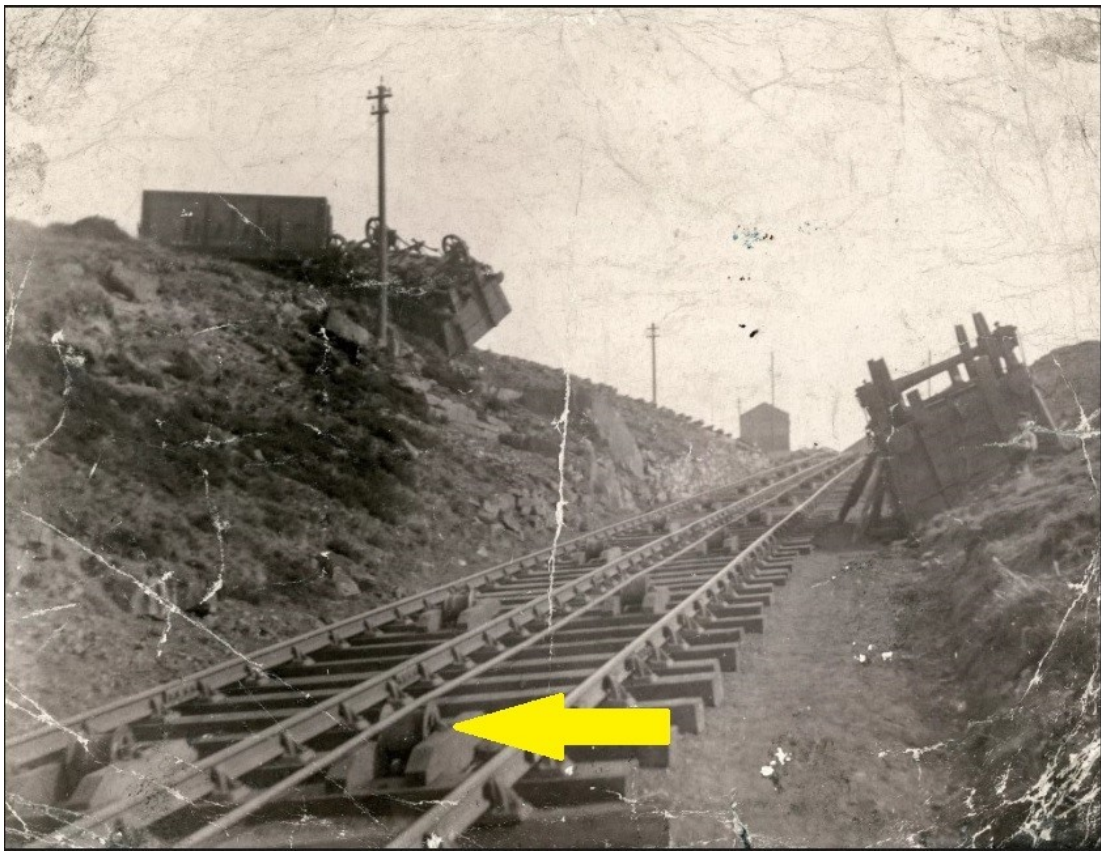
Ingleby Incline – Scrap Iron Found

Graham Betts

On one of many walks in the North York Moors National Park (recommended) our route led past some old railway cottages to ‘Incline Bottom’, the lower level of the Ingleby Incline.

Looking up at the immediate walk before us I was amazed at the gradient. The walk up it was, shall we say, ‘steep’. Part way up I spotted in the undergrowth the piece of iron shown in the photo, and alongside this was half of another identical item. This being of interest I picked it up and quietly slipped it into my wife’s rucksack for later inspection.

From what I can find out, this was a spindle bearing for the rope rollers used to haul wagons, and locomotives, up and down the incline serving the mines above Rosedale. I have found another photo of the incline showing where I think the bearing fits.



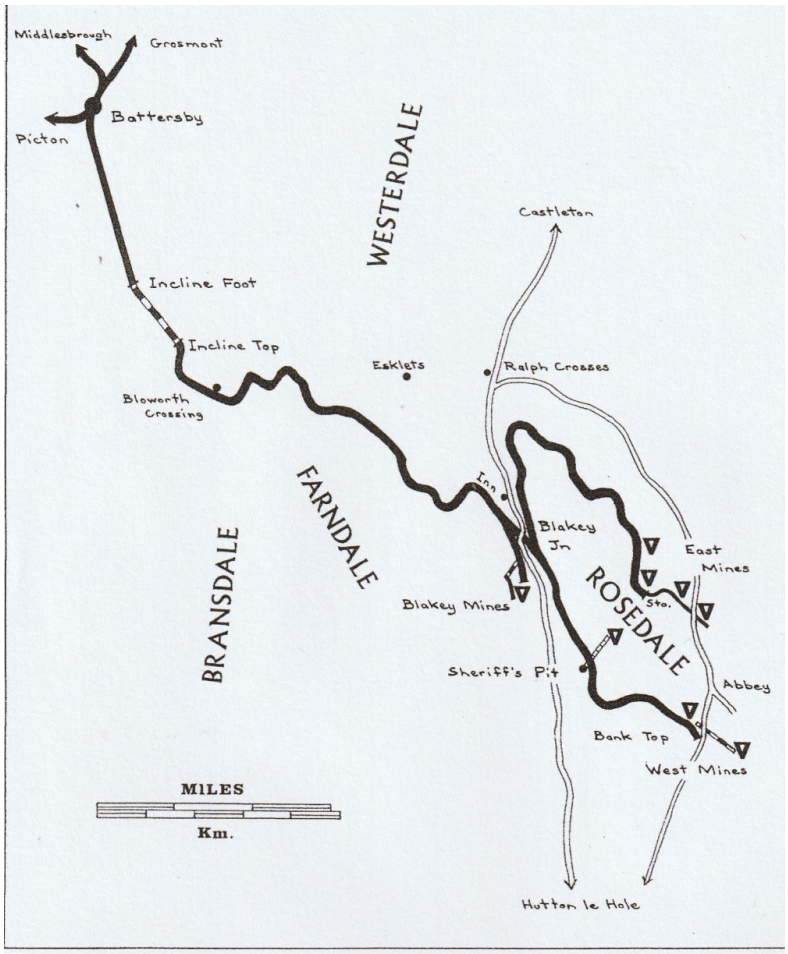
From a book published by the Scarborough Archaeological and Historical Society the incline installed by the NER to replace the original, was 1430 yards long and ascended the moor top at 1370ft. The gradients started at 1 in 11 to a maximum 1 in 5.

The usual practice of loaded wagons hauling empties up was in use with a drum house at the top making up any difference with brake houses adding control.

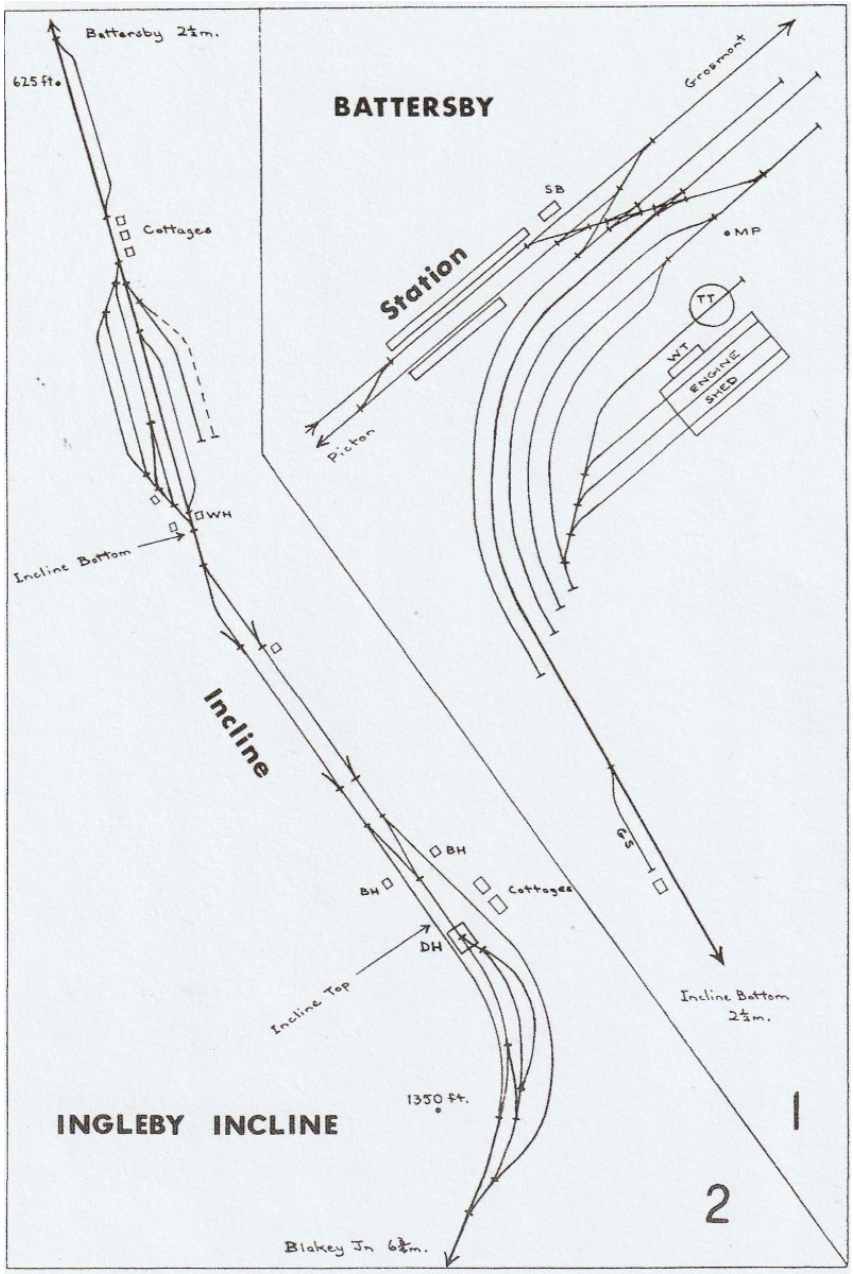
At the bottom, the nearest station was Battersby, still open today serving the Middlesbrough – Whitby branch. Now a dead end, the Trains reverse at Battersby to continue in either direction. Originally Battersby was a three-way junction but the line to Picton on the Nothallerton – Stockton on Tees line was lifted. There was also extensive sidings, a three lane engine shed and turntable at Battersby.

The top of the incline was a complex of sidings and the onward route to the Rosedale Mines which remain open today as easy level footpaths and well worth a walk for any railway enthusiast. Some of the old mining architecture remains in place and the setting is magnificent, looking over the heather moors and down into Rosedale and Farndale. The Lion Inn at Blakey Junction is described as the 'Best Pub in the North York Moors' by the guardian.

The maps show the layout of the area, the complex at Battersby and the incline.



The Rosedale Branch showing position of ironstone mines and connecting tramways.



TRACK PLANS 1 & 2. Not to scale. Dated about 1926.
BH Brake-house, DH Drum-house, GS Goods Siding, MP Milepost, TT Turntable, WH Weigh-house, WT Water-tower.

Regarding the locomotives hauled up to incline top there were a few, but the type most associated with Rosedale is the NER class P (LNER J24) designed by Wilson Worsdell. Sadly, all 70 were withdrawn by 1951 and none are preserved.

A Trip behind Tornado with A Little Anecdote **Michael Bennett**

Tornado at Salisbury

A few years ago in a romantic moment – OK, many years ago then, I booked a trip from Paddington for February 14th hauled by Tornado. The route will be a familiar one: out of Paddington platform 1, stopping at Reading for water from a fire tender before continuing west and turning left at the White Horse at Westbury to pull in at Salisbury before setting off for our destination at Waterloo.

The advertised extended stop at Salisbury suited us well as no.1 daughter and family live nearby and this would serve as a family get together, albeit an expensive way of getting to Salisbury!

The story and history of Tornado will be familiar and so I will not repeat it here, except to say that she hauled the usual 13 coaches including the Support Coach and performed faultlessly making all the right noises and all the right smells.

Of the three ticket options I choose 1st class non-dining which included a glass of champagne and a few snacks. Our seats were next to the gangway connector on a table of four. The other couple were previously unknown to us but transpired to be excellent travelling companions especially so as we had all lived in Northampton at some time and shared the same regrets of its demise. A short while after departure a lady and gentleman were escorted from the adjacent 1st class dining car to the pair

of seats at the table opposite, and the luckless employee surpassed even Uriah Heap in being ‘ever so humble’, promising that champagne would be brought to their table together with everything and anything they wished; indeed he would appoint a stewardess (you could say ‘stewardess’ in those days) exclusively to attend to their every whim; or words to that effect. The lady asked us if this was ‘a premier dining car’ but we had to disappoint her in that we were non-dining. The fact that were were nevertheless 1st class did nothing to improve her ire.

The lady moved the plum slightly to one side and vociferously explained to us that she had booked 1st class premier dining but that when they boarded the train the seats were occupied and the wretched people would not budge. Naturally we were most sympathetic with their plight especially so when we realised that she clearly felt she was now downgraded to a coach occupied by the hoi polloi. Her husband (we assumed that was the gentleman’s ill fated lot in life) said nothing. It was clear that she had raised merry hell with all and sundry within striking distance. We could now understand why they were receiving such exceptional service and acknowledging that mistakes do sometimes happen Steam Dreams were doing their utmost to make amends.

Tornado at Reading

In due course two members of staff appeared to offer their further apologies for such a mix up. I say members of staff but this would be woefully injudicious as one was wearing tails and sporting a top hat; so God and his henchman then! They grovelled even further and of course we were all ears. They could not work out how the double booking could have occurred and in an attempt to understand the error eventually and tactfully asked to see the couple's tickets, whereupon you could hear the deafening silence. The top hat spoke softly but firmly, explaining:

(a) the tickets were for the previous day, and

(b) with a different company.

They were politely told they could stay on the train but must alight at Reading whereupon the woman (no longer a lady) exploded and demanded to know how they could possibly get back to London as this had already cost her in excess of £300. They were advised to take a service train. Her husband still said nothing.

Ten minutes later we pulled into Reading and the two untouched glasses of champagne were swiftly and deftly appropriated to our table.

There is no denying that somehow, and for some reason, they tasted rather good.

Tornado up close

And here is Tornado 148 times smaller, on Michael's Layout:-

But it is not just our layouts that can be small…….

30 Years Ago — Nick Coppin

I recently found some cuttings from the newsletter of the Scalefour Society; more specifically, the area group report for the East Hants group run in the early 90s from my late parents' house in Waterlooville, just north of Portsmouth.

It is the Group's second year and my dad is describing who attended and what they got up to:

We live near the coast and not far from Portsmouth, so it's not surprising that the group includes several ex-Navy members; indeed, Scott Stevenson is still serving somewhere on the high seas. We get regular postcards from him and keep in touch via the Chronicle(?). Meetings tend to be spiced with old sailor's yarns and part of my job is to bring the discussion back to model railways when it seems to be getting out of hand!

Now, 160 miles to the north and 30 years on, Scott (back on shore) is our website editor and I am the secretary. Railway Modelling really is a small world!

(No escape, we are all looking forward to your salty sailor stories now, Scott! - Ed.)

And finally, another photograph from **Chris Kapolka**, both in colour and in black and white. We have had a splendid literary anecdote, so now for the artistic amongst us, am I alone in finding the black and white print much more atmospheric and exciting?

Double chimney LMS Jubilee class 4-6-0 No. 45596 Bahamas heading north over Cefn viaduct with an excursion heading for Chester

Peter Cox