

A journal of the Brighton Circle, for those modelling the "Brighton" in all scales and gauges.

The L.B.& S.C.R. Modellers' Digest

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[Contents on page 2](#)



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Contents

		Page
Newick and Chailey - a project in progress	Phil Taylor	<u>5</u>
Jones and Potts No 115	Ian White	<u>14</u>
Comparing Terriers	Gary Smith	<u>33</u>
The Renaissance of Imberhorne	John Shaw	<u>35</u>
Lewes Station Goods Shed of 1846	David Rigler	<u>50</u>
Deptford Road	Ian Buck	<u>59</u>
A Stroudley Timber Truck	Simon Turner	<u>65</u>
Craven 2-4-0 No 176	Eric Gates	<u>81</u>
Billinton 6 Wheel Carriages in 7mm Scale	Rob Watkins	<u>93</u>
The B Special "Might Have Been"	Colin Paul	<u>103</u>
The B Special "Might Have Been"	Mike Cruttenden	<u>128</u>
Brighton Lewes Road 1908 in 2mm Scale	Huw Evans	<u>134</u>

Contents

		Page
A Belgravia in 2mm Scale	Gareth Collier	149
Three Bridges Shed c 1900	Jamie Patterson	152
Limitations of Early Black and White Photography	Ian White	158
Rope Shunting	Graham Bowring	166
The Brighton Circle AGM		167
Hangleton Station - Part 4	Colin Paul	171
Starting from Scratch part 4 - Drills and Drilling	Terry Bendall	192
Michael de Jong Smith		206
Medyka Bahn Overhead Electric - Review	Edward Hart	215
New Releases		226

Editorial

Seasonal greetings to all our readers! This is the issue to enjoy with a mince pie and a suitable festive spirit.

As always, my thanks to all those who have put pen to paper (or, more accurately, finger to keyboard) to provide a range of articles on diverse aspects of modelling the LB&SCR.

The front page, unusually, is in black and white, to provide an interesting comparison with the view of the prototype Newick and Chailey on [page 5](#). This is an excuse not only to show off some lovely modelling by Phil Taylor, but also to demonstrate some of the issues of interpreting old black and white photos, as discussed in the subsequent article by Ian White.

For modern image modellers, we have two items on the Elevated Electric. Ian Buck describes the first steps on his model entitled Deptford Road and Edward Hart reviews the components that have recently become available for the Brighton's overhead catenary.

In describing the refurbishment of a model of a G class single, John Shaw manages to introduce more Gaelic into this edition than usual. Colin Paul describes the construction of a 7mm scale model of a loco that the Brighton never actually built (but might have done) and David Rigler shows a CAD model of the original goods shed at Lewes.

Finally, season's greetings to all our readers - and feel free to write up your models of Brighton subjects for a future edition!

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[Return to contents page](#)

Newick and Chailey - a project in progress

By Phil Taylor

If the front cover looks vaguely familiar, this image from the Lens of Sutton collection may provide the clue!

Cover photo by Ian White.



The following pictures were all taken by Ian White on a visit to Shropshire in summer 2023 to view my model railway, which is a representation of Newick & Chailey station on the LB&SCR Lewes to East Grinstead line circa 1898. It is to 4mm scale, P4 standards. The extent of the model covers the area from Cinder Hill tunnel at the south end, to the Station Road (now A272) overbridge at the north end. Ian's camera(OM System OM5 with Olympus 12-45mm F4.0 lens) has the capability to take multiple versions of the same image at varying focus points and blend them automatically very rapidly. The end result of this incredibly impressive technology is a picture that is in focus throughout.

Please note that the scenery is far from complete and the structures were only placed temporarily in position, hence the various gaps and missing elements. The signals and ground signals have been constructed but were not in place at the time of photography as they are very vulnerable to damage while working on the layout. I am planning to carry out the detailed scenic work (grass, trees, hedges, fences, telegraph poles and so on) starting from the far edge and working forward, eventually fixing the structures in place and blending them properly into the scene. Further weathering is also required. In some of the views you can see where I have marked up the location of the various landscape features, using the 25" Ordnance Survey maps, historic photographs and modern day surveys as guides, aiming to make the result as closely representative of the original in the chosen timescale as possible. For practical reasons the overall model is somewhat compressed in length, although I have tried to keep all elements in the correct relationship to each other. I am also planning to build in some forced perspective towards the rear of the scene. The backscene consists simply of heavy grade white paper in one continuous roll so as to eliminate joints and sharp corners. It is hoped that this will effectively fade into the background when viewing the model (as it has no points for the eye to focus on) and represent an early winter overcast sky. My sadly lacking artistic talents do not allow for a painted backscene! I apologise for the lack of headboards on the engines, it's on the to-do list...



The station from the goods yard area. The south signal box, cattle dock, station buildings, canopies and goods shed are all visible. The overall ballasting is typical of the period.



The station building from the forecourt side. This was unusual in that it had three storeys, necessitated by the line being in a cutting at this point. The model represents the building as originally constructed but over fifteen years old, complete with deterioration and weathering of the plastered upper parts. These were covered over with protective tile hanging shortly after this date. Note the date stone and stylised LBSCR monogram, stained glass and decorative plasterwork. Although not a large building, it is very complex and extravagant in its typical late Victorian detailing, such as the porch, tilework and brickwork, particularly on the chimneys.



Billinton B4 class 4-4-0 No. 52 'Siemens' (brand new at this period) hauling the 1895 Pullman set, approaching the south signal box. In reality this train would never have travelled on this route, but it's my railway!



A train that is more representative of those that would have been seen on this line at the time. Billinton E4 class 0-6-2T No. 560 'Pembury' hauling a typical train of mixed 4 wheel, 6 wheel and bogie stock in the down (southbound) direction. This engine isn't really suitable for this time period, as it was not built until November 1901, a consequence of me refining my modelling period after the model was built!



The rogue Pullman express again, this time a little further south. The train has just emerged from Cinder Hill tunnel and is about to pass over the underline farm occupation bridge.



The station area looking from the north east. Both trains previously described are in the station. The north signal box (in reality just a ground frame controlling the north crossover) and footbridge are also visible. This scene will look very different when completed, as the background here consists of a heavily wooded area known as the 'Great Rough'. In the foreground will be the station garden and well house.

Stroudley D1 class 0-4-2T No. 26 'Hartfield' is running light engine under the Station Road overbridge, having just left the station heading towards Sheffield Park (or is it just arriving?). It is evident that the bridge needs to be built into the scenery. Despite there being no trace of the real bridge today, it still exists under the present day A272 at this point, minus the parapet walls. The cutting and bridge were filled in with rubble and rubbish after the line was closed.



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[Return to
contents
page.](#)

Jones and Potts No 115

- an OO finescale model

By Ian White

I chose to model this little 0-4-2T/WT because it was appropriate to a small diorama I am constructing, based on Hailsham, and for the challenge of its gothic firebox. My last scratch build was of 2-2-2 'Seaford' (L.B.& S.C.R Modellers' Digest 12:93) which had a similar firebox, but half hidden by a partial cab, making it much simpler to achieve a symmetrical appearance. On No.115 there would be no hiding of any imperfections in symmetry. I'd like to thank Chris Cox, Gerry Nichols, John Minnis and Ian MacCormac for their help and advice with this project.

A great many early LB&SCR locomotives underwent a series of changes that were so drastic that metamorphosis might be a better description than rebuild. No.115 started off as Joint Committee No.119, an outside cylindered long-boilered 2-2-2 with flangeless drivers that entered service in July 1845, and almost immediately passed to the London and Brighton Railway as their No.119. As an outside cylindered 2-2-2 it would have looked very similar to Jones No.97, depicted here after its rebuild to 2-2-2WT. No.119 was renumbered to No.39 in October 1846, then to No.34 in 1848, before being fitted with inside cylinders in 1849 and allocated No.115. It continued to run as 2-2-2 No.115 until 1858 when it became an 0-4-2. Then in 1863 it lost its tender and was fitted with side tanks and a well tank, and as the original brakes would have been fitted to the tender, the tank locomotive brakes must also date from that time. This was its final form, but it did have another two number changes, becoming No.260 in 1875, and then No.404 in 1877; it was

withdrawn in 1879. There is a drawing of 0-4-2T/WT No.115 in Burt's serialised article, the "Locomotives of the LB&SCR 1839-1903", which was published in *Moore's Monthly Magazine*, and later reprinted as a book. The book illustrates a few more of the described locomotives than the original magazine articles, so a great many of the figure numbers differ between the book and original. Figures 5 and 6 from the magazine article are reproduced here (subsequent references to Burt's figures refer to numbers used in his 1903 book, and

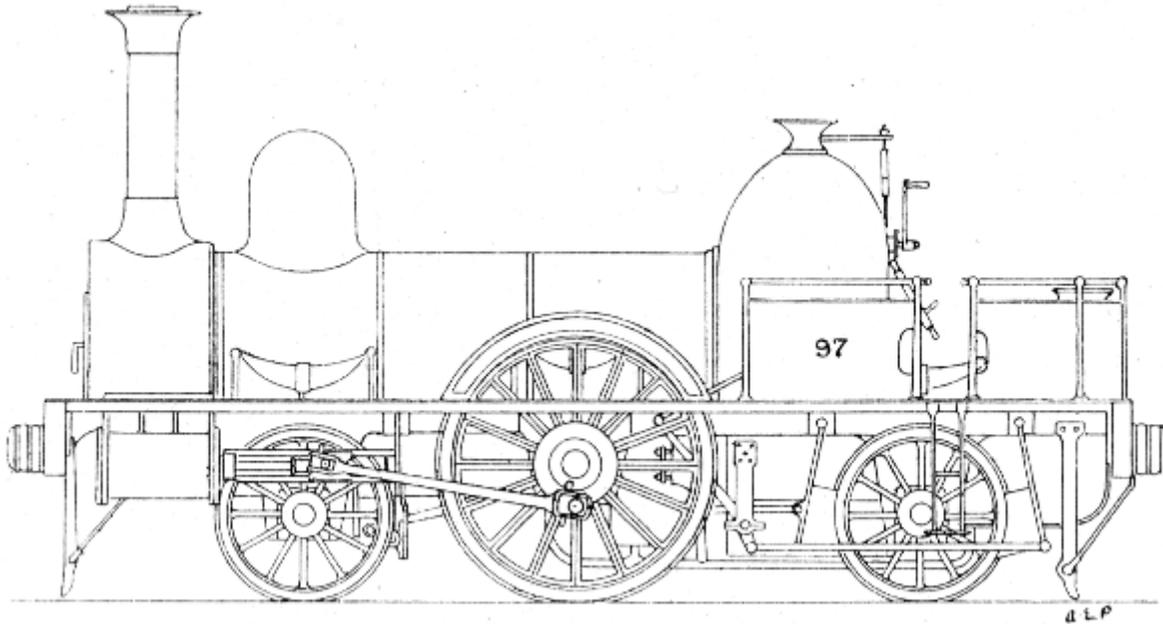


FIG. 5.

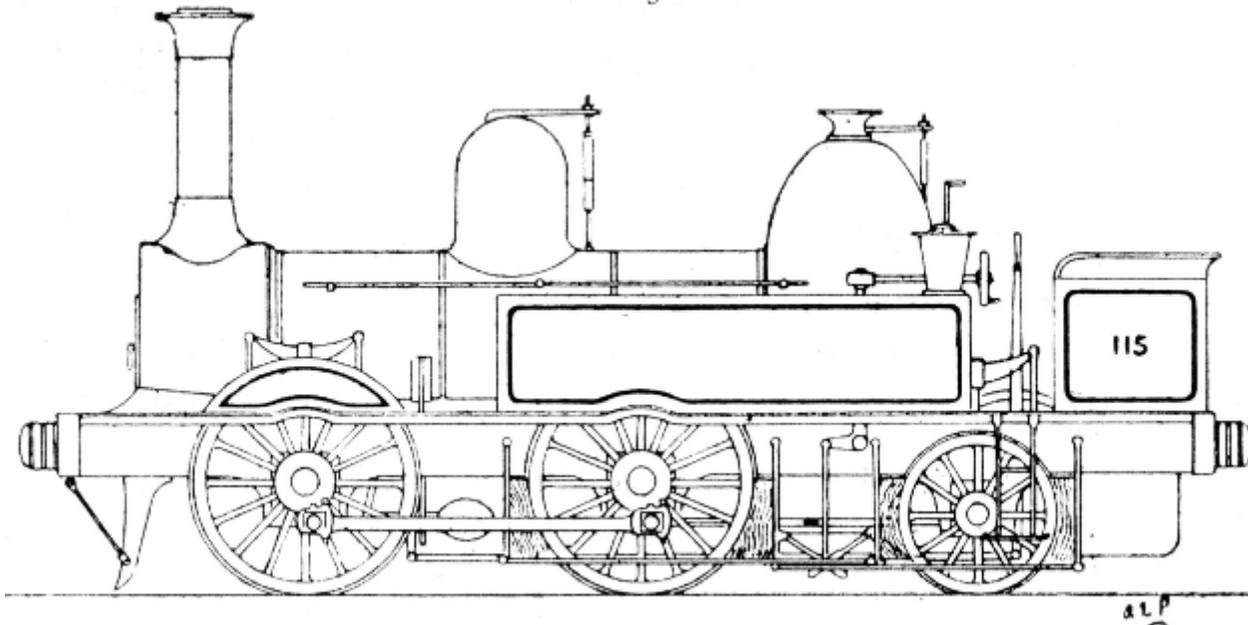


FIG. 6.

Figures 5 and 6 from Moore's Monthly Magazine (1896) show two of the rebuilt Jones and Potts 2-2-2 locomotives (these were Figs 7 and 8 in the book). The two drawings have been approximately matched for scale and aligned by their boilers (both 11ft long). 2-2-2WT No.97, originally Joint Committee No.121, gives an impression of what No.115 would have looked like as long-boilered 2-2-2 No.119.

0-4-2T/WT No.115 worked the Polegate to Hailsham and Eastbourne branch lines during the early 1860s, before being moved to the Lewes-Uckfield line, and then hired to Mr Furness in 1868 for building the Hayling Island Railway. Hailsham Station had opened in 1849 as the terminus of a short branch line from Polegate, and it became a through station in 1880.

There is a photograph of Hailsham Station, a cropped section of which is reproduced on the following page, which includes No.115. The locomotive history dates the photograph to between 1863 and 1868. The locomotive was returned to LB&SCR service in the late 1860s and had several allocations but is unlikely to have served Hailsham again. The carriages in the photograph are of pre-1870 designs, with low footboards which would have been replaced by higher boards early in the 1870s, so the carriages also fit with an 1860s date for the photograph.

Frank Burt (b.1871 – d.1949) would have had access to the entire LB&SCR drawing office collection but the solitary official drawing only shows cross sections and a half-plan (LB&SCR No.1015, 2/10/1862; NRM ref. 23-135.496). Most surviving drawings of early LB&SCR locomotives are similarly lacking in the external and other finishing details depicted in Burt's drawings. As the surviving Drawings Register only starts in 1870 (NRM coll.), we have no way of knowing if more comprehensive drawings were available for each locomotive when Burt produced his great work. Burt was also a collector of locomotive photographs, amassing a collection of glass plate negatives that include a great many that date from well before he was old enough to have operated a camera; that collection is in the NRM.

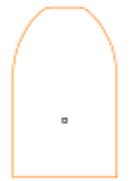
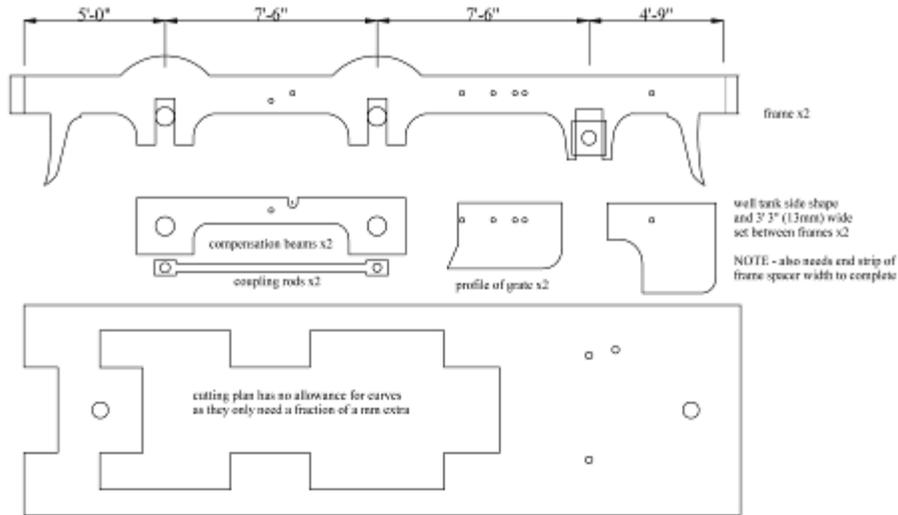
Following page - No.115 at Hailsham, with a rake of four carriages, plus at least two vans further along the line, perhaps just shunted off the train; there is an open carriage truck at the end loading dock to the left. Note that some structures which appear to belong to the dome and firebox may belong to the building behind. The nearest carriage has 4 compartments and may be a Type 9A or 9D Second; the next is a 3 compartment First such as Type 2A or 2F; the third vehicle is a brake, but it is not clear if it was a full brake or perhaps a Type 8F brake Second; the last carriage has 5 compartments and must be a Third. Photo courtesy of Lens of Sutton Association.



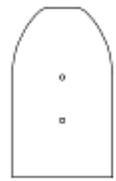
It is therefore possible that a great many drawings in Burt's work were based on his interpretation of cross section and half plan drawings, augmented where possible by photographs. Even if he did have access to more comprehensive drawings, it must be remembered that drawings show the way the prototype was originally planned, and not the way it was built, let alone later modified.

The photograph shows that the loco had features that were not included in the Burt drawing, some of which may date from the 1863 rebuild, and other, possibly later additions. These included a rear spectacle plate, rear guard irons, and a communications gong. The steps appear to have a form of guard plate to the leading side and back. The handrail was fitted along the tank side rather than being confined to the boiler, and the buffers appear to be sprung, although their design cannot be determined. There is also a vertical handrail on the cab-side.

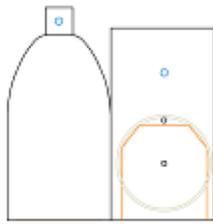
My first step to scratch building is to use CAD software to create a cutting plan for the sheet metal parts and the lathe turnings. These were based on the Burt drawing and the official drawing in the NRM collection. The Burt drawing was pasted into the CAD software (TurboCAD 20) and scaled so that parts could be digitally "traced". Various possible gearbox plans were also tested against the Burt drawing, and I chose to use a HiLevel RoadRunner PLUS 45:1 gearbox and a 1020FE Iron Core motor.



profile of finished firebox
- DO NOT cut this shape



internal former of firebox
- set side to side
- Most of the lower parts need cutting away for a 20mm motor



two walls of firebox (x2 of these)

1. bend shaped wall to fit internal former - do same with other pair and solder
2. bend non-shaped walls to meet shaped walls
3. cut file non shaped walls to shape of shaped walls
4. reinforce corners
5. round-off corners

orange shows approx area to cut out for motor

top square on 1 piece only

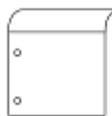
upper small hole in front and back to be set with .7mm wire on which to locate top of boiler tube

upper small hole is also regulator mount position

inspection cover only on front



cut 1 rear and spec plate
cut 2 side plates
bend upper sections

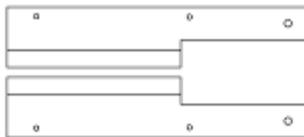


wheel splasher (2.5" overrise) x2
cut top overlength

Note - splasher top is increased depth to hide 80 wheelbet - BUT note need to fit spring



tanker with side spacers to set position
- coal hole - fit rivet strip along edges



tank side - 2x

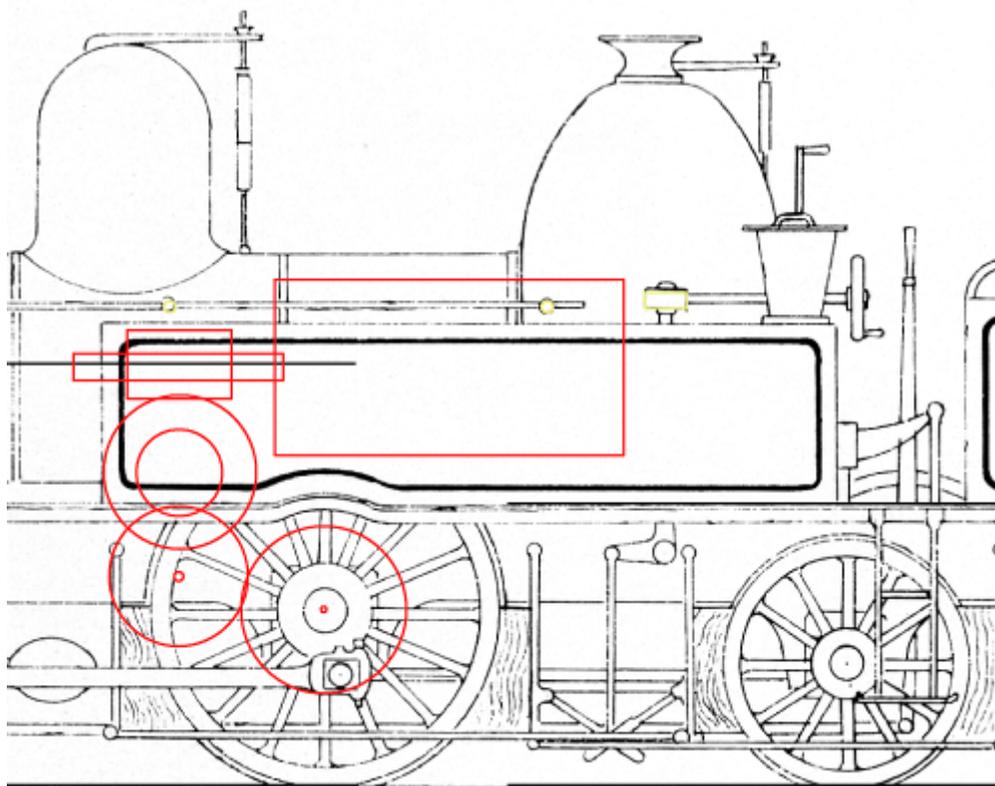
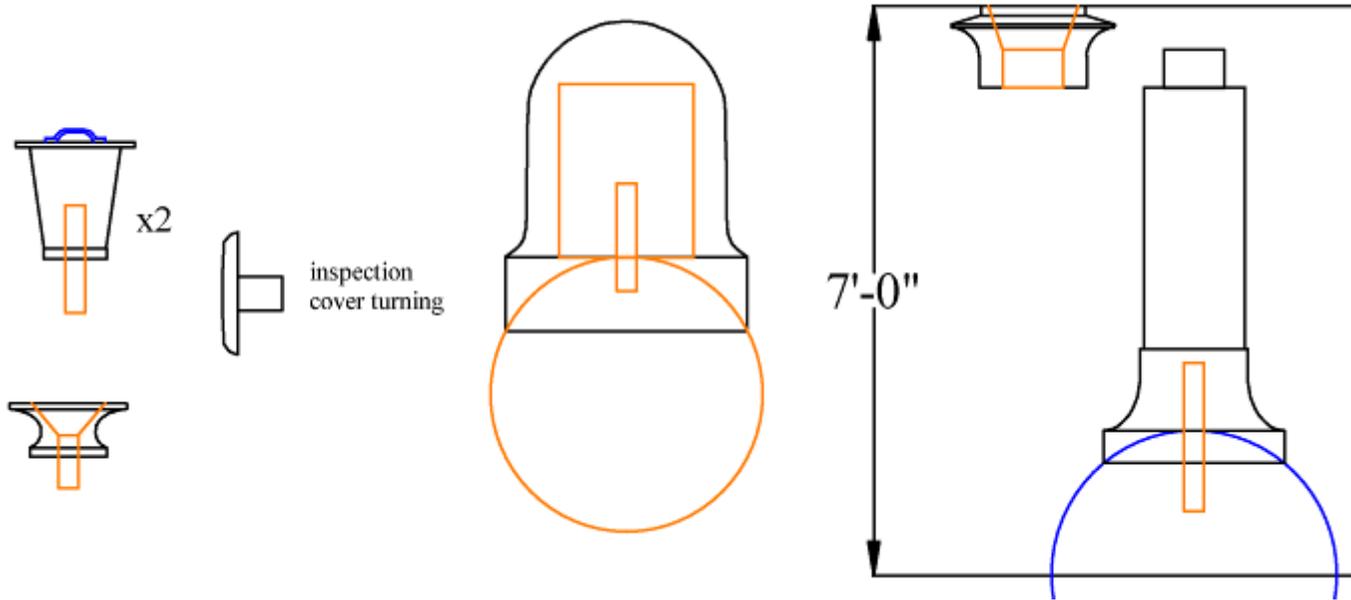
NOTE: hole into tank from cab area for pipe to well tank

tank top and inside
NOTE - top overlaps 1" over ends
- file off flash



Left

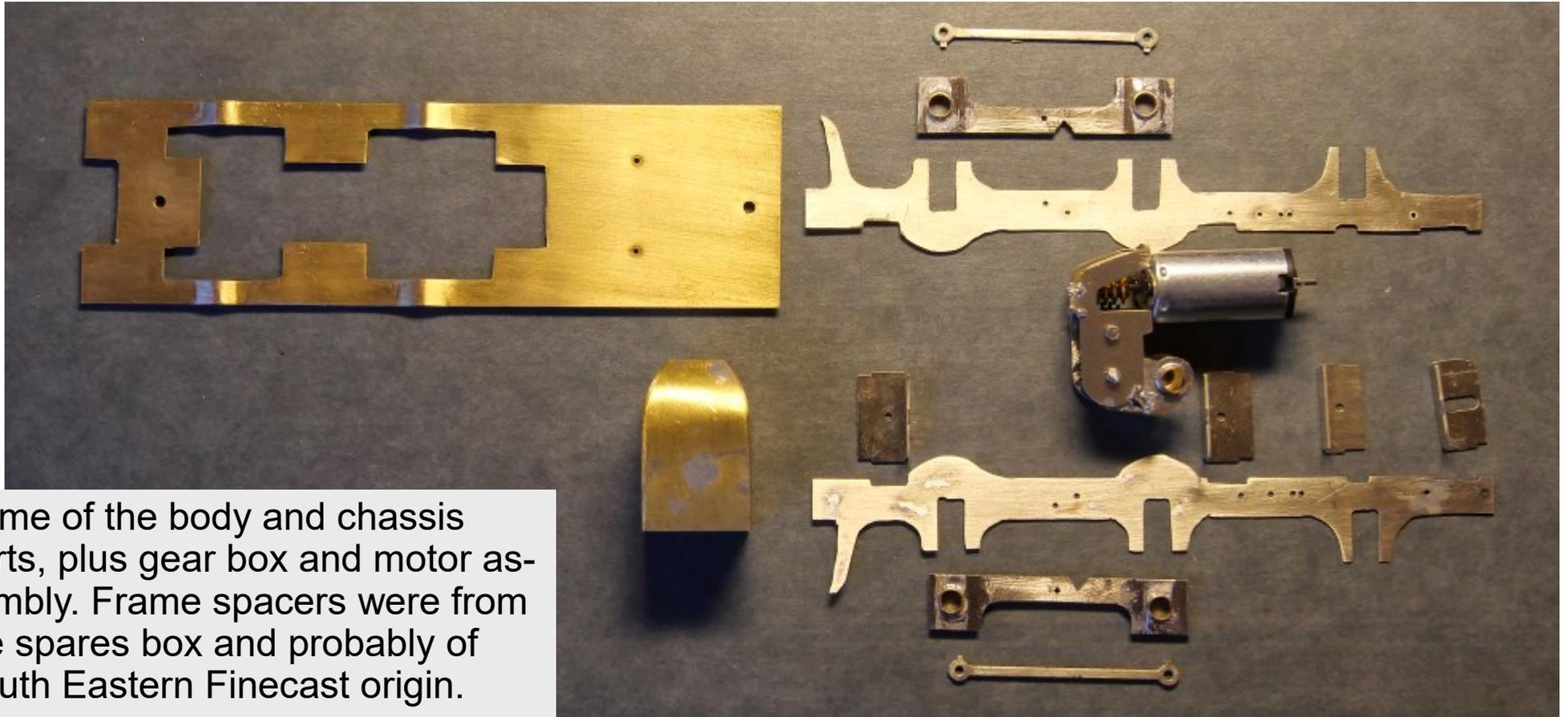
The cutting plan which was printed to final size (4mm scale).



Above left - Lathe turnings for the two tank fillers, firebox top, inspection cover, dome, and the two parts that form the chimney. Each drawing was printed x10 final size (40mm scale) on graph paper so that each 1mm square represented a 0.1mm cut with the lathe.

Lower left - The layout of the gears and motor, shown in red, on the Burt drawing. Also note the complex brake gear.

Body parts were cut from 10thou sheet brass and chassis parts from 15thou nickel silver. Paper cutting patterns were pasted to the sheet metal using a glue stick and most cuts were made using a jeweller's piercing saw, but the footplate was milled (see *The L.B. & S.C.R Modellers' Digest* 11:63). Traditionally, the first task with any scratch build is to make the coupling rods, as their length sets the lengths and positions of other related parts. My attempts at producing acceptable rods with rectangular ends failed and I resorted to using a set of ready-made rods out of the spares box! The driven axles run in bearings set into beams that pivoted between the frames, and jig axles were used to set the bearings in the beams to exactly match the coupling rods. The trailing axle was set in hornguides, and the whole chassis assembly set up on an axle jig (see *The L.B. & S.C.R Modellers' Digest* 9:66).



Some of the body and chassis parts, plus gear box and motor assembly. Frame spacers were from the spares box and probably of South Eastern Finecast origin.

Forming the tiny crank clearance curves in the footplate was a challenge. The original plan was to form the valences from 1mm square brass but I found it impossible to get the tiny curves looking right. Instead, I cut 10thou brass sheet into six 3mm wide strips, bent each individual strip to shape, and then soldered three strips on top of each other to create the required thickness. The footplate was similarly bent, and the two sets of strips soldered under it, slightly set in from the side. The bends were formed by arranging a piece of 1mm square brass under each bend position and pressing hard on each side with a small piece of brass bar, practising first on scrap strip. The result has a few imperfections, but most observers of the completed model will not notice them.

The other challenging part to create was the gothic firebox which had to look symmetrical in the side, front and back views. I made the firebox in two parts, each comprised of a side wall cut to shape, and a rectangle that would later be shaped to form the front or back wall. The upper curved section of each side wall was slightly over height so that when bent to shape the finished height would be correct. An internal former of the finished shape (less 0.5mm to allow for the wall thicknesses) was also cut (see cutting plan). Each side plus front/back wall was bent to approximate shape, then folded to form the corner; the straight portions of the side walls were then soldered to the internal former and along the remaining two corners. The sides were then bent to fit the former and soldered to it. Finally, the rectangular front/back walls were pressed hard against the shaped sides and soldered into shape. The excess metal on the rectangular front and back walls was then roughly cut away with a slitting disk and then filed to fit the shape of the sides. The first attempt was scrapped; the second resulted in good symmetry in each view but the top was slightly rectangular, i.e. the sides were not exactly the same shape as the front/back. The third attempt was rubbish, so I opted for the second, as the error was negligible. The internal former was then largely cut away using diamond burrs, and the motor recess opened out using a slitting disc and burrs. A test assembly of the chassis, footplate and firebox followed (see following photo).



First test assembly to check footplate clearances around wheels and the fit of the firebox over the motor. The top part of the firebox was lead filled.



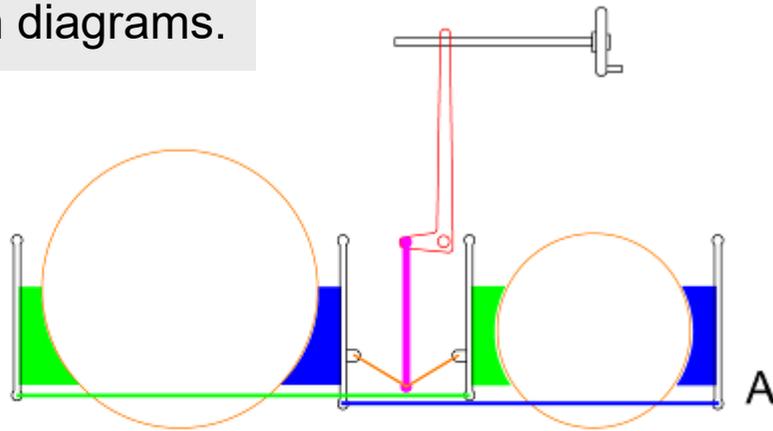
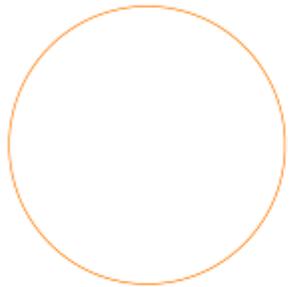
Second test assembly to check the fit of the smokebox and boiler assembly over the motor. Note that the buffer beams (made from layers of a wooden coffee stirring stick) were fitted to the chassis rather than the footplate. The rear half of each side tank and the front half of the boiler assembly were lead filled.

Scratch building a locomotive from this era is always a voyage of discovery and taking a few wrong turnings is inevitable. Burt's drawing led me astray in a few places, e.g. it does not show rear guard irons and I forgot to add them to my cutting plan, so I had to add them as an afterthought. I also fitted dumb buffers as per his drawing, and it was only when I came to write these notes that I realised that the photograph shows some sort of sprung buffers. However, they don't appear to be of the usual self-contained type common to a great many Craven locos and rebuilds, and the official drawing does not show any buffers, so I decided to leave the ones that match Burt's drawing. I also followed the drawing for the cab entry steps as it was impossible to interpret those seen in the photograph. His depiction of the lower section of the smoke box and cylinder chest sides is also difficult to reconcile with the official drawing, and with hindsight I should have fitted a standard smokebox wrapper. Instead, I made the smokebox using brass tube with the intention of creating the cylinder sides as a separate fitting.

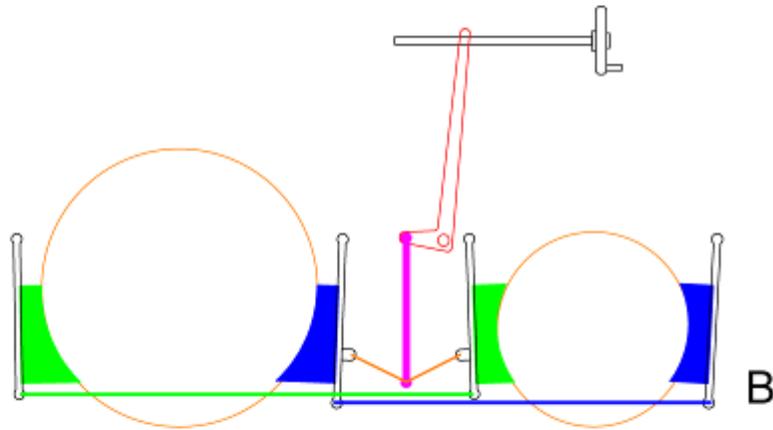
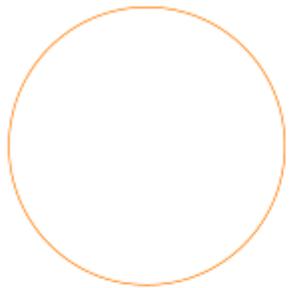
Compromises are inevitable to create a model that works, and the gear box unfortunately protrudes about 1mm forward of the side tanks. I did consider extending the tanks further forward, but experience shows that when you change a body dimension you can set off a chain of unintended consequences. Burt's drawing did not include any sanding gear. Some locos of the era had a single sand pipe set vertically between the drivers, so I fitted a freelance sandbox in front of each side tank, and that conveniently hid the protruding gearbox.

The brake gear was challenging but luckily only had to be fitted to one side of the model. The brake hangers and blocks were etches found in the spares box, including two that originally had curved backs and were intended for use on a Stroudley Terrier, but I filed back as much of the curve as was feasible without damaging the integrity of the part. The official drawing showed that the mechanism depended on a crank next to the firebox. Had the brake gear been replicated on the right side of the loco there would have to have been a linking shaft through the firebox! Discussion with Gerry Nichols and Chris Cox led to the conclusion that this locomotive had brakes on one side only, and subsequent study of drawings in Burt's work identified other tank

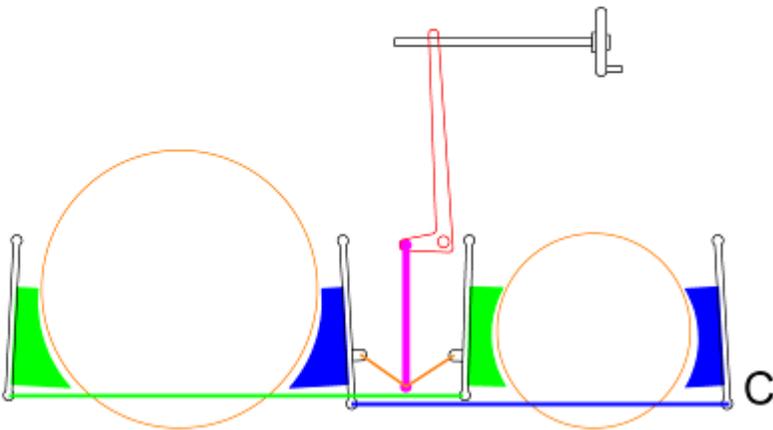
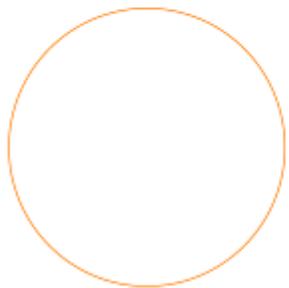
Brake mechanism diagrams.



A



B



C

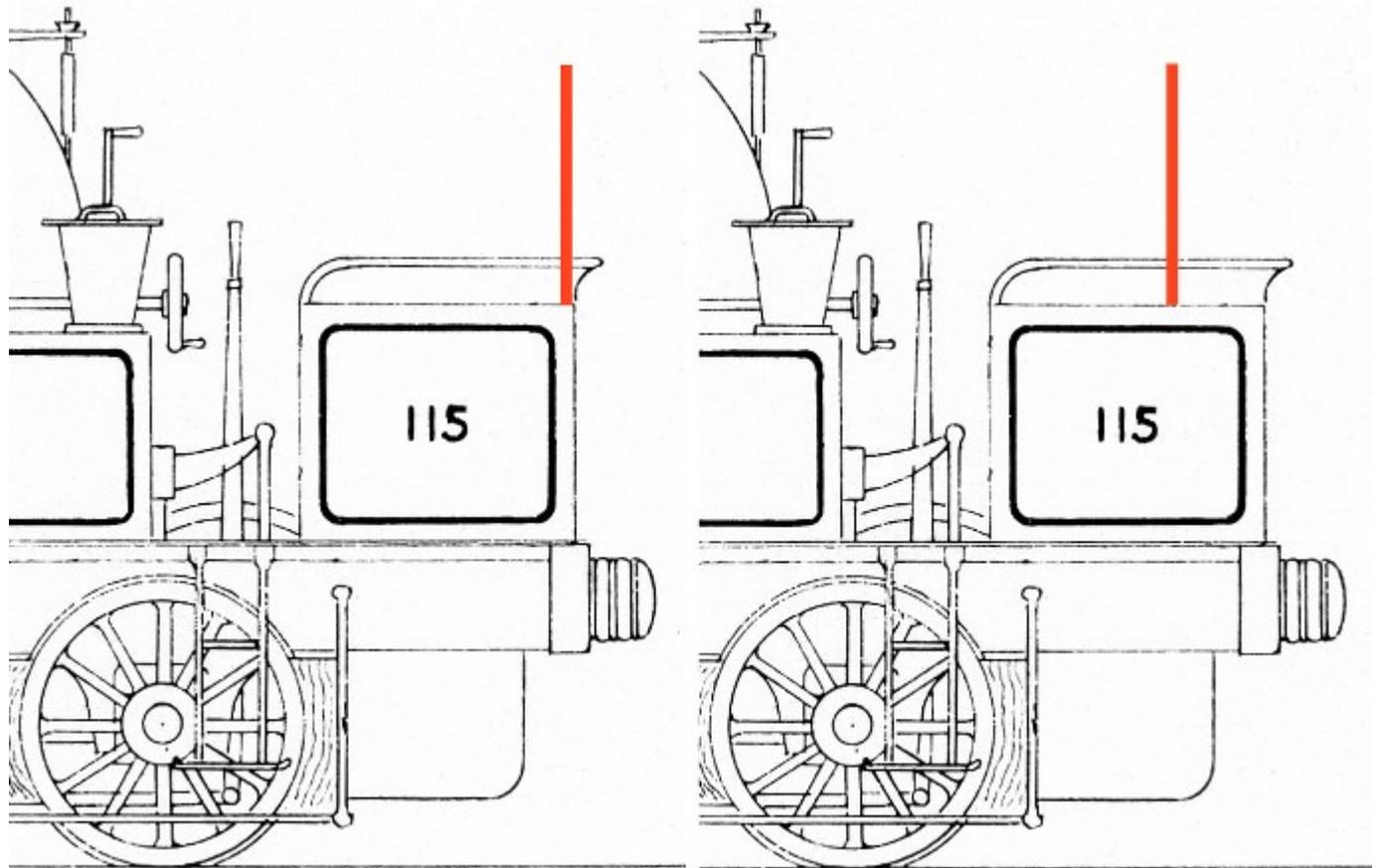
A - as drawn by Burt. Movement is controlled by a screw, operated by the footplate crew; the screw moves a lever which pulls or pushes on the vertical purple rod; that links to the centre pair of brake blocks; the green pull rod links the movement of the near-centre green brake block to the front green brake block; the blue pull rod links the movement of the near-centre blue brake block to the rear blue brake block.

B - the brakes are "on". When the screw is turned clockwise it pulls the purple vertical rod up, squeezing the centre pair of brake blocks against the wheels, and in turn, moving the green pull rod back, and the blue pull rod forward, thus transmitting the "on" movement to the front and rear brake blocks.

C - the brakes are "off". When the screw is turned anti-clockwise it pushes the purple vertical rod down, pulling the centre pair of blocks away from the wheels, while also moving the green pull rod forward, and the blue pull rod back, to release the front and rear brake blocks.

locomotives that appeared to have had the same limited braking. The drawings all show the left-hand elevation but one example was right-hand side braked, namely 2-2-2WT No.14, and some details of its brake rods can be seen showing from the opposite side of the loco (Fig.21 in Burt's book). All the other tank locomotives that had this style of clasp brakes were left-hand side braked, e.g. 2-2-2T No.98, later known as *Seaford* (Fig.42 in Burt's book; also Figs 33, 35, 39, 47, 85). Some other tanks had similarities to this clasp arrangement, including Jones and Potts single tank No.97, depicted here with No.115 (see also Burt Figs 2, 29, 93, 101, 102).

The position of the rear spectacle plate is not clear from the photograph, and the likelihood of it being to the front or rear of the coal bunker was discussed with Chris and Gerry. The NRM drawings showed that the bunker was only 1ft 4ins from front to back, and there are known examples of locos with similar plates in both possible positions, e.g. LCDR 2-4-0T No.145 had the plate to the rear but SDJR 0-4-4T No.12 had it to the front, in the manner of an enclosed cab. The photograph shows what might have been coal behind the plate, and if that interpretation is correct, the plate must have been in the forward position.

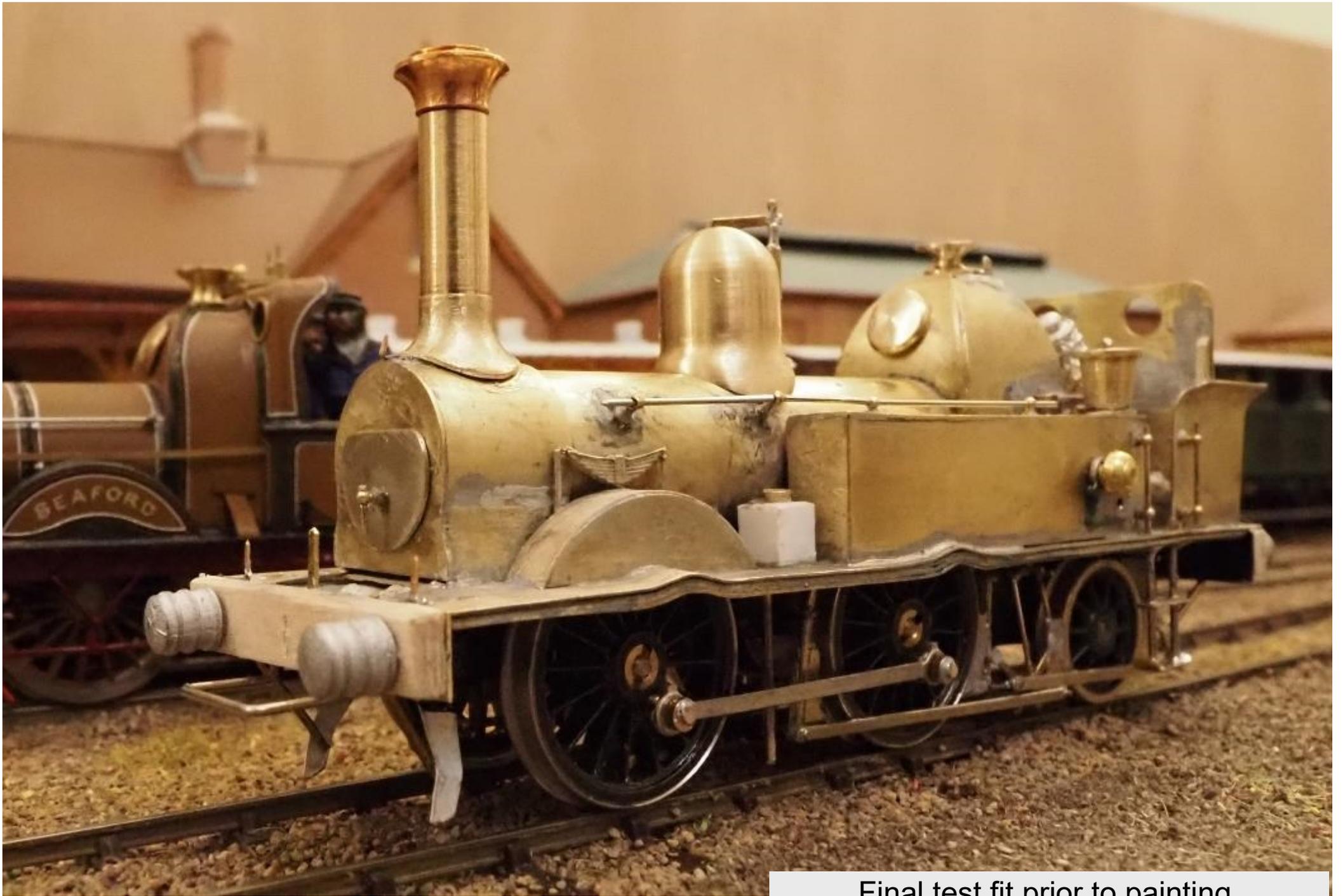


Burt's drawing only showed a handrail along the boiler side, but the photograph appears to show a handrail along the top outside edge of the sidetank, and that is likely to have been continuous with the front of the boiler, like the modified "West End Well Tank" 2-4-0T No.378 (see *The L.B. & S.C.R Modellers' Digest* 17:68). The photograph also shows a vertical rail on the cab-side, and we can assume there was a rail on each side of the cab entry. The handrail knobs on the boiler side needed to be moved and I had a couple of goes at positioning the second knob before I was happy with it, and that left some messy soldering to clean up before painting.

Burt appears to have drawn a slightly oversized dome. The boiler is very small, and when I drew the dome with the flange size drawn by Burt (as measured along the boiler), the flange extended much further down the boiler sides than in his drawing. I reduced the dome diameter slightly to make it a more plausible shape, but ensured it was still large enough to cover the internal fittings shown on the official drawing.

We may assume that there was an inspection cover fitted to the front of the upper section of the gothic firebox, although it was not shown in the Burt drawings. A simple lathe turning was made, ensuring that its button-like shape was thin enough to be bent to fit the curve of the firebox front. To bend it, it was fitted to a brass bar of suitable diameter, over which a brass tube was fitted, and the whole assembly was then crushed in a vice to bend the lathe turned fitting.

Like No.58 that I described previously (see *The L.B. & S.C.R Modellers' Digest* 11:57 and 17:68), No.115 had both a well tank and side tanks. No.58 had a single filler within the cab area but No.115 had a tall funnel-like filler on each side tank. The official drawing shows a 4 inch pipe in the cab area connecting the well tank to the inner side of right-hand side tank, and presumably there was a similar pipe for the left-hand side tank. The pipe connected to the side tank just below the filler funnel, so the side tanks had to be almost full before water flowed into the well tank (it is not clear from the official drawings if the side tanks were also linked by a pipe under the boiler to ensure an even loading across the locomotive).

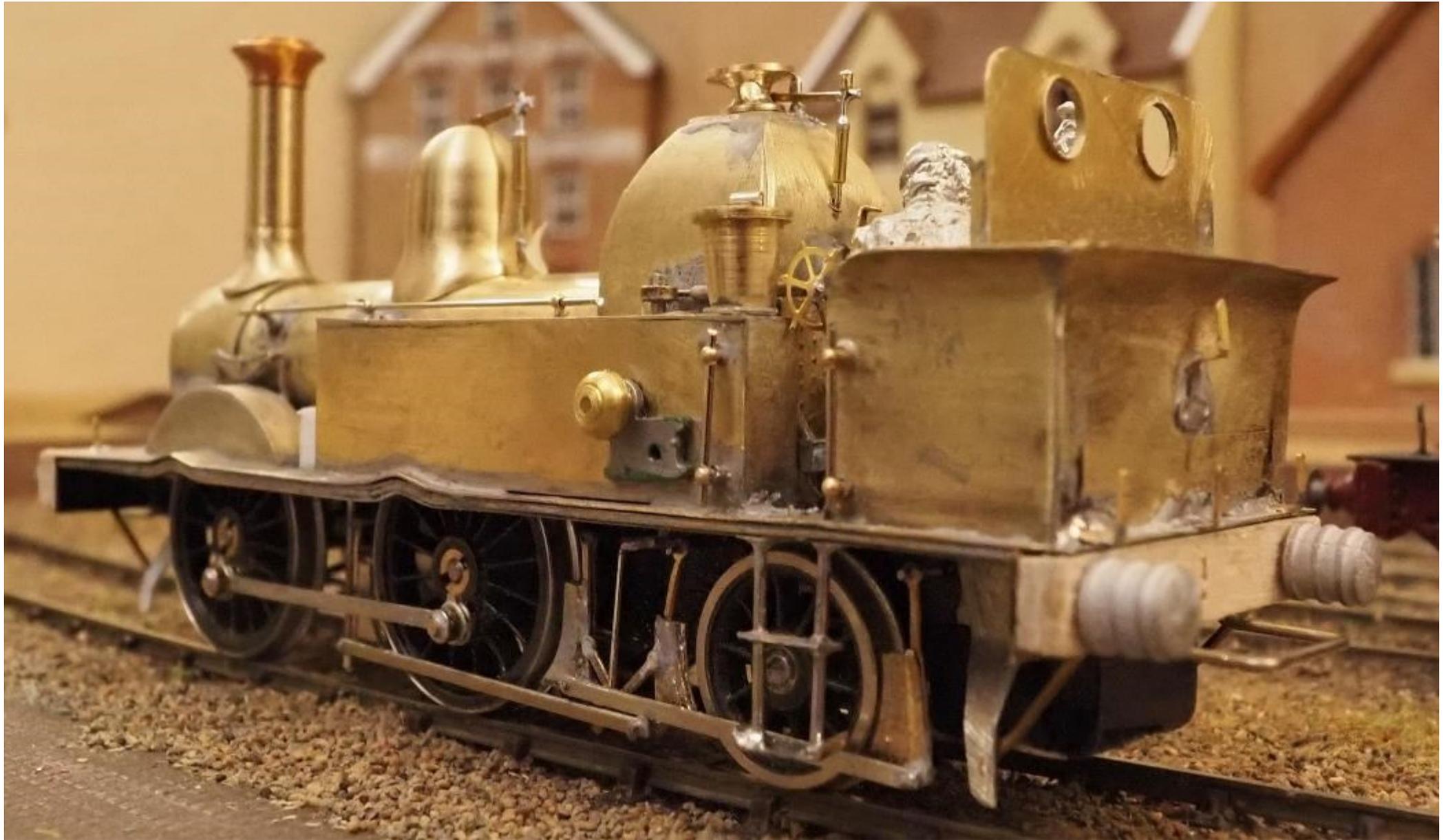


Final test fit prior to painting.

The completed body was painted with Railmatch post-1928 GWR green, chosen because it is a plausible match that I could buy in an aerosol to save having to get the airbrush out. Despite what I thought was vigorous mixing it went on thinly along some edges. Luckily, I had also purchased a separate pot of the same colour, but in acrylic. I decided this was an ideal time to try air brushing an acrylic paint for the first time, but I over diluted it resulting in an uneven splatter which I did my best to wash off, but some stuck fast, giving some areas of the boiler a blistered appearance, which might even pass as added realism! That still left the problem of the thinly painted edges, but luckily the colour match between the acrylic and enamel paints was so good that I was able to brush paint those areas, and with hindsight I should have tried that to start with. I resisted any thoughts of stripping the model and starting again because the imperfections are barely noticeable under normal on-layout viewing conditions, even if they do look like the Himalayas in a close-up photograph!

The photograph of the prototype indicates that the lining comprised an inner pale line, probably white and a broad dark line, most likely black. There is a slight trace of what might be an outer pale line immediately above the buffer beam, but no sign of an outer fine line elsewhere. It is likely that there was an outer fine line, but it could not have been white as that would be seen as easily as the inner line. Given that the red end of the spectrum was not captured in monochrome photographs until 1906 when panchromatic film was introduced, locomotives lined in colours such as white, black and red appear to be lined with only white and black. ([See associated article](#)).

Given the uncertain lining colour, the difficulty of achieving a smooth finish over the crank curves in the footplate, and my dwindling supply of suitable transfer lining such as white-black-red, I decided to restrict lining to the boiler bands, represented with red-black-red transfers. The cab-side number was Fox Graphics and the "B 115" was made up from leftover bespoke transfers printed on a micro-dry printer (OKI DP-5000) for a previous project. Finally, a coal load and crew were added, and the spectacle plate was glazed by drawing some Humbrol ClearFix across each opening.



Running with the new style 1020FE iron core motor is smooth with a Gaugemaster Model W controller but erratic with the Model HH feedback controller that I am used to using with my other small loco models, all of which have Mashima motors (mostly 10 series; some 12 series).



Photographs copyright Ian White

The completed model. My project for this coming winter is to complete the Hailsham Mill layout and pose the loco with some suitable stock to recreate the c.1865 Hailsham photo!

[Return to contents page](#)

Comparing Terriers

By Gary Smith

On the left is 'Leadenhall' from Hornby, and on the right 'Brighton' from Dapol.

Both are great models. Previously, I have complained that the split boiler on the Hornby model is more conspicuous than the cab roof on the Dapol model. Also, Hornby uses only one cab for all variants, with the additional holes for A1X additional pipework giving a machine gunned effect.





These pictures really highlight the different design choices. To my eyes, the darker shading on the name, the less prominent white lining and black pipework on the Hornby model make the Improved Engine Green appear darker. By contrast, the Dapol model includes additional details like lining on the buffer shanks, the copper capped chimney looks correct, and hand rails and fittings like lamp irons all come together to make it a much brighter model all round. Although you can't see it here, Brighton's wheels are lined out, whereas Leadenhall's are not. Weaknesses are the rivet detail on the Hornby cab back, and the lack of coal in Dapol's bunkers.

The Renaissance of Imberhorne

By John Shaw

Since the last, much enjoyed, Patcham gathering, I have spent virtually two thirds of my modelling time enthusiastically working upon 'Imberhorne'; this work is producing dividends, as I trust the following two groups of photographs and paragraphs will demonstrate.

Introduction: Before we get into the photograph analysis, two essential aspects to consider:

- i) livery details;
- ii) traction and coaling.

Livery Details: When Stroudley came south from the Highland Railway's Lochgorm works in January 1870, he brought with him some already existing locomotive design features e.g. white cab roofs and their shapes, plus the already applied (1865) improved engine green with elaborate lining. This livery was of the Scottish Highlands inspiration, not of the Sussex chalk downlands. Pendon Museum proclaims that their wonderful creation shows 'the railway in the landscape'. Stroudley's livery proclaims the locomotive being absorbed into the Highland's changing colour palette of late summer, autumn and early winter in the Highlands, good tracts of which were clearly visible from Inverness, especially from the top of Ness Castle, including several Munros e.g. Beinn Bhreac Mhor (about 2,650 ft); this livery is a Highland scenery colour mélange, both of the exposed rocks and the vegetation. I have explored a great portion of the Highlands, with the major exceptions of the Strathnaver and Strathallerdale zones. The following would seem to hold true for areas even as far west as those great Torridonian sandstone peaks such as Stac Pollaidh (about 2,000 ft) in the environs of Assynt-Coigach. The lining-out, especially on the very noticeable, white lines' sections of the boiler bands, can viewed as the mountain torrents and

burns flowing in rapid profusion down the sides of the great u-shaped glaciated valleys, including the Great Glen. The adjacent colouring being that of the micro-climate induced vegetation on the incised valley sides and their floors. The very prominent white cab roofs conveyed the essence of the very many, prominent beinns, sgurrs and stacs, with their early winter snow-covered summits. The astonishing blue of the number plate backing, can be seen as representing the lochs or even the smaller, more profuse lochans of, say, the Flow Country. Nevertheless, it all fitted rather comfortably into white, chalky 'Sussex-by-the-Sea' for some decades!

Traction and Coaling:

Success on both fronts!

The traction problem is nearly resolved. Electrics are not my strong point, but I have persevered to the point where traction occurs in both directions on a regular basis and the 'fireworks', whilst not fully eliminated, are greatly reduced.

How the tender centre axle came to be drilled 1.5mm higher than the other adjacent two is a mystery, but the wheels did not reach the rails, but windmilled away to no great effect! After much thought and with some trepidation, I cut the frames immediately abaft the centre wheels, whilst also partially unscrewing the front and after frame structure retaining screws. This ploy worked immediately, with the powered centre axle dropping squarely onto the rails. With aid of plastic splints and super glue, the split frames were rejoined and the allowed to set really hard for a couple of days, before being painted over; you really can't see the join! Traction was better both ways, but it was not yet good enough. Extra weight on the motor was needed, plus some additional remedies too.

Fishing, both fresh water and coastal sea fishing, have a strong following in my city. Having located the main piscatorial equipment suppliers in some far-flung back road of an industrial estate, I set out during a quite spectacular thunderstorm to purchase large sea-bed functioning lead base weights; there was quite a selection to choose from, therefore, the additional weight

problem was heading for solution. For emplacing this lead on the tender top, the ideal photograph came when I found the well-known one (RAS WP102), c. 1898 of the Class B2 4-4-0 No. 209, "Wolfe Barry", (built 09/1897), which had a wonderful mynydd (mountain) of very carefully selected and stacked, best Welsh steam coal on its large tender top. Stroudley's tenders of this era were large and long, as I can see from looking at the completed building of my second, contemporary L S W R 1879 Beyer, Peacock "Steamroller" 0162. These magnificent chunks of fresh coal were not as large as those upon B2 No.315 "Duncannon's" (built 07/1895) tender (Bluebell Railway Archives), but were nevertheless goodly sized chunks. Concerns about chunk sizes and shapes were highly relevant as, once I had carved up (N. B. in very safe conditions) the 170 gm. lead weight into the preferred shapes/sizes to make a longitudinally-shaped half hard-boiled egg that I could glue to the tender top. I could then use appliqué work to fashion the coal pieces onto the lead, with the greatest weight being directly above the centre, powered axle, thereby also making the shape as close to "Wolfe Barry's" load, as I could. This did the traction aspect a world of good, whilst visually it looked quite compelling.

The best steam coal was extracted from the central valleys of the South Wales Coalfield, with the anthracite laying to the west and the household coal to the east. Coal comes in many forms, but all the main forms, with the exception of lignite (brown coal, which does not have enough age nor metamorphic pressure) and anthracite (with its greater age and exaggerated formation pressure) allow 'schistosity', i.e. having cleavage lines, like in slate. This meant that the fireman, faced with such photographed tender loads, had to develop a technique to break up such chunks rapidly, even as their train was on the move. I have seen two old films showing how this was achieved. Allowing the large coal chunk to jigger through the tender coal hole onto the fireman's shovel held by the right hand in the lower part of the haft, the lump was so positioned that the cleavage lines faced upwards. Then, with the pointed end of his coal hammer, the coal was struck hard along a prominent cleavage line. The resultant, more manageable pieces were then cast into the firebox, once his driver had opened the firebox door via the spring-loaded handle to the left of the

backplate tray. To create further authenticity for the model, I went to my old F. J. Roche drawings book for shapes and dimensions for a fireman's coal shovel and a coal hammer, both with shaped wooden hafts. Scratchbuilt, these items reside on the top of the coal on the fireman's side.

This coal, I assume, came to the 'Brighton' coastwise by colliers to Shoreham port from Cardiff or Barry Docks. There had to be shed staff who were true experts of dry-stone walling techniques, akin to those practised in the Yorkshire Dales. No mortar, nor glue kept their tender coal mountains in place and they had to remain both self-secure and be able to deliver their coal at a useable rate to the coal plate door. In pre-1914, the rank order table of coal stacking in shed grounds, would prove to be a very valuable and interesting read. The Great Eastern was fully devoted to stacking, as pre-1914 photographs of both Stratford and Ipswich sheds show, with large 'fields' of immaculately stacked coal. The North Eastern was no slouch at this activity, either. Consequently, colliery to consumption had to be a reasonably quick continuum. Where did the 'Brighton' stand in this activity? Additionally, you cannot stack coal forever as a source of energy. Coal loses its calorific value very quickly. Furthermore, it is not advisable to transship it between transport modes several times, for even, if coal is a metamorphic rock, it is brittle, consequently, it does not take kindly to being dropped from a height into a collier's hold, nor into a railway wagon, especially metal ones. What types and capacities of loco coal wagons did the 'Brighton' possess and how many did it have? The L B & S C R seem to have been at the top of the game with their coal procurement policies, which I trust the photographs and the model demonstrate.



Loco front.

This, you might think, is the completed front of the engine, with burnished lamp brackets, door hinges and strappings and a plethora of route discs, together with later pattern Brighton headlamps – do any of these survive? I have fitted the Westinghouse brake pipe and have ensured that we now have two buffers with burnished heads, one was missing upon arrival and a burnished draw hook with three link couplings has also appeared – so far so good, but one main item is not correct and will need replacing, if at all possible. Whilst under some further research, it would appear that the cartouche apparently should have a different sequence of colours, including CREAM, plus the vermillion centre. The new waterslide transfers from Mike Waldron look as though they will solve this one. The model lacks a centre buffer beam lamp iron and the recent article in the Brighton Circular Vol 49 Issue 1 suggests that this may need to be corrected.

I have ordered from the NRM, two AO -sized prints of Brighton Works' drawings, both at 1/2" to 1ft. BTC relic 419/59 is of 2-2-2 "Grosvenor" and Roll 496 is of "Gladstone". I am very used

to dealing with NRM North Eastern Darlington Works drawings, with my Raven Pacific GA being some 8ft by 3ft. Therefore, I shall be intrigued to see what Brighton Works drawings are like. I would like to build some between the frames details as there is a very visible, gaping hole beneath the boiler with plenty of the inner red frames on display. The details for the cylinders/valves' fronts, plus drain cocks could also then be built.

Following page

Firebox, Westinghouse brake pump, speedometer gear and number plate fixing.

The fireman's firebox side was adorned with the Westinghouse brake pump and its related piping. Steam drifting from it when it was at work might have caused some sight problems for the crew, just like that from the Salter safety valves, but these could only have been short-lived. I discussed renovating and fully lining out the pump in the initial article. The whole ensemble was much enhanced by the fitting and polishing of the copper piping.

A speed recorder was fitted on this side too - a chain driven affair from the driving wheel centre boss. This was very advanced kit for the time. That which you see is my second attempt at it: the first did not pass muster. The rear brass boss was cut from thin brass sheet using a paper hole punch. Then the raised centre for the bearing end was stamped in, using an old centre punch and the outer bearing end fitted into it, as was the retention at the opposite end. This finished the rear end of the body fabrication, which was fixed behind the valence; the brass outer face being polished and varnished, just like the prototype. The boss on the driving wheel was made from a very conveniently shaped and sized top hat bearing that was super glued to the driving wheel boss, once the central location of it had been divined. The prototype speedometer was chain-driven, the best photograph I have seen would suggest a double chain. At this scale, I viewed chain building as a "bridge too far" exercise, so a substitute was made from doubled-up, twisted claret cotton, which was then dipped in diluted varnish, one end being formed into a closed loop



in the process. This when dry and made flexible again, was put around the bearing and boss ends, gently tightened and ends knotted, leaving just a little sag in it, as with bicycles of old. It has passed operational testing.

Number plate and works plate fitting can cause a good stir with me, because of the delicate and precise nature of the work involved. These two sets of plates came from Ian MacCormac and they have delighted me. Virtually all of the initial work was completed in a box so that nothing could spring away and be lost on the floor. I carefully and very slowly cut a number plate and a works plate from the fret with my finest pair of scissors, ensuring that the outside rim of the plates retained their curvature, any roughness being gently chamfered off with the finest of emery papers. The blue background paint, from the same tin I used for 'Falmer' 25 years before, was used in slightly let down form to 'flood' the background areas. Cleaning activities by shed operatives would have left thinner areas of this paint and this has been achieved. No glue was allowed anywhere near the fixing processes. Careful measuring was performed several times to define the emplacement spot and trial placings followed. When all was thought to be 'A1', the engine was laid on its side, the plate was removed northwards to allow a small spot of let-down varnish to be laid at its centre. The plate was returned by gentle, slow sliding so that no bow wave of varnish went before it. Using two fine-pointed, new cocktail sticks, I shunted it about until I was satisfied all was correct; this was then left for an hour to set. After that, using a broad, very fine-bristled varnish brush, the whole cab-side was painted with let-down varnish and left to dry overnight. This varnishing routine was repeated three more times.

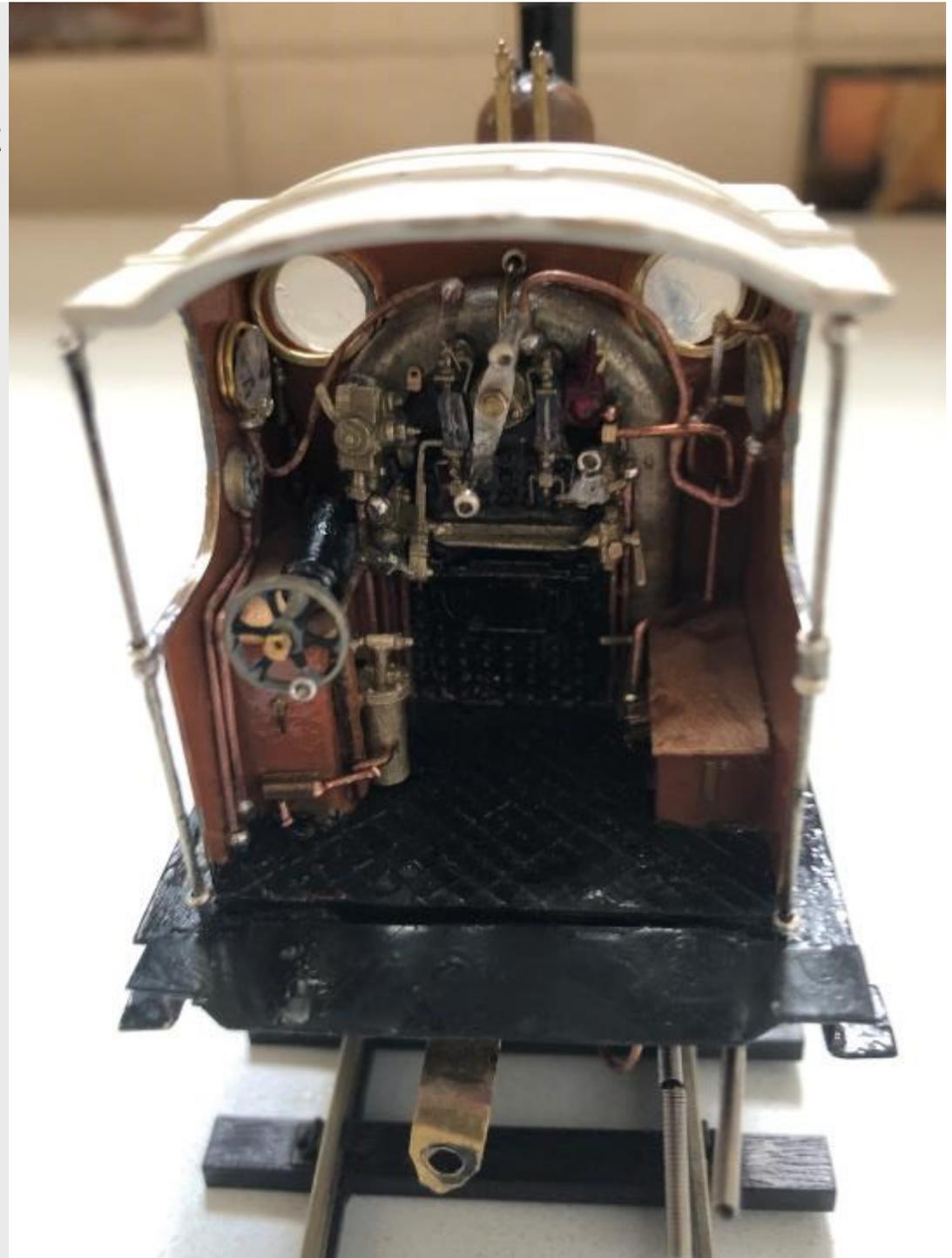
This method was repeated for the work's plate, with the additional proviso of using a good magnifying glass, to ensure the text was correct way up!

Cab Details

This has been the major constructional task of this project!! It could not be escaped, nor was it going to be, for there was nothing in the cab but empty space - not even the initial paint on the walls was the correct colour.

The only reliable drawing was to be found in that slim, but brilliant book by F. C. Hambleton, his 'Locomotives worth Modelling' p.18. This should be improved when I receive my 'Gladstone' drawing from the NRM, as this one has the features drawn as looking from the rear to the front. Photographs, clear, good quality ones, seem just as scarce. There is one in P. J. Wisdom's HMRS book and one in an early NRM brochure of 'Gladstone', when they were setting up, but after that you have to trust to experience. Whilst Hambleton records the cab wall colour as 'yellow', this does not agree with the NRM photographic evidence. After a long discussion with Ian MacCormac at Patcham, we concluded that 'Tan' was the appropriate colour, thus the walls were so painted.

A plethora of the correct scale brass castings sourced from Ian Young at Sanspareil Models



in Carlisle, to whom I am very grateful, now came into play, boiler backplate first. The already fitted checkerplate cab floor needed some gentle burr work before the backplate slipped into position. Then it was centred and secured. Next the two prominent gauge glasses, the double-faced Westinghouse brake gauge on the left wall and the boiler pressure gauge on the right wall were installed - N. B. not on the front wall. Proper printed faces were sourced, far better than the efforts I tried initially. They were varnished onto circular plastic bases, cut by a paper punch, then fitted into brass rings. Following fitting to the walls, their copper pipings were then attached. Two brass spectacle rings were conjured up to the size in the Hambleton drawing N. B this is of a different diameter to the cab front version - how has this occurred? A whistle handle appeared too.

The regulator handle came next, perhaps the most prominent item in the cab – but how to build a convincing, moveable one? Using some nickel strip I drilled a fine hole in it, then shaping it into the main handle and burnished it. The straight bullhorns, with their pommel



ends were then added; they are the ones in the photographs. I judged them too intrusive in the end and made two more narrower, shorter spindles, still with the pommel ends and these look much better.

The boiler regulator hole, already cast into the back plate, was slightly enlarged to take a nut and then drilled through. A small washer was then placed behind the main handle. The body was separated from chassis, so that the main spindle could have another washer added in the firebox space, followed by a locking nut, which had a blob of glue dabbed on the spindle to stop it working loose. Some oil was applied to the cabside nut/washer zone and movement ensued. It is usually kept in the shut position.

Gauge glasses came purchased from a new supplier, coming in two brass cast top and bottom parts and a 3-D printed light blue translucent glass, which I made up, drilled holes in the back plate and fitted. The left hand one has had to be re-adjusted so that it stands vertical, like the right hand one - they look suitably convincing. The requisite piping was then added. Seating was made from a marquetry sheet of burr maple, both being very carefully chamfered and shaped to fit around the backplate edge and into the cab corner, whilst the edges were bevelled; both then received three coats of varnish.

Many kinds of other equipment followed, including the reversing wheel, which I think still needs some latch gear on the top and the speed recorder gauge, which had a liquid filled vertical glass tube to give the readings. Some thirty years ago, I persuaded the Science Dept. technicians to extrude some glass tubing into a very thin section. They produced some lovely thin tubes, the last of which I had available to make this gauge. Using two filed down hand rail knobs, I slid the glass through their apertures and glued them in place. So far so good - now to fit them into the top

right-hand corner (fireman's side) of the cab without breaking the glass. This was achieved by rolling the engine unit onto its side, then placing two blobs of glue at the top and bottom locations. Using my finest pair of tweezers grabbing the bottom brass knob and with the aid of a cocktail stick, I carefully put it in place and let it solidify; its piping followed. All the other piping sections and other apparatus followed, including some items of unknown purpose to me, such as the large item with a tap top at the right rear base of the driver's 'seat'.

I use the word 'seat' with some caution, as that on the fireman's side could only be used by squatting down, and the driver's by perching on the narrow 'shelf', inwards of the reversing gear. Hambleton described the cab layout as 'wonderfully neat'. That it may have been, but I suspect there were operational difficulties with it. The driver had to stand behind the reversing screw, almost standing on the fall plate to operate it and being left-handed would have helped. This may also explain the need to have the two rearward extension spindles to the regulator, which also had to be very easy to move. The driver could not stand further to the right as he would have obstructed the fireman's throw. The cab sheeting design is, essentially, pure Highland Railway, like that on their No. 2 'Aldourie', with the exception of round spectacle plates, not square ones. This meant the driver standing to the right of the cab cut out, enjoying all the all-season benefits of fresh air. At least they were spared extra fresh air by the non-provision of ventilation holes along the top of cab front sheet. Perhaps it was true that the 'Brighton' only allowed funnel front running, as there were no tarpaulin tags along the cab roof rear nor any extended retaining irons on the tender coal space front as the L S W R tended to do; these are very difficult to model, as I know from experience.

This and following page

Tender rear:

Good detailed views of this area are hard to come by, but persistence has paid off. Burnished coupling hook and bright Westinghouse pipe restraining chain in real silver to enhance the views. Enhancement was further extended when I sourced and fitted two sets of working buffers. The heads were burnished and the stocks painted claret, but no lining out has yet occurred. One view, has the red lamp in position, the other has it removed to show the engine number transferred on to the tender flare. Whether the transfer font is fully correct is open to question. There are no commercial transfers apparently available, whilst the Brighton number font contained a very unusual font for the seven – a '2' inverted clockwise and without the circular end to the upper top lefthand extremity. This, and the associated number plate design were direct descendants of the Highland Railway's plates.





Coal hole door partially open.

This and preceding page

Tender Front:

If you want clear photographs to help you with modelling the tender front, you are in for quite some search, but there have to be some somewhere. Better still are the drawings in Hambleton's excellent work on pages 94-95. From them, you can build the two water supply taps at the front of coal space (done), the 'pep' pipe tap towards the base of the driver's side on the front of the coal space plate (done), front plate top coping (done) and a working sliding coal space door with its brass knob handle (done). Next, you can paint the non-brass parts in Stroudley's dark olive green (done). Note that the coal hammer and the coal shovel are resting on the coal top, along with scratch-built fire irons, a bucket, spare lamps on the shelf and one of Brighton's uniquely shaped oil bottles in its correct place according to J. N. Maskelyne's drawings.

This records progress up to 19/08/2023, more progress has been made since and there is more still to do!

Photographs copyright John Shaw



Coal hole door closed.

[Return to contents page](#)

Lewes Station Goods Shed of 1846

a 3D CAD Model

By David Rigler

In previous articles I have described and shown my efforts to create 3D models of the buildings associated with the first and second stations at Lewes. The goods shed was the last major structure of that era remaining for me to complete.

The goods shed in Lewes appears to have been constructed at the same time of the first terminal station. It lasted well into the 20th century before being demolished for redevelopment of the area.



The primary modelling has been carried out to reflect the very early days. As usual as much information as possible was gathered to start estimating the building dimensions. I have repeatably found the large scale 1/500 1879 Ordnance Survey Maps of the area useful as one of the triangulation points when the building footprint is shown. However, caution is needed as in this case the loading bay openings are shown equally spaced whereas the photographic evidence showed they were not.

This footprint also indicates it was after the wooden extension was replaced by a brick built one. You will see later that, as an exception, I have modelled this later addition for comparison.

Also visible in the aerial photographs is a canopy over the right hand loading bay. I believe this was a later addition and is not modelled.





Many years ago, I was fortunate to have acquired prints of some detail of the building in its later days. The central window, I believe, is a late modification which I chose not to model. Similarly the far extension looks to be a later addition and again is not modelled.

These prints helped me work out that there was a slight slope down on this side from the doorway to the loading bays. The down pipe style with hopper is modelled from an earlier photograph.



This and the following page show various views of the building in its earlier period, with timber extension at the southern end.

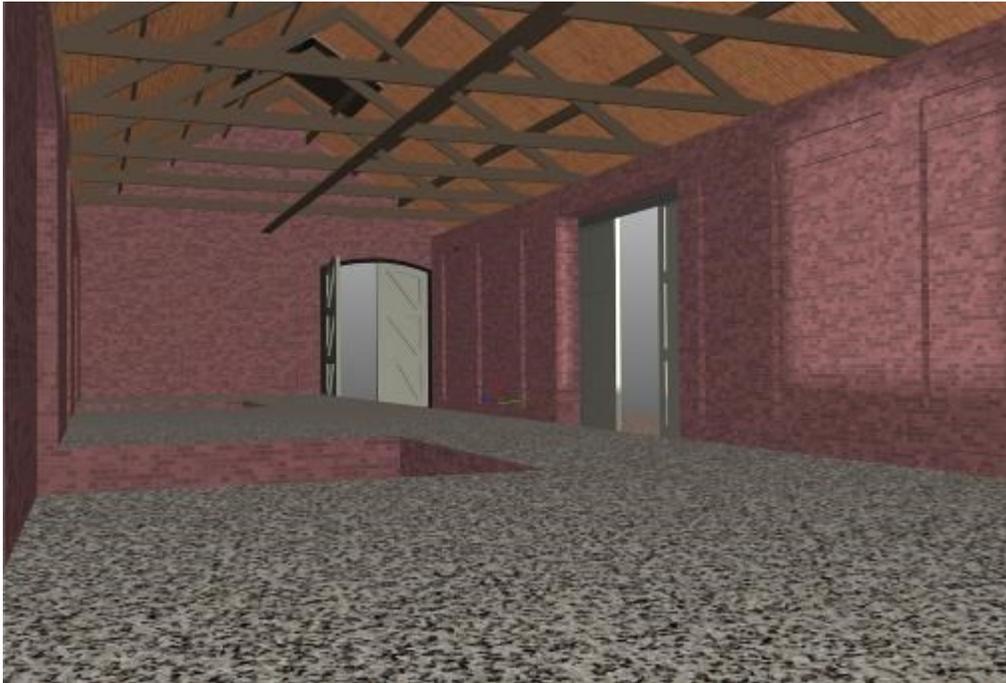




This view shows the later period, with the southern extension now built of brick.

The photograph below is after the 3rd station was built and shows the rerouted Uckfield line running behind the goods shed.



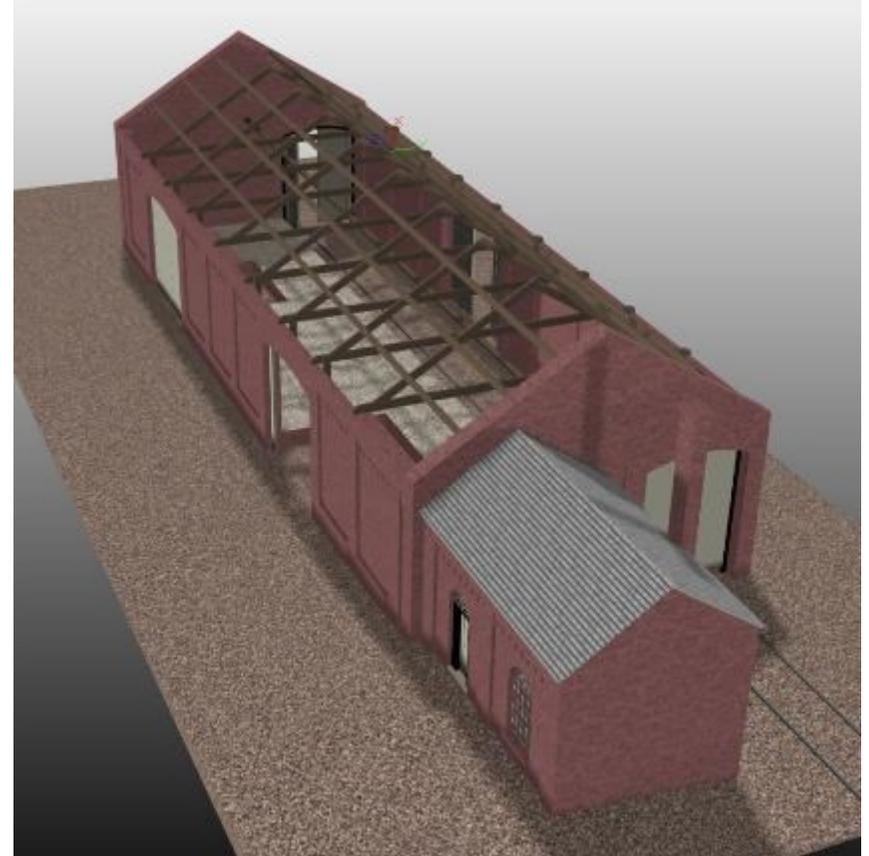


I don't usually model the interiors of the building but, having a good photograph to work with, I have included some of the structural roof detail. I was also intrigued by the loading bay doors and how they opened. The wall structure and step back above the doors all indicate that the doors slide into the wall. I have not seen this before so would be interested in comments regarding this.

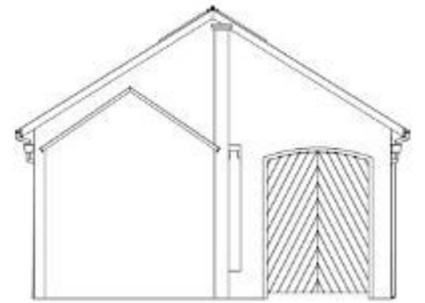
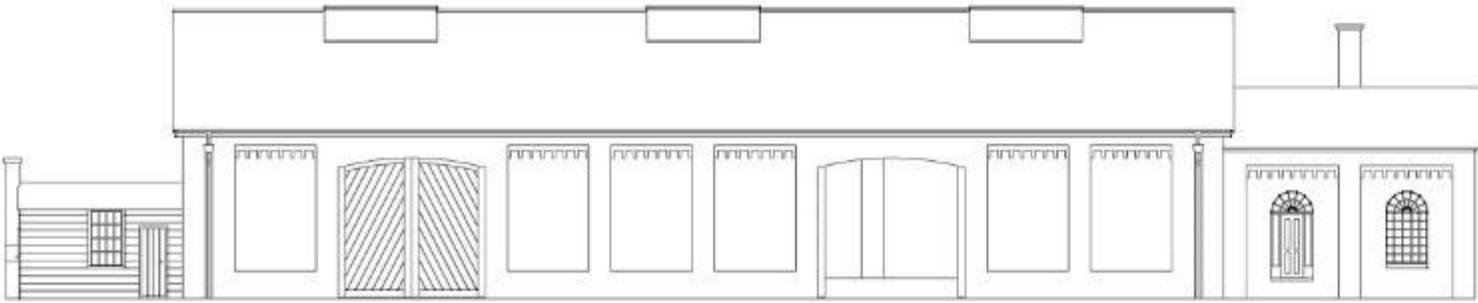
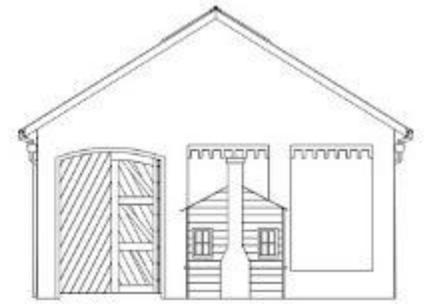
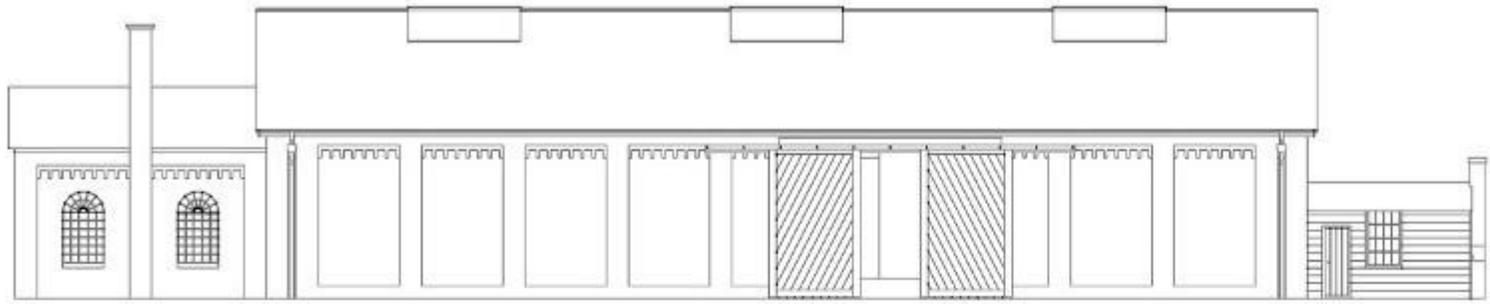
To finish, here are two aerial views of the model, showing the roof frame structure, alongside a photograph of the goods shed in its later form.

Having completed a physical model of the first station, which can be seen near the top of the picture, I am contemplating modelling the goods shed and creating a working model of this limited area.

My reservation is having to also model the stock of that period to go with it!



Standard Elevations of the Goods Shed



Images copyright David Rigler

[Return to contents page](#)

Deptford Road

By Ian Buck

How this came about is the culmination of many factors. When I started my railway career at Selhurst in 1975, there were still people working there who had worked on the LBSCR “Elevated Electric” trains, mostly at Peckham Rye, and I was fascinated by some of their stories of a system of which I was vaguely aware. At that time the AC electric shed at Selhurst was still in use as the paint shop and the high doors and electric tie-offs for the overhead told their own story. I started looking into this system and, although not much was written at the time, I started noticing old switch cabins and the bases of the overhead masts.

Over the years this developed into an interest in early electric railways, ie pre 1914, and, with my interest in the LBSCR in general and my fascination with the Edwardian period, I started thinking about an Elevated Electric model.

After a number of false starts, I was spurred on at the last 2023 Wealden Railway Group exhibition when I was asked will I ever do the AC layout! Challenge rather stupidly accepted. This coincided with what passed as retirement, so I thought that I would have plenty of time to do this.

As this is an exhibition of small layouts, the layout had to be small and this was the first problem. I wanted to produce a “what if” type layout based in South London in 1911. This I reasoned would allow the running of Crystal Palace stock at some point. First of all, I needed a name. Modelling an actual station would be out of the question in the space available, so I settled on Deptford Road which sounds South Londonish.

This layout was rather bizarrely inspired also by a mug. I have, as a family heirloom, a mug issued to my Grandma at a large gathering of schoolkids at Crystal Palace to celebrate the coronation of George V. As she lived in Hammersmith, I like to think that she would have caught the very new Elevated Electric service to Crystal Palace from Victoria, having firstly caught the electric District Railway.

Some of you will probably shriek in horror when I say that I am using Peco 00 Streamline track and the few vehicles that I have use commercial couplings at the moment.

I set myself the following parameters

- the main line must be on a viaduct,
- the station will be similar to those at Queens Road Peckham, Old Kent Road and East Brixton,
- the main line shall be electrified on the overhead system (which was the whole point),
- there will be a low level goods yard for added interest,
- the year shall be set at 1911 and
- there shall be an electrical switch cabin.



At this stage I have to mention the inspiration that I have got from the erstwhile Brighton Road P4 layout.

One thing about modelling an urban scene is the amount of buildings and structures that have to be constructed, even with a layout as small as Deptford Road. This meant an almost bottomless pit of materials were required, including sheet plastic of various thicknesses and several sheets of Wills building materials, predominately cobbled stone and Victorian pavement.

Most of the buildings in South London, including the railway ones, are made in brick, which meant the use of numerous sheets of Slaters embossed plasticard. Wood was also used for platforms and station shelters and for these I have used scribed plasticard to keep the costs down. However, where possible, I have used recycled material. The columns holding up the platforms are from a couple of metal coat hangers.

The station buildings are based mostly on East Brixton and South Bermondsey, as that is



where most photos seem to survive. The switch cabin is based on that at East Brixton. The South London cabins were surprisingly modern especially when compared with what followed for the later schemes.

The overhead gantry supports were unique in their concept and, on the original South London Line electrification, were well over-engineered. They were also built to fit their location meaning that few were the same. I have used this to my advantage, making gantries out of Woodland Scenic plastic girders and cross truss sections.

One thing you notice about Edwardian street scenes are the number of people present. So far I have only acquired a few and these have come from Langley Miniature models, as have the few road vehicles.

Railway vehicles so far collected are mostly freight, consisting of some open wagons, vans and rectangular tank wagons. I have a Bachmann E4 radial tank and a Hornby Terrier named Earlswood. This is not strictly relevant to the era modelled, but I live in Earlswood, so the temptation is there. I have models of a South London driving trailer and a South London first class trailer. I had also modelled a South London power car but, after completing it, I realised I had made a mess of the width and have had to start again.

Things still to be done are many and varied. They include the overhead catenary and the construction of at least one SL power car to go with the driving trailer I already have. After this, I shall make two more SL power cars in original condition, to match the first class trailer. I am also eagerly awaiting the Rapido E1 tank engine but I shall not hold my breath.

The platform buildings and canopies need to be completed, as well as platform details. Signals will also be required, controlled from an above-the-tracks mounted signal box à la Battersea Park.



Several more figures need to be acquired, as do more horse drawn road vehicles and perhaps one or two early cars.

The initial intention is to get Deptford Road into a condition that can be exhibited at the Wealden Railway Group exhibition in Steyning in March next year. Following that, it is intended to upgrade the layout, fit 3 link couplings to wagons, enhance details etc and to build phase two, which will essentially add to the station and viaduct section. I would like also to build models of all pre-first world war overhead stock, which basically means the Crystal Palace stock and the overhead line maintenance vehicles. However, just to throw a wobbly into the mix, I have started working again for a short while, so the time I thought I had is not there any more!

I hope that by the time of the next Modellers' Digest, I shall have a lot more to report.

Photographs copyright
Ian Buck



[Return to contents page](#)

A Stroudley Timber Truck

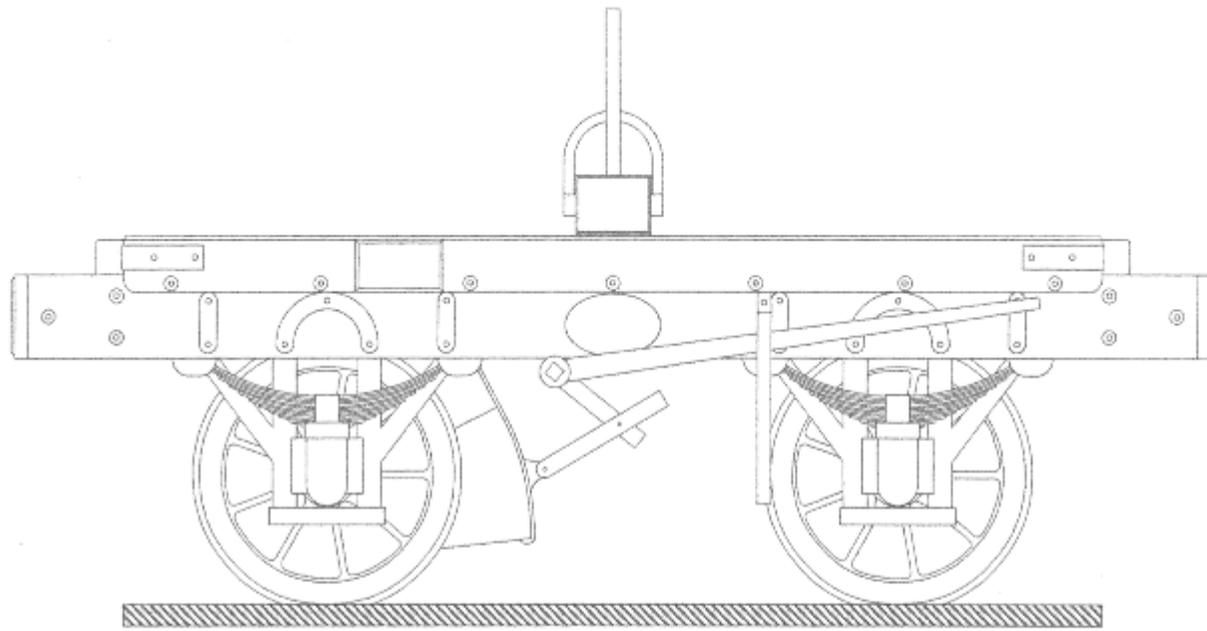
By Simon Turner

One fine day, I was idly chatting with Chris Cox, proprietor of 5&9 Models, and he mentioned that there was a requirement for an LB&SCR timber truck kit, preferably from an earlier period. There had been a timber truck kit in Eric Gates' Woodham Wagon Works range but, as I understand it, the drawing used was one of my very early ones, using the best information available at the time - which was not very much.

Since those far off days of the 1980s, copies of the timber truck designs of both Stroudley and Billinton have come to light and this seemed a good opportunity to make some use of them (see drawings on following pages). I therefore undertook to create a master, from which Chris could make a mould for casting, and set to work with styrene, scribe and scalpel.

Creating masters requires some thought. Most wagons are "more or less" symmetrical. If you are canny, you can get away with making only one side, one end and one solebar. The big caveat is that each must fit the others in both left and right orientations.

A second caveat is that "more or less", which I put in inverted commas for very good reason. Most of the masters I have made have been for prototypes from before, sometimes well before 1900. This means, typically, brakes on one side only. So, while the wagon is symmetrical in body design, it may have lugs and brackets which appear on only one side, and there is then a decision to be made whether to cast detail and remove from one side when in the construction phase, or to cast separately. In this case I decided to omit the brake lever fulcrum, as it was a simple blob and easier to add subsequently than to cut off. Some may disagree.

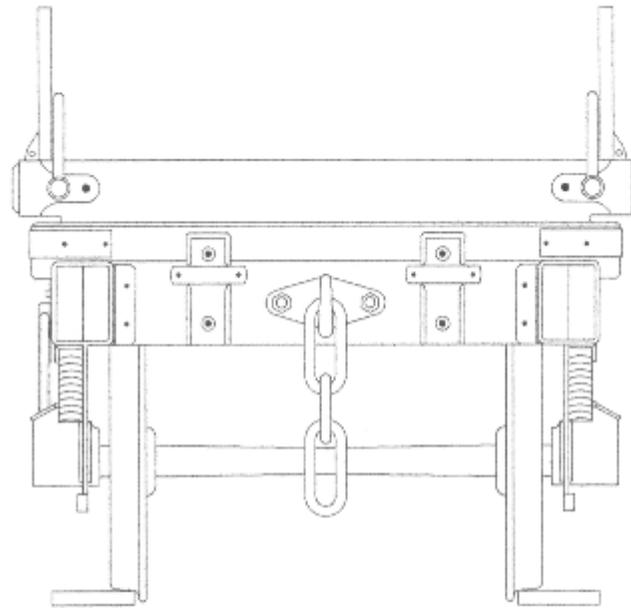


LB&SCR Timber Truck

Dwg.No.2451 of 1874

Redrawn by S.Turner Mar 1999



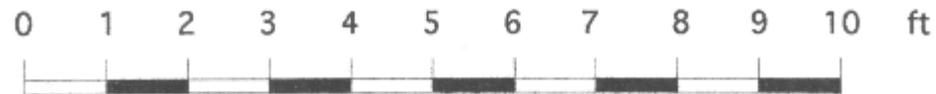


End View

LB&SCR Timber Truck

Dwg.No.2451 of 1874

Redrawn by S.Turner Mar 1999



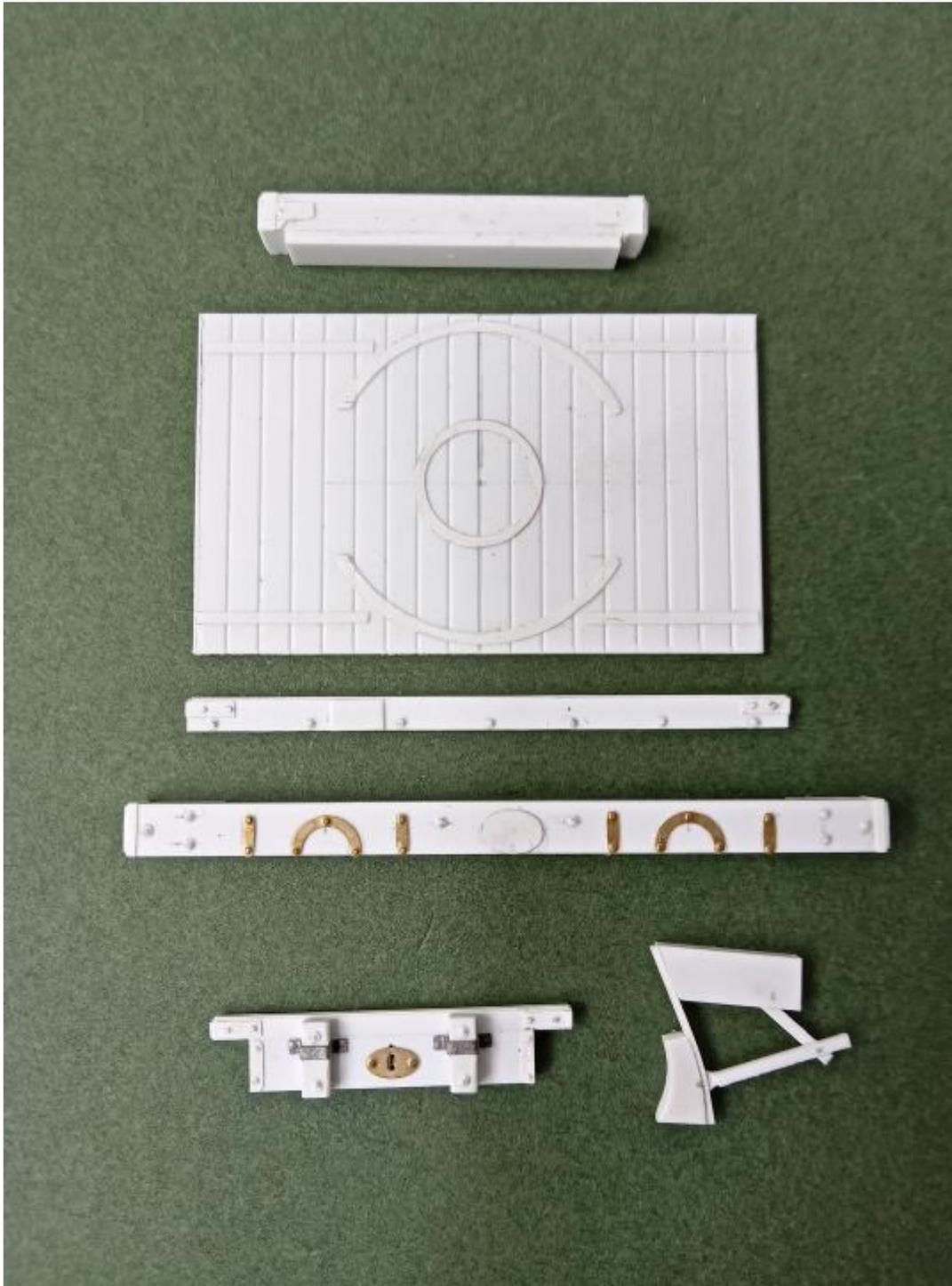
The next issue to ponder is how close to the prototype can we go. I have for many years used compensated axleguards of various types but they are designed to a standard which reflects the axle lengths of available model wheels. So you need 24.5-25mm between the solebars, unless you are going down the road of bespoke axleguards and making your own axles. It can be done and I have done it - which is why I don't do it now: life is quite literally too short.

So, to the purist, the kits I design will never be perfect, but your axleguards will fit, once the soles are in place, and, should you go down the route of sprung buffers, there will be enough clearance for those as well.

To the case in point, the Stroudley timber truck of 1876. I first thought that this would be a doddle but should have known better. The largest, most visible part of a timber truck is the floor and, since there is only one, each spin of the casting machine generates a spare, as I only did one side, one end and a sole. You also get a spare bolster.

The floor is an absolute pig as it has a large circular rail for the bolster to turn on. This required cutting a 0.75mm wide circle on a radius of about 15mm. The result is OK, but this is where 3D printing would have the edge. In principal if you can draw it, you can 3D print it: your drawing is your master.

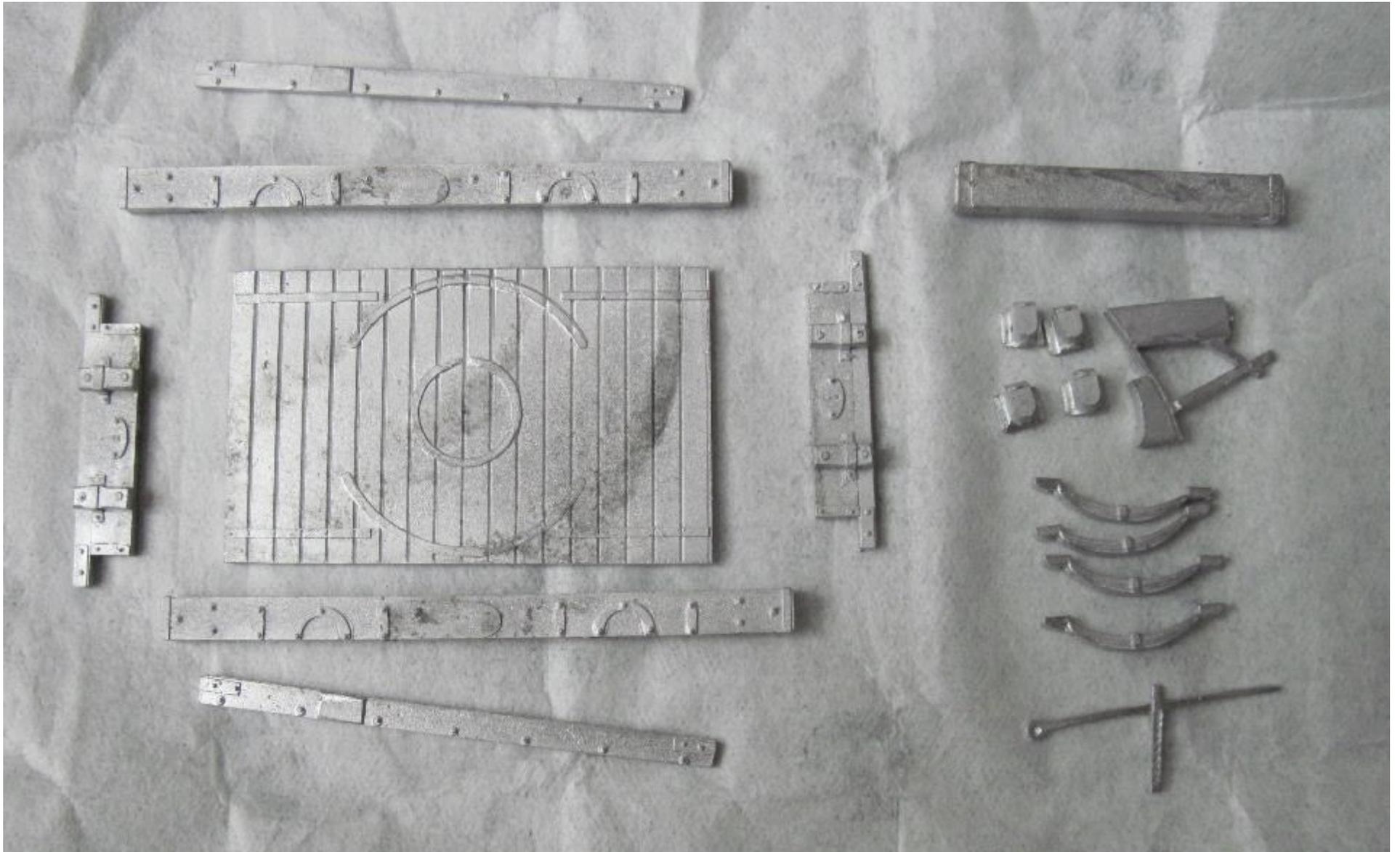
However, you cannot 3D print white metal and a little wagon like this needs to have weight to be a decent runner, so the light materials of the 3D print world are not ideal in this instance. You come across the same problem with open wagons in styrene, whether scratch or kit built. A floor made of 1mm thick lead sheet is one solution but, even then, in my humble opinion, you need extra weight.



Picture 1

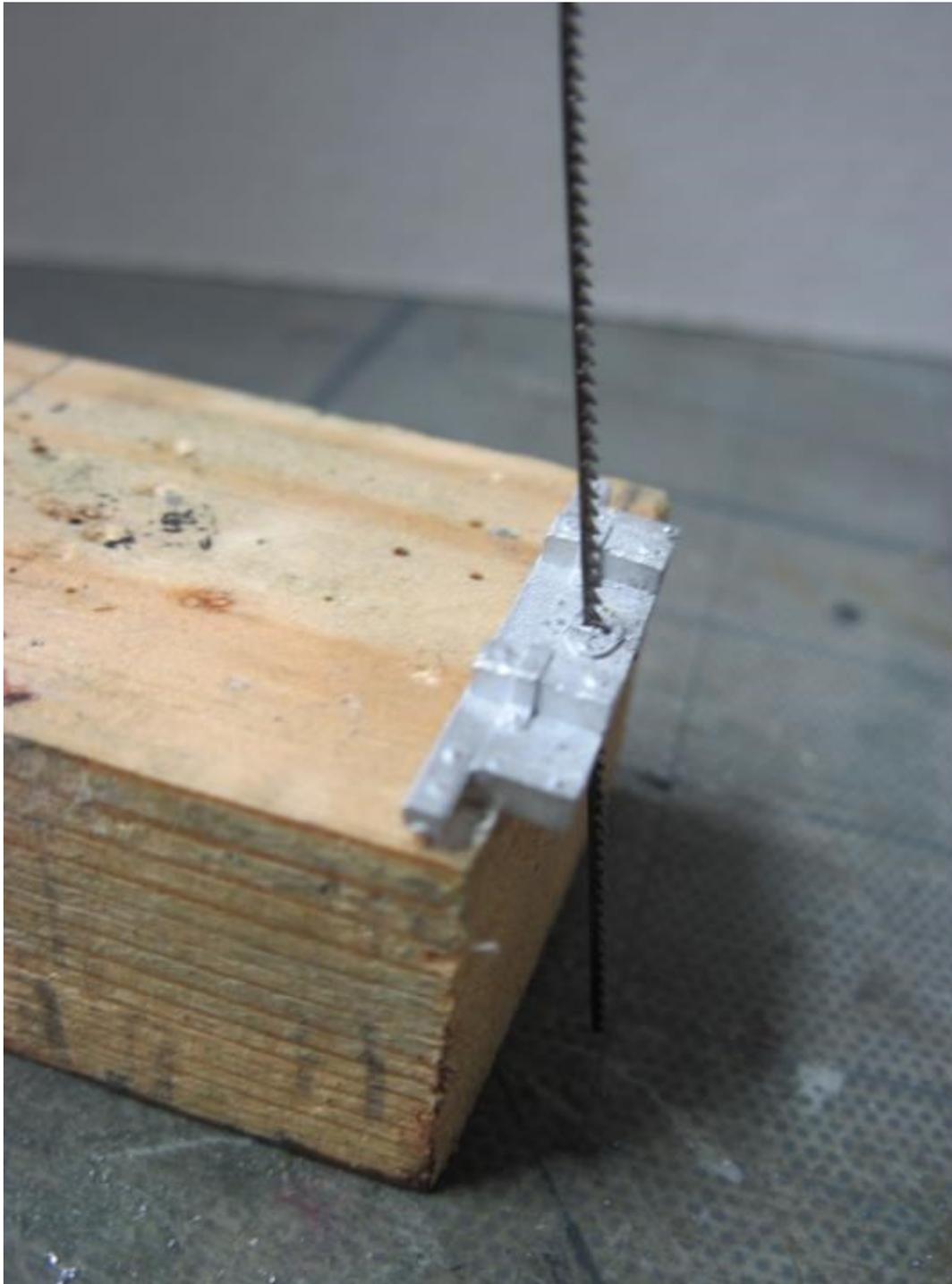
The completed master. This is how the kit starts out. As can be seen, the large radius curves have proved difficult, but they can be tidied up with files etc. when cast. More serious was the fact that, being lazy, I used Evergreen planking for the floor, with the unfortunate result that, in some places, the "ironwork" sank into the grooves. On the model, once painted black, this defect will be noticeable only by those with supernaturally good vision.

The Kit



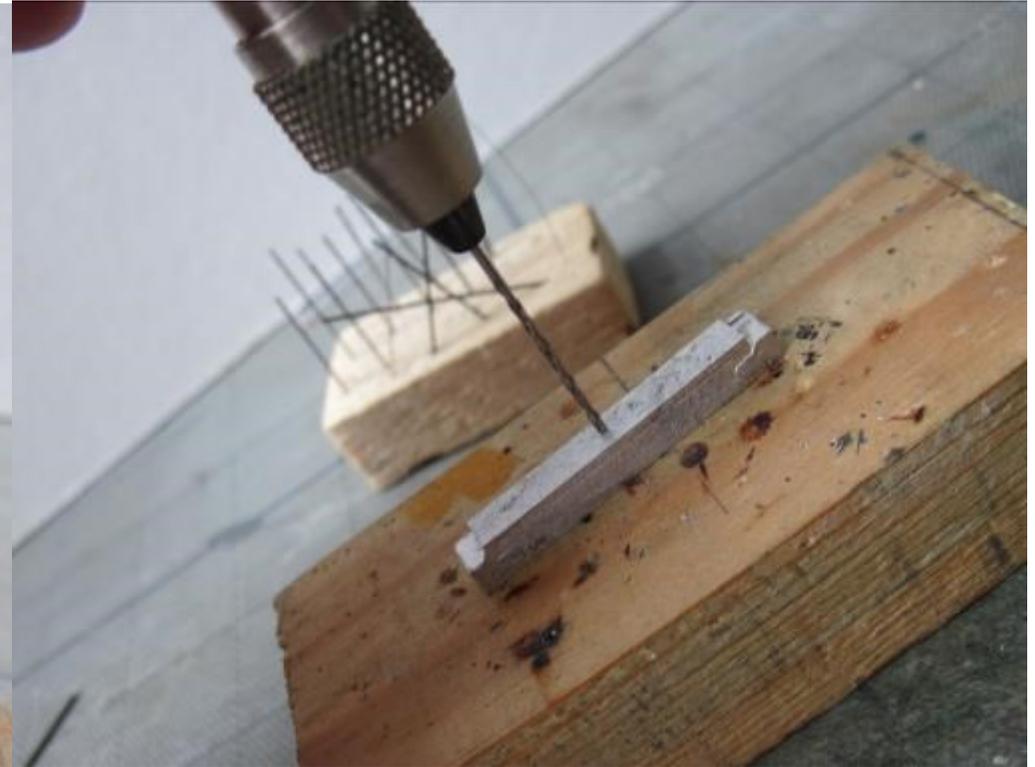
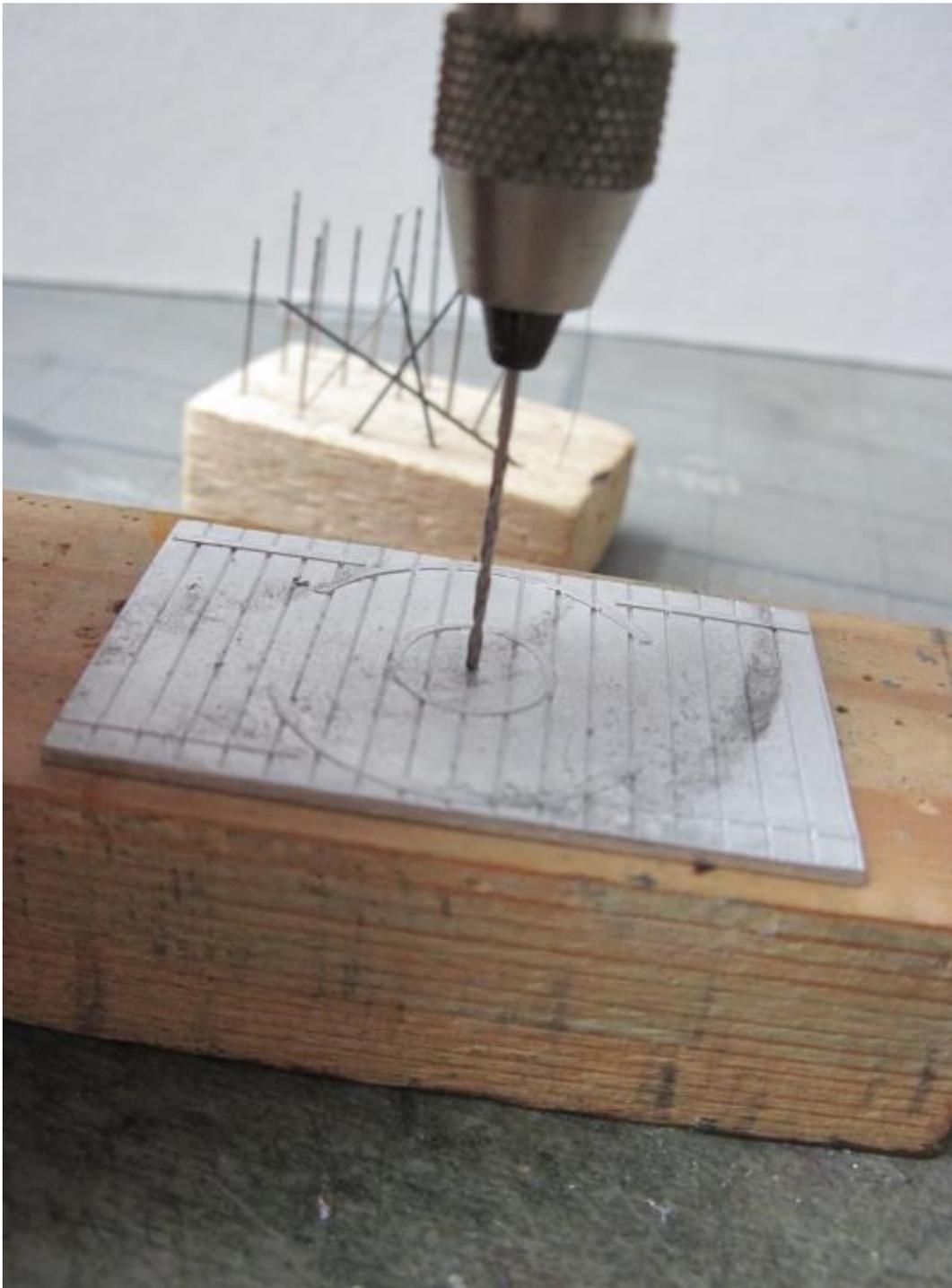
Picture 2

The kit of parts. This is what comes out of the bag. Chris has added axleboxes, springs and a brake lever.



Picture 3

Opening the coupling slot using drill and then piercing saw, depending on the coupling you wish to use.



Pictures 4 & 5

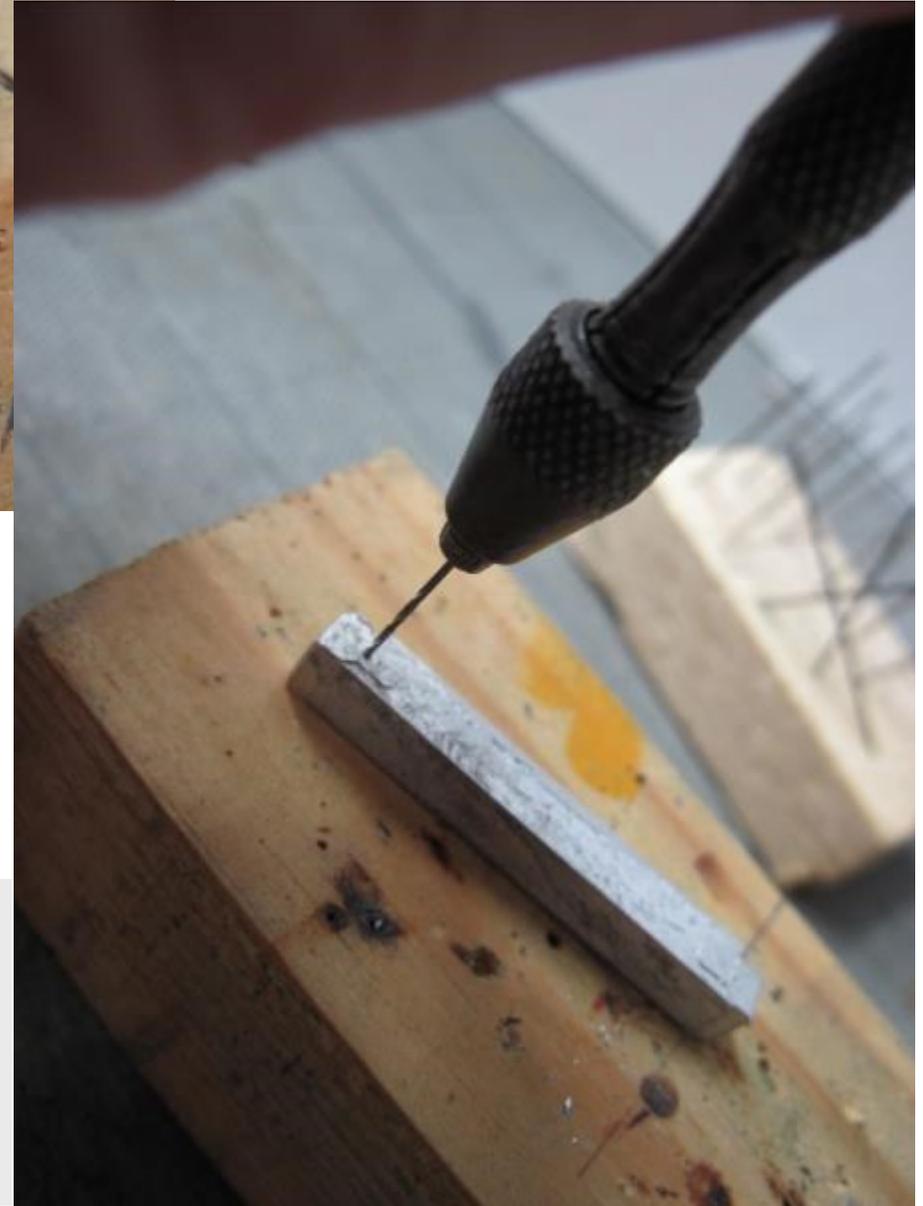
Drilling out the holes for the pivot in the floor and bolster.

When drilling out the bolster for the pivot pin, remember to drill from the bottom and don't go all the way through. It is also useful to counterbore the bottom of the bolster hole, as, no matter whether you use glue or solder to fix the pin, you tend to get a shoulder of material which is difficult to remove.



Left Picture 6

The counter-bored bolster



Right Picture 7

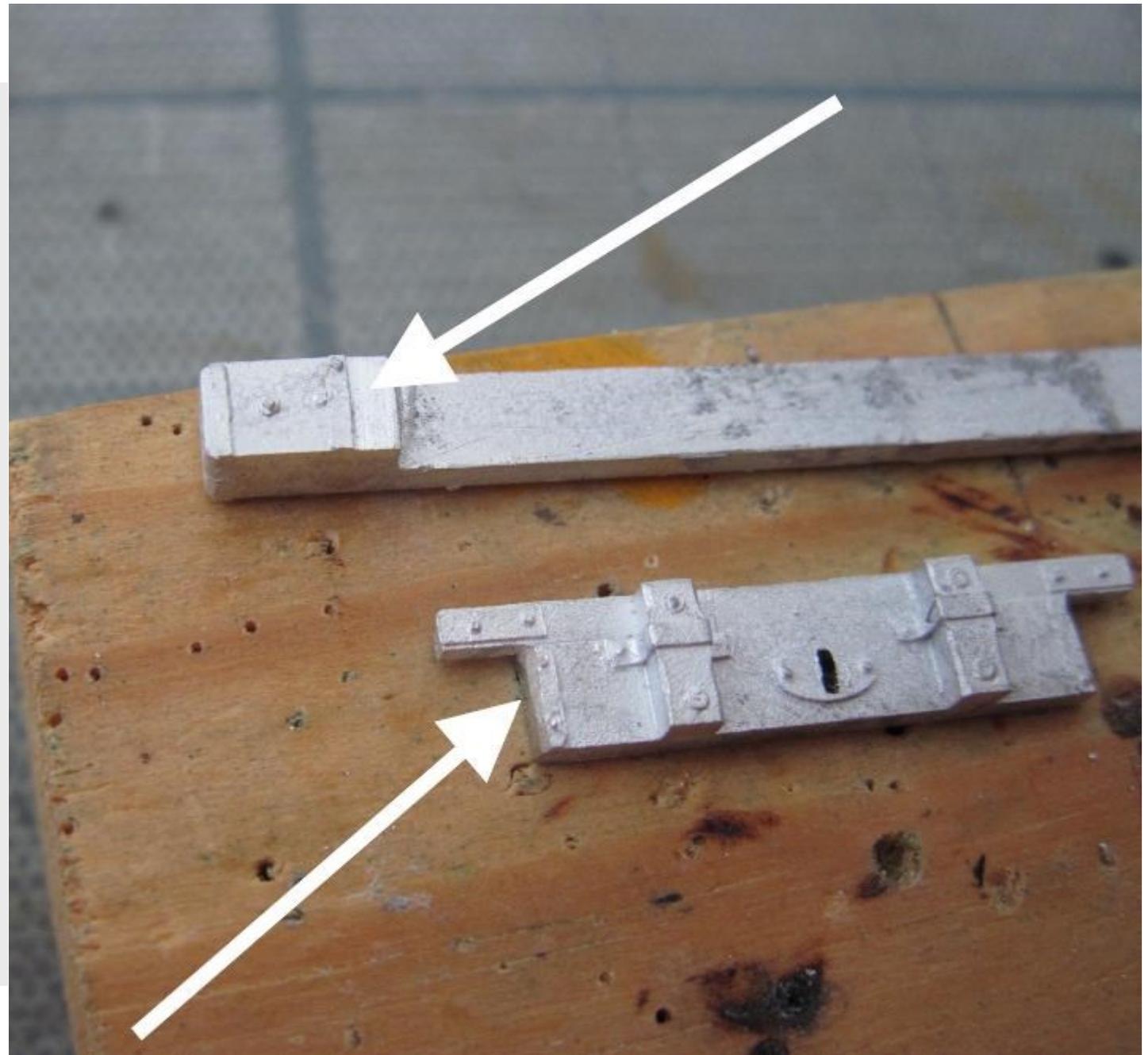
Drilling the holes for the staples.

The holes for the staples are conveniently drilled right through the bolster but care should be taken to ensure the hole is straight and square.

Picture 8

These two parts need to fit snugly, to get the correct length to fit the sides.

The next job is to chamfer the ironwork on the end headstock to make a tight fit with the ironwork on the inside of the buffer (known as the clump block). This was one place where foresight failed in preparing the master, but it is easily rectified with gentle filing in the places indicated in Pic 8 by arrows. Once this is done, a test fit of the ends into the soles can be done, to make sure the sides don't overlap the ends. Quantities of Blutack are a useful aid.



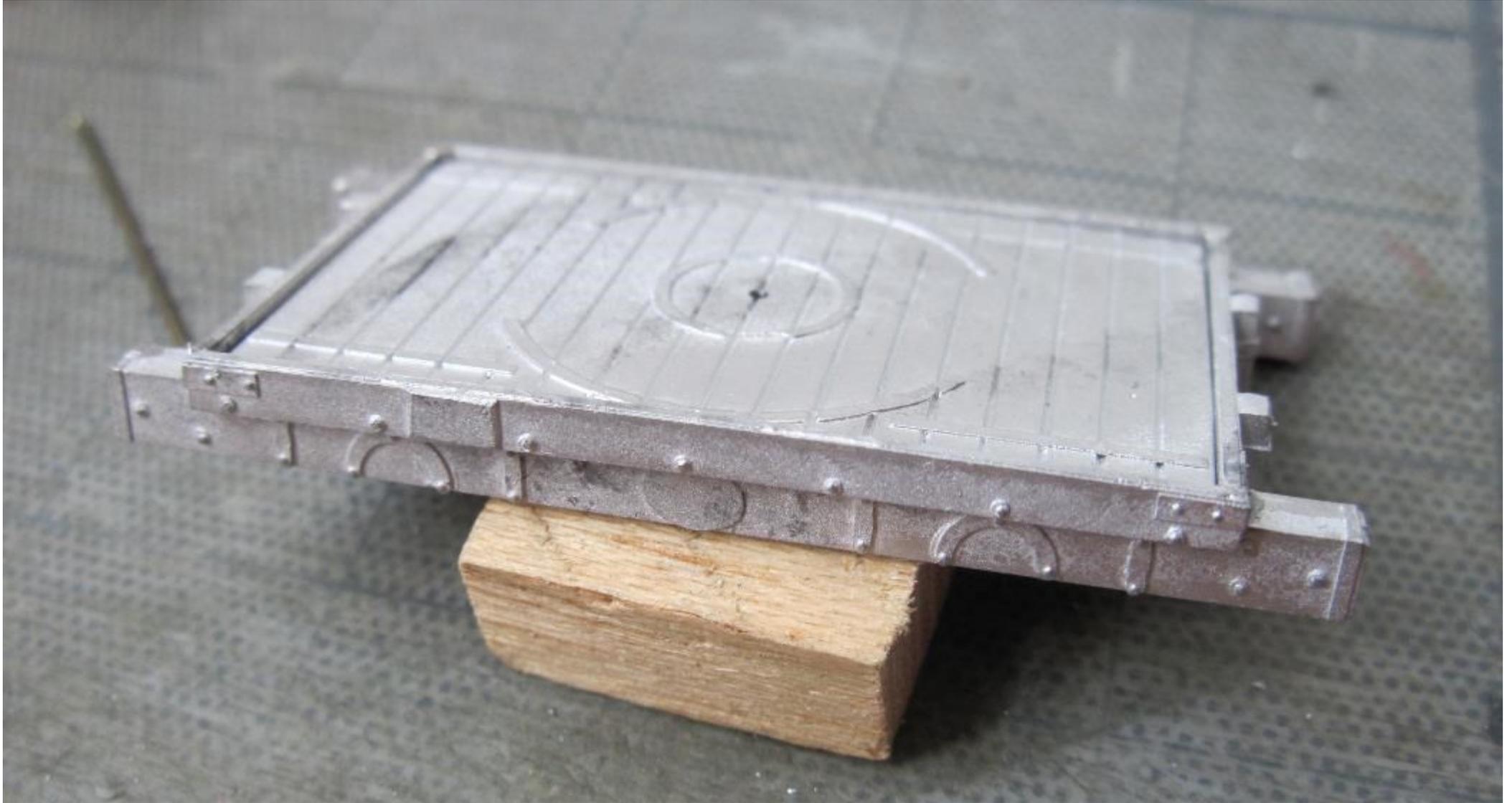


Picture 9

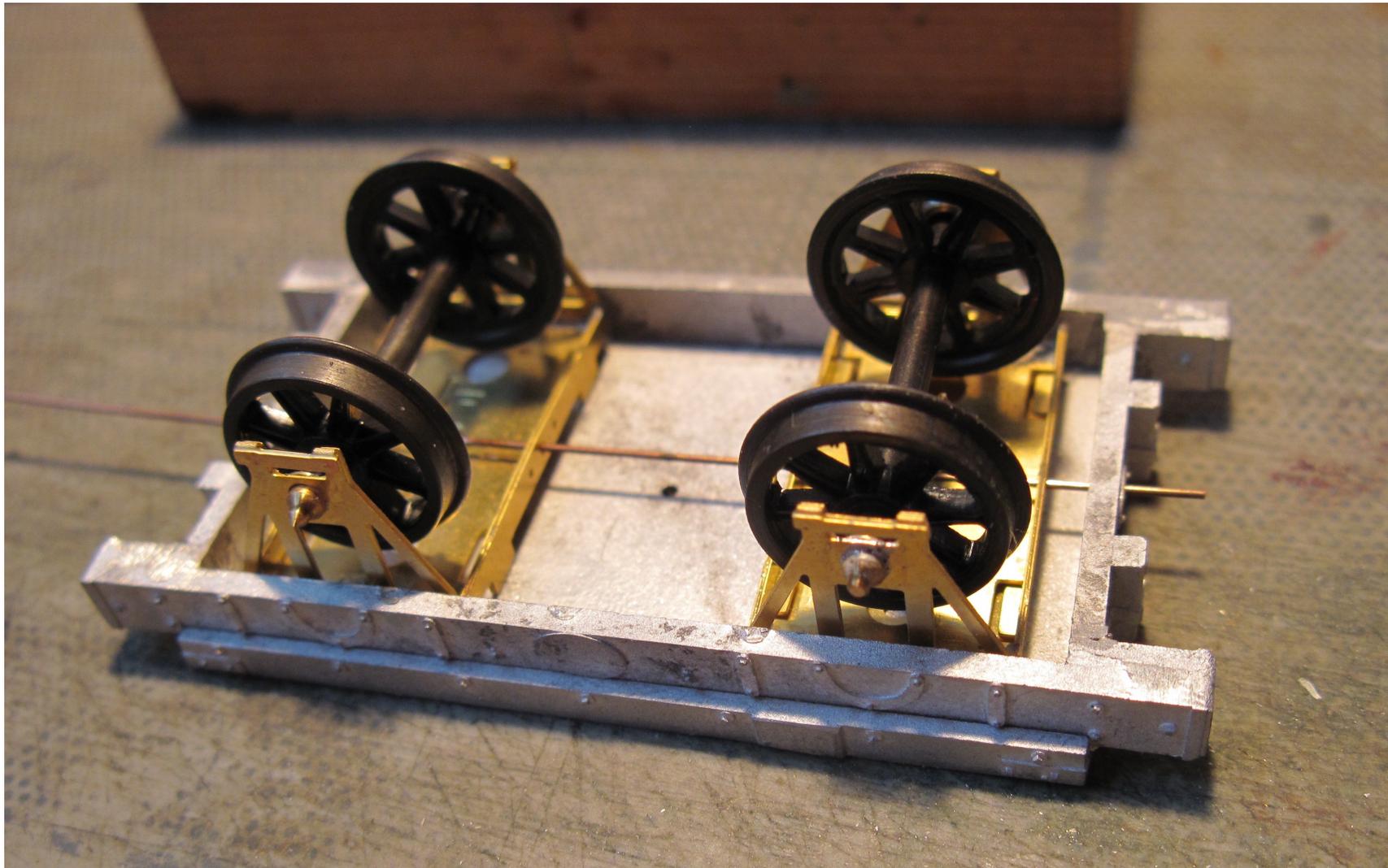
Whether you use low melt solder, which I would strongly recommend, or glue, which I have never tried, is up to you. For the purposes here, I will describe the soldering method.

First solder one end to one solebar making sure it is square in the x,y and z planes and that the solebar is the right way up. This can be difficult, but with low melt solder you can start again if it doesn't go well. Once one end and solebar is done, repeat for the other pair, making sure the orientation is correct. The two parts are then easily connected to give the basic frame shown above.

Picture 9 shows the basic frame, bottom side up. Note that this isn't quite complete as the top left corner has not yet been soldered.



Picture 10
The completed main structure.



Picture 11.

Lining up the w-irons using a straight wire through the coupling slots and holes provided in the etches.

Once the W-irons are in place, the springs can be soldered to the solebars but care must be taken to make sure that, once the axleboxes are glued to the rocking end, they clear the springs. Trial and file are the watch words here.

Picture 12

With the springs and boxes in place, attention can turn to the brakes. The lever needs a pivot point to be attached to the solebar (refer to the drawing for dimensions). For this I used a piece of scrap white metal, soldered in place, but any material could be glued to the same effect.



The cast parts for the brakes need some work. The lever supplied by Chris is marginally long, so I cut it and redrilled a hole for the pivot.

The brake block casting is a bit of a mystery since I produced it from the drawing but, for some reason, while the block is perfectly acceptable, the push rods don't align with the pivot point. My solution to this was to cut and solder them to be closer to what was required but it was a fiddly and frustrating task and there was a temptation not to bother.

Ready for the paint shop. The bolster has acquired a pivot pin underneath and stanchions and staples. The brake lever is held in with **Blutack** temporarily, as it is easier to paint separately and fix with glue, once the body paint is on.



Picture 13 Two trucks at East Croydon in the Billinton style. (Courtesy John Minnis)

The livery of these wagons was the usual shade of grey, which I tend to interpret as exactly that which comes out of an undercoat spray can. Some of the ironwork, definitely the running gear and brake equipment, would have been black.

As to the lettering, things are rather less clear.

In Billinton's day, it would appear from what little evidence we have that the number and legend "LB&SCR^y" or from about 1900 "LB&SCR" were applied to the sides in letters about 7" high. That took up most of the available space.

However there is a picture of three of these wagons at Selhurst, taken during widening works in the earlier 1890s, and it would appear that there was no legend and the only identifying mark was the numberplate. This interpretation should be followed with caution, however, as the legend tended to disappear under dirt. This picture appears as the lower plate on page 99 of "Images of Railways: LB&SCR" by John Minnis and published by Tempus Publishing: the original is in the collection of Roger Carpenter.



Picture 14 The completed wagon with just the number plate for identity so far. It will probably remain that way unless further information becomes available.

As can be seen in this illustration the brake linkage is not really visible, so whether it was worth tinkering with it is a moot point.

Craven 2-4-0 No 176

By Eric Gates

Ian White commissioned his “scratch builder aids” for a pair of Craven locos in May 2010. Since then, it has been interesting to see how many of the 14 sets of etched frets have appeared as running models and to ponder on those that are still sitting in the “must do” collection, providing potential articles for the Digest. From my pair, the 0-4-2 saddle tank was completed some years ago and has been an interesting addition to my loco collection, provoking a lot of comment when running at exhibitions – in this part of the world, the comment is usually “is that Great Western?”.



The 2-4-0 has taken a little longer and I finally started work during lock-down. Part of the challenge was to identify which loco to build; the four locos of the Brighton built batch of 1864 may have started life looking the same but were significantly altered by Stroudley. All had the rear frames extended, but driving wheel springs were underhung, splashers were panelled in, capped chimneys were fitted - in various permutations. The safety valves were rearranged - until 174 blew up in Lewes station, after which valves were fitted back onto the dome where the footplate crew could not "adjust" them so easily. After much thought, I opted to build a loco in original condition, making the rather rash assumption that all four might have started out looking the same - in other words, matching Burt's drawing of No 174. This meant that I could paint the loco in its original Craven livery - but also that I had to find a way to produce the driving wheel splashers with their brass banding.

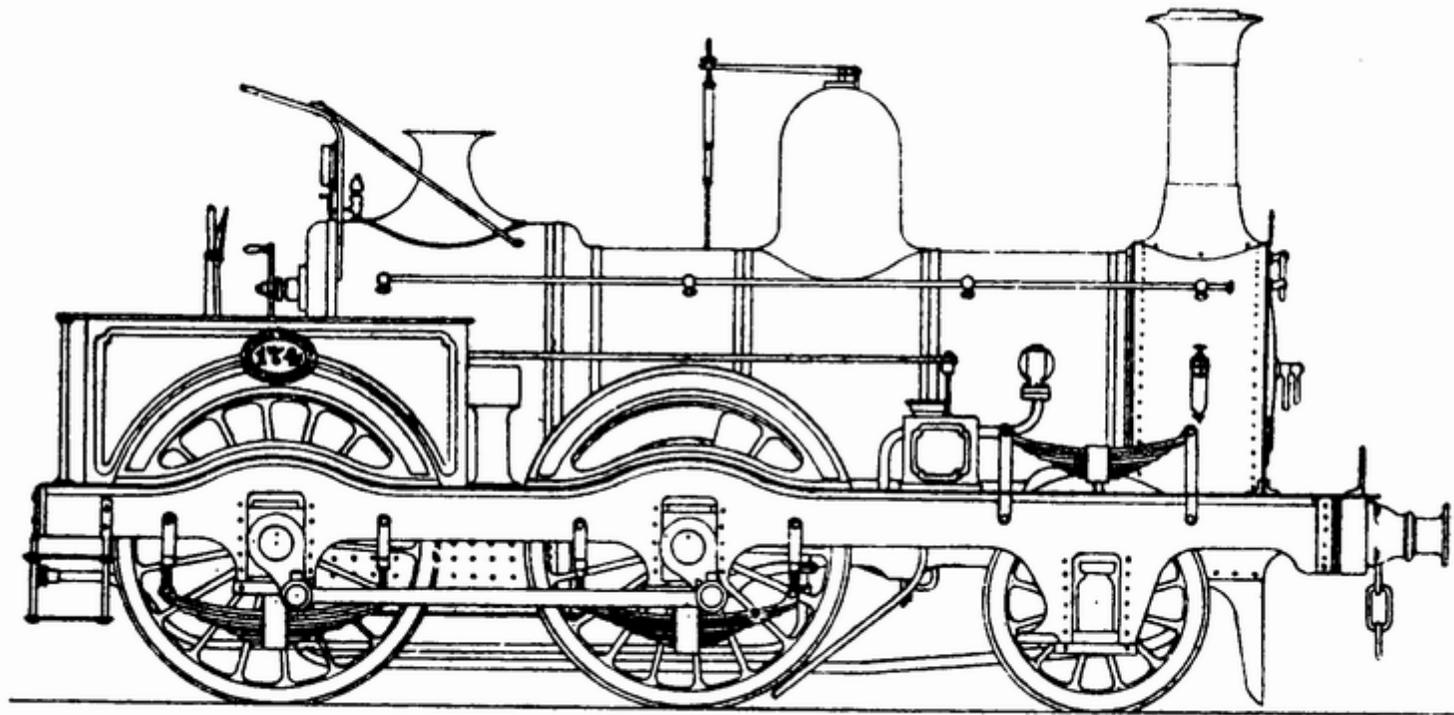
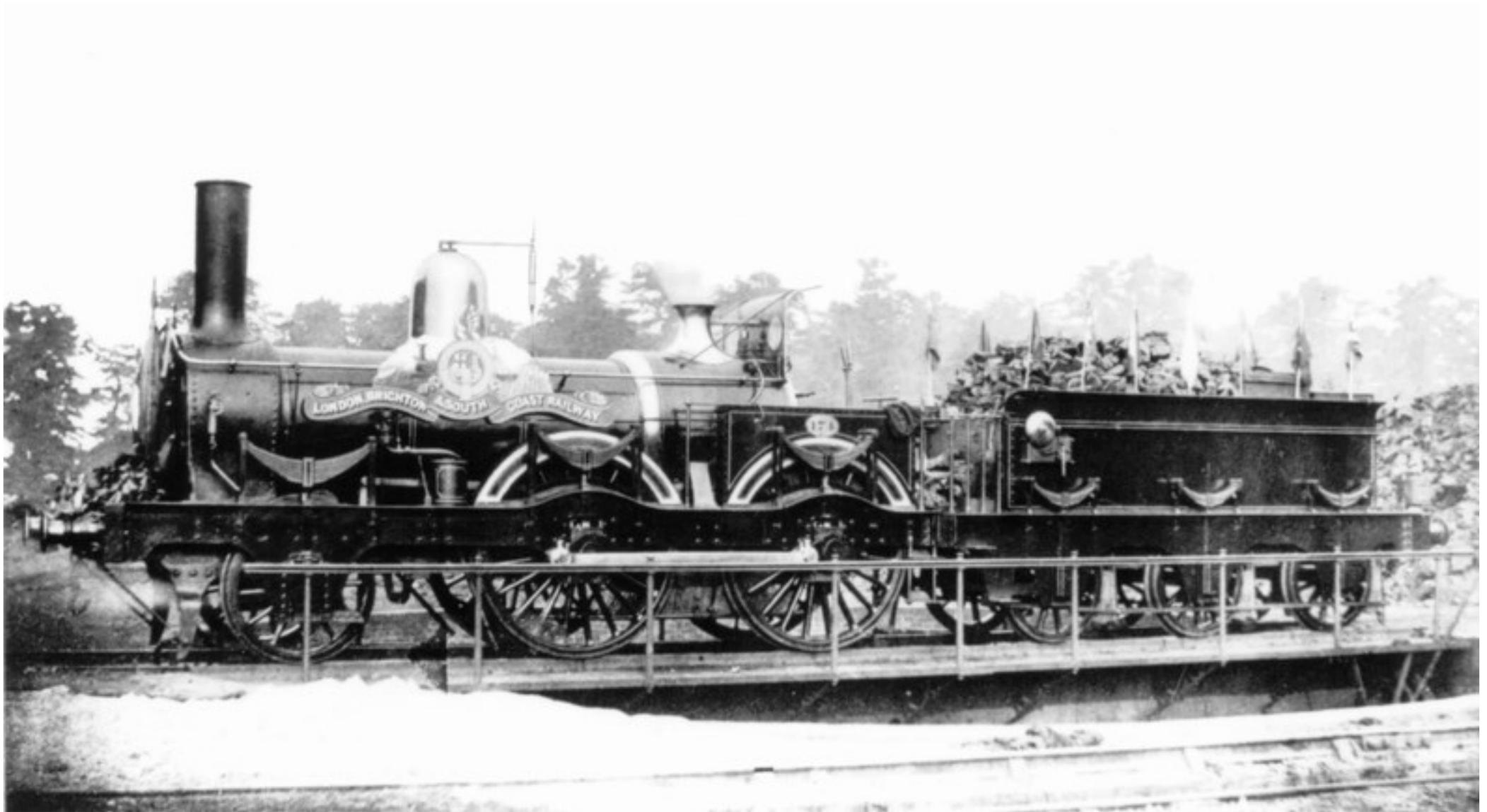
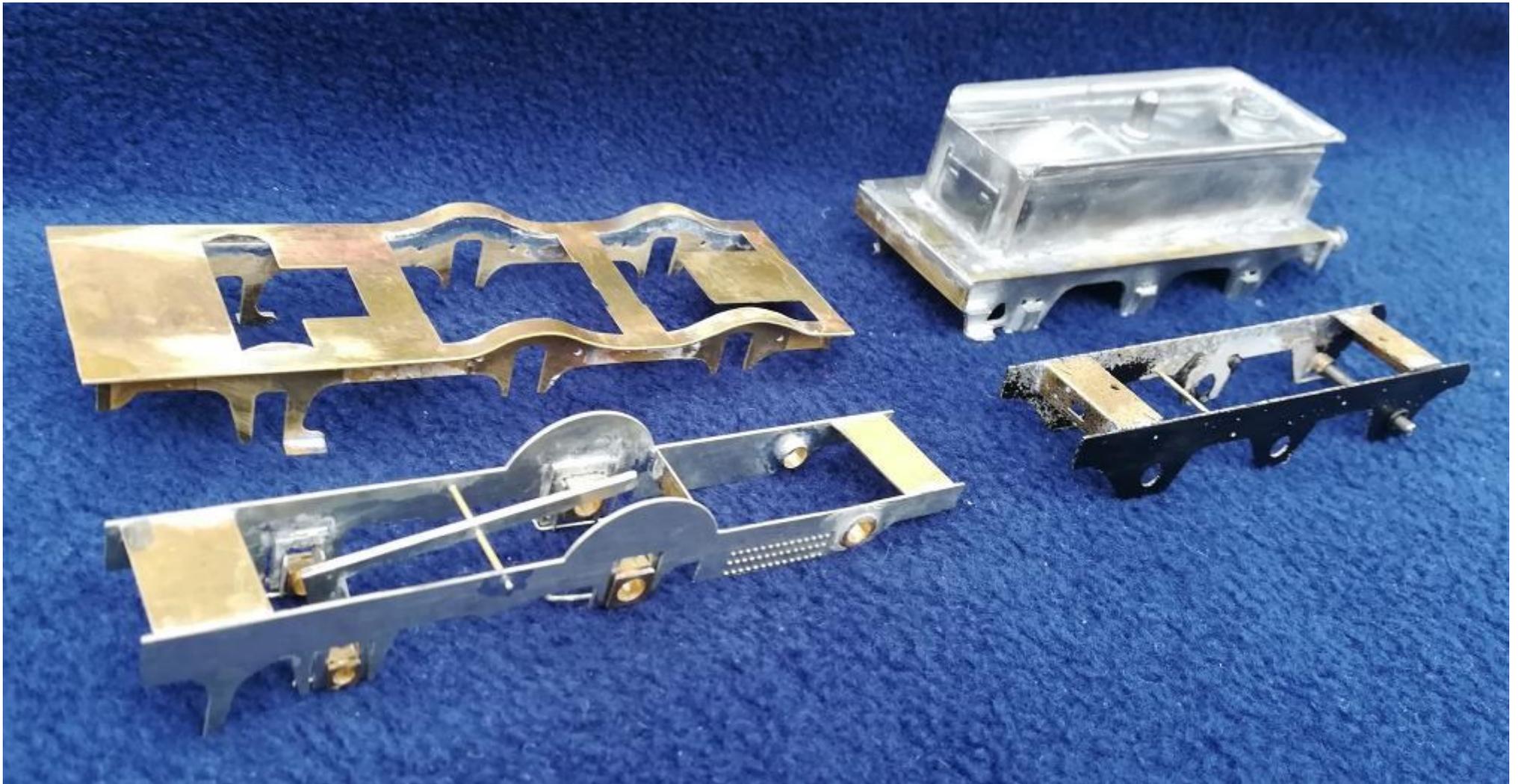


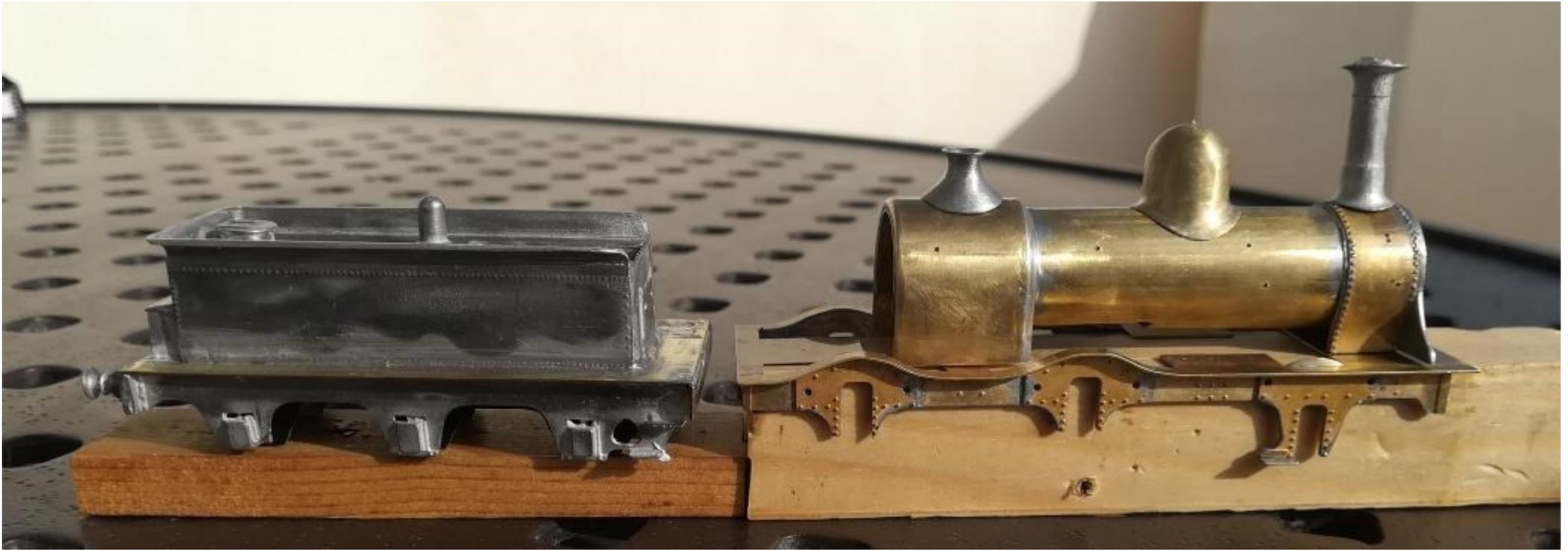
Fig. 70.



No 174, new and polished up for a shedmasters' outing. And before anybody asks, I have no intention of trying to replicate the headboards and other decorations!

Construction of the loco followed largely traditional lines. It is built to EM gauge and compensated with a rigid rear axle and a compensating beam between the leading and centre axles. I shall be interested to see whether this works as well as on the saddle tank, where the driving axles are on two compensating beams and the trailing axle rocks. To my mind, this has the huge advantage that the driving wheels remain an absolutely fixed distance apart! The motor is by Mashima and gears by High Level. This represents my first attempt at an outside framed coupled loco and the outside cranks are the standard Alan Gibson product.





The boiler fittings are a bit of a cocktail of parts from Messrs MacCormac and Cox, with a brass dome from Alan Gibson. It is very satisfying to start with the rough brass casting and then work it up with fine glass paper and eventually wire wool to give a real shine that would do credit to a Tri-ang “Lord of the Isles”. Unfortunately, this then leaves you with the problem of getting all the white metal “brass” castings to match. In this case, I have used [MIG brass](#) metallic paint, which matches better than any other metallic paint that I have tried and seems to be widely available (Antics).



The question of the fenders and splashers, with their cutouts and brass edging, was solved by a kind offer from Ian MacCormac, who just happened to have the right 3D print. This is vastly better than anything that I could have produced with a coping saw, but I remain slightly suspicious of the stability and resilience of 3D prints. In this case, the thin section started to warp. The suggestion of warming the item up with a hairdryer, straightening it and then plunging it into icy water did not seem terribly appealing when it had been glued in place, painted and lined! I have resorted to gluing a metal section behind the sides to hold them flatter and to camouflage the top by painting it green, rather than polished metal, so that any curve is less obvious. For future reference, an etch for items like this would be a better solution (and much easier to get the shiny brass bands).



The stovepipe chimney is one of Ian MacCormac's prints. The original print is very fine and commendably thin, but caused me to worry about vulnerability. I therefore ran a coat of Araldite down the inside to give it a bit more substance, without affecting the top rim too much.

The tender

The tender was an e-Bay rescue of one of the 5 & 9 cast kits. The previous owner had soldered it together using low melt solder with commendable enthusiasm, sometimes getting the parts correctly aligned. I immersed it in very hot water and reduced quite a lot of it back to kit form, although the basic structure remained firmly attached to the brass footplate. It therefore started with some slight misalignment which I have been unable to cure. Springs came from Ian MacCormac's 3D prints and were attached with a pin through the centre and into the footplate, to give them a bit more purchase.

Brake rigging is a bit of a hotch-potch of 3D printed brake blocks (again, thanks to Ian MacCormac), nickel silver rod and scrap fret. 3D printing resin is not very keen on a warm soldering iron

To give the loco a bit more adhesion, I have tried to create the tender as a semi-trailer, with a rigid rear axle (with pickups) and sprung front and centre axles so that some of the weight bears on the rear of the loco. The pin (a bolt) on the tender front engages with a loop on the loco rear and should be adjustable with a nut to allow greater or lesser weight to be transferred. I shall be interested to see how this works in practice.



As with all early locos, there are a number of queries that I have not really resolved. What shape was the sandbox on the footplate? The drawing suggests square, but photos suggest that at least some were round. Mine is square. There should be rods to actuate the sanding gear, but I have left those out. What colour was the lining and were the frames lined out? I have gone for white/black/white, based on Southern Liveries, Southern Style Part 2 and, in the absence of any evidence, have left the frames unlined – even if they do look a little bit unfinished.



Number plates are by Ian MacCormac. I chose No 176 since there seem to be no photos of it in original condition to prove me wrong! The crew are by [ModelU](#).

The red frames are Holt's aerosol red oxide primer, which is used as a primer for the complete loco. When given a coat of satin varnish, this comes up with a much richer shade of red and I have left this as the colour of the frames. For the smokebox, footplate and other black bits, I use a grey/black which is bit softer than pure black. The green is from Precision paints and the lining comes from Fox Transfers' LNER range.



At the risk of upsetting some readers, the original ex-works livery has been toned down a bit (I hesitate to say weathered). Although locos seem to have been regularly cleaned, tenders appear to have got less attention and the frames would have built up oil and dust residue.





Photographs copyright Eric Gates

[Return to contents page](#)

Billinton 6 Wheel Coaches in 7mm Scale

By Rob Watkins

I have been building a series of six wheeled Billinton Coaches as part of a larger collection of stock that I am building for the new 7mm exhibition layout at the ESMRC (East Surrey Model Railway Club).

In brief, Smithfield is a fictitious station somewhere in the city of London, which would link the GNR with the LBSC; as most of the club members are interested in southern and eastern railway vehicles, we figured this would be the best way to model a suburban station that would allow us to run all this lovely stock!

As part of my own interest in railway modelling, I really prefer the building/modelling aspect of the hobby and have found that, with ongoing improvements and affordability in 3d printing, I can now design and print my own models to a pretty reasonable standard that wasn't possible, unless you had a huge budget at your disposal, even a few years back!

So having produced a series of GNR Howden coaches for Smithfield, I wanted to have a crack at something a bit more challenging: something where I would have to practise how to achieve a reasonable finish with lining

Robert Billinton's lovely six wheel coaches in LB&SCR umber seemed perfect and, having purchased a couple of books with decent diagrams and drawings, I set about modelling the following, D70 First, D71 Lav Comp, D72 Tri Comp, D74 Third, D75 Brake Third, and finally both the D46 Full brake, and D77 infamous Double Ducket Brake, all of which can be seen on the following page in the CAD models.



D75 Brake Third



D74 Third



D46 Full Brake



D77 Brake



D71 Comp



D70 First

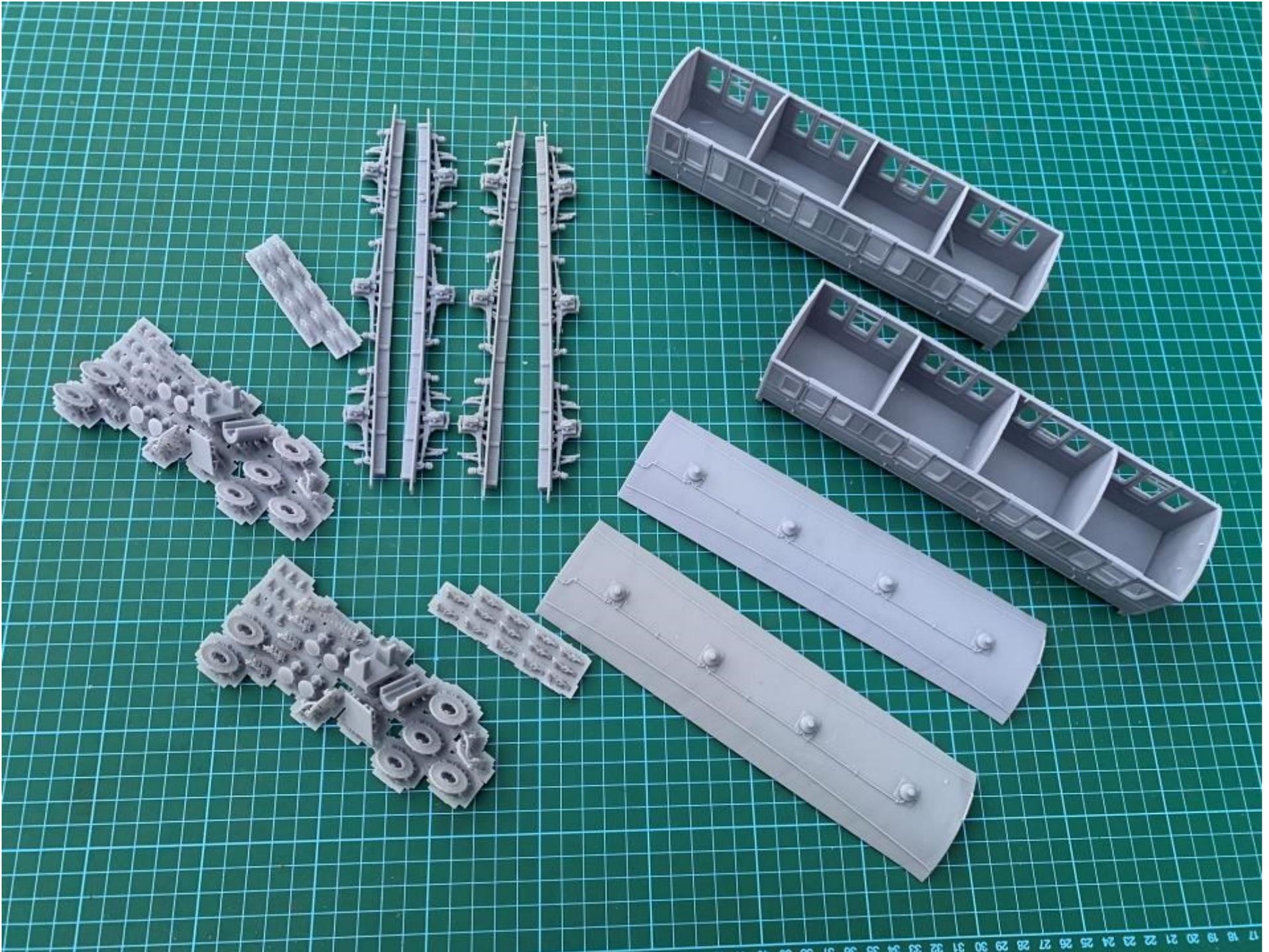


D72 Comp

LBSC Billinton

Having gained a bit of experience the previous year printing the GNR Howdens, I have now split the models up even more, and print all the details separately, so I could paint the coaches, and line them before they are assembled. I feel this makes the process much easier than having to line around door handles and grab rails!

The picture on the following page illustrates 2 D70 carriages, that I have printed. This shows how I split the models up into their various components for printing, roofs, bodies and detail parts, some of which are still on their print supports!



Once printed, I prime the models using any good spray primer. This helps me spot any dodgy printed parts that I need to fill or sand to get a better finish!

Then once the models look OK, I prime them again, wait 24 hours and then hit them with Plastikote Brown spray. I think is a close enough representation of LB&SCR Umber and gives a better, more even finish than if I were to paint the coaches by hand! I do recommend leaving this paint to dry fully for 24 hours, as I have made the mistake before of whacking a satin coat of varnish on top to protect the coat of Umber, only to find that I get the dreaded cracking/peeling! Once dry, whack on some good satin varnish, for which my preference is the spray type that you can get reasonably cheaply at Toolstation! This step is super important, as it protects the umber, so that when I start lining and it starts to go horribly wrong (which it sometimes does), I can easily wipe off, and start again!

The lining was applied using Chris Arundel's 0.25 lining pens, with a slightly thinned Vallejo Iraqi Sand paint! I printed off some custom lining guides to help with the lining of the curves, and a steel rule to do the straight lines! If honest, I could probably do a whole article just on lining, as it took me a while to get used to. The D74 shown here is the first coach I attempted to line using this method and, whilst not perfect by a long way, it is OK! And the more lining I attempt, the easier it gets!



Once I'm satisfied with the lining, I then lock it with another coat of satin varnish, which I think gives a nice level of shine for the scale and period of the coach! I have deliberately painted the roofs grey, and not white, to give them a slightly more worn/weathered look, as I doubt they would have stayed white for long, and as we are modelling the end of the pre-grouping era, it would probably look more suitable! And if I'm perfectly honest, I prefer grey roofs to white with the umber. I did a test with both, and found the white almost felt a little bit toy like in its appearance, and reminded me of my early Hornby coaches when I was a kid! So that is my excuse and I'm sticking to it.

After locking in the lining with a coat of satin varnish, I got to work picking out the hinges, door stops and locks, and gas pipes with black grey from Vallejo, and added matt black for the steps, buffers and solebars! I also painted in a very thin dark grey wash into the recesses of the doors, and window frames, to give a little more depth to the coach side! I then assembled all the detail parts, buffers and glaze the windows with clear sheeting from inside. All grab handles and door handles are painted brass, then dulled down with a wash coat of black to take the plastic shine off them!

After the model is assembled, with solebars and wheels glued in place, I checked to see how they ran. Where not satisfactory, the solebars come off and I reset them again, but mostly I have got the technique of putting these together now to get them running well! The middle wheel is on a sliding central bracket to allow these coaches to negotiate 5 foot curves! I have tested them at the South East Gauge O Guild track and confirm they run, however I have noticed that Peartree wheels are by far the best choice for these little coaches and, when I have deviated from these, I have run into the odd issue!

So here we have a selection of the current 7 coaches I have built for the club layout. I have to say a huge thank you to Ian MacCormac for supplying the superb transfers, without which these coaches would look nowhere near as finished, so thank you Ian!

Also huge thank you to the [East Surrey Model Railway Club](#) for all their support and encouragement throughout this project. It's been an absolute blast and pleasure working with them all on the current Smithfield layout and, if anyone is interested in helping out or getting involved with this project or other projects we have on the go, new members are always welcome, as there is always lots to do. We meet twice a week on Monday and Thursday nights and, although we are a small group, it is a great place to come and share our passion for all things railway - especially LB&SCR and GNR. We would love to see you there.



Diagram 74 Third



Diagram 75 Brake/3rd



Diagram 71 Lav Compo



Diagram 70 First

Van



The club layout with a selection of Billinton vehicles being pulled by Peter Palmer's Dapol Terrier.



Photographs copyright Rob Watkins

[Return to contents page](#)

The B Special “Might Have Been”

By Colin Paul

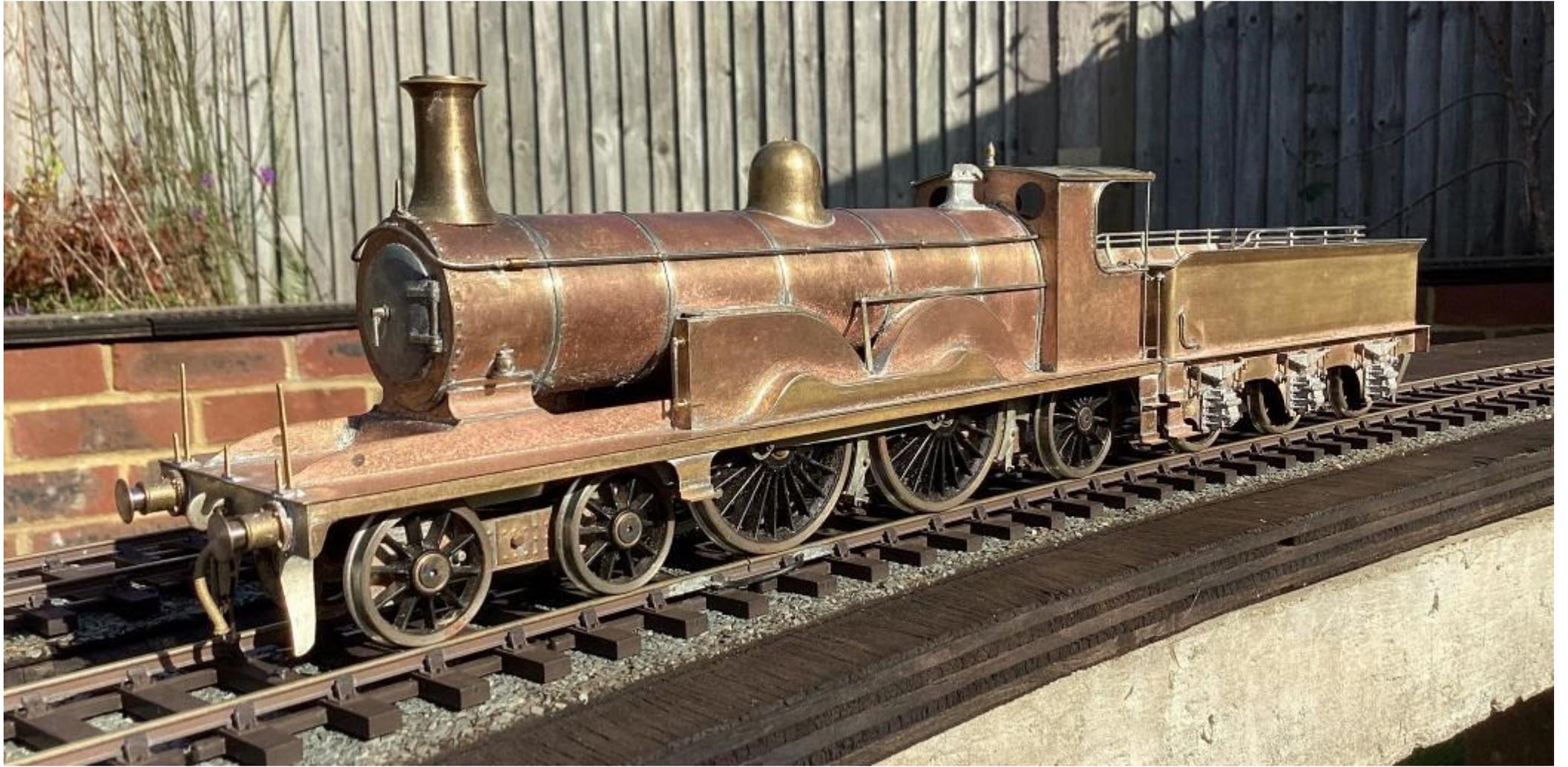
Mike Cruttenden's preface

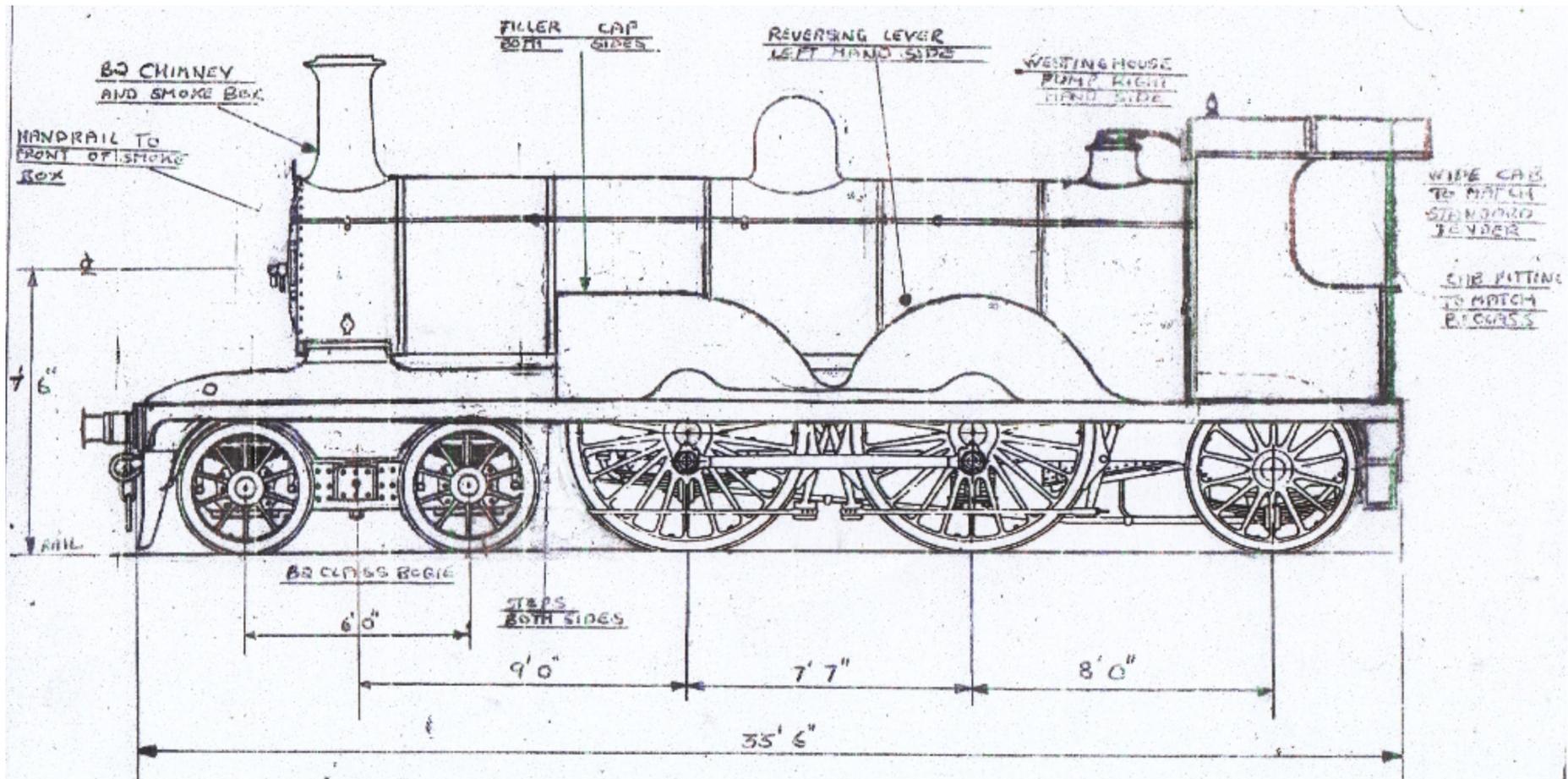
The next locomotive in the “Might Have Been” series, following the K2 Prairie in Digest 17, is a proposed small boilered Atlantic for secondary lines, developed around 1908.

D. E. Marsh had first hand experience of such locos during his previous employment on the GNR. The proposal was put forward in response to the need to reboiler both the Billinton B2 class 4-4-0s and the Stroudley B1 0-4-2 Gladstones. It features a straight running plate, lengthened B2 boiler, B2 chimney and dome, Marsh safety valve, B2 cab, B1 Splashers over the four drivers, a rear axle moved further out underneath the cab and, lastly, a B2 tender.

The idea was rejected by the Finance Committee, when it was revealed that the cost of the amalgamation of the two classes would be greater than the reboiling of both of them. The Traffic Department was also none too impressed when they realised that the number of available locomotives would be reduced!

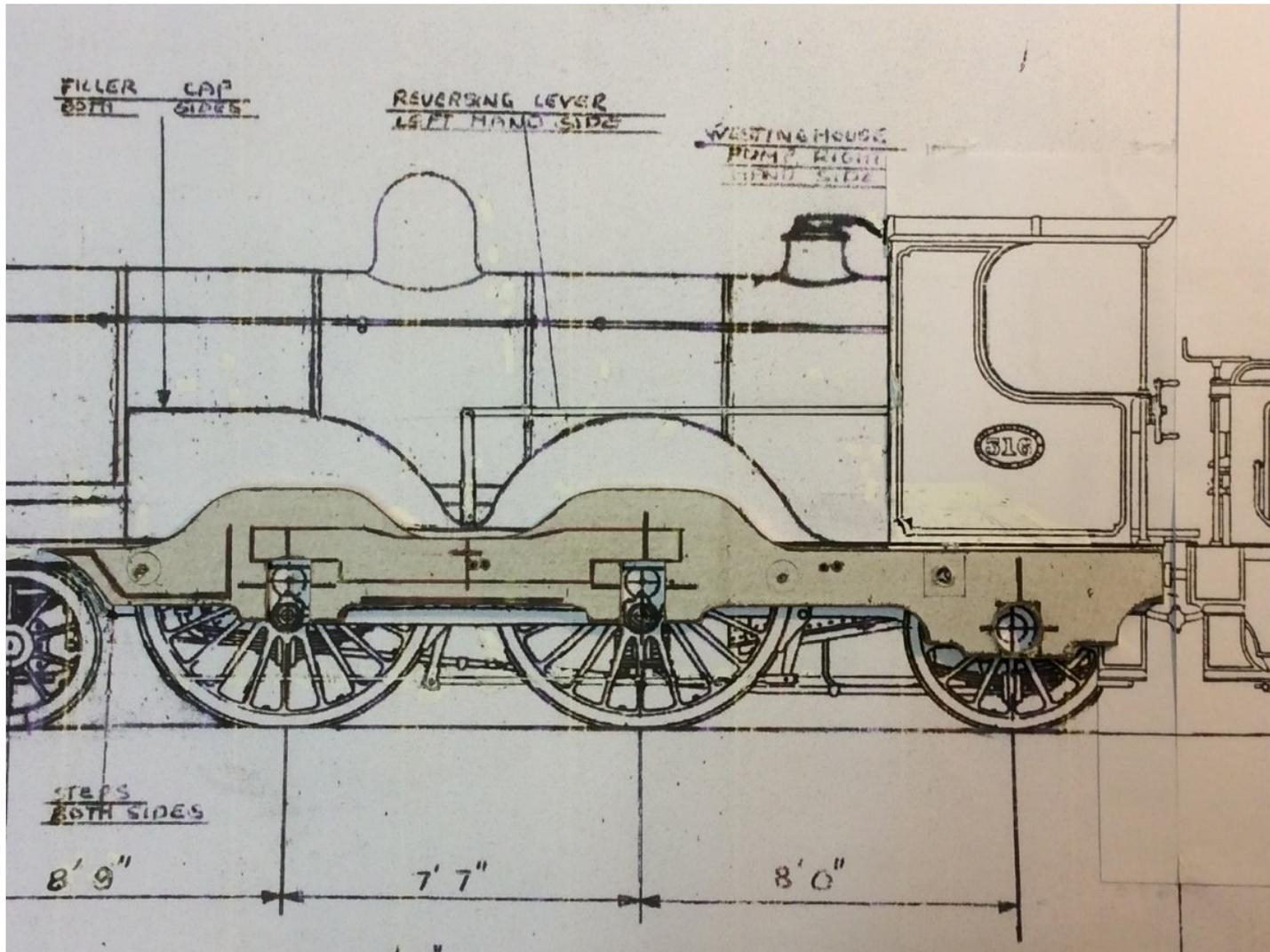
The following article documents the construction of the loco by Colin Paul.





This is the design that Mike envisaged. Looking quite strange at first, it has grown on me and I now think it is a handsome looking locomotive. After discussing it with Mike at length, a few modifications were made. The main concern was the clearance of the front bogie wheels with the sideframes, and the closeness of the wheels to the underside of the footplate. I feared the flanges here might foul and cause shorting. I overlaid a much better print of the drivers and rear axle area and deleted a few lines here and there.

We also discussed the braking. Another concern was the clearance of the front brake hanger/shoe which is very close to the rear bogie wheel. In the end, Mike decided on just four brakes, located on the rear of the drivers, as seen on the model, not as shown on the drawing.

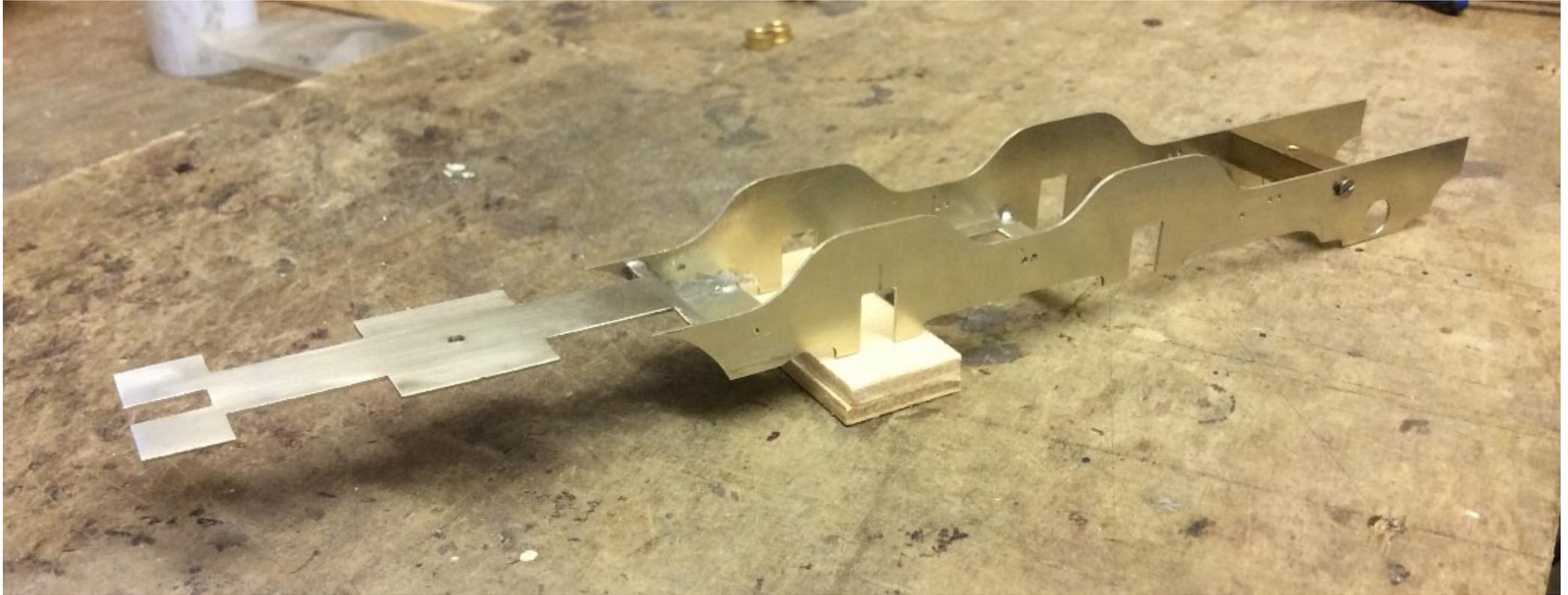


The first parts to fabricate were a pair of chassis sideframes. These closely resemble the design in John Birch's Albion Models LB&SCR Gladstone kits (now part of the Roxey Mouldings range www.roxeymouldings.co.uk) but with some slight tweaks for this model.

A print of the sideframes was then prepared. I drew an outline of the compensation beam, making sure it had enough clearance. Once cut out, the beams would then sit on top of the four Slaters Hornblocks. Position marks were added for the frame

spacers and brake hanger pivot holes etc. Note that the strange question-mark-on-its-side shape, in front of the leading driver, shows the outline of the front frame spacer, which provides support for the front bogie arrangement.

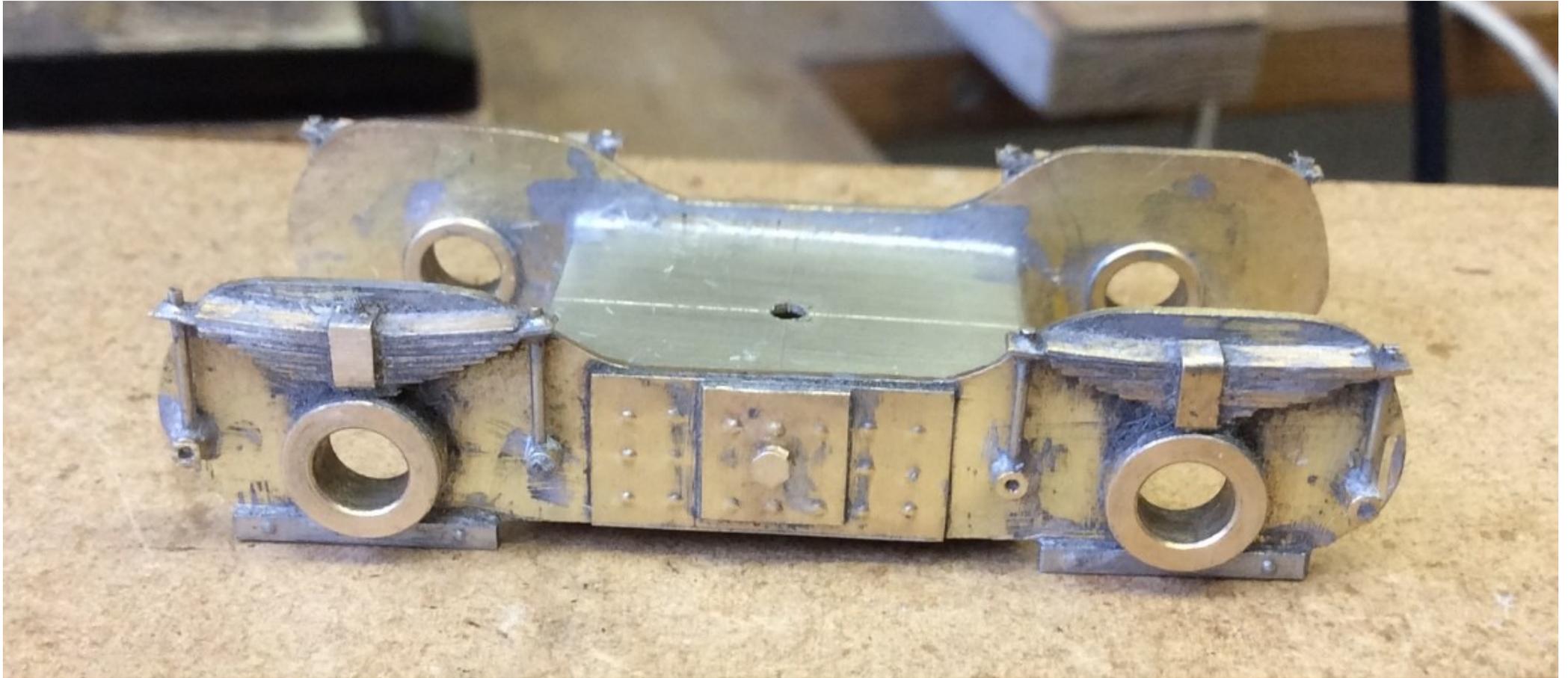
Two 0.028" pieces of nickel silver (n/s) strip were soldered together onto which the print was then glued. All holes were drilled out, followed by cutting out the frame using a piercing saw.



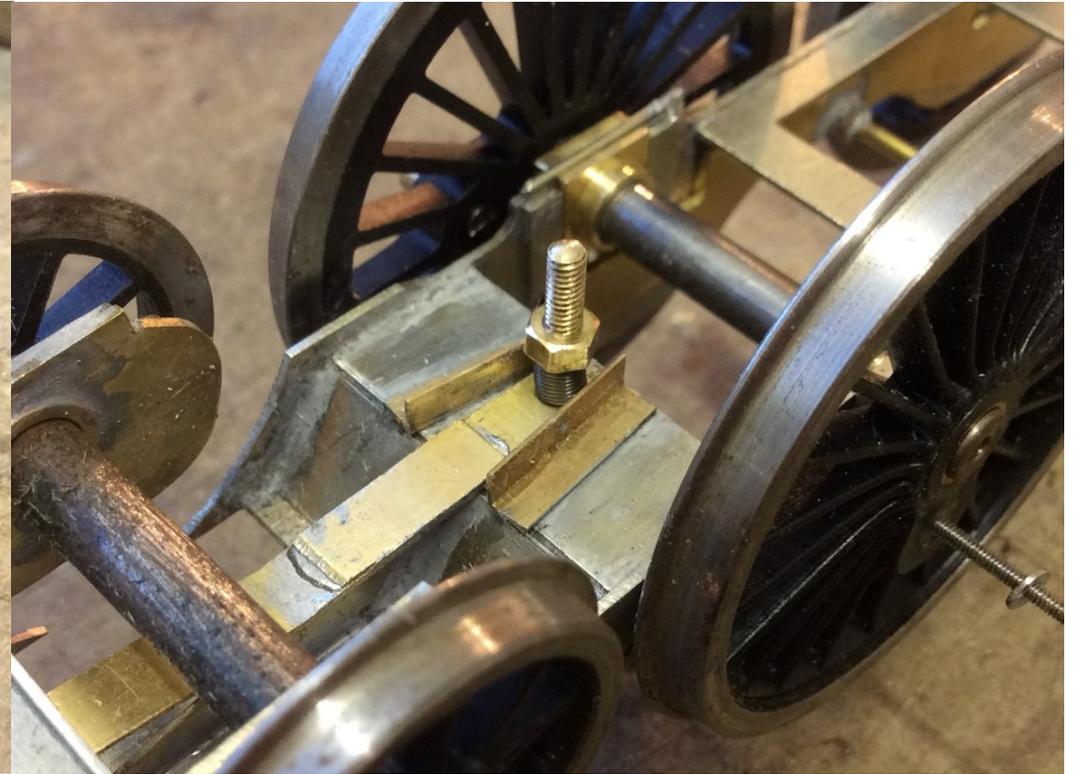
After cutting out, the two halves were separated and cleaned up. A 25mm frame spacer was temporarily bolted in position, just in front of the rear axle holes. A small rectangular frame spacer (just visible) was made that fits in between the four driving wheel hornblock slots. The rather flimsy front extension frame spacer will eventually be strengthened underneath. Later on in the build, the curved bogie sideframe segments and guard irons will be fitted.



A close-up view showing my compensation beam design. Because of the nature of Mike's garden railway layout, all four drivers had to be compensated. First, pairs of scrap n/s strip were soldered either side of the hornblock slots to stop the hornblocks from rotating. Two compensation beams were cut out from brass, and pivoted with 1/16" tube. They are held in position via a 0.8mm n/s pin. After fitting the rear axle (just visible on the right), the beams were filed down for a perfectly level chassis. Note the rectangle frame spacer with cut out section, shown on the previous page.



The front bogie was built up from scrap brass and n/s. Again, a frame spacer was made first, incorporating a drilled-out pivot hole for the swinging arm. Overlays were cut out, punch riveted, then soldered in place in the centre of the sideframes. Leafsprings were made from 1.5mm wide n/s strip with the correct 7 leaves each. Supporting struts are 0.6mm n/s rod and tubing. From normal viewing angles, none of the springs can be seen but I know they are there.



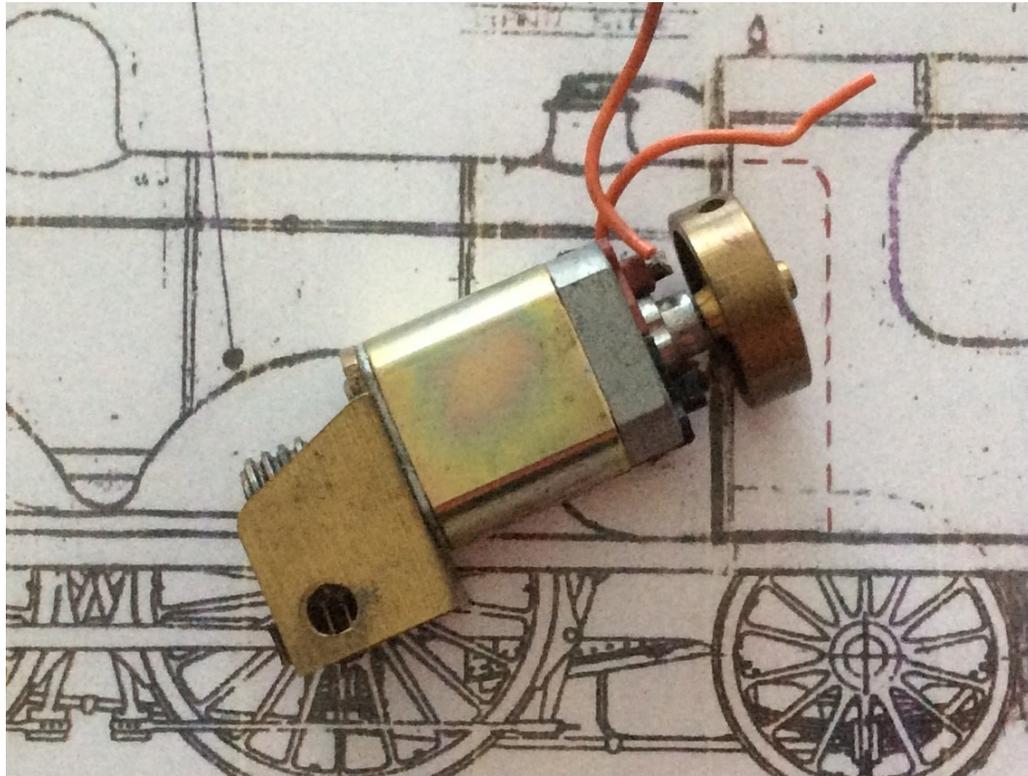
Left - The front bogie with wheels fitted. The long pivot beam is clearly visible, which gives enough downward pressure to keep it firmly on the track. Two vertical 'swing arm restrictors' can also be seen. With minute adjustment of both, the bogie has been set up to negotiate just under a minimum 6' 0" radius curve.

Right - The chassis from below. There are also two long L bracket 'sideway restrictors' on the main chassis underneath the frame spacer. They are there to control the amount of side to side swing movement. Just under the nut there is a compression spring that can adjust the springing pressure.

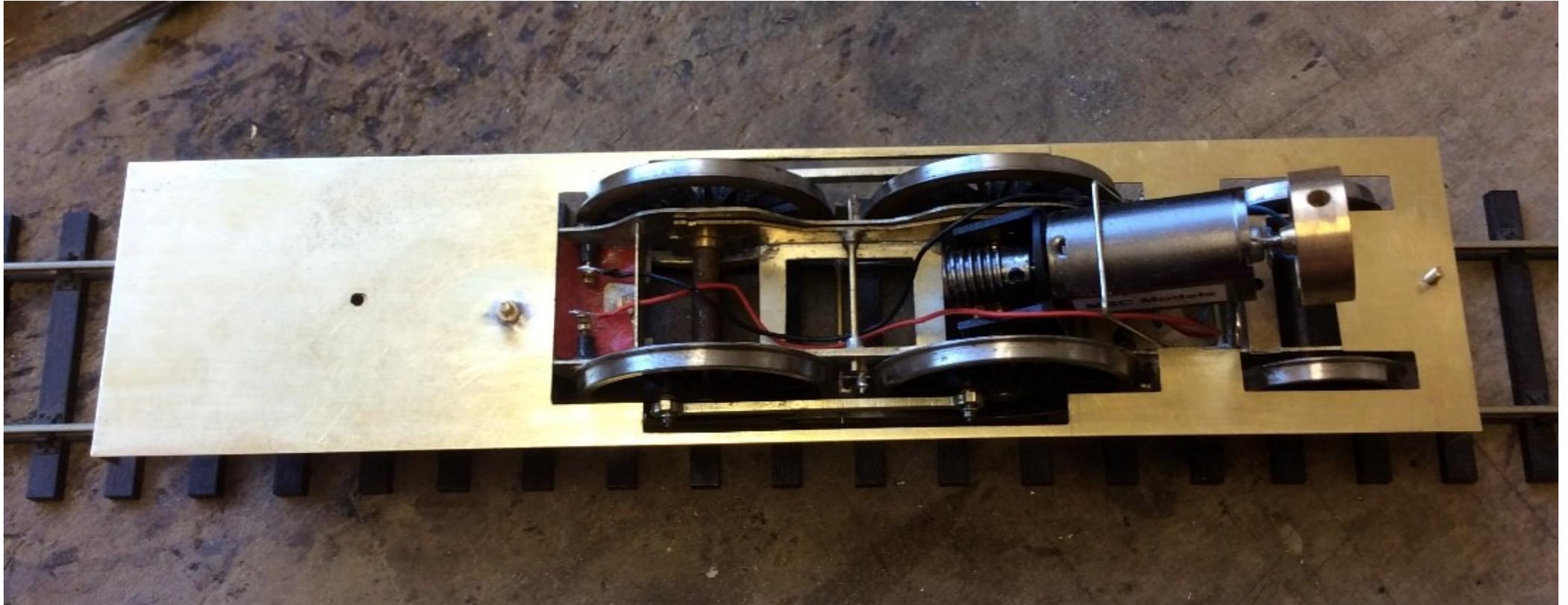


This view shows a near complete chassis after it has been fitted with the excellent MSC Models SM motor with 30:1 single reduction gearbox (www.mscmodels.co.uk) with flywheel and run-in in both directions. A double reduction gearbox would have been preferable but it wouldn't fit in. The single reduction gearbox still gives superb control.

The bespoke milled coupling rods were made by the late Dave Brooks of JPL Models in Manchester (he also milled the rods for Mikes K2 'might have been' which was featured in Digest Issue 17).



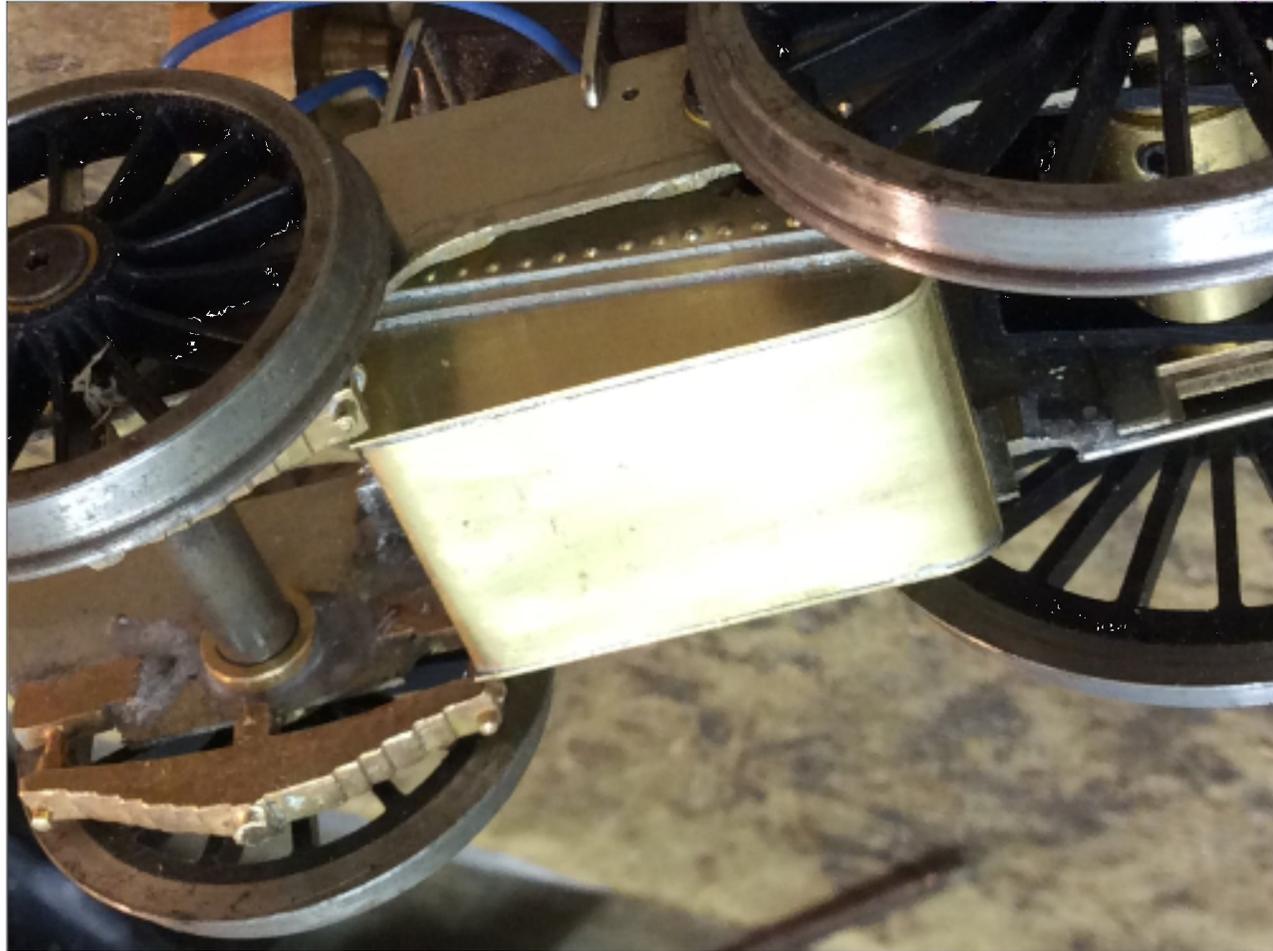
Although I wanted to use an MSC Models JH motor and gearbox, it didn't fit, as it was too large. Colin Hayward kindly sent me his spare MSC Models SM motor with the same 30:1 gearbox. Here, I have overlaid it onto the drawing. It fitted in easily, but the flywheel was a little close to the rear of the backhead casting, as outlined by the dashed line. When the motor and flywheel were fitted, the flywheel fouled the back of the backhead casting, so it had to be turned into a conical shape, as shown.



Getting the footplate design correct took many attempts with cardboard templates. The apertures for the motor/flywheel and rear axle wheels were relatively easy. The main problem was gaining enough clearance for the sideways and up and down movement of the drivers. More critical was getting the crankpin nuts to clear the inside face of the small outside splashers. In the end, the footplate had to be widened by 2mm to a scale 7' 10" (55mm) instead of 7' 6". This increase in width is not at all noticeable. Once I was happy, the cardboard mock-up was checked and double-checked before the brass sheet was cut out.

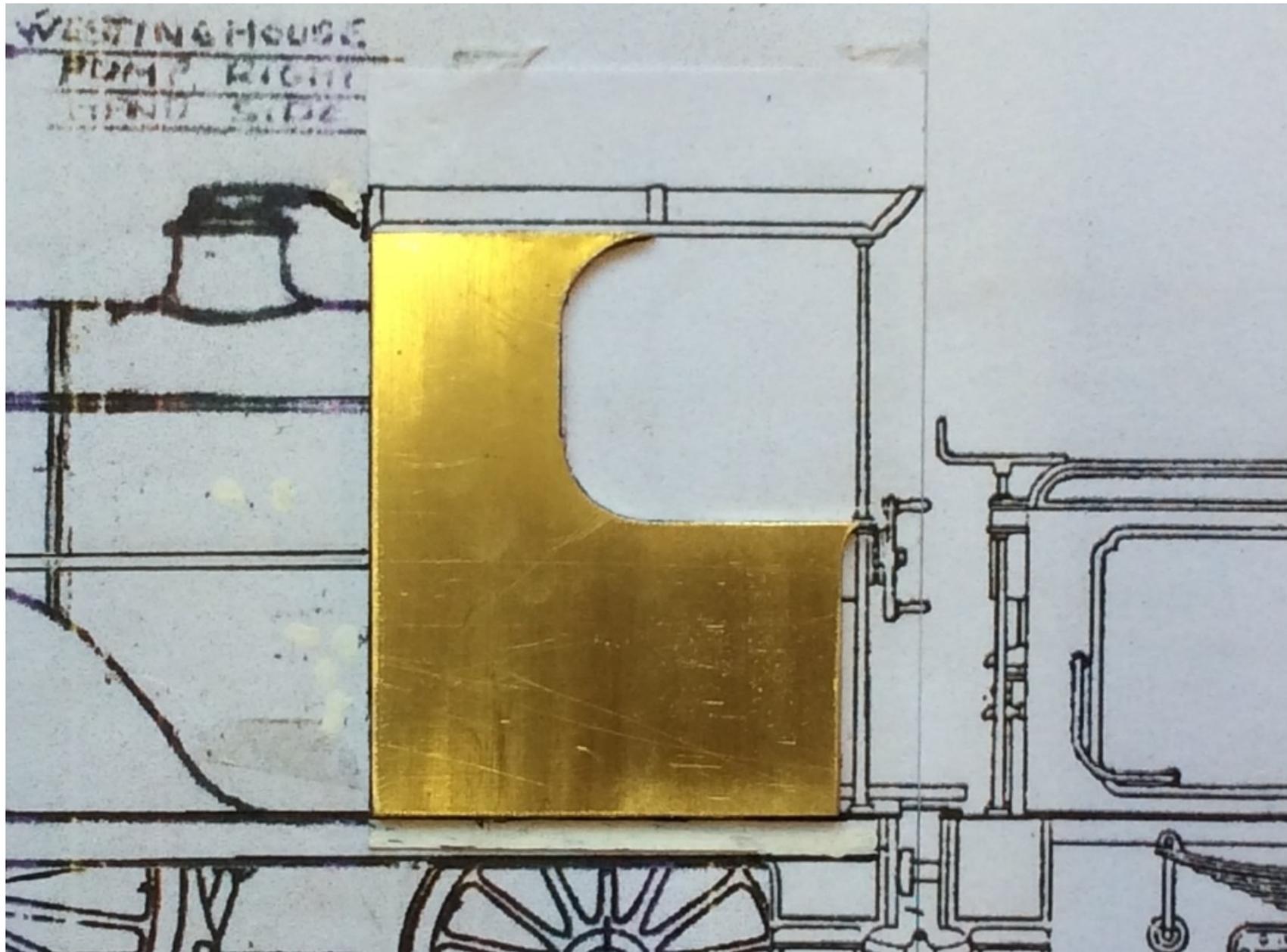


The footplate has now had side valancing (3mm x 3mm L angle) fitted, along with the headstocks, saddle sideframes, curved saddle, and guard irons, as per the drawing. Because all four drivers and coupling rods move up and down, the radii of both splashers had to be increased slightly for the maximum upward movement. Again, these areas are subtle and not noticeable. Just visible behind the rear driver is a brake hanger and shoe.



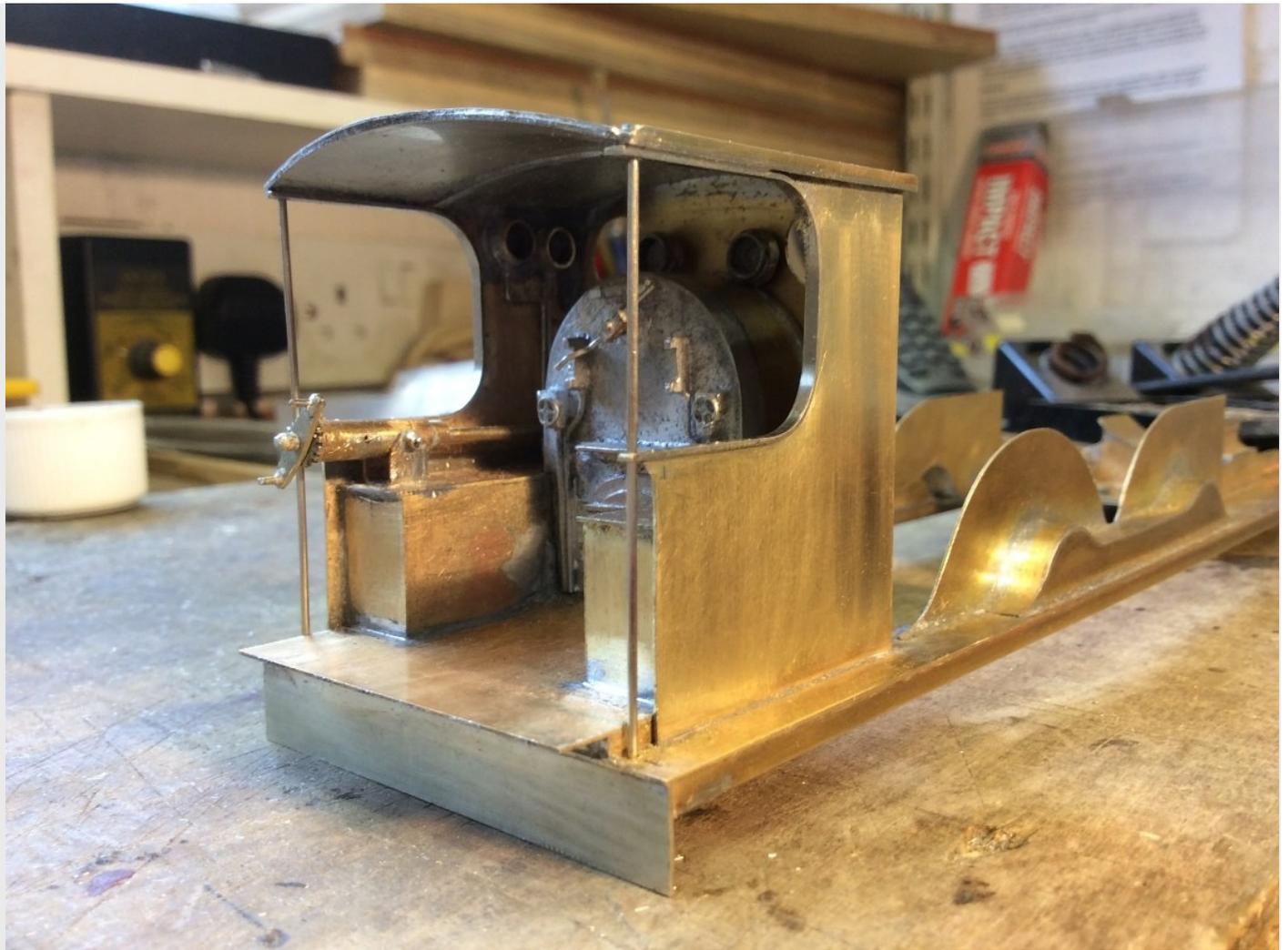
The ashpan was built up using scraps of brass and soldered as a separate slot-in unit. Being a very tight squeeze, it had to fit between the 3' 6" lost wax keeper plate leafspring castings (www.lgminiatures.co.uk Ref:27-042) and the rear of the gearbox. To the right, behind the rear driver, a temporary 0.7mm n/s rod keeper plate can be seen which will be substituted with a (lgminiatures Ref:27-043) lost wax compression spring casting.

As can be seen, the rear axle is fixed within round bearings. Due to constant derailing whilst running backwards, this was changed. The holes were elongated downwards and springing added. This eliminated the issues with derailments.



The cabsides were fabricated from two pieces of brass soldered together. A print was glued on, then both sides were cut out as one. The front spectacle plate was done in the same way using a single piece of brass.

The cabsides and front spectacle plate were soldered in place, making sure they were perfectly square and parallel to the footplate. Next, a raised floor was fitted and two rectangular box shaped splashers were made from off-cuts of brass. To clear the fly-wheel behind the backhead, (obtained from an ACE product LB&SCR B4 kit and modified to suit www.aceproduct.org) it had to be deepened slightly with a 5mm brass surround strip. It has been designed as a slot-in unit for detailing later and painting. The reverser was made from brass tubing, using Cliff Pester's drawing of the LB&SCR K Class 2-6-0 version and is not quite 100% accurate. The reversing handle can rotate. For strength, the cab roof was made from n/s sheet with 1mm x 1mm L angle rain strips. Beading strips were 1mm wide n/s strip, with 0.8mm n/s rod grab rails.



NB. The closeness of the camera to the subject has slightly distorted the image making it appear out of square.



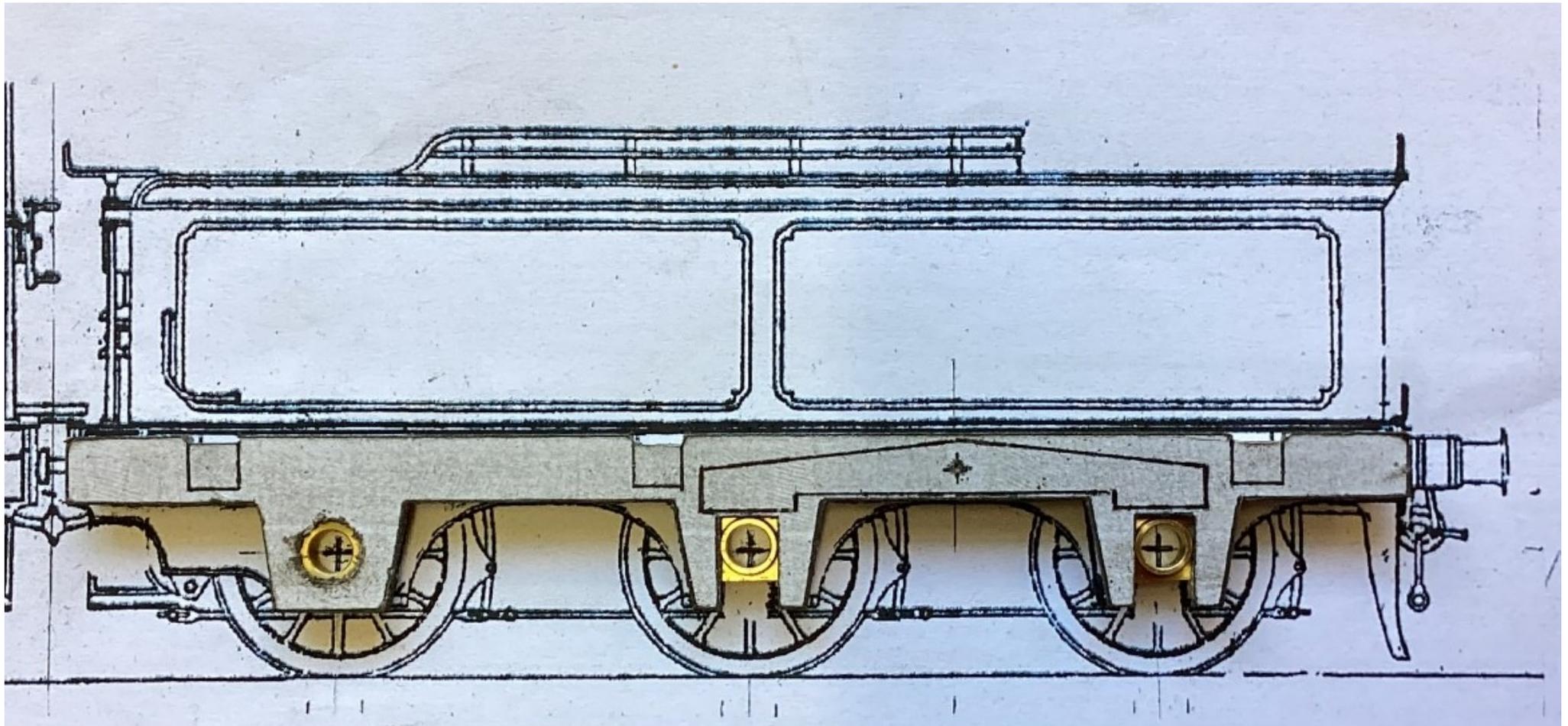
A couple of cardboard boilers were made to check wheel tread clearances. Only when I was totally happy with it was the proper boiler rolled; any mistakes would have led to a new piece of brass sheet. After rolling, a waste bit of brass was soldered on the inside of the seam. The grim task of cutting out the driver openings and filling to shape took forever. Finally, the firebox was opened out into a gentle flare. I checked numerous times that it sat level on the saddle and footplate.

On the original B2 class boilers, there was a row of rivets around the smokebox edge, which I punched in. A round disc was cut out and fitted for the smokebox door.



The finished locomotive barring a few incidentals such as the lubricators, Westinghouse pump, lamp irons, roof whistle and vac pipes. The most critical area to get right was a perfectly parallel boiler, followed by the four curved splasher surrounds which had to hug around the boiler. The white metal smokebox door was turned down from a much larger SR one and is fitted with a scratch made smokebox dart.

The brass turned chimney was kindly made by Cliff Pester and is truly exquisite (well done Cliff). He designed it with a thread on the bottom so it could be secured in place via a cheesehead bolt on the inside of the boiler.



With no LB&SCR B2 type tender etch available, it also had to be scratch built. Having built several tenders from scratch, the compensation method I adopt is a double beam acting on the centre and rear axles hornblocks with a fixed axle on the tender front. As with the locomotive sideframes, two pieces of n/s (0.028") were soldered together, a printout of the frame applied and then cut out. The outline of the compensation beam, which will be made from brass, is clearly shown. Three square frame spacer positions are also shown with slots filed out along the top edge.



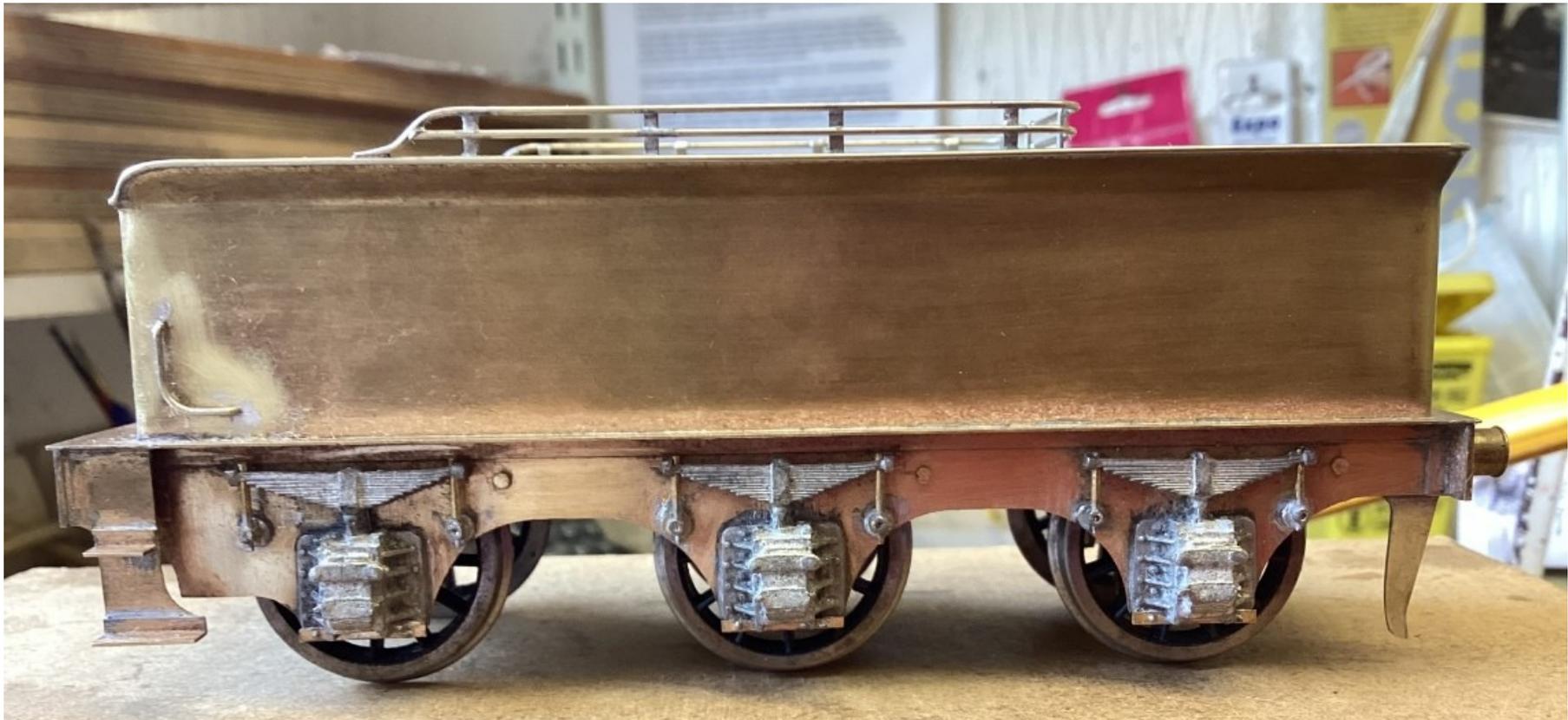
The basic frame, soldered (Carrs Speedy Solder) together, using my own $\frac{1}{4}$ " square brass frame spacers. Each one has a lip on top, that fitted into the filed slots as shown in the previous photo. The double beams were cut out from scrap brass, and pivoted in the centre via $\frac{1}{16}$ " brass tubing, with a 0.8mm n/s pin. Each one rests on top of the hornblocks as per the locomotive. Minute amounts of careful filing of the bottom of the beams result in a horizontal chassis.



Before any brass was cut, cardboard footplate templates were again used. The most critical area was giving enough clearance for the middle and rear axles to move up within the slots. The two sideframes were then cut out and soldered in place.

Forming the two tender sides was very tricky. Even after annealing, forming the curved ends was not for the faint hearted, as they had to be at perfect right angles for a square body. Once done, the flares were bent outwards. This view shows them temporarily placed in position.

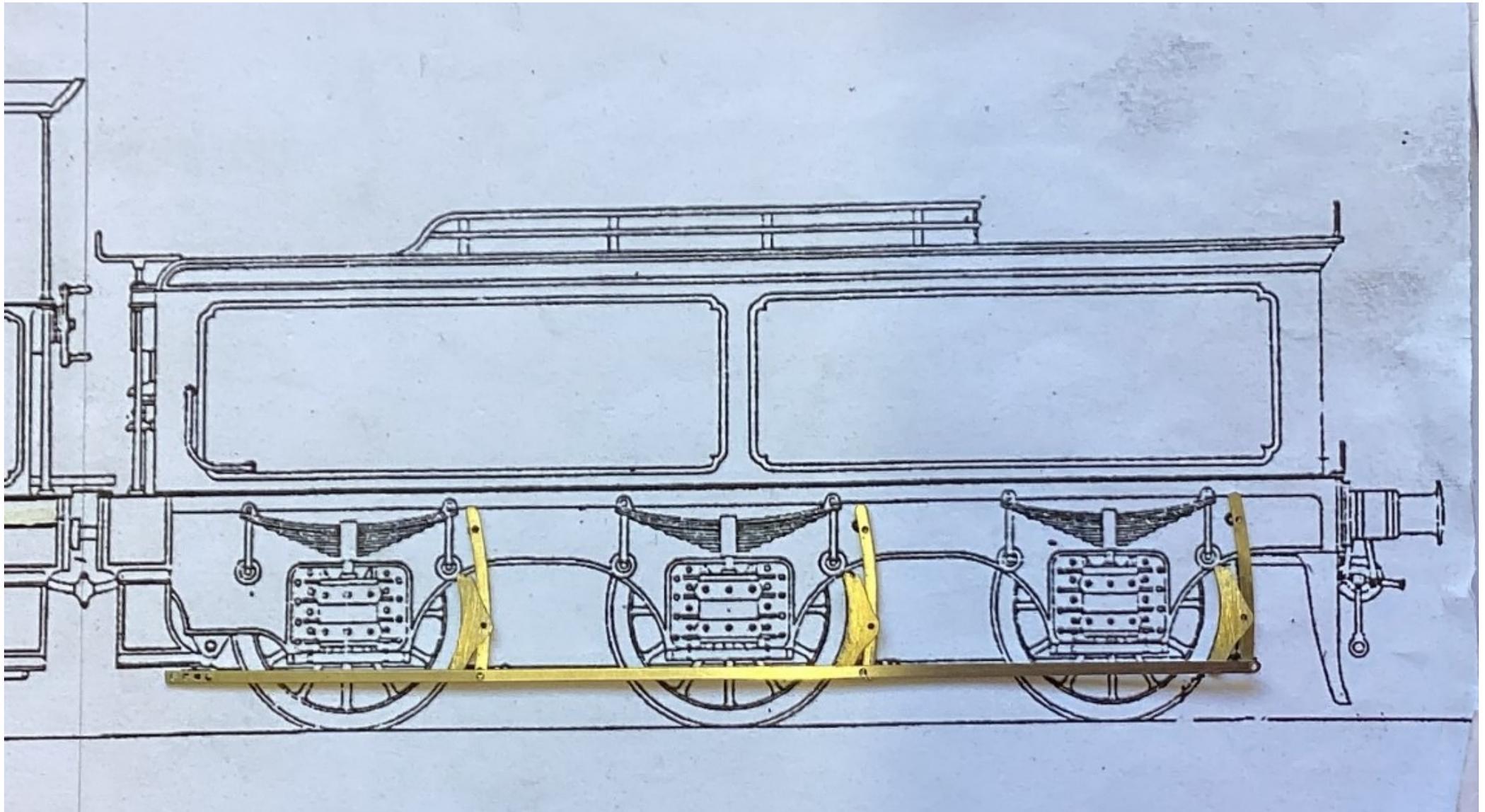
Just visible on the headstock is a rectangular slot for the drawbar.



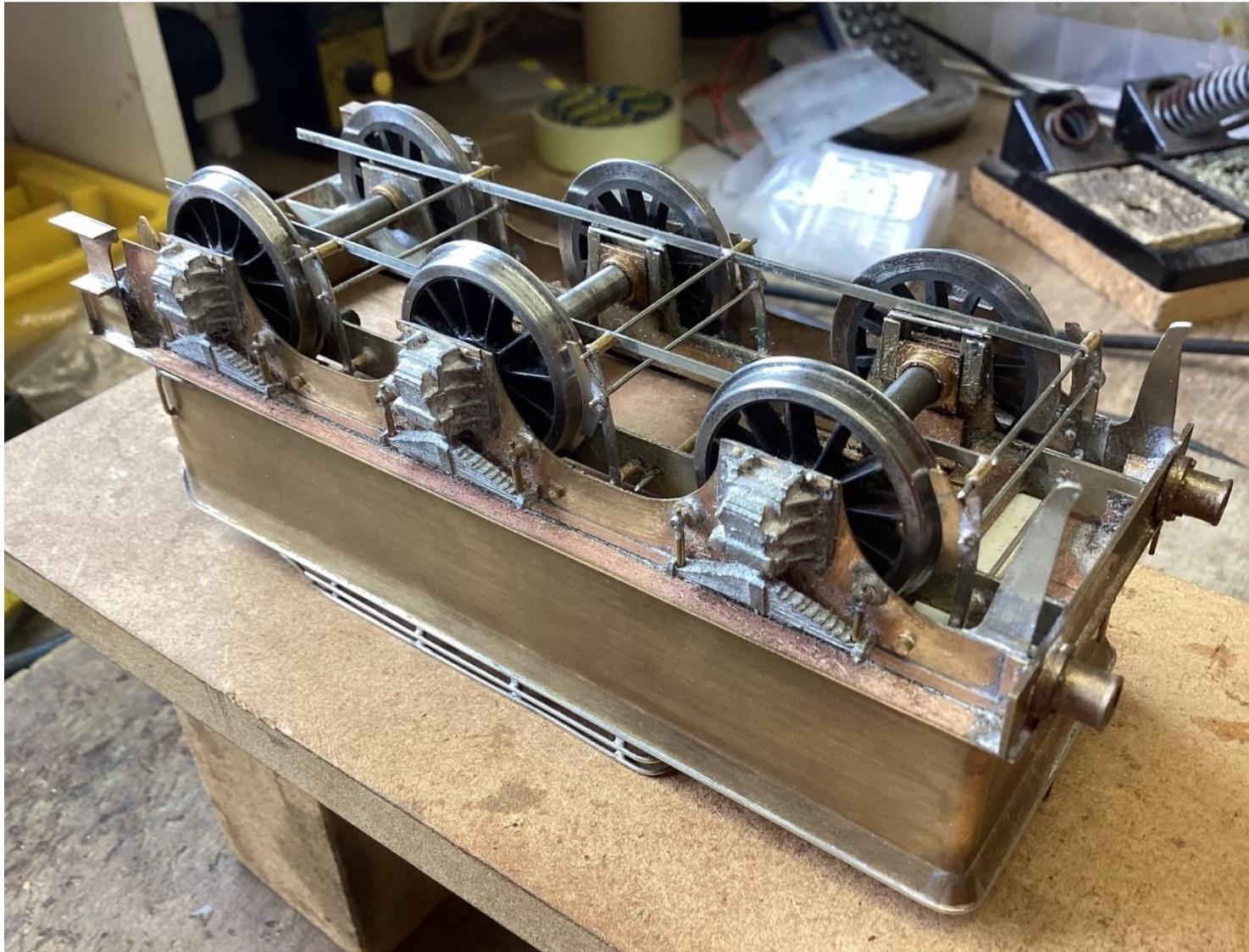
The near complete tender with just the handbrake, brake gear and water filler to fabricate. Later on, the brake pipes and lamp irons will be added.

A beading strip (0.8mm n/s rod) was fitted around the flare. The curved flared ends had small pre-curved pieces soldered in place then filed smooth. The coal rails were 0.8mm n/s rod. The two rear guard irons were made from scraps of n/s since they are very vulnerable,.

Six LB&SCR B4 Class axlebox/spring castings were obtained from ACE Products and are a lovely representation of the large oil filled axleboxes fitted to these tenders. They did require some remedial work to remove the cast B4 Class suspension hangers which were not fitted to the B2 tenders and replace them with 0.6mm n/s rod and washer disc plates. Also just visible are added keeper plates which were not on the castings.



The brake hangers were gently pre-curved (matching the drawing) from a strip of 1.5mm wide x 0.3mm n/s (brass ones are shown in the photo that were replaced with n/s). 0.8mm holes were drilled out for the brake shoes and brake pull rods. The six shoes were cut out as one from six layers of brass, soldered together. The long brake pull rods were also 1.5mm wide x 0.3mm n/s strip.



The brake hangers located in predrilled holes in the chassis sideframes. When fitting the brake shoes, a bit of tweaking was required here and there so the shoes didn't touch the wheel treads. The two pull rods were then secured behind the wheels by 0.8mm n/s rods that were attached by brass tubing behind the hangers. The far ends have not yet had the handbrake linkage added. Slaters buffers have been fitted and note also the stronger n/s guard irons.



Finished views of the completed locomotive.

All of the smaller items have now been fitted to the locomotive and tender. They include the Westinghouse pump with associated pipework, grab rails, the tall vulnerable locomotive lamp irons, scratch made whistle, lubricators, and tender water filler. Brake pipes, couplings and the Westinghouse pump were Laurie Griffin castings.

So, all in all a lovely looking locomotive that I have enjoyed building. Of the 20 odd locomotives that I have constructed, I think this is one of my best scratch builds.



Photographs copyright Colin Paul

[Return to contents page](#)

The B Special “Might Have Been” Test Running at Ashcombe Down

By Mike Cruttenden

The new loco at Sandy Hill Junction. The train is crossing from the down main to the down relief line, with Sandy Hill tunnel mouth in the background.





Crossing Summit Bridge before descending Summit Bank, heading for Ramber Park.



Down train on the main line, climbing the 1 in 50 gradient up to Summit Bridge.



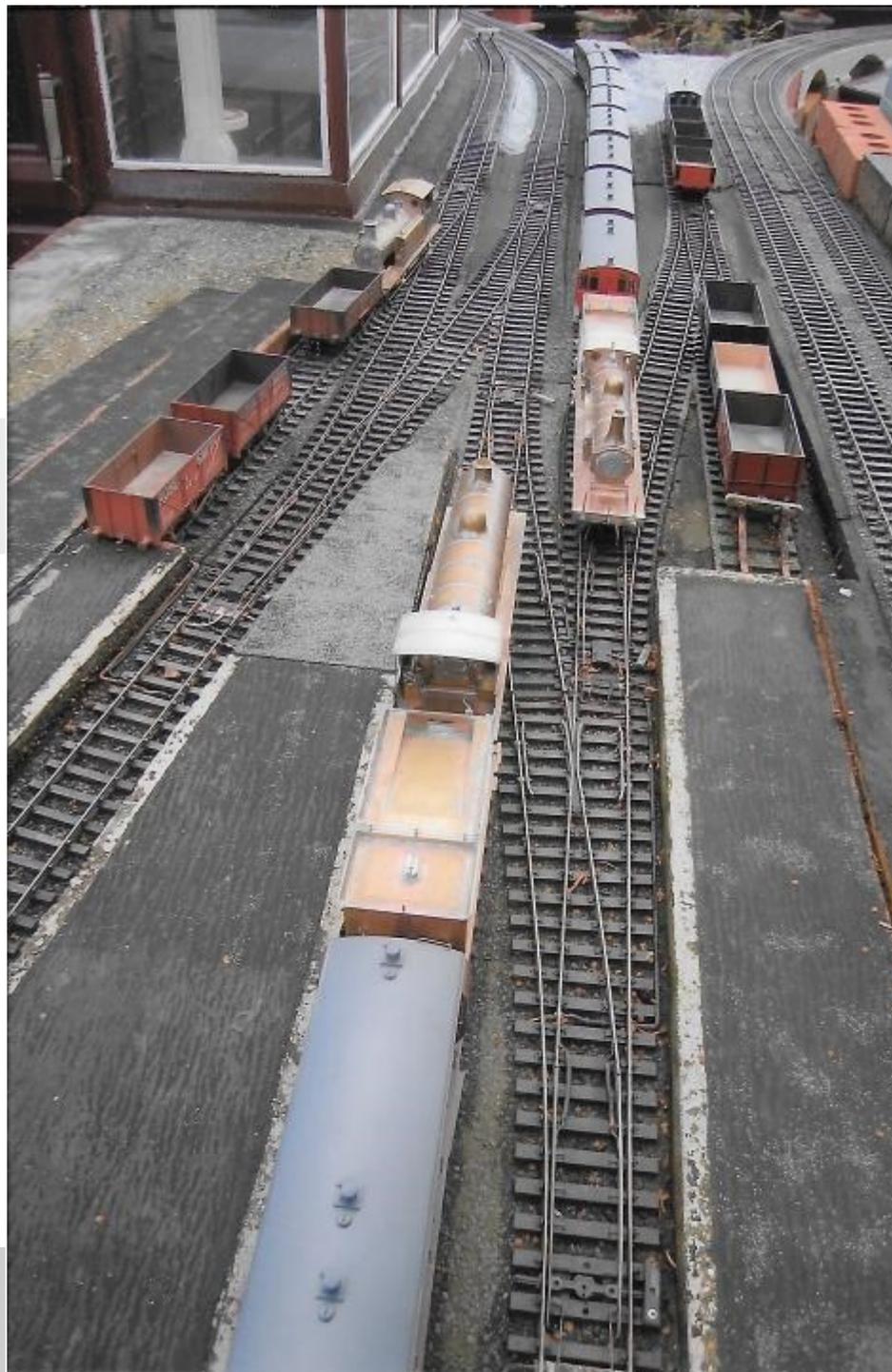
Atlantic in Sand Rocks Cutting, heading for Sandy Hill Junction, en route to Ashcombe Down station.

Empty coal train crossing Summit Bridge.



The southern approaches to Ashcombe Down, recently rebuilt with extended head shunts and down lines.

Ashcombe Down
southern approaches.



Photographs copyright
Mike Cruttenden.

[Return to contents page](#)

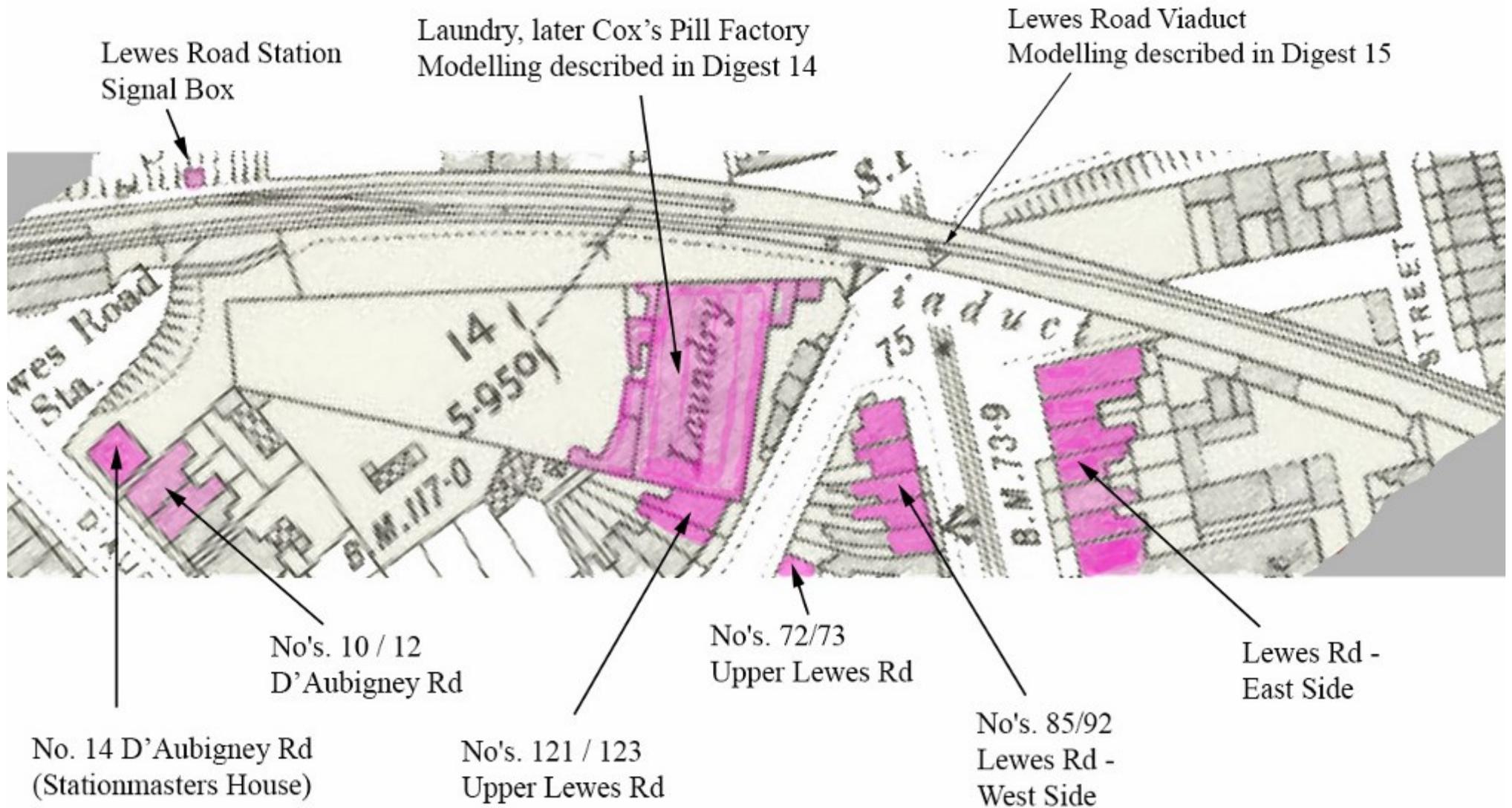
Brighton, Lewes Road in 2mm Scale

By Huw Evans

Readers may recall from previous updates that I'm attempting to model, in N gauge, the urban landscape of the Lewes Road area of the Kemptown branchline in its Edwardian heyday. For those who know this part of Brighton, I hope my model will eventually cover the area from the London Road tunnel through to Elm Grove tunnel. This will include both the Lewes Road station and short lived Hartington Road Halt. Previous status update No. 1 (Dec 2021 / Issue 14) covered my attempts to build 'Cox's pill factory' which dominated the local skyline; then status update 2 (June 2022 / Issue 15) covered the monumental Lewes Road viaduct.

For this status update 3, I have focused on modelling some of the more mundane urban scenery around the Lewes Road. Each building follows a common process of collating all the historical and contemporary photographic sources, together with plans, if available, or indeed physically measuring the building, if it still exists. An element of detective work, or ultimately artistic licence, is then needed to picture the building in its 1908 form. I then draw it up in the 'Sketch-up' package, import it into Photoshop to apply the surface detail in layers, before constructing in either Mount board or Plastic-card. I've also taken to using brass etch window frame components, of which there are a number of suppliers in N gauge. If an exact match to the prototype window can't be found, then I've had to subtly change the design to suit. Thankfully in N gauge the differences are small.

Lewes Rd 1908 - Central Diorama



Apart from the fiddly nature of scratch building in N gauge, the biggest headache I've had has been compressing distance and its impact on the model. This first central module is 3 foot in length but in reality should be 6 feet. I've therefore had to make some significant decisions in what to leave out, yet still leave the overall look realistic and uncluttered. A particular problem has been the hillside which is steeper than reality to reach the track level at the top of the viaduct. If this were a rural landscape this problem could be hidden easily enough with copious vegetation, but here there are back gardens and yards, with which many Brighton locals viewing the model will be familiar. I've disguised the problem as best as I'm able with fictitious terraces and steps, but the overall impact is, I'm afraid, a bit of a compromise. On the following pages are pictorial details of each of the models and their modelling sources, but here is a summary:

No. 14 D'Aubigny Road (Stationmaster's House)

I'm grateful to Andrew Garrod of our society, who has provided details of this building in the Brighton Circle magazine over the last 2 issues. Generously, he actually gave me advance notice of these plans, so I've been working in the background on these for some time.

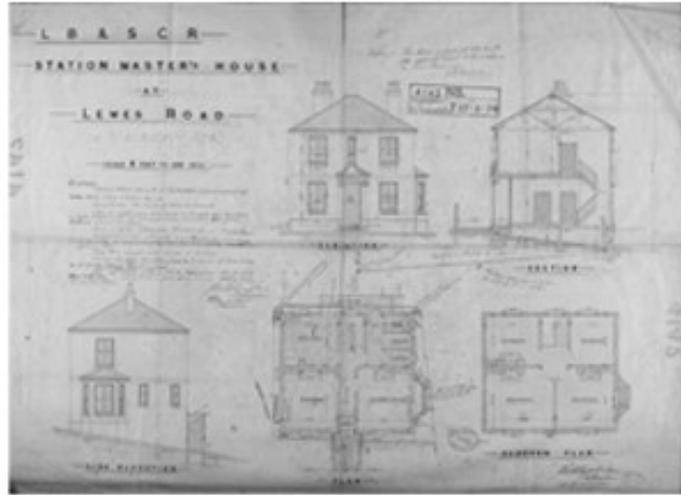
No's. 10 / 12 D'Aubigny Road

The adjoining late Victorian villas to the stationmaster's house also still exist to this day. The 5 section bay roof was one detail to master, plus I've added internal detail and an LED flickering fireplace to one of the buildings. As I'm rapidly concluding, so much of these detail seems so important at the time of construction, but is barely noticeable in the finished model!

No's. 121 / 123 Upper Lewes Road

These flat roofed terrace houses arranged in a fan shape are surprisingly old (1860's) and still exist to this day. I was able to model one and a half of these houses in the space I had available. The front porch roofs are constructed from 1mm plasticard struts. I would have loved to have included some of the adjoining grand villas of Roundhill Crescent in my diorama, but sadly space limitations prohibited this.

14 D'Aubigny Rd (Stationmasters House)



Original plans dated 1895
courtesy 'The Keep'



Aerial photograph C 1948
courtesy Cox's archives



Street photo C 1980
Courtesy James Gray
/ Regency Society



Contemporary street photo
2021 - Huw Evans

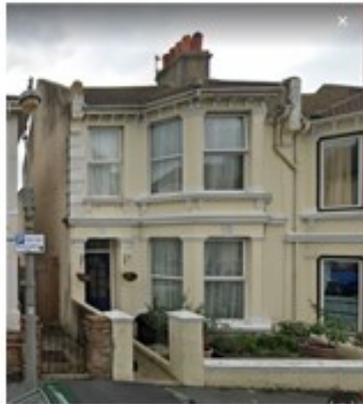


Aerial photograph 2022
Courtesy Google Earth



Rear garden detail showing exaggerated terraces &
awaiting further vegetation and detailing

10 / 12 D'Aubigny Rd



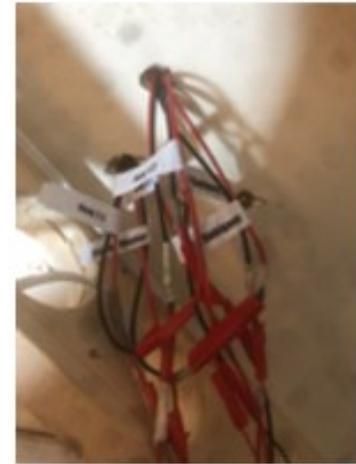
Contemporary street photo
2021 - Huw Evans



Aerial photograph 2022
Courtesy Google Earth



Model starts to take shape



4 light circuits enter
these 2 buildings



5 segment bay roof



interior detail of 2 rooms



Model Dec 2023 A/W final detailing

121 / 123 Upper Lewes Rd



Adjoining building C 1900
showing front door canopies
Courtesy James Gray/Regency Society



2022 Google Street View



C 2022 Courtesy Google Earth



Model
under
construction



Model in situ - Dec 2023
(additional walling required)

No's. 72/73 Upper Lewes Road

I wanted to show at least one example of the houses on the other side of the street, to give an impression of a closed in urban canyon. An unassuming design from the front, though there is still some nice brick detailing, which the Victorian designer added at the roof line. Note, I was also keen to show the below pavement level room and illuminate this through a simple street level grill.

Lewes Road Station Signal Box

Again, I'm very grateful to Andrew Garrood for his account in Modellers Digest 15 of how he constructed and modified an OO kit of a Saxby & Farmer Type 5 signal box, located at the West end of the Lewes Road viaduct. To make this in N gauge, I had to cut a few corners and wasn't really happy until my 3rd attempt, using the most appropriate brass etch windows I could find. As you can see from the photo, the end result is tiny and the correct 12 scale feet in length, so I'm relatively pleased with that. It will shortly be officially planted at the west end of the viaduct, leading to Lewes Road station itself, which will feature in a planned adjoining diorama.

Lewes Road - West Side (No's 85-92)

This row of houses and two shops proved fiddly in the extreme to get right. I thought I'd save time by constructing the row of buildings as a single model, but the varying height of the roof and floors along the row proved a nightmare to get right. It would have been much simpler to construct as separate pairs of houses. The shop windows are brass etch and a 3D component by "Model Railway Scenes". I deliberated at length at colouring these buildings and shops. Victorian and early Edwardian sepia photos suggest you can have any colour you like ... as long as it's brown! Clearly the first 10 years of the 20th century was a time of great change and I'm sure the evolution of paint formulas and colours was a part of that? I've eventually succumbed to a dark green and lemon yellow for the shops, but I'm still worried these might not have come in until the 1920's, ten years after my diorama is set? The shop names and trades are taken from the 1908 census for these buildings. All still exist to this day, with the delightful end of terrace corner dairy, with its Victorian detailing, now less than romantically called "Booze Corner"!

72/73 Upper Lewes Rd



72/73 Upper Lewes rd c 1981 during construction of the Giratory road, showing original chimney detail!



Nos. 72 / 73 shown in 2022 - Huw Evans



1981 pavement widening still visible



Aerial photograph 2022
Courtesy Google Earth



LED Light holders



Model December 2023 a/w final detailing

Lewes Road Signal Box



Saxby Type 5 Signal Box
a surviving example at Isfield



3 versions produced
before I was happy



Final model a/w planting at West End of Viaduct
all components made from A4 plasticard sheet
plus brass etch windows

Lewes Rd West Side



C 1908 James Gray/
Regency Society



C 1975 James Gray
/Regency Society



C 1930 James Gray



C 1980



Photograph 2022
/ Google Earth



2021 Google Street View



Today's sorry view



Model Detail 1 /148 scale
2023 Huw Evans



Lewes Rd East Side



Photos Approx 1865 James Gray/ Regency Society

Today's view - Huw Evans 2021



Bay and Dormer construction



East side takes shape

Lewes Road - East Side

As these buildings are somewhat different, they were more obviously constructed as separate models. Dominating this row is the Connaught Centre, a religious community centre and after multiple changes it has recently reverted back to a religious role. A feature of this building I was keen to model, was the front cellar, steps and below ground floor. A suitable hole was drilled into my baseboard to sink this in.

Other buildings in this row together with back yard and outbuildings are still to be completed, but I was keen to show the main front facing elements of Lewes Road in time for this edition of the Digest.

Lighting the Diorama

I was keen in this diorama to pay particular attention to lighting. Street lights are off the shelf models by "Layouts 4 U", to represent the back-street gas lighting. The main Lewes Road electric lights are models by Faller, which, to me, look a close approximation to the Edwardian prototypes. As you may know, Brighton had some of the first electric street lighting in the world, so that's a nice feature to include. Interior building lighting is provided by cheap LEDs, but I have gone to town on the lighting control system. I've used the well known "Woodland Scenics - Just Plug" system. This is not designed to be used with other suppliers' lights, but, using an online resistance calculator and a bit of guesswork, I've soldered an appropriate number of additional resistors to each circuit of typically 6 lights. These are left to run over a 24 hour period in different settings before I consider burying them in my model buildings. I do this by pre-wiring each building with LEDs so that the wires dangle out and are labelled, before laboriously taking a single LED out of my external test circuit and soldering in the one buried in the building, making sure the revised circuit still works before moving onto the next light. If that wasn't a slow enough process, I've then decided to make life difficult for myself, by trying to simulate realistic lighting activity. Using the Woodland Scenics "sequencing light hub", I can get each lighting circuit to come on at a different time, which is standard functionality. But to make this more realistic, these circuits are spread

across my diorama. A single building can therefore have up to 4 different circuits feeding its lights, so that those in the attic will come on at a different time to those in the cellar etc. Hopefully I can simulate the inhabitants slowly waking up, before downstairs lights are switched on, then in the middle of the night only street lighting being on. In hindsight, would the casual viewer note such subtlety and could I have got away with buying some cheap random control LEDs strings from a garden centre instead?!

I'm sure to date I've spent well over £300 lighting this 3 foot long diorama, with a hundred plus LEDs. Still I like to think it looks atmospheric!



Next Steps

I'm hoping my next status report 4, will be my concluding one for this diorama. However there's quite an extensive modelling list still to complete before I get there! Further terraced houses on "Melbourne Street"; general building & backyard detail throughout the diorama; tram poles (non powered) from brass tubing; a more accurate working model of a Brighton open top tram; vegetation including trees in blossom along Lewes Road; Edwardian street transport from brass etch kits already bought, which need constructing; more comprehensive weathering of the diorama and lastly, but not least, some model humans to populate my diorama.

Until then, Happy modelling.





Photographs of models copyright Huw Evans

[Return to contents page](#)

A Belgravia in 2mm Scale

By Gareth Collier

Many moons ago, I ordered a Small Loco Works LCDR Europa class loco via Shapeways, which turned out to be one of their worst quality prints that I'd seen. A better replacement was sent and the original was put to one side.

Anyhow, the original print has been kicking around my workbench and, by chance, was in view as I was flicking through my Stroudley Loco book and turned to the small Belgravia class. A quick run over with the ruler and an idea developed.

As a reminder, the print looked like this and was always going to need a lot of work.



Most dimensions were very close but a lot of detail needed to go, which sanding was going to remove anyway. I removed the springs, boiler bands, dome, safety valve, smokebox door, cab roof and a portion of the outside frames. A new roof, reshaped cabsides, new dome, safety valve, footsteps, front wing plates and smokebox door were added.

The drivers are from a Farish V2 on shortened, outside framed 08 axles and slimmed down cranks, so passengers on the platform weren't in danger. The leading wheel is a Farish tender wheel.



The springs posed a problem as you can't add or remove the drivers with them in place. As a result, holes were drilled in the frames for them and they are fitted afterwards and held in place with Micro Krystal Klear, so, if they need to come out, a dab of water will loosen them. As it is, the drivers are free wheeling, so shouldn't need to be removed.

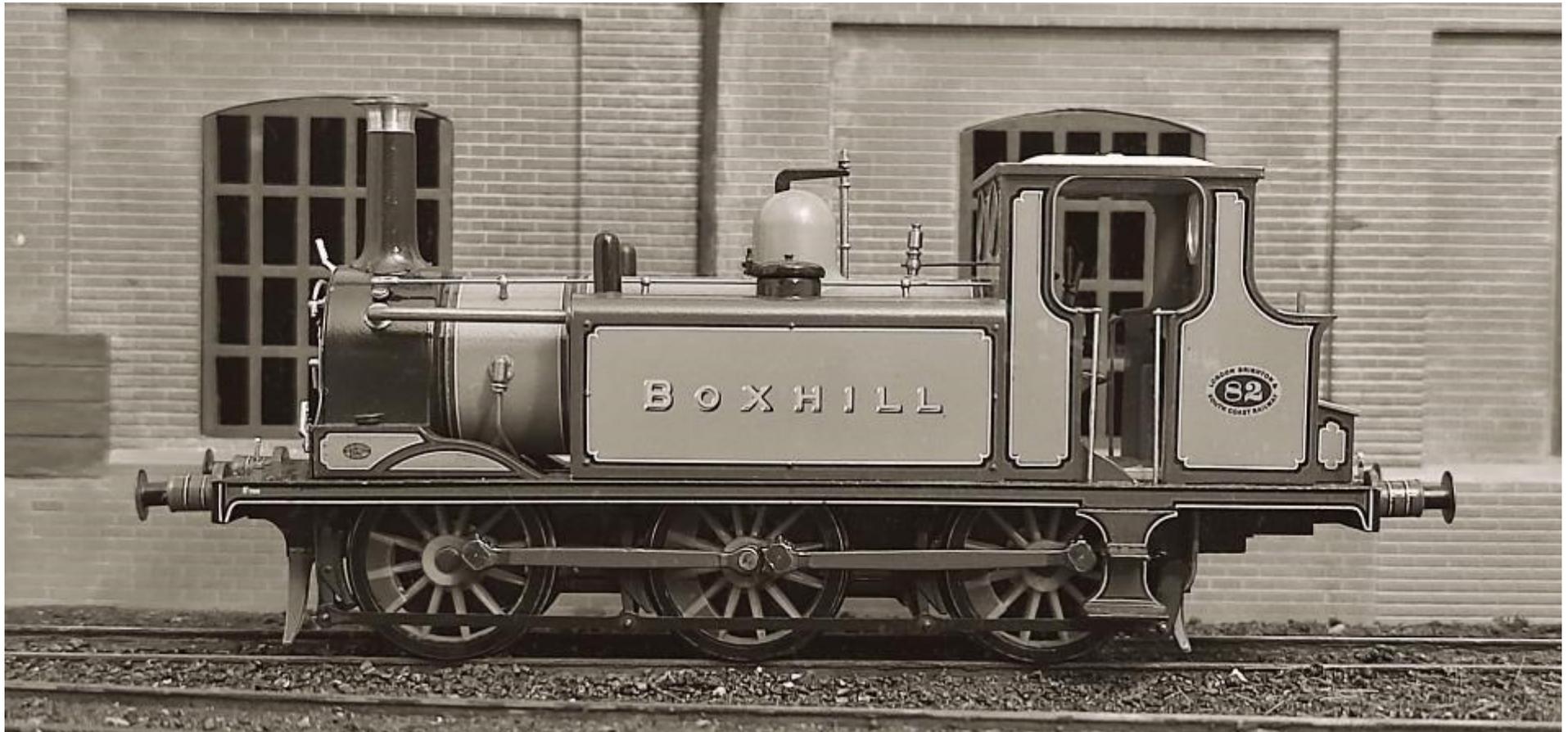
The tender, as usual, is powered by a Terrier chassis and is built from scratch from brass. It is now finished except for its number plate, which is on order.



Three Bridges Shed C.1900

By Jamie Patterson

This project started when I arrived home from Ally Pally earlier this year with a Dapol/Rails A1 *Boxhill* in my bag. I was very impressed with the model and, as I sell some 3D printed rolling stock, I decided to combine my newfound desire to model the LBSCR with my need for a scenic backdrop for my 3D prints.



I am an Isle of Wight Steam Railway volunteer and, as our E1 was based at Three Bridges, my local station, I thought it would be fitting for my photo plank, to be a home for the Rapido E1, that I have on order in Goods Green, to rename as our *Burgundy*.

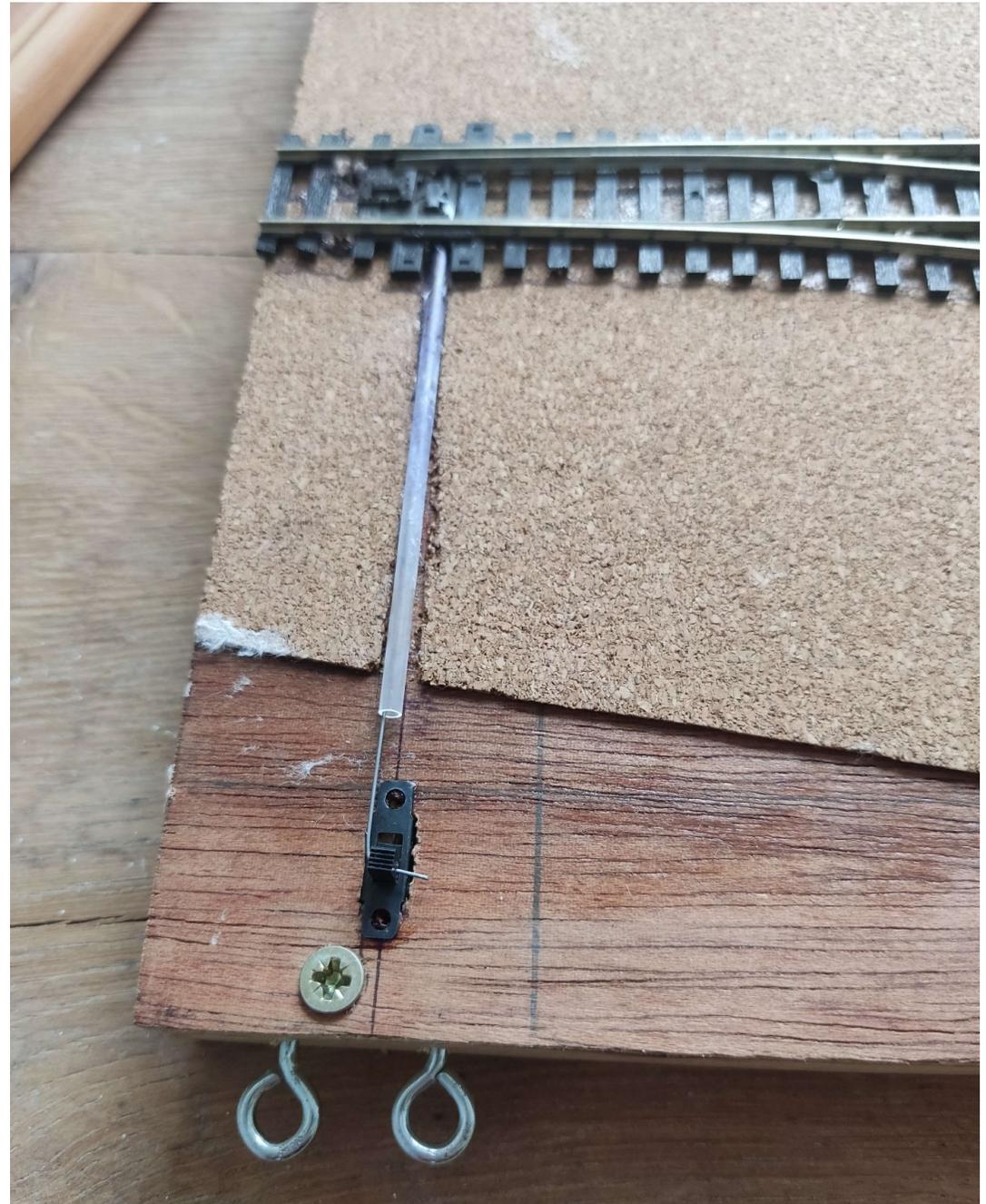
Having found a 1904 image online of A1 *Millwall* at Three Bridges in what appeared to be a siding beside one of the engine sheds at Three Bridges, I decided to build a model based on that photograph. I thought it would be a fun challenge to try to model a real location as accurately as possible on a low budget, having been inspired by many fine pre-grouping layouts, and having most of what I needed already. My interest in the LBSCR wanes with the arrival of Marsh, so a period of 1895-1905 was chosen – also a financial decision as there's less RTR support for this period, meaning I'll be less likely to spend money on RTR stock!



The first part of the layout that I built was the shed. It's made from one and a half Airfix shed kits, that I found in a bits box, which just happened to look very similar to the prototype. I may build a new model of the shed in due course, but the Airfix bash will do for now.

I built the 60cm x 25cm baseboard in the usual way, the details of which I shall spare the reader. It was only at this point that I realised *Millwall* wasn't in a siding, but rather had been raised off the ground acting as a pump engine – oops! So much for modelling a real location... I was too far along with this project to stop, having built the shed and baseboard, so I decided to model a fictional pair of sidings beside the shed.

The track is Peco code 75 and the layout is wired up for DCC, should one wish to make a train move. Power is provided through some metal screw eyes drilled through the side of the baseboard – the wires are soldered to these on the inside, meaning any controller can be attached to the layout with crocodile clips. The single electrofrog point on the layout is controlled by wire in tube, the tube being part of an old ballpoint pen!



The ground was brought up to sleeper height using cork sheet and the hill to the right of the shed was made from polystyrene smoothed with filler. The layout was then painted black in the yard and brown where the grass was to go, which gives a nice sense of depth and realism if any of the scatter material is a bit thin. I used real loco ash (possibly out of a Terrier!) from the Isle of Wight Steam Railway, ground up and sprinkled over the yard. The static grass is from WWS; for a first attempt, I'm very happy with how it looks. I've also used a few bits of Woodland Scenics Poly Fiber and Gaugemaster dark green leaves.



Although not quite yet finished, I'm really happy with Three Bridges Shed. It's my first foray into most skills used in layout construction, and I'm pleased with how it's looking.

I do intend to sell some 3D prints of LBSCR stock, so keep an eye out for those and the finished layout in the new year!



The image that I used for inspiration - from the Dave Searle collection.



... and my homage to it.

Model photographs copyright Jamie Patterson

[Return to contents page](#)

A Cautionary Note:

The Limitations of Early Black and White Photography

By Ian White

Most of us are old enough to have used analogue cameras, and those of us who used black and white film will remember products such as Ilford Pan F, which rendered “all” colours to shades of grey. None of us are old enough to remember a time when black and white photography failed to translate the entire visible spectrum into shades of grey, and it is therefore very easy for us to over-interpret some of the early photographs which inform our hobby; and how many of us knew what “PAN F” meant?

Some discussions on the Brighton Circle e-group have prompted some members to caution others in their interpretation of Victorian and Edwardian photographs. Photographs taken in the 1860s only captured light at the blue-violet end of the spectrum, so if a locomotive was lined with red and black, both lines would appear as dark grey to black, and we might easily misinterpret that as evidence that the loco was only lined with black. Photography improved in the early 1870s with the development of “orthochromatic” emulsion (the light sensitive layer on film and glass plate negatives), which extended the light captured to the centre of the spectrum, so it accounted for yellow and green as well as blue and violet, but it still failed to capture red. Despite the availability of the new emulsion, many photographers continued to use the earlier processes, which they called “ordinary”, but I’ll call it “pre-ortho”. In 1906, “panchromatic” emulsion was created that reacted to the entire visible spectrum from red to violet, but it was not until the 1920s

that it was widely used for still photography, and then orthochromatic films largely disappeared from the market. We might surmise that these slowly adopted changes were caused by photographers continuing to mix their own emulsion to paint onto glass plates, and it required a widespread switch to the use of manufactured film to bring about change. As to Ilford's "PAN F", that was introduced in 1935 as "Panchromatic Fine-Grained" film; they still make "PAN F 50" and, amazingly, an orthochromatic film, called "Orth Plus 80", was made available in 35mm format in 2019!

The aim of this short article is to give some comparative examples of the differences between the three major types of black and white photography but as digital emulations; I don't have an analogue camera at the back of the cupboard! Further details can be found under "Orthochromatic" and "Panchromatic" in Wikipedia, and for an explanation which includes "Ordinary", see:

<http://www.earlyphotography.co.uk/site/gloss11.html>

Before using a digital camera to create emulations of historic black and white photography, we need to consider how digital photos are stored. Digital images are a grid of points called pixels, each having a single numerical value for red, green, and for blue (RGB values); other colours in the visible spectrum (yellow, orange, violet) are described by combinations of R, G and B values. The RGB colour model closely approximates the three colour receptors in the human eye, but a system of complementary colours (cyan, magenta, yellow and black) is used for colour printers; note that RGB colours have no direct association with the way we mix paints. Most of us store our photos in JPEG format which can store up to 256 shades (2^8) of each of the three RGB colours, giving about 16.7 million ($= 2^{24}$) possible colour combinations, with black at one extreme (RGB = 0, 0, 0) and white at the other (RGB = 255, 255, 255). Most digital cameras can capture up to 2^{12} or 2^{14} shades of each colour in their RAW format files. TIFF files vary, but usually have capacity

for 2^8 or 2^{16} shades of each colour, giving a possible 2^{48} colours; roughly 281 trillion! Software, such as Paint Shop Pro, can convert a colour image to black and white by applying weights to the RGB values of each pixel, according to a simple formula:

Grey value of a pixel = $R \times 0.30 + G \times 0.59 + B \times 0.11$

Taking a modern digital colour photograph and reverse engineering it to show how the same scene would have appeared in early black and white, should ideally be carried out using software that takes account of the response of each film type to every part of the visible spectrum. That may be possible using “DxO FilmPack 7”, which can emulate the spectral and grain characteristics of hundreds of film types. The examples that follow are based on a cruder approach in which pre-ortho is emulated using only the “B” values from “RGB”, orthochromatic the “GB” values, and panchromatic the full “RGB”. Although that disregards any direct role of yellow, orange, or violet, it suffices to highlight the major differences.

I used my simple RGB-based approach to process some photographs of Richard Barton’s “Hayling Island”, and Phil Taylor’s “Newick and Chailey”, to illustrate how the changes from one film type to the next might have impacted the appearance of LB&SCR scenes across the early history of photography. The software used was Paint Shop Pro 2023, and the models were photographed using in-camera focus stack with an OM System OM5, fitted with a 12-45mm F4.0 lens; see Digest 17 for details. First, I took a view of Richard’s “Hayling Island” and created the three monochrome emulations seen here, along with the original colour photograph.



The image on the left is based on blue only (red and green excluded), and that gives an idea of how that scene might have looked if captured using pre-ortho emulsion. The next image is based on blue and green (red excluded) to suggest the appearance of a photograph using the orthochromatic emulsion introduced in the 1870s. The final monochrome image uses the full RGB range to emulate a photograph taken using panchromatic emulsion.

The pre-ortho image almost loses the distinction between the blue-grey plasterwork and the pale-yellow wooden framing of the station building. The orthochromatic and panchromatic versions easily differentiate the plasterwork from the wooden framing, but the pale reddish platform brickwork, and the red fire buckets are much darker in the orthochromatic image than in the polychromatic; those near-red items include some green and blue components. The limitations of the early photographic emulsions are seen better in the almost pure red hem of the dress of the lady sat second from right, which appears black in the pre-ortho and orthochromatic images, but mid-grey in the polychromatic image.

So, does red loco lining look black in these emulations of early photography? The following set of cropped images of Richard Barton's 0-4-2ST *Bognor* show that contra to expectations, it does not! It transpires that the "red" lining on the model (sample RGB = 231, 122, 119) is a long way from pure red (RGB = 255, 0, 0), but that may have more to do with layout lighting than the actual lining colour. I had a very similar result when I applied a time-limited trial of "DxO FilmPack" to a photograph of *Gladstone* taken at the NRM, where I obviously had no control over lighting conditions. Referring to the model of *Bognor*, we can see that the bright red of the rear guard-iron provides a more convincing example of how red can be lost in an early photograph. In both the pre-ortho and orthochromatic emulations, the rear guard-iron is almost indistinguishable from the black of the frames, although even that "red" does not completely disappear as it contains some green and blue (sample RGB = 215, 75, 42), most probably from the layout lighting.

William Stroudley's passenger yellow colour is so dark in the pre-ortho emulation (left) that it is indistinguishable from the dark green cab roof, and we might easily make the mistake of thinking this loco had been painted in goods green! However, it is much brighter in the orthochromatic and panchromatic images, and most historic photographs make a clear distinction between the dark green "framing" of the lined panels and the passenger yellow areas. When expressed as RGB

values “improved engine green” contains a lot of green (approx. RGB = 206, 134, 59), but as noted above, the RGB description does not tell us how to mix paint. It would also be wrong to assume that any historic photograph of a Stroudley or Robert Billinton loco in passenger livery which looks dark was taken on a pre-ortho glass plate, or that one that looks bright was taken on a later film type, as several other factors might influence the brightness of a monochrome print. Major factors being the light level and colour temperature of the daylight when the shot was taken, and of the light used for printing off the negative; the film used, and the grade of photographic paper used to print it can also influence contrast and mid-tones. In many cases the “negatives” our prints come from are themselves photographic copies of original prints or their negatives, thus adding an additional level of error, typically losing detail and sharpness, and often failing to capture the original’s tonal qualities.



Slightly diverging from the matter of film types, I'm sure many of us have wondered how close we can get to matching a photograph of a model to its prototype. In the following pair of images, we can compare a postcard of Newick and Chailey Station (see *The Brighton Circular* 34:159) with a photograph of Phil Taylor's model of that scene. As the original is thought to date from about 1906, it would almost certainly have been taken on orthochromatic film, so that emulation is given for comparison. An added complication is that Phil Taylor's postcard format print was made from a Lens of Sutton Collection copy-negative (identified by John Smith's biro label across it; John Minnis, *pers.comm.*), which may not have the same tonal characteristics as its original (thought to have been a postcard). As to matching the scene, it is remarkably close and a testimony to the accuracy of the model, but the photographs have slight differences in perspective and brightness.



The latter could easily be adjusted and with a little effort it might be possible to reduce the differences in perspective, but it would be almost impossible to get a camera into the exact matching position and equivalence of its focal length to that used on a plate camera.

Readers not interested in the methodology can skip this paragraph! Creating the panchromatic image in Paint Shop Pro 2023 was as simple as pressing the button labelled “grey scale”, and then adjusting the contrast of the image using a function called “Histogram Stretch” to ensure the brightest pixel was white and darkest was black. I then took the same photograph, used “Adjust Color RGB” to remove red, and repeated the grey scale and stretch functions to create an orthochromatic image. To emulate the pre-ortho image, I needed to get rid of green and red but found the previous approach blotchy and unconvincing. Instead, I used “split channels to RGB” to create separate grey-scale images based on each of the three colours, selected the blue channel image, and applied the stretch function to balance its shades from black to white. Regarding the conversion of RGB colour to grey scale, there are three main formulae, namely average, weighted average and another based on analysis of the human perception of luminance; Paint Shop Pro used weighted average and details of the three approaches can be found in:

https://mmuratarat.github.io/2020-05-13/rgb_to_grayscale_formulas

Software such as DxO FilmPack uses files called LUTs (Look Up Tables) containing replacement RGB values to be substituted for the RGB values in a digital camera image, e.g., a LUT to emulate Kodachrome 25 transparency film contains about 1.27 million replacement colours, but a LUT for a black and white film only needs 256 grey scale values.

Rope Shunting

By Graham Bowring

Rope shunting was used in goods yards where one of the sidings faced the opposite direction to the others; shunting with a rope saved having to run round a wagon, which would usually involve blocking the running lines. I think this was done from early days of railways well into BR days. It's quite easy to do on a model: I used a length of fine chain with the link at one end, hooked over the loco coupling hook and the other end over the wagon. If it involves changing the point between the loco and the wagon, the electrical switching of the vee of the point will have to be changed. Sadly

the wagon does not follow at a constant speed due to the weight and inertia being very different from the prototype. I doubt if that could be improved.



Photograph copyright Graham Bowring

[Return to contents page](#)

The Brighton Circle AGM

The Brighton Circle held its AGM at Keen house on Saturday 28th October and, as is traditional, there was a display of models in addition to the business of the meeting and the three presentations on subjects of Brighton interest.



No 18, built from an EBM kit by A Hammett for Doug Thomas in 7mm scale.
Photograph copyright Alan Budgen.



This is probably the first time in about 150 years that three Craven locos have been photographed together in their original livery.

From left to right, 2-4-0 No 176 belonging to Eric Gates, 2-4-0 No 175 belonging to Nicholas Pryor (both locos from Ian White's sets of etchings) and Slaughter goods 0-6-0 No 253, built from an EBM kit produced by Ian MacCormac, belonging to Nicholas Pryor. All are to 4mm scale.

Photograph copyright Alan Budgen.



Phil Taylor brought along a Brake/3rd and an Open A to illustrate his current experiments with couplings.

The carriage will have a semi-permanent coupling at the right hand end where it forms one end of a block set. At the outer end, and on the Open A, are Phil's own design of auto-coupler which will allow both coupling and uncoupling remotely, using electromagnets.

Photograph copyright Eric Gates



Simon Turner displayed a scratchbuilt model to 4mm scale of an early Saxby and Farmer “stilts” signal cabin, with the posts passing through the roof of the building.

The model is based on the box rescued from Withyham by the Bluebell Railway, where it can now be seen - although the signal posts are long gone.

Photograph copyright Eric Gates

Hangleton Station Part 4 - Painting

By Colin Paul

PAINTING

At long last it is painting time. This again is something new to me. Yes, I have painted locomotives and rolling stock before, but not buildings. Again, I am going in blind with some trepidation. I think the hardest area is choosing what colours to use and, more importantly, what primers to use under them. Through trial and error with samples etc., I have come up with the best way of avoiding numerous over coats of paint hiding what is underneath. Again, the masking off of areas is a pet hate of mine which I wanted to keep to a minimum.

The first thing to do was to go over all of the individual items with a fine toothed comb. You'd be surprised that, on what seems, at first, a perfectly flat piece of Plasticard/wood, you find there are glue globules, glue smudges and streaks, squeezed out hard melted plastic and file marks. Some stand out like a sore thumb, where others are hardly visible even under a lens. At the end of the day, I have done my best in the preparation.

COLOURS (EXTERNAL)

Modelling the LB&SCR in the 1890's I have chosen the later colour scheme of red/dark mauve for the doors, architraves, guttering and downpipes etc and off white for the wooden shiplap cladding. Sash windows were gloss white.

Not wanting to mix any specific colours together fearing colour differences across three or four

future buildings (i.e. the signal box, shunting box and goods lock-up), I have gone by the colour swatch route from Peter Wisdom's Southern Style Part 2, (HMRS ISBN 978-0-902835-32-0). He suggested buildings' red based on Railmatch 650 Midland Railway Red, and buildings' off white based on Railmatch 203 Rail White.

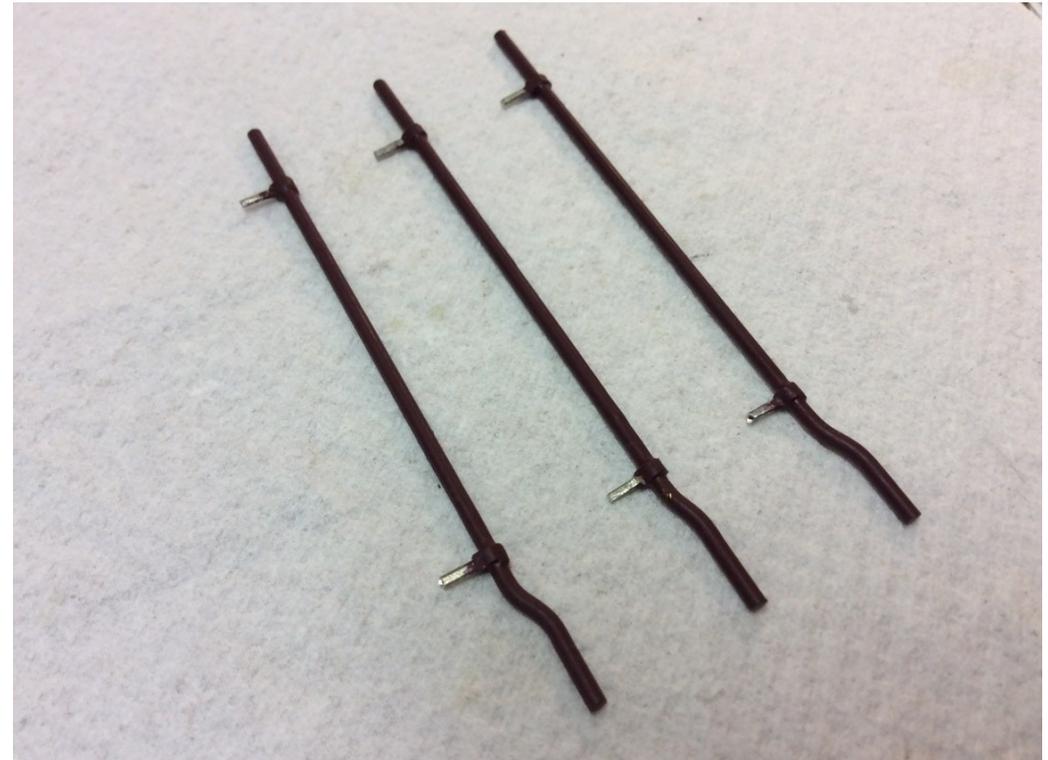
COLOURS (INTERNAL)

For the wall panels above the dado rail and the recessed panels of the doors I chose Humbrol 121 – pale stone, whereas Revel 84 – leather brown was used for all wooden panelling, seating, around the fireplaces etc. Humbrol 33 – matt black was used for the fireplace and hearths.

I chose not to paint the floors, but they might be lightly weathered and toned down.

INNER WALL PANELS

Each wall panel was primed first. The best undercoat was Halfords light grey from a spray can for both colours, before the cream/brown colours were applied. Even at this stage, it was still very difficult painting the panelling of the doors with crisp lines of different colours.



Three platform side downpipes ready painted and formed from solid 1/16th (1.57mm) brass rod. For some strange reason there was only one on the entrance side. This had not been made when the photo was taken as it was to a different design.

DOOR OPENINGS

When the plan view was scaled up to 7mm, I decided which way the (dummy) doors would logically be hung. Some were obvious, some guessed at. Having decided, I then drilled small 0.6mm pilot holes where the doorknobs would be located. A diameter of 3/64th (1.19mm) (KS161) looked ideal. Each of the 16 knobs required were turned and rounded off. The backs of the knobs were then turned down, leaving a 1mm shaft, and superglued in place.

GLUEING THE INTERNAL WALL PANELS IN PLACE

Starting with the ticket office, the chimney breast panel was tackled first. Knowing each panel fitted perfectly before painting, it didn't require any subsequent trimming. Before any gluing was attempted though, several strips of wood were cut to length to act as props, propping across to the far wall of the room. This way the panel was held perfectly flat against its respective inner wall. The back of the panel was then scored (hatched) with a scalpel and Evo-stik contact adhesive applied. The panel was quickly positioned and propped quickly, securing it in place. Overnight, the props were removed. This one panel totally transformed the look of the room.

The road approach window panel was fitted next. Sliding it in position it was a very tight fit. I think the extra thickness of Evo-stik on the chimney panel pushed it out slightly



Slaters Plastiglaz (Ref:0312) was used throughout the building. With minute spots and smears of Super-glue on the insides of the windows, the oversize glazing pieces were placed in position. Each glazing piece was then cut flush. Wherever glue seeped outside the sashes, the glazing was quickly removed then replaced with new glazing.

more. So, with very careful (gradual) trimming off both vertical edges, the window on the panel lined up perfectly with the window opening. Because this room is narrower in this plane, shorter props were then cut. The panel was then glued in, placed as for the chimney breast.

Over the following week, all of the other panels were glued in place as above.

INSIDE FURNITURE

The colours used are as follows:

Bench seating (throughout) - Humbrol 84 (Matt Mid Stone) matching the wall panelling colour.

Ticket office counter - Humbrol 133 (Satin Brown).

Slate shelf (Porters/lamp room) – Humbrol 79 (Matt Blue Grey).

Cupboard front and side panels – Humbrol 98 (Matt Chocolate).

Drawers – Humbrol 160 (German Camouflage Red/Brown).

Floor still to be decided, but will probably be left unpainted.

Although I had highlighted the drawers underneath the counter tops in a different colour, when painted and replaced, I quickly noticed the absence of the drawer knobs/handles. A dab of gold coloured paint resulted in over-scale blobs, which did not look very good. So the drawers were repainted again in No.98 and, by way of improvement, I drilled out small 5.5mm holes in the drawers and cupboard doors and glued in 0.5mm diameter brass rod. Each knob was then filed back to protrude out by 0.5mm. Looking through the windows, the knobs can clearly be seen.

The seating was fixed using superglue and the counters/cupboards etc. were glued in place with contact adhesive, which gave me a bit of time to manoeuvre them into their final positions.

ARCHITRAVES

For ease of painting around each of the window and door architraves/ corner pillars/guttering etc., each one was carefully masked off with low tac masking tape. Again, any overspill of the building's red paint would transfer to the tape and not onto the main walls. When the tapes were removed, some paint had crept onto the wooden panels but not too much. Off-white was then applied to the plain wood with two coats.

DOORS

The four doors (which as yet are not fitted) have also been painted in the buildings red with Revel 84 (Leather Brown) used for the inside, matching the panelling colour of the interior rooms. When dry, holes were drilled out for my turned up brass-knobs which were superglued in place. These doors, along with the windows, won't be fitted until the off-white has been applied.



A close-up view showing the main entrance doors and windows installed. Because the sash windows were white, including the borrowed light above the doors, I didn't bother painting them, leaving them in the white Plastikard colour.

CANOPY

At present, I am still not sure what colour(s) will be used (if any) on the underside of the canopy, so for the moment it will be left in plain wood.

The underside was then masked off, including the tubing for the supporting columns, then given a light spray all over in Halfords grey primer.

The awnings were painted first in the off white colour, where two coats were required. Any overspill of colour onto the guttering would be covered by the building's red. The narrow beading strip was painted next in red with a very steady hand under a lens. Remember, this strip is only 1mm wide x 20thou. Again, any overspill of red was touched up with off white. The guttering was painted next in the red (three coats) followed by Humbrol 33 (Matt Black) for the gully.

LEAD ROOF

After several trial colours, I chose Humbrol 106 (Matt Ocean Grey) which looked the most convincing when it was hand brushed on.

CANOPY SUPPORT POSTS

From what can be gleaned from very early photos of the real Fittleworth station, what is painted on the posts are vague. Only a handful of close up (blurred) photos are known to me. Two show a dark painted base roughly $2/3^{\text{rd}}$ the way up from ground level, with the top $1/3^{\text{rd}}$ in a lighter colour. These photos are undated of course, but were clearly taken in pre-grouping days. I have presumed the colours were either buildings red or possibly black with off-white as used for the main building.

BRICKWORK PAINTING

From the start of the build, you will have noticed the Slaters brick Plasticard colour is brown. Not looking much like brick or mortar colour, it would have to be painted accordingly. Looking at our own house, which was constructed in the 1930s, the bricks and mortar colours are multi coloured in various shades and not all uniform like the new houses of today. Having a copy of Martyn Welch's book *The Art of Weathering* (Wild Swan Publications ISBN 1 874103 119) the 'Buildings' chapter (pages 101-114) was read intensely. He suggested applying a base colour of mortar all over the bricks, then wiping the excess off, leaving the colour in the recesses of the courses. Bricks could then be highlighted in various different shades of browns etc. Experimenting on scrap strips of brick Plasticard with different colour buffs, I chose Humbrol 94 (Brown/Yellow) for the mortar, which near enough matched the colour on our house. Straight away, the bricks were transformed. They still looked a bit uniform in colour though. Around half a dozen or so different shades of reds/browns/greys and mauve colours were then trialled over the top, highlighting individual bricks. Although this small section was highly effective, it took me a long time to complete this small segment. Remember, the brick size is tiny at 5mm x 1.5mm. Knowing this part was going to be daunting, I simplified the colours to just one - Humbrol 113 (Rust). Painting the individual bricks with this colour, the individual bricks were not all the same colour, as can be seen. Some bricks had a good application of colour applied, hiding the base colour completely, whilst others were painted sparingly, with the base colour showing through. Some bricks were darker in one area and lighter in another, which gave the appearance of various shades of the brown within a single brick. This, too, looked impressive. Undaunted, the whole of the brickwork was done this way.

CHIMNEY STACKS

The chimneys were attempted first. All were given the mortar treatment and left to dry overnight. Working under a lens, the individual bricks were picked out. Going back to the individually painted roof slates, the bricks too were surprisingly therapeutic and relaxing, although a lot smaller and more fiddly to achieve the end result. It was inevitable that some paint spilled over into the recesses which had to be retouched in the mortar colour, but nothing serious. The first side of the first chimney was completed in an hour or two. I wasn't particularly bothered how long it actually took; it was the overall impression I was after. After it was totally finished, it was temporarily placed into position onto the roof. From every angle and normal viewing distances, it looked very realistic. When the other sides were finished, the remaining two chimneys followed.

With handling over the last few weeks, some of the mortar colour on the tops was beginning to wear off. The cement tops were re-painted in the mortar colour. The square hole openings, which previously were left unpainted, were then given a coat of Humbrol Matt Black No.33.

The chimney stacks were then fixed (Evo-stik wood glue) in their respective locations on the roof. Whilst the glue was drying, it was imperative that they were dead vertical and this was checked with the use of a small 'T' square. The lead flashing around the bases of the chimneys was touched up with Halfords grey primer, matching the lead flashing on the rest of the roof.

CHIMNEY BREAST WALLS and PLINTH BASE

Very early on, I made a bit of a boob. It concerns the line of the bottom plank on the building's sides and ends, which I'd inadvertently scribed by mistake. I did not realise my error until the windows and door apertures were cut out. When the time came to affixed fix the brick plinth base in place, the offending scribed line was just above the top of the bricks and looked a bit odd. The only way to hide the line was to partially fill it with PVA then cover with mortar colour. Some of the lines are still visible in certain areas but only just.

ROOF

The roof was given a light spray in Halfords grey primer. Although it looked perfectly fine, the light shade of grey was a bit too light and too uniform in colour. To me, this did not look at all prototypical. I was considering whether to just highlight the lead flashing in a darker colour, then weather it. Deep down, I wanted to replicate the colour photo of Fittleworth taken in the 70's, which shows a patchwork of different colour greys. The only way to achieve this was to highlight individual slates, which I knew would take me an absolute age. Undeterred I had an off-cut of Slaters roof tile sheet for a trial run. From my stock of suitable Humbrol greys, the following five colours were chosen: 27 (Light Grey), 64 (Sea Grey), 79 (Blue Grey), 106 (Matt Ocean Grey), 145 (Medium Grey) and 224 (Dark Slate Grey). This patchwork of colours was applied, which looked good and much more convincing. To stretch the colour range a bit further, I blended two colours of grey together. creating more shades. In the end, I ended up with around a dozen or so different colours. After spending an hour on the trial piece, I was convinced this was the way to go. So, being a masochist, the whole roof of 1530 tiles were painted this way. The painting was relatively quick and therapeutic, taking only four or five afternoons' work. The flashings, hip and ridge tiles were left in the lighter Halfords grey primer which contrasted well with the tiles.

GENTS' URINAL

The roof is a thin piece of plywood painted lead colour which is also a tight fit within the opening. Again, it can be removed for adding more detailing inside.

The semi open gents' urinal has been painted internally. As mentioned in the main text, the urinals are a snug, slot-in unit that can easily be removed if required. For now, I have left it in the unpainted white Plastikard. The cistern was painted in the dark grey colour with pipework left in unpainted brass. The lead covered roof was painted in a mixture of grey colours as used for the slate tiles. This close up clearly shows the meticulously painted slates and individual brickwork to good effect.



GLAZING

Luckily for me, the LB&SCR sash windows were gloss white, so I have left the Slaters white Plasticard unpainted. Being semi matt, rather than gloss white, the eye is not drawn to them.

For the glazing, I used Slaters 0.25mm (0.010") Plastiglaze Plasticard (Ref:0310). Each bespoke glazing piece was carefully cut out and affixed in place with Evo-stik contact adhesive.

WINDOW FITTING

Starting with the window frames, I feared if I glued around the edges however sparingly, some of the glue (whatever I decided on) would seep out onto the front and rear faces of them, causing all sorts of problems. Placing them in position, then securing them from the inside without glue sounded a better option. The ticket office window was trialled first. With the window placed in position, it was secured in place by adding small lengths of white 4mm x 2mm 30thou Plasticard strips, superglued onto the inside openings. Longer 23mm long strips were then glued along the bottom securing the bottom sash in place. Viewing in from the outside, these small securing strips cannot be seen at all, but they are visible looking out. To disguise them more, the plywood surround was given a coat of white paint. If in the future a window requires attention or the glazing replaced, the strips could easily be removed, and the window removed. The same procedure applied to the larger 'borrowed light' windows above each door.

DOOR FITTING

The glazing pieces were cut and fitted snugly in place in each door slot. The way the doors were designed and made, the above method of fixing could not be used. The only way to secure them in place was with very small dabs of superglue, strategically placed around the doors (not along the tops). It was inevitable some glue did seep out onto the inside face but a quick wipe cleaned the worst off and, when dry, the offending areas were given a coat of Revel 84 – Leather Brown.



The borrowed light windows above each door (both double and single) were done in the same way as the windows. With the surround being that much narrower, the cubes of Plastikard were significantly smaller, as shown. Again, the inner surrounds were painted white.

Because I was concerned about glue seeping onto the window panes, I decided not to glue them in at all and secured them in place with small lengths of scrap Plastikard. Since each is roughly 3mm long by 1mm wide, they cannot be seen at all from normal viewing angles. Along the bottom, a 1mm wide strip was glued in place (again hidden). The inner surround was then painted matt white. If any of the glazing comes adrift over time, the windows can easily be removed by prizing off the side pieces and simply removing the whole sash window.

POSTER BOARDS

Many years ago in 2008, I purchased two different styles of LB&SCR poster boards (Sheet KMB13 the other with no Ref No.) from Kirtley Model Buildings (www.kirtleymodels.co.uk) thinking they would come in handy one day. This day finally arrived when I wanted to decorate the building. I don't think now they are available ready printed. You have to go onto the website, request the sheets you require, then download the artwork (free of charge). Printing them off yourself on whatever medium you like.

The posters I chose were stuck (PVA wood glue) directly onto very thin plywood. After each one was cut out, the colour of the borders around each poster corresponded roughly to the buildings red, so each one was given a coat of paint. Not wanting to glue the posters in place, I have Blu-Tack'ed them on. Looking at the photos, the results are very impressive and bring the whole building to life.

You may have noticed the Summer Timetable posters on the entrance to the booking office. Operating the garden railway on nice hot summers' days, I thought they were appropriate. Mind you, I have had some pre-arranged running days cancelled due to bad weather, as some of you have experienced here.



LIGHTING

When the finished building was placed in position for a low-key garden railway running day and a photo opportunity, the inside of the rooms were virtually pitch black. All of my hard work on the inside walls could not be seen. Some form of lighting had to be incorporated into the rooms. I also thought that one day, if the garden railway was abandoned because of a house move, an indoor layout might come to fruition. So, as an experiment, I secured with Blu-Tack a spare grain of wheat bulb to the underside of the roof in the middle of the booking office and waiting room. It was temporarily wired up to a variable transformer and switched on. To my total surprise, this single bulb lit the whole room and looked very convincing. It was dimmed down to between 6 and 9 volts, which gave the light a warm orange gas-lit glow. With this success, I thought about the rest of the rooms (6 in all) including the two hang down lanterns underneath the canopy. Not having enough bulbs, I found suitable ones from www.nationallampsandcomponents.co.uk at a very reasonable price on the internet. Bare wired 12 volt bulbs (Ref:7219) measuring 6.35mm x 3.77mm were ordered and, although slightly over scale, I was happy with them.

I decided to wire the bulbs in parallel from the outset. For the contact strip, two 0.6mm n/s rods were secured over the top walls of each room. The bulbs could then be soldered on in any position I liked along them. The coal store has got the feed wires going down through the floor and platform to the transformer. I might add lighting in the Gents' urinal which is at present unlit. It does look a bit strange seeing it not lit, but I cannot find a way to feed the wires in from the Porters/lamp room end wall.

After the bulbs were soldered in place and switched on for the first time, every room was lit and looked great.

CANOPY LIGHTING

The real Fittleworth Station had just two hang-down lanterns. As Hangleton is an exact copy, it also should have two. Having some spare S&D MODELS (www.sanddmodels.co.uk) LB&SCR lantern tops (Ref:GL8), two were carefully made up as per instructions including the glazing.

Fitting the bulbs was going to be tricky. The only solution was to have a hollow base in which the whole bulb (with wires first of course) could pass through from underneath. The two wires would then pass through two pre-drilled holes in the top. One hole had a plastic sheath glued in, to stop any shorting.

Copying the lanterns at Sheffield Park station, the curved supports were formed from 0.7mm n/s rod with small 'L' angled ends. Two side holes were drilled out on the top of cover before soldering them in place. Both were then painted in building red.

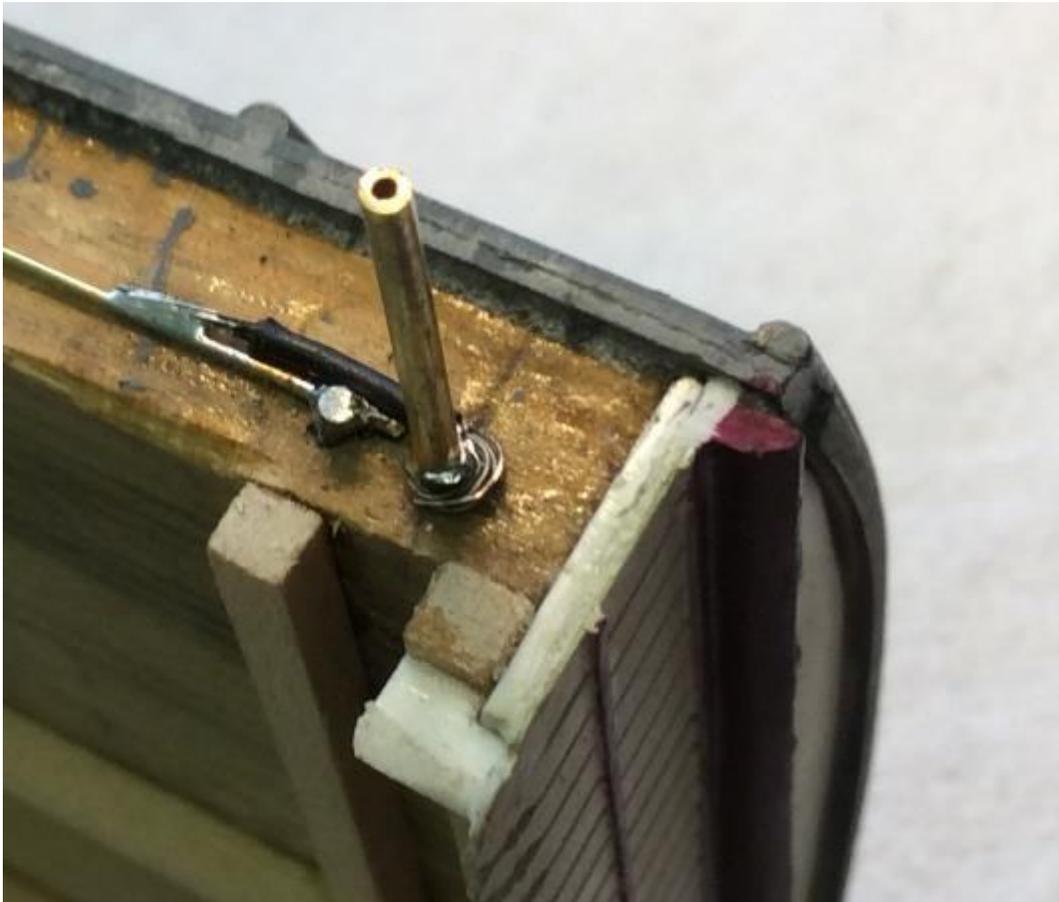
Looking once again at the real canopy, the position of the lanterns is virtually in-line with the two small vertical segments of downpipes on the front face of the awning. Their position is also conveniently in front of the two inner support columns. To me everything looked prototypical. To support the lanterns in place, two deep (5-7mm) holes were drilled out either side of the supporting beams underneath the canopy for the rods to slide into. Being over-long, the lantern is securely held in position without the use of any glue.

WIRING UP THE CANOPY

This took some thought. Because the canopy is not permanently attached to the building, it has to be positioned and removed quickly on a running day. I did not want to have any additional wires coming out from here there or everywhere, then have to connect them together every time. I came up with the idea that it could slide into position (via the two locating tubes protruding out from behind the canopy) directly into the building's front, which would somehow have the feed wires attached inside. This way the lanterns would light up automatically with no additional wiring when the canopy is placed in position.

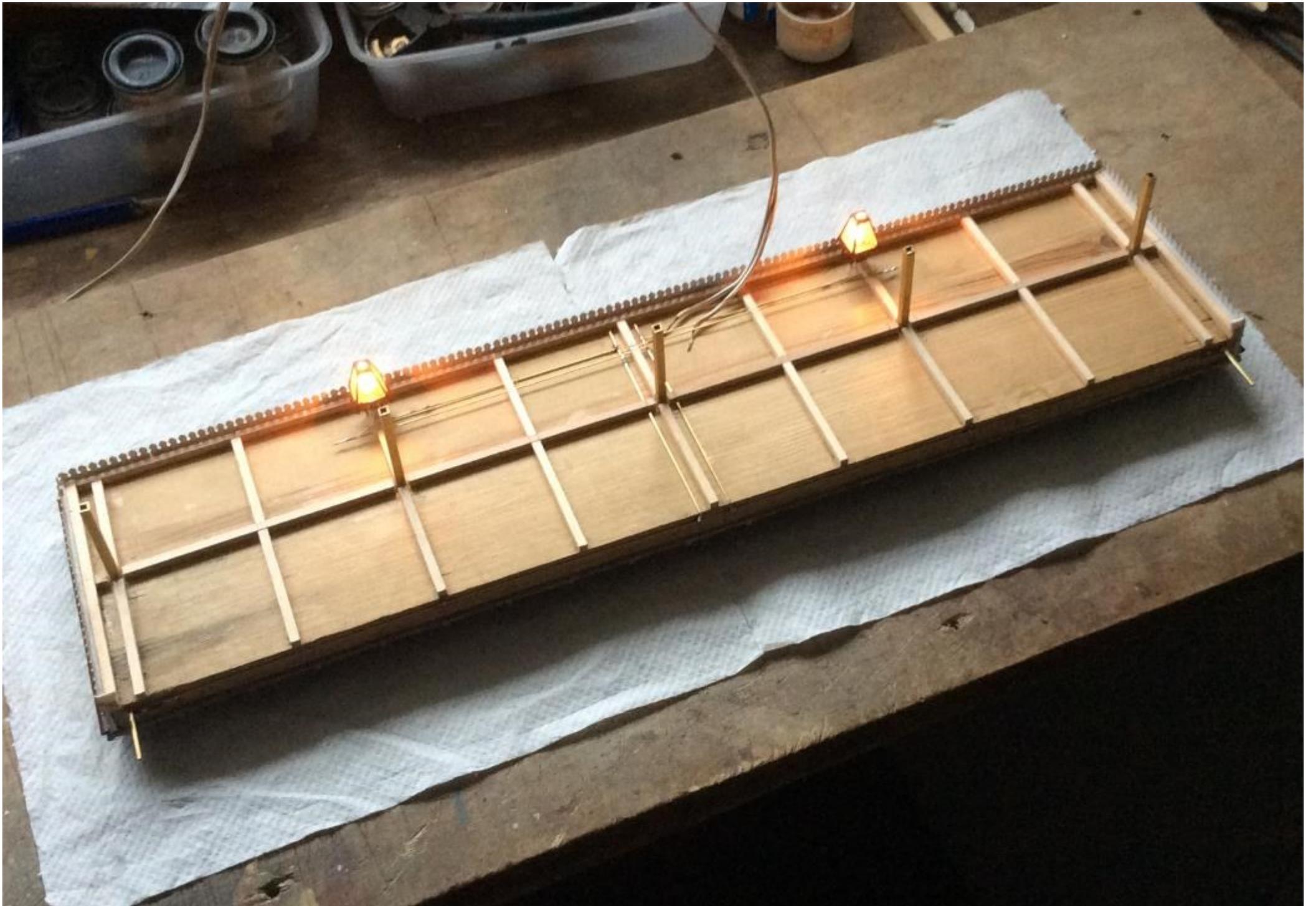
Knowing the idea would work (in theory), the two securing holes (on the building's front) were opened up slightly for the next telescopic tube up. Tubes were cut to 2cm lengths then had a copperclad square washer soldered to it. They were passed through the holes in the two outer rooms (the ticket office and porters/lamp room) then superglued in place. When dry, an outer washer (on the outside of the building) was soldered on. Any excess tubing was cut off, filed, and made good. The canopy slid in first time. Feed wires were then soldered on ready for the two contact strips.

When I constructed the canopy, I left a 1.5mm overhang of roof over the back edge of the wooden sub-base. Knowing there was enough clearance, 0.5mm brass rods were secured (via brass panel pins) on the rear of the canopy for the contact feeds. The ends of the feeds were then bent in various angles forming a lattice of rods eventually leading to the lanterns. The lanterns were reinstated with bulbs inserted. The ends of the bulbs were soldered to the feed rods. Temporarily wiring up, the bulbs lit up first time. Again they were dimmed down a bit to an orange glow for a perfectly lit up canopy.



There is a lattice of brass rod runs, to which the two lanterns feed wires are soldered. The rods then run along the back of the canopy towards the two brass tubes located on the ends. These tubes locate into the front of the building for alignment and electrical supply.







BESPOKE HANGLETON STATION LANTERN TRANSFERS

During the construction of the building, I was approached by John Ritter in Australia to make nine S&D Models LB&SCR station platform lamps for his Scale 7 LB&SCR Hadlow Cross model railway. It wasn't until the lamps were nearly finished that the question of etched station names on the front of the lanterns glass was discussed. Bespoke Hadlow Cross transfers would have to be produced for them, which he agreed would be a nice feature. I would eventually want some anyway for my Hangleton station. Ian MacCormac (ianmaccormac@hotmail.com) of EB Models was approached, knowing that he produced the transfers for my 7mm LB&SCR travelling hand crane. The size and shape of the lantern was measured and submitted to Ian. John suggested clear letters on a blue surround thinking the letters would show up better. Remember, these letters are just over 1mm high even in 7mm. Trial samples were subsequently sent to me and tried out on John's models first. To my amazement, the letters are legible from a few feet away. After some final tweaks (enlargement) with a re print, the actual transfers were applied to the glass lanterns and look splendid. I did apply a gloss varnish over the top of them just to protect them. Having proved successful, the Hangleton transfers were applied to the two previously fitted hang-down lanterns underneath the canopy. Once lit up, the light shines through the clear letters as per the actual glass and the lettering is still legible.

FINAL TOUCHES

When the canopy and roof were placed in position, I noticed a small gap of wood showing in between the canopy and bottom of the tiled roof. To hide the gap, the offending area was given a coat of Humbrol Matt Black No.33. At the same time, the valley of the guttering was also given a coat of Matt Black. The door thresholds have been given a coat of Humbrol 64 (Light Grey). I think this shade is a bit too light and maybe needs to be changed.



This, then, concludes the construction of Hangleton station building.

So what's next? The signal box is the next logical building to construct for Hangleton, followed by the small goods lock-up, the cattle pen and the diminutive shunting signalbox (based on the one at Portslade that controlled movement into the RONUK factory). I prepared the drawings for all these many years ago, so watch this space.

Photographs copyright Colin Paul

[Return to contents page](#)

Starting from Scratch

Part 4 - Drills and Drilling

By Terry Bendall

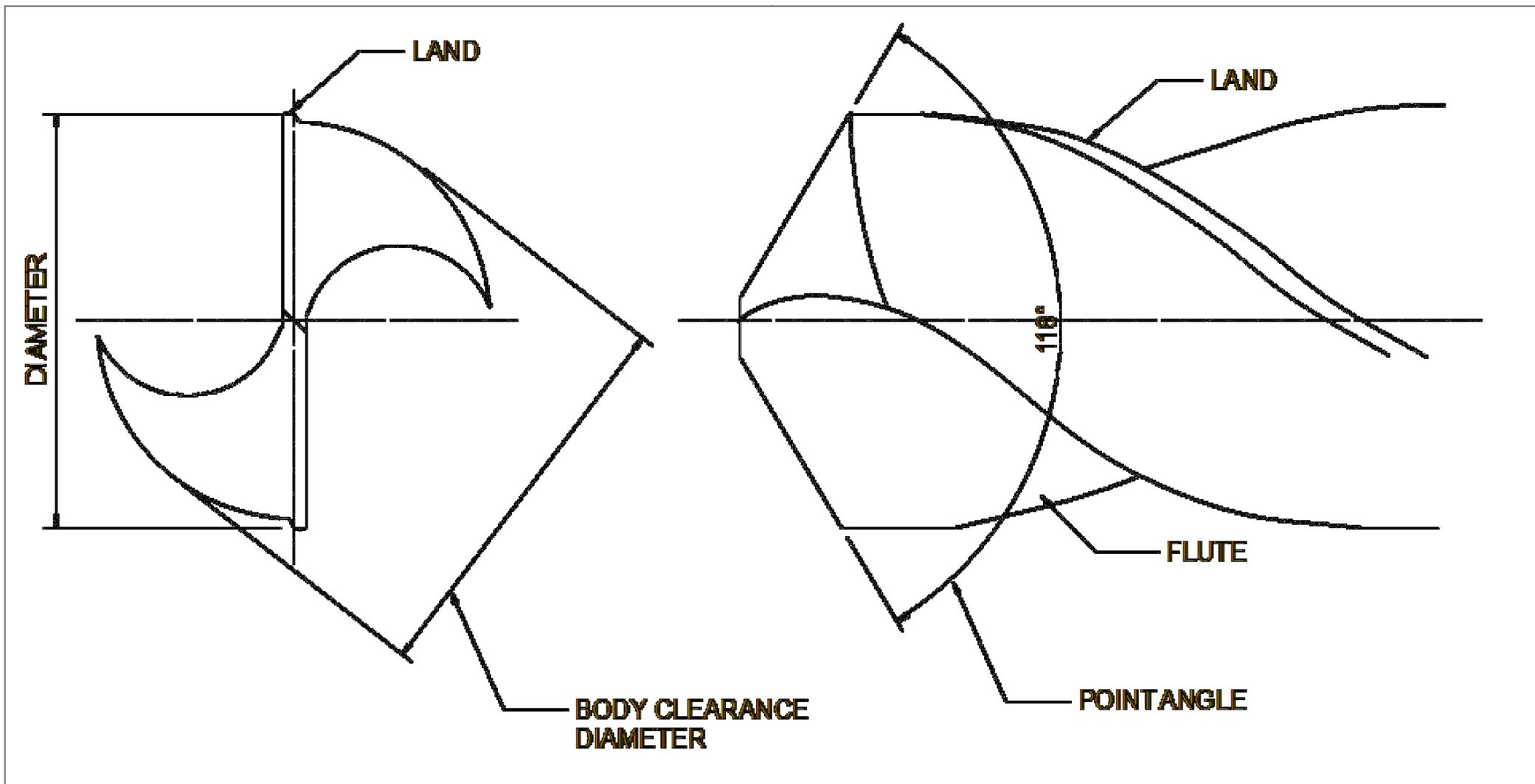
The making of a hole in wood, metal or plastics is something that is likely to be required frequently in our model making. This part of the series will look at the different types of drill bit that are available and how they can be used.

The most common method of making holes is to use a twist drill, sometimes called a jobber's twist drill. The term "jobber" comes from the period about 1850 – 1950 when a "jobber" was defined as a person or company that bought from a manufacturer and sold to a retailer. The term is now used to refer to a twist drill that has a length between 8 – 12 times, compared to the diameter. Picture 92 shows a photo of the end of a new 12mm diameter drill whilst picture 93 is a drawing of a twist drill and shows the names of some of the parts.

Picture 92 - End of a 12mm diameter twist drill



Picture 93 Parts of a twist drill

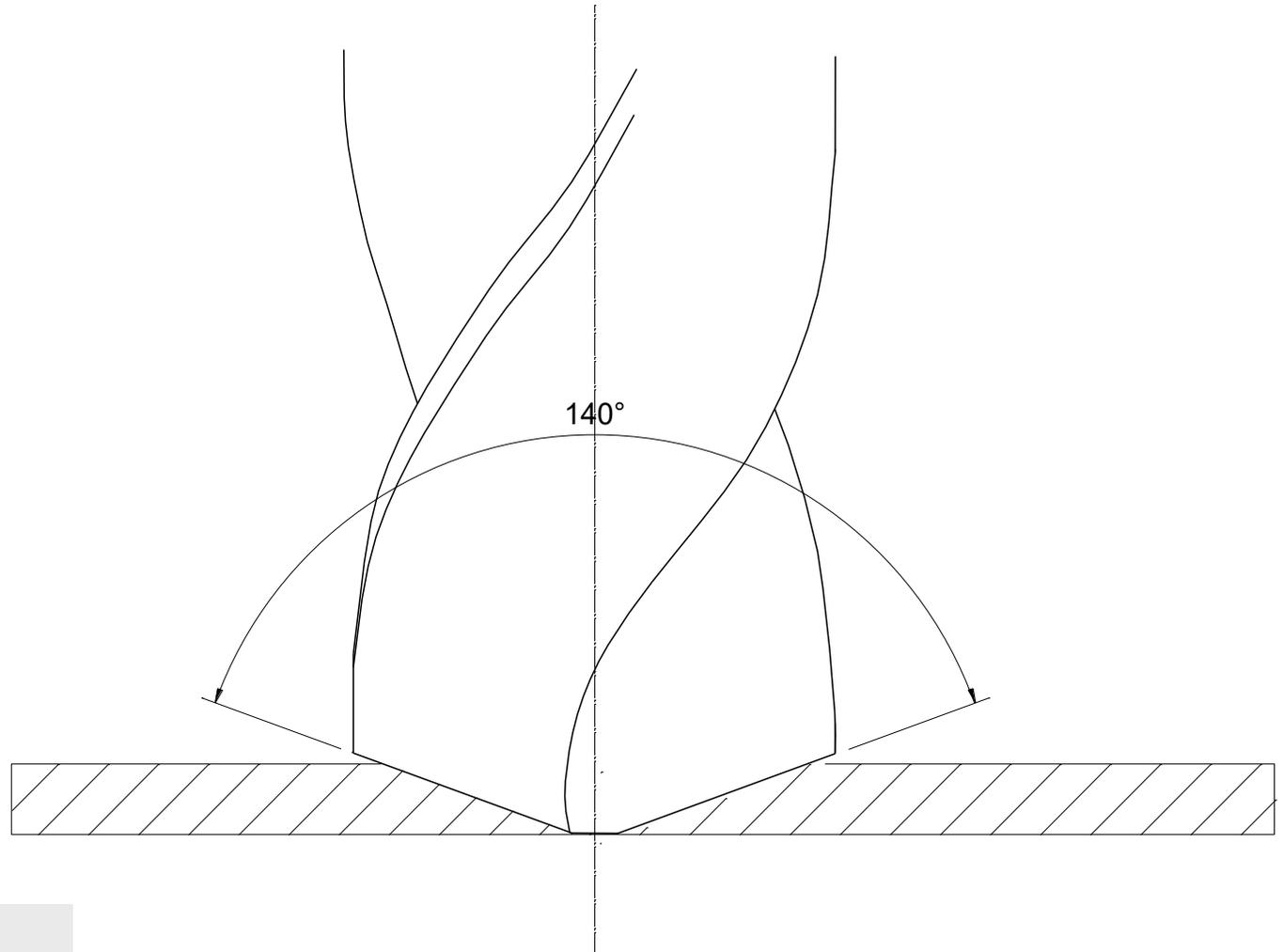


One of the important things to note from the drawing is the land of the drill. This provides the clearance for the drill as it makes the hole, and the diameter across the lands is the only place on the drill that is the full diameter. The point angle is also important and for general use this should be 118 degrees. Picture 93 shows how the end of the drill slopes away from the cutting edge which gives clearance during the cutting process. The flutes slope back from the cutting edge as well and this is known as the rake angle. In order to give effective performance the point angle should be symmetrical and the correct shape. This is not very easy to achieve but the use of a jig to hold the drill when sharpening will help. Picture 94 shows a twist drill grinding jig, with the hole that allows it to be fixed to a bench alongside a bench grinding machine, using a suitable mounting bracket. However using this device is an acquired skill.



Picture 94 Twist drill grinding jig

Although the standard point angle will cope with most jobs that we are likely to do, a shallow point angle, usually around 140 degrees, as shown in picture 95, is useful when drilling holes in thin sheet material. When this is being done, the point on a standard drill will often break through the metal before the main body of the drill is supported by the metal and will often result in a hole that is not perfectly round. One way to avoid this is to clamp the metal firmly whilst the hole is being drilled and support it on a piece of scrap wood.



Picture 95 Shallow angle

For most of what we do in railway modelling, a drill is unlikely to get blunt very easily or become damaged. It is however possible to cause damage to a drill in larger scale work or when trying to drill hard materials and picture 96 shows a 12mm drill where the land has been worn away in such a situation.

A more common problem is a drill breaking, especially in the smaller sizes, such as 2mm diameter and below. Drills of this size are too small to be held in a grinding jig so if they are to be sharpened it has to be done free-hand, which is not easy, not just to get the correct angle and shape of the end but also to see what you are doing. In such situations I can usually produce something that will cut but it may not work very well, so sometimes it is better to throw the broken drill away and buy a new one. In the very small sizes, below 0.5mm diameter, I can sometimes sharpen a broken drill using a small oilstone but it is more by luck than anything else.



Picture 96 Damaged land on a drill

Before a hole is drilled in metal, its position needs to be marked and this was covered in part one of this series and so does not need to be repeated. A type of drill that is useful to assist in getting the hole in the correct place is the centre drill shown in picture 97. Normally this is used when drilling a hole in the lathe but it can be helpful in a drilling machine at times since the design makes it less likely to “wander” from the correct position. Picture 97 also shows a countersink bit used to make a countersunk hole for screws. This particular one is 8mm diameter and is made from high speed steel.

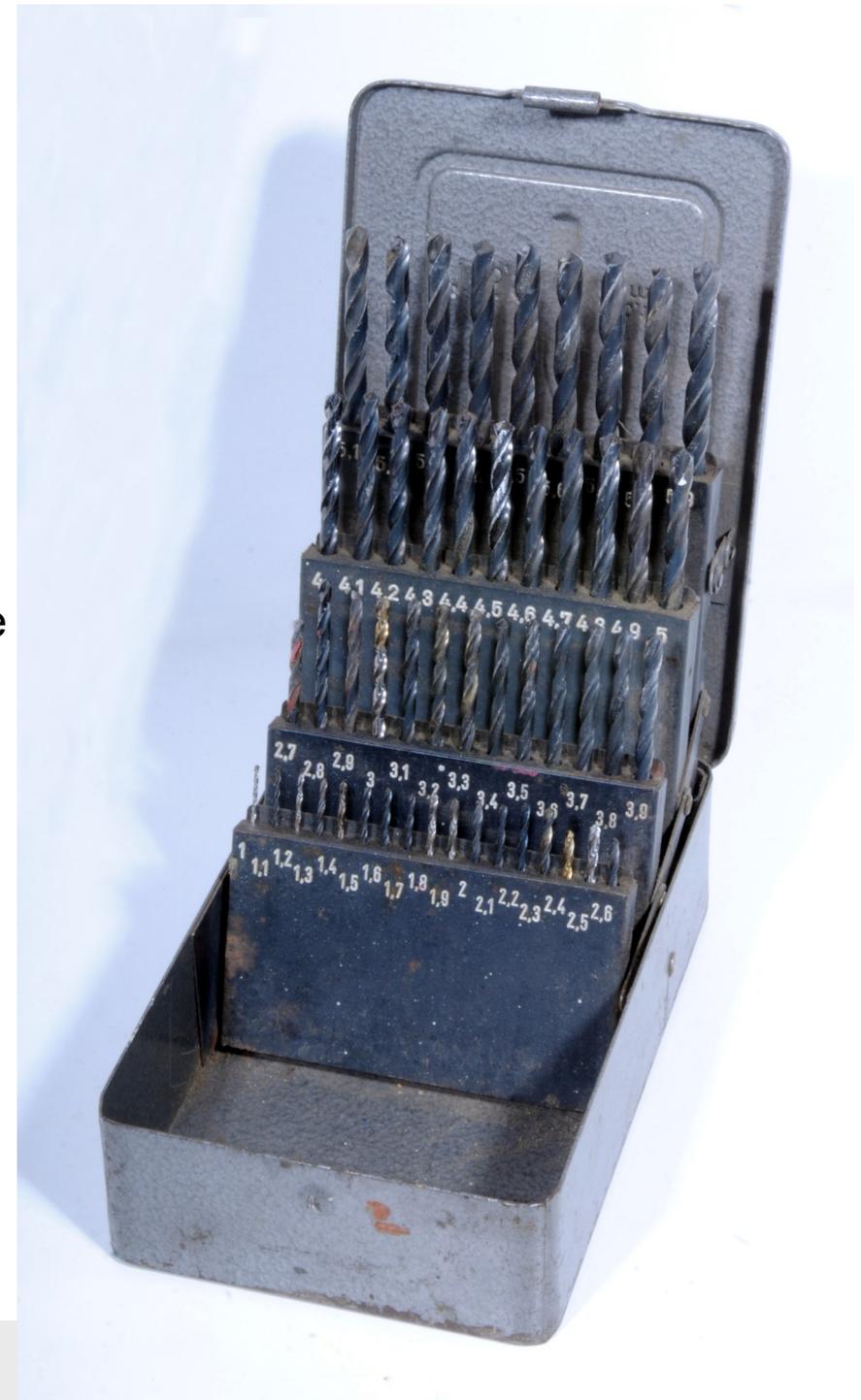


Mention of this metal is a convenient place to point out that, just as with taps, drill bits are available in carbon steel and high speed steel and, as mentioned about taps, the carbon steel types are cheaper but will not last as long. I use the same idea with drill bits as with taps and buy carbon steel drills for the smaller sizes and high speed steel for the larger ones. Cobalt twist drills are a more recent development and are generally reckoned to be longer lasting than high speed steel.

Picture 97 Centre drill (top) and countersink bit (bottom)

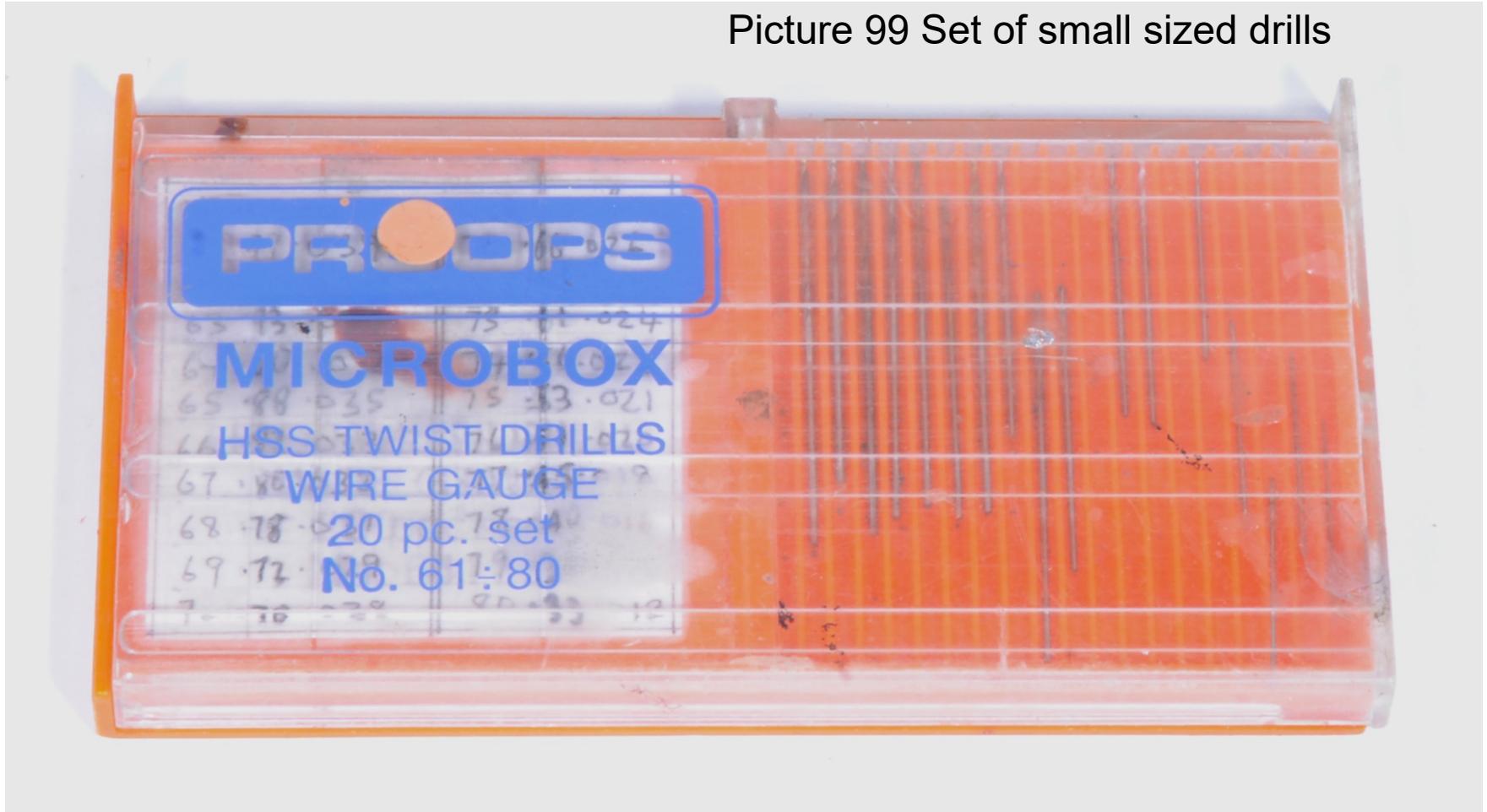
Most of us will use metric size drills since these are the ones most generally available but drills are also available in fractional and number sizes and at one time, but now less common, in letter sizes. The number sized drills are based on a system of wire gauge sizes and these, together with the letter range of sizes, were intended to give a range of drills which were closer to the desired tapping and clearance drills than were possible with fractional sizes in steps of $1/64^{\text{th}}$ of an inch. However, metric sized drills are easily available in steps of 0.1 mm and, in some cases, 0.05mm, so the number and letter ranges are now largely superseded.

One of my luxuries is a set of drill bits from 1 mm to 5.9mm in steps of 0.1mm as shown in picture 98. I invested in this about 40 years ago and most of the drills in the box are the originals. Back then such things were a lot cheaper but such sets are now a significant price and may be suitable for a present.



Picture 98 Set of drills

This sort of set is by no means an essential item and some of the larger sizes are rarely used but it can be quite useful to have drills available in steps of 0.1mm especially in the smaller sizes. As an alternative to buying a full set in one go, finding a piece of wood or metal such as aluminium and using it to make a rack for the drills and buying as needed is a cheaper way forward. The tool stands at model engineering exhibitions will sometimes have empty boxes or stands for drills that can be used as the basis of a collection or even secondhand sets even though some of the drills may be missing. Something that is more affordable is a set of very small drills from 0.3mm to 1.0mm shown in picture 99 and I find these very useful to have available. For both sets, the usual tool suppliers can supply replacements when needed.



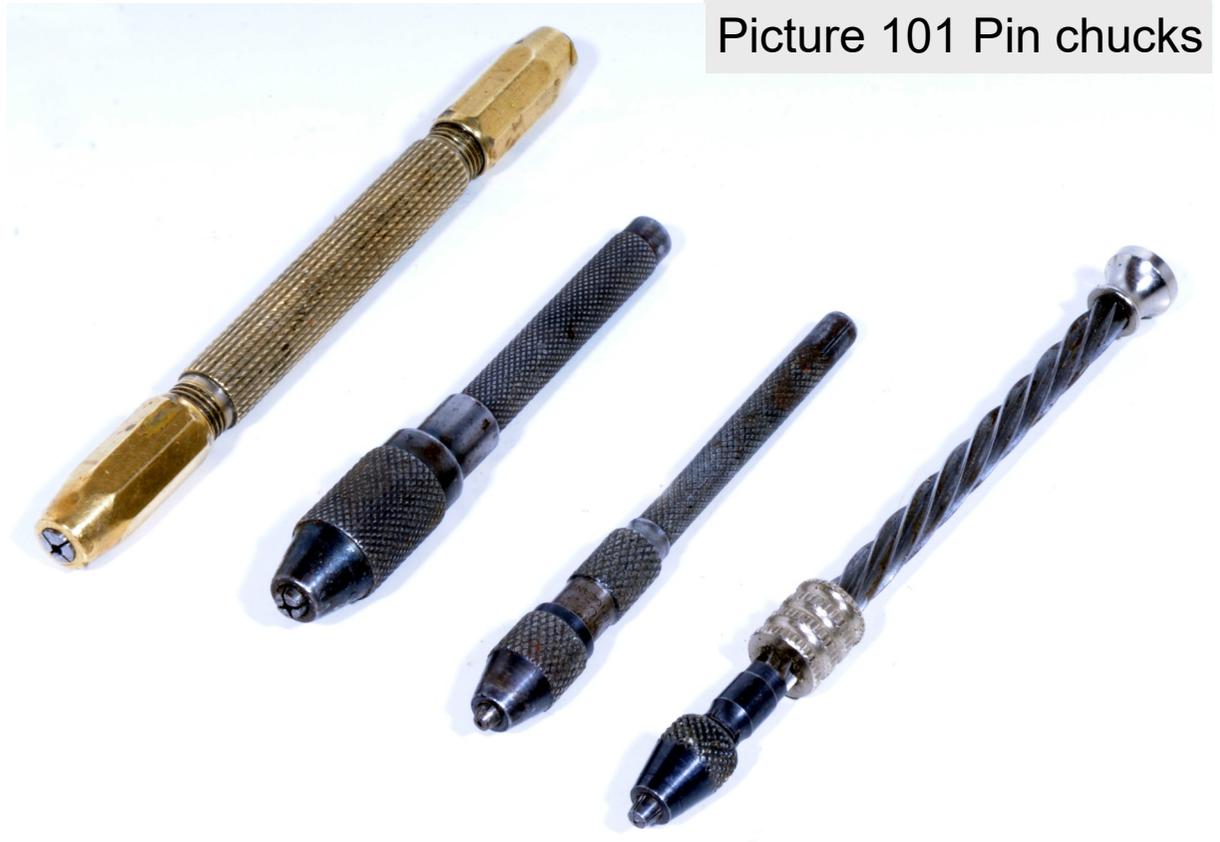
Picture 99 Set of small sized drills

We do of course need something to hold the drill in order to enable it to be turned to make the hole. The humble hand drill shown in picture 100 still has some advantages especially with drills less than 4mm diameter and is a tool that I will often use even with drills down to about 1mm diameter, especially when drilling holes in wood or plastics. For smaller sized drills, some sort of pin chuck or pin vice will be needed and picture 101 shows the range that I have. The chuck of these tools will wear after a time and I find they will no longer grip the very small sizes of drill – below 0.5mm so I keep the Archimedean one on the right for drills of this size. I find this particular type works best if I just rotate it in one direction rather than using the oscillating motion.

When drilling holes in metal, using a pin chuck for the larger sizes of drill can make things hard going, so a small hand-held low voltage power drill can be a useful addition. I have a very old and battered one which I use where great



Picture 100 Hand drill
Picture 101 Pin chucks



precision is not needed and a better quality one which is more powerful and which is used where greater accuracy is needed. A variable speed control is useful and can be bought with the tool – another useful present request!

There will be times when the hole being made needs to be exactly perpendicular to the surface of the material being used and in such circumstances some sort of precision drilling machine is needed. There is a wide range of these available, with an equally wide range of prices and whilst the cost is significant, they are a worthwhile investment. Picture 102 shows my version which also doubles up as a vertical milling machine for light work. This machine is actually an assembly of several items bought as funds permitted. I started with the machine head which is a Unimat milling head and later added the motor. This was originally used on my lathe but at an exhibition I found the X –Y table so this formed the basis of a small vertical mill/drill. The digital read-out was a later addition. This machine is my main choice when



Picture 102 Small mill/drill

drilling and serves for what I need. A basic small drilling machine would be suitable for what most people require, although those who work in the larger scales may find a use for a bench drilling machine with a 13mm capacity chuck. When drilling through flat sheet support the material on a piece of scrap wood which will prevent damage to the table of the machine.

One problem with a drilling machine is that the chuck may not close down small enough to grip very small drills. This may mean that a pin chuck has to be used although, if a lot of holes have to be made, this can be a bit tedious. One solution is shown in picture 103 which is standard pin chuck shortened and the end turned down on a lathe to fit into the drill chuck. I did this originally to hold very small drills – under 0.7mm, in the tailstock chuck of the lathe but have also used it in the drill/mill. Obviously great care has to be taken but I have successfully drilled 0.3mm diameter holes using this chuck in the machine shown.

Small parts need holding firmly when drilling and picture 102 shows the machine with a small machine vice fixed to the table. This is used for small chunky items where the torque of the drill may snatch the part out of the hand. Some machine vices have a vee groove in the jaws or possible in one of the two, usually both horizontally or vertically and these are a very useful aid in drilling holes in round bars.



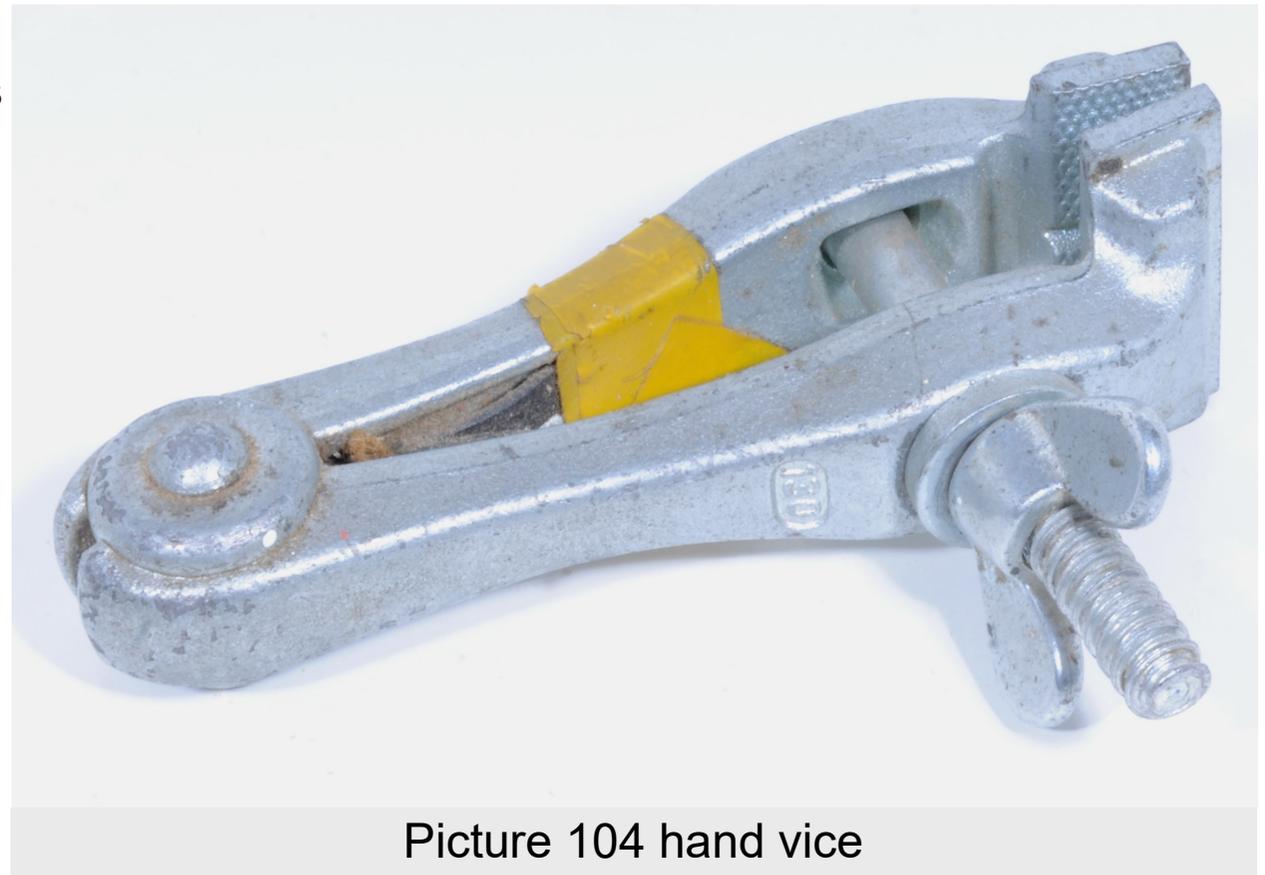
Picture 103 Modified pin chuck

Drilling a hole across the diameter of a round bar or tube needs care since it is very easy for the drill to wander so the hole is no longer diametrically across the bar. This is a situation where a centre drill is very useful to get the hole started in the required position and a machine vice also assists in this process.

Sheet material is a little difficult to hold and picture 104 shows a hand vice which is designed to hold thin sheet. The one shown is about 130mm long, so a bit big for much of what we do, but other sizes are available from specialist suppliers. Even a small

machine is powerful enough to snatch at the part being drilled and can result in a nasty cut to the hand, so be careful. The greatest risk is caused as the drill breaks through the material which is when snatching occurs, so the pressure on the feed lever needs to be reduced at this point.

Another potential source of harm is the machine vice itself. For holes that are less than 5mm in diameter, it is normally possible to held the vice in one hand, whilst using the other to feed the drill into the work but above this size there is a risk of the drill snatching at the material as it breaks through, which can have sufficient force to snatch the vice out of the hand. This will result in the vice and work spinning around with the drill until the drill itself breaks, so the solution is to bolt the vice to the table of the machine.



Picture 104 hand vice

Whilst on the subject of safety, take care to avoid the swarf that is produced, especially in materials such as brass which produces small chips. The swarf from drilling steel has sharp edges and if large enough can cause a nasty cut. Some machines are supplied with a guard for the chuck. It is intended for that purpose – to guard the chuck to prevent entanglement but may extend to cover the drill bit. However, the main protection against flying particles is some sort of eye protection. It should be noted that the lenses of standard spectacles are not normally designed to withstand impact and, where this is a risk, proper prescription safety spectacles should be used. Head band magnifiers are also not designed to withstand impact but these may cope with the small scale of what we normally do. The message is to think about what you are doing and take proper precautions.

If a machine is being used to drill holes, some thought has to be given to the rotational speed and the rate of feeding the drill into the work. The rate of cutting for a particular metal is given in feet (or metres) per minute and it is possible to calculate the speed from this or alternatively look up a reference table. In practice, for much of what the model maker will need to do, such things are not required. As a general rule of thumb, the smaller the diameter of the drill, then the greater the speed of rotation, although for holes under about 3mm diameter the same speed will do for almost all jobs. The rate of feed into the work can also be calculated but this can generally be judged from experience. If the feed rate is too slow the drill will rub rather than cut and if it is too fast then the swarf will clog up the flutes of the drill and it may break. As with many other jobs, experience is a great teacher.

When drilling holes in wood, the speed can generally be increased but when working with plastics it is often an advantage to reduce the speed, since the heat created by the friction of cutting can cause the swarf to bind together. Drilling holes in the harder plastics, such as acrylic, can cause the drill to snatch and to prevent this, modifying the end of the drill to reduce the rake angle, as shown in picture 105, will considerably reduce this risk.

A further point to consider when drilling with a machine is the lubrication of the cutting edge. As a general rule, brass and nickel silver do not require any lubrication but if extensive work in

aluminium and its alloys is being done, then paraffin can be used, although I tend to work these metals dry. If drilling holes in steel then the best lubricant is soluble oil. This lubricant can be bought from model engineering suppliers and is normally supplied in neat form to be mixed with water, generally in the proportions of one part oil to five parts water, so a small amount will last a long time. Ordinary lubricating oil can be used as a short term substitute if drilling steel, but is not ideal.



Picture 105 Modified rake angle

Michael de Jong Smith

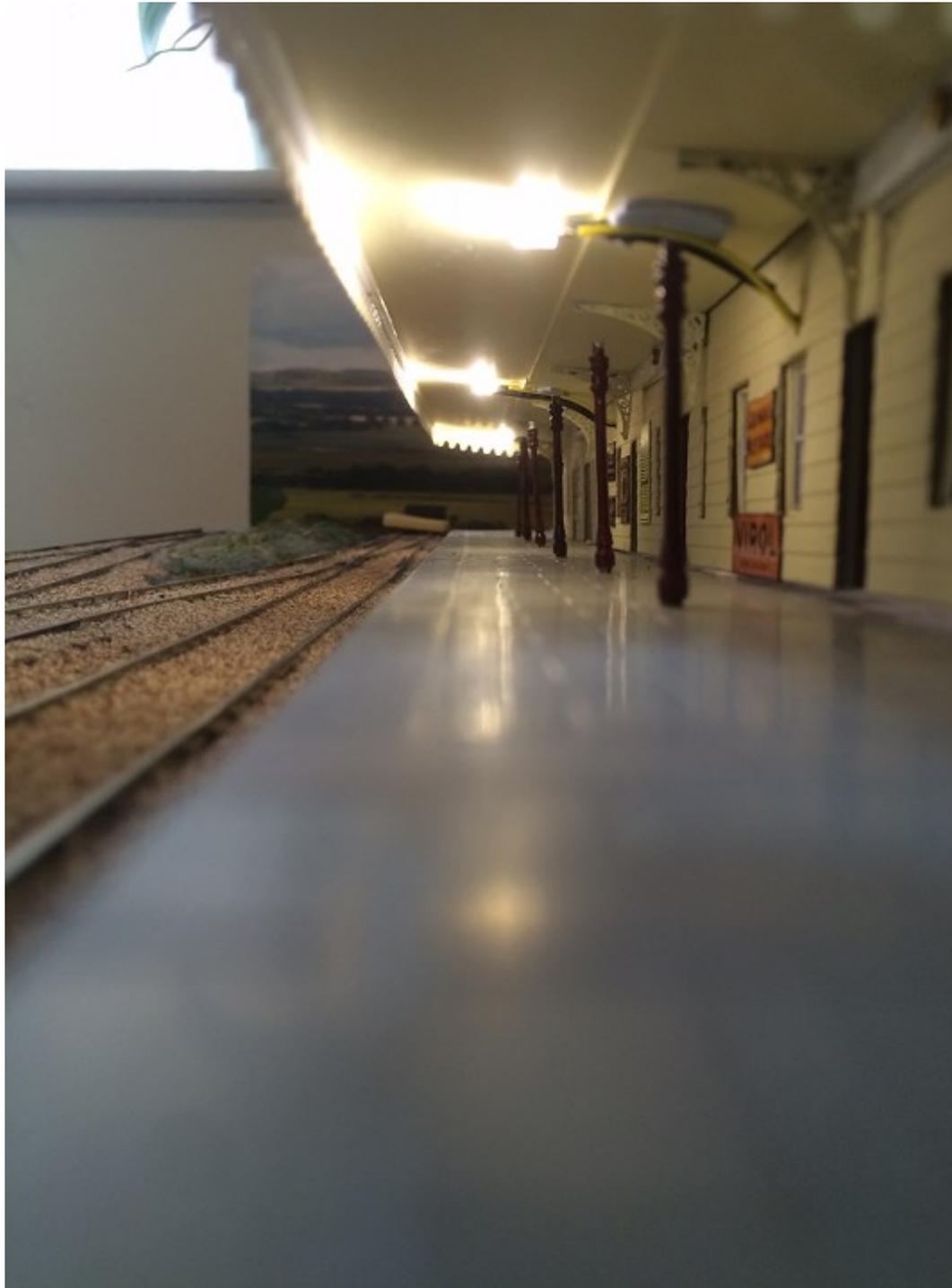
Michael de Jong Smith, who was a long standing Brighton modeller and contributor to the Digest, sadly passed away in June this year.

His EM gauge model of Midhurst was a replica of the 1866 LBSCR station, with locos and stock appropriate to the period before 1900.

The following photographs have appeared previously in the Digest but serve to show the quality and interest of his work.



















Photographs copyright Michael de Jong Smith

[Return to contents page](#)

LB&SCR Overhead Electrification

Equipment in 4mm scale by Medyka Bahn

A Review by Edward Hart

[Medyka Bahn Models](#) is a small Polish firm, which has specialised in providing components for modelling railway overhead electrification systems. As part of its range, it has introduced a selection of kits intended to reproduce the LB&SCR's overhead electrification in 4mm scale. They have provided for both the original gantry type used for the South London line, as well as the later versions used for the extension of the system to Crystal Place, Coulsdon and Sutton. The latter style replaced the earlier lattice structure gantries with the simpler 'N' formation, as this was considered to provide less obstruction to the sighting of signals. The prototypes were constructed mainly from fabricated steel sections, which are reproduced as plastic mouldings.

The components supplied in the kits include mouldings for the 'A' frames, used to support the gantries, as well as the trunnion and insulator assemblies, which were normally mounted on the top beam of the gantry. These supported the catenary wires, which thus passed over the gantries. The catenary wires supported and supplied power to the tractor (pickup) wire by droppers at 10 feet intervals. The trunnions were mounted each side of the centreline of the track, which usefully served to reduce the effects of the moist, sooty, sulphurous fumes from steam locomotives on both the wires and insulators. The insulators were designed so that they were held in compression and, in addition, a system of double insulation was used. The company, being a UK pioneer in this form of traction, was very concerned with the safety of its system. Contact with a wire supplied at 6,600 volts ac was clearly more of a hazard, compared with that of a standard

tramway system powered at up to 600 volts dc. The kits also include mouldings for the bases of the 'A' frames, enabling them to be secured to a baseboard.



Wandsworth Road. Part of the original installation on the South London line.



Tulsa Hill showing the later type of installation during SR days.
This and previous photo copyright Lens of Sutton Association.

Diagram from a paper by Philip Dawson reproduced in 'Railway Mechanical Engineering, Vol.2'

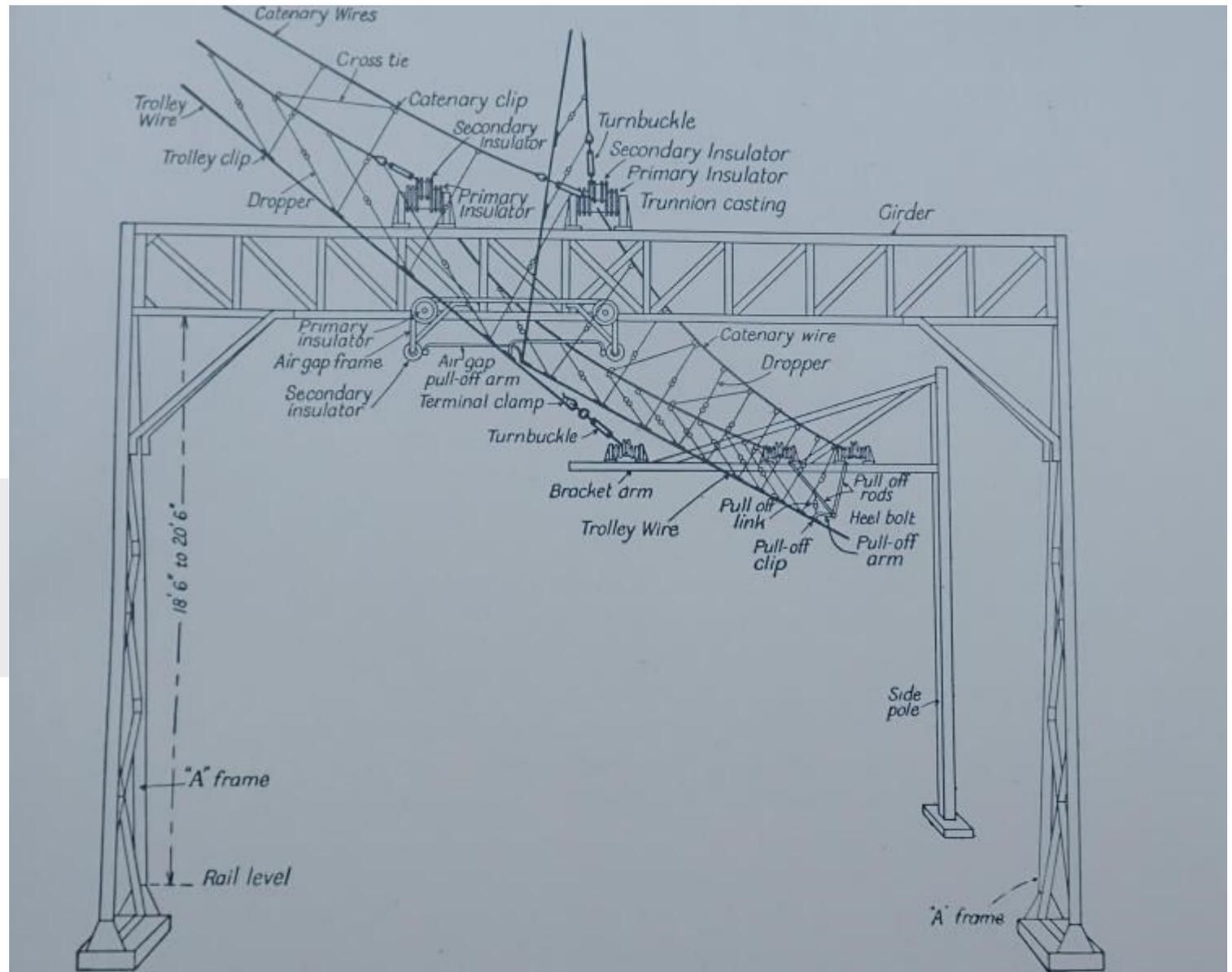
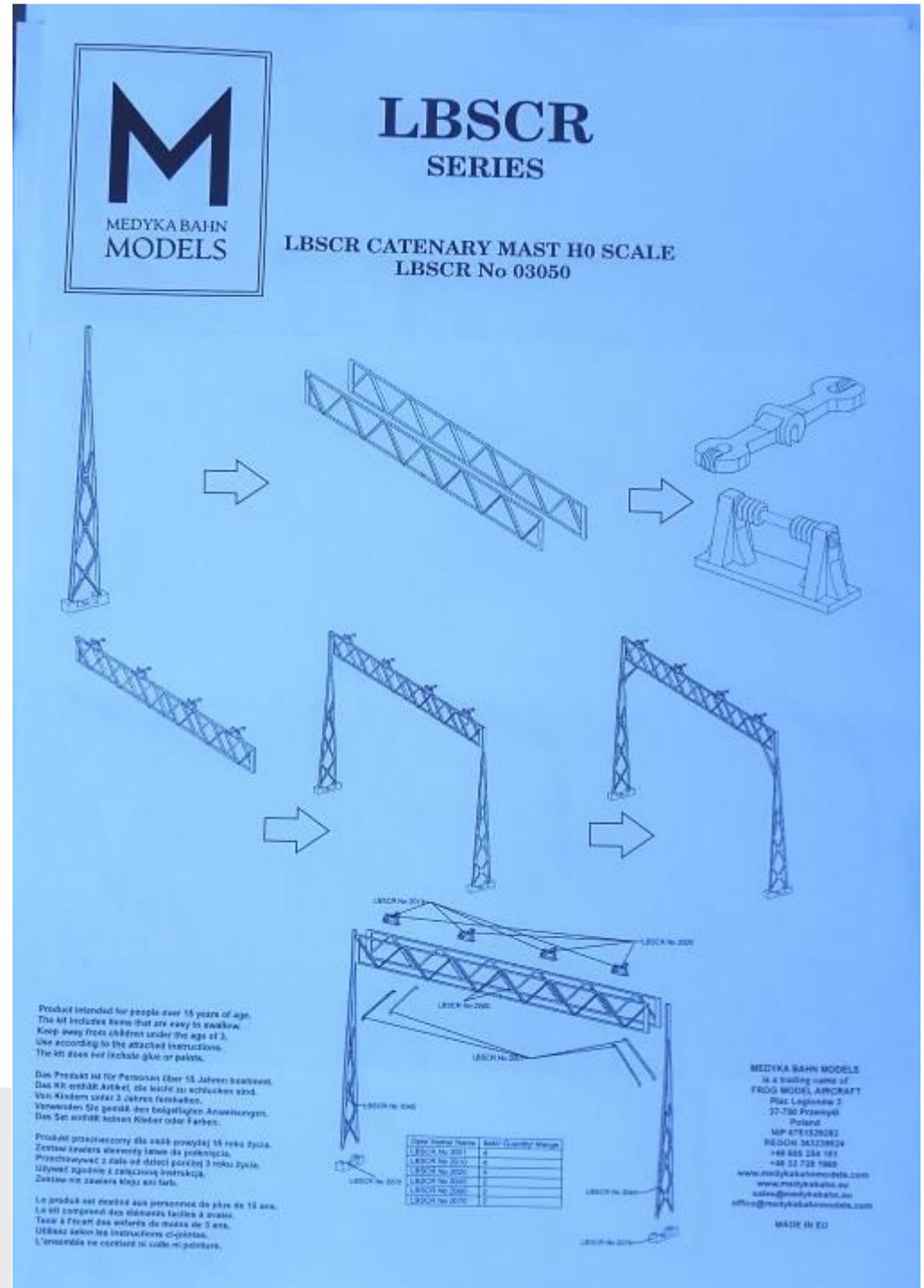


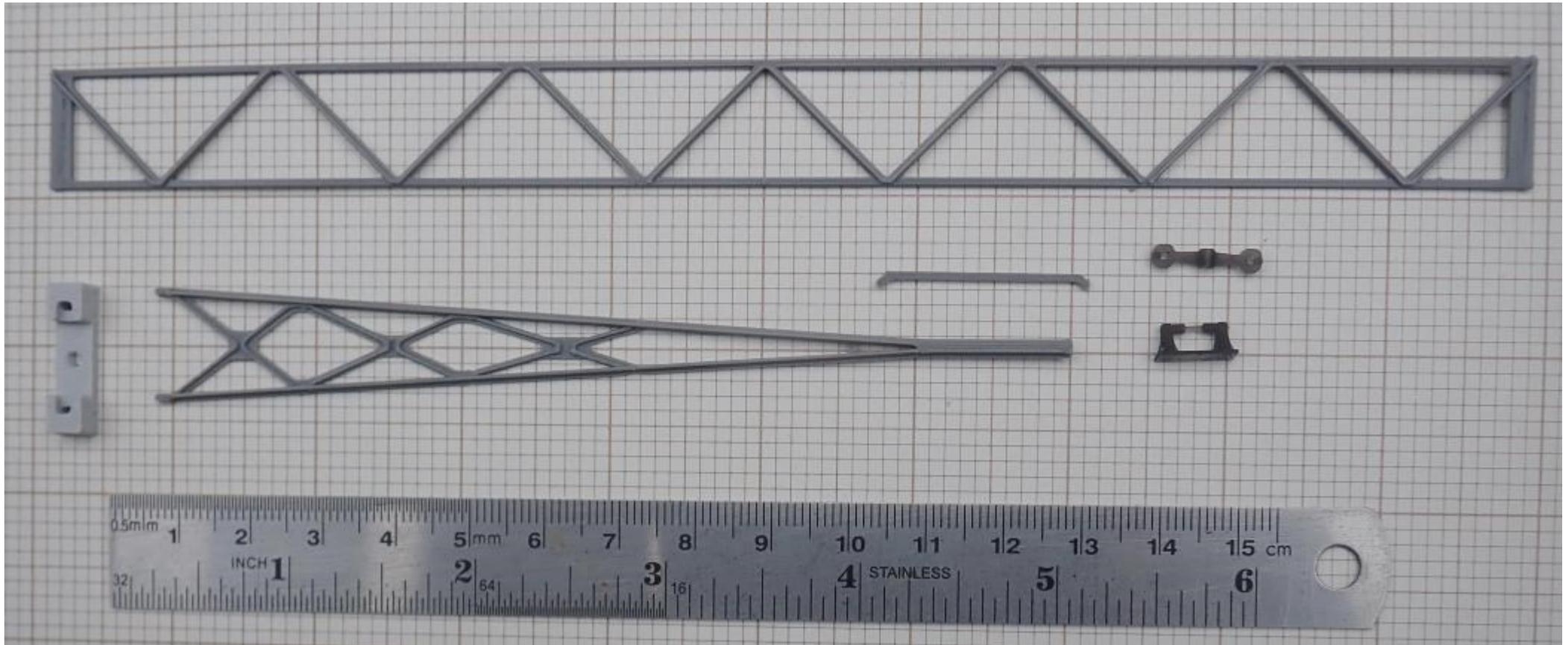
Fig. 52.—Overhead Equipment, London, Brighton, and South Coast Railway

Names of parts: Distance between standards, 50 ft. to 210 ft. Distance between trunnions, 2 ft. 6 in. to 7 ft. Distance between droppers, 10 ft. Size of trolley wire, 7 ft. S.W.G. Size of catenary wire, galvanized steel 12/13 S.W.G. Size of dropper wire, galvanized steel 6 S.W.G. Strain on trolley wire, 18 cwt. at 60° F. Breaking strain of trolley wire, 22 tons. Elastic limit of trolley wire, 19 tons. Weight per yard of trolley wire, 2.26 lb. Stagger of trolley wire, 9 in. from centre (existing). Stagger of trolley wire, 12 in. from centre (proposed). Size of pull-off rods, $\frac{3}{4}$ -in. steam tube.

The actual installations varied considerably depending on the site. There were many adaptations, including those needed to enable the trolley and catenary wires to pass under low bridges and to provide gantry supports where space was limited. The modeller will need to consult photographs to provide for a particular installation. Two good sources for these are the books 'London's Elevated Electric Railway' by Geoff Goslin and 'The LBSCR Elevated Electrification' by Stephen Grant, but unfortunately neither seems to be in print at the moment.

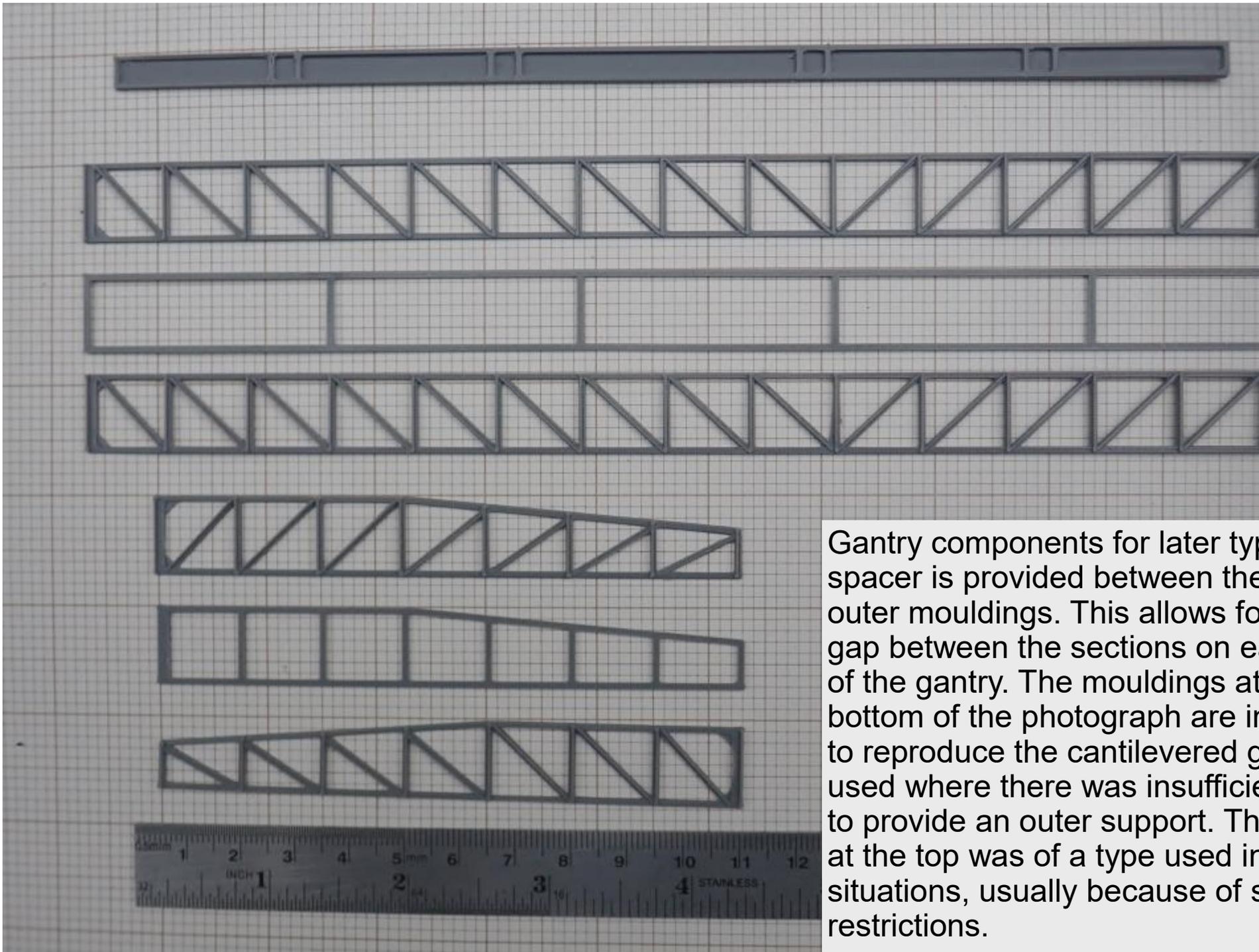
Instruction sheet supplied with the kit for the South London line components. Anyone familiar with IKEA instructions will have no problem with these!



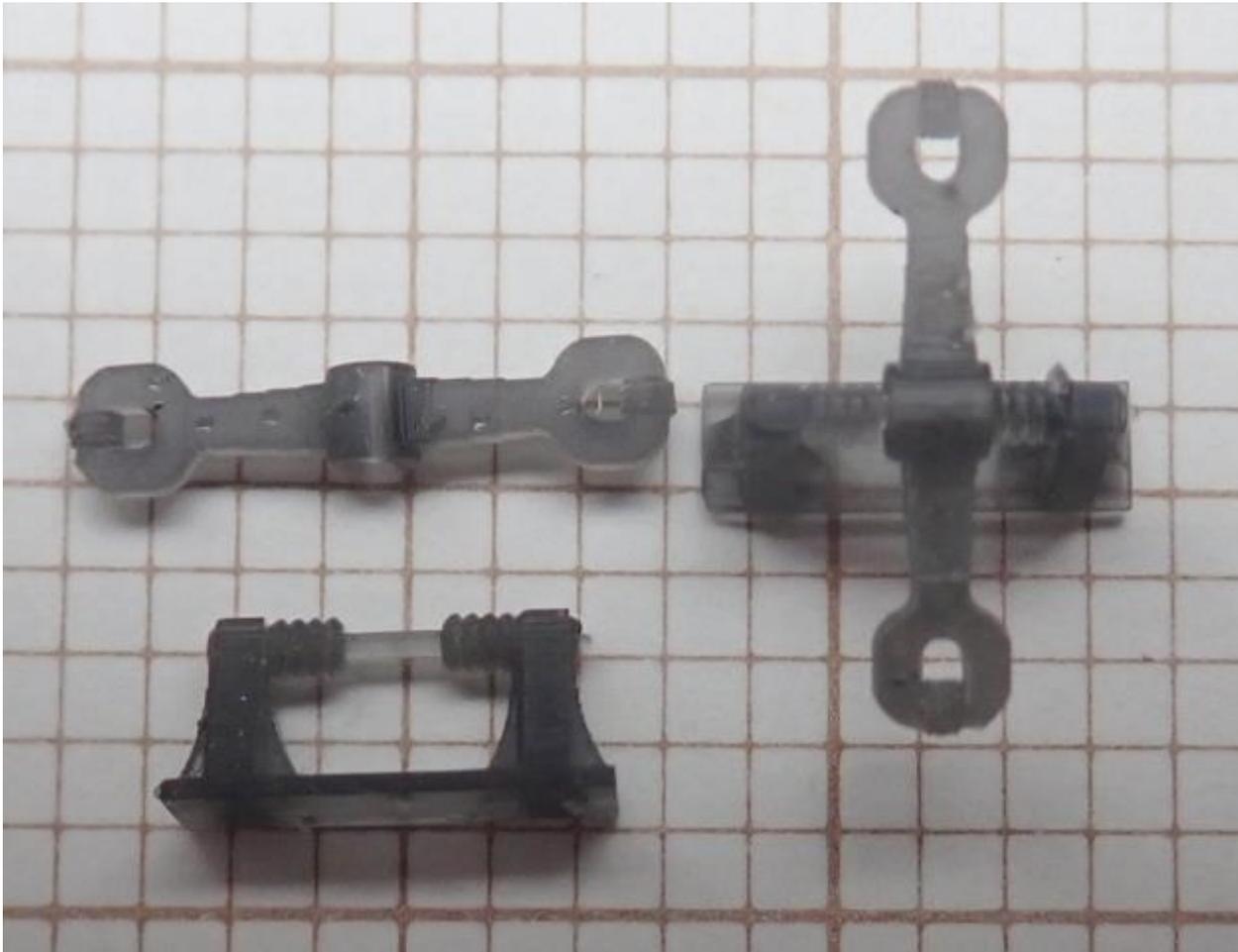


Components supplied for the early type of gantry. Two single-sided mouldings are glued together to form the gantry.

The mouldings lend themselves to modification. The gantry lengths are generous and will need to be shortened where the gantry just spans a pair of tracks, with side support adjacent to the tracks. Longer gantries are required where the 'A' frames are at the back of station platforms or where junctions require a greater span. There is also a representation of the girder type, used for example at West Norwood junction, where the wires had to pass under a bridge which carried a road junction that particularly restricted the site. The moulding supplied scales at 50 feet long, so provides a generous margin for trimming as, in this case, the prototype length was about 30 feet.

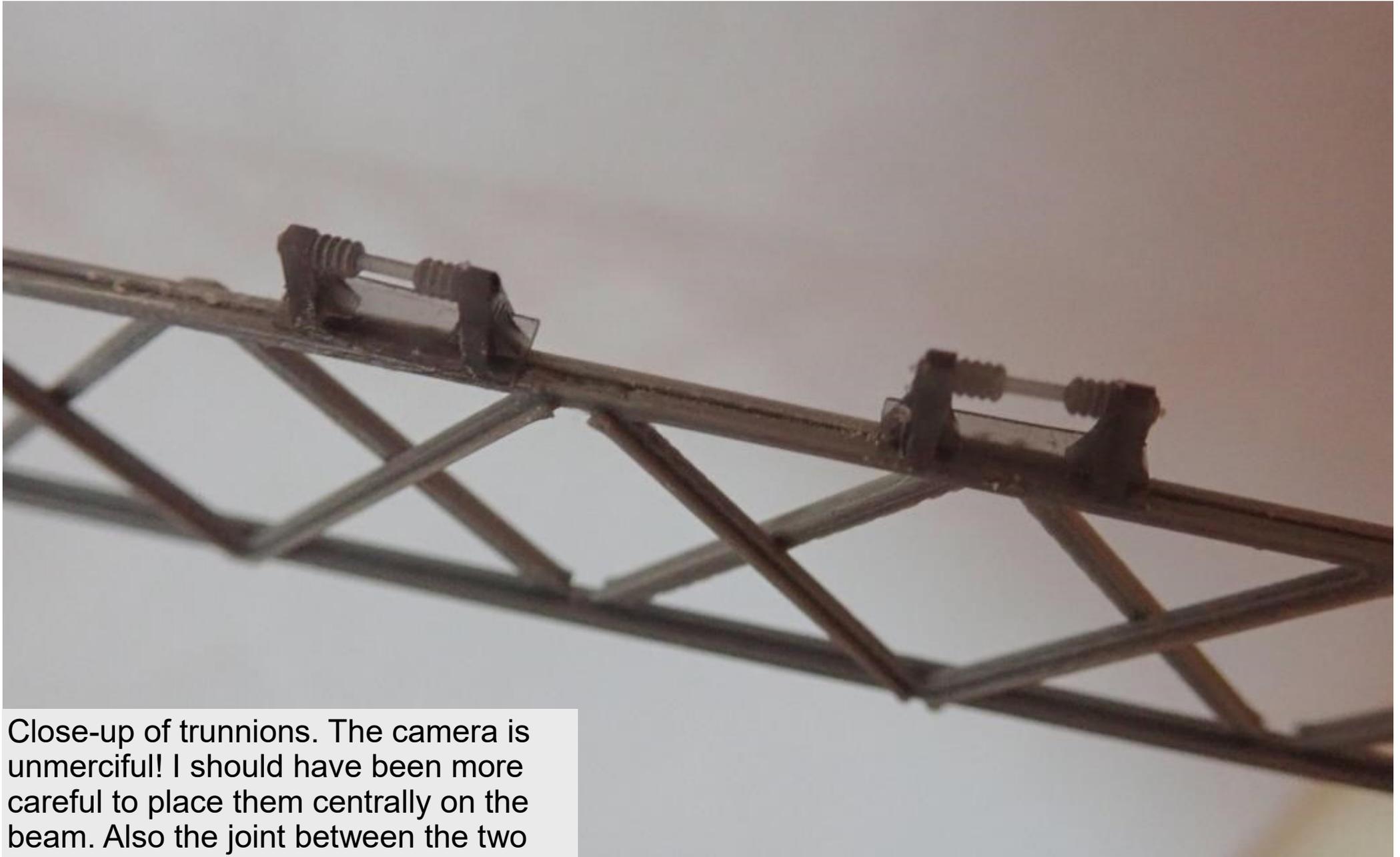


Gantry components for later type. A spacer is provided between the two outer mouldings. This allows for the gap between the sections on each side of the gantry. The mouldings at the bottom of the photograph are intended to reproduce the cantilevered gantry used where there was insufficient room to provide an outer support. The girder at the top was of a type used in special situations, usually because of space restrictions.

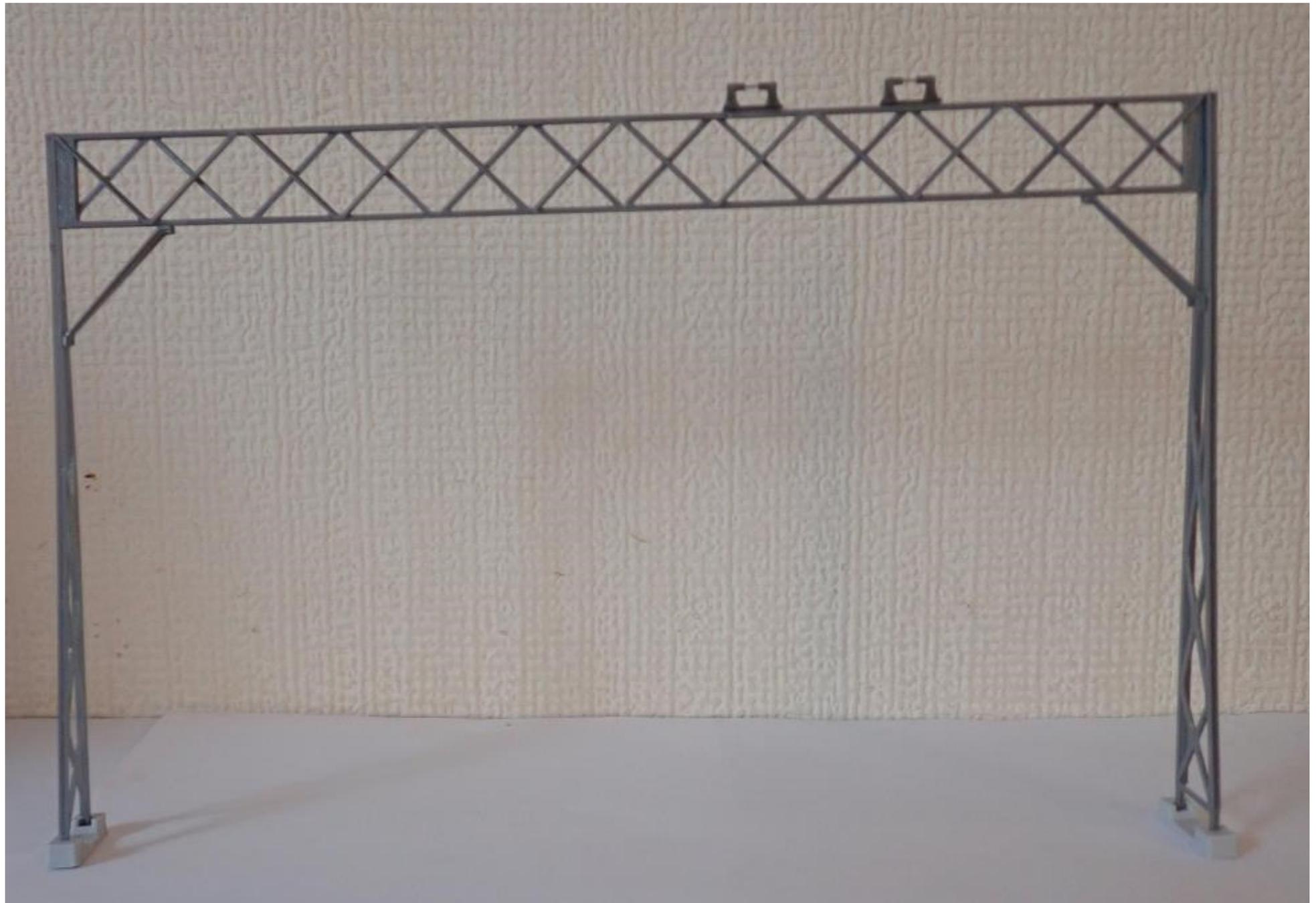


Mouldings for the trunnions/insulators and secondary insulators.

I do have some reservations on the 'A' frames as supplied in the kits as, in 4mm scale, they place the bottom of the gantry at a scale height of 25 feet above rail level. The prototype aimed at a height of about 20 feet, which permitted the catenary wires, passing above the gantries, to support the trolley (pickup) wire at a height of 16 feet. Therefore the supplied frames will need to have a substantial amount removed from their bases, which will effectively remove the bottom section of bracing. I suppose that the true rivet counter will modify the frame to restore the three sections within the reduced height but, for most, leaving just the two sections might be a compromise worth accepting.



Close-up of trunnions. The camera is unmerciful! I should have been more careful to place them centrally on the beam. Also the joint between the two gantry mouldings needs to be cleaned up.



An assembled South London line gantry.

So what is my verdict? The mouldings are of a decent standard and provide a good level of detail. Plastic moulding may not be the ideal way to represent relatively thin steel sections, but it is far simpler than attempting to use brass etchings. I attempted some assembly to get a feel for the overall appearance and the results can be seen in the photographs. More careful assembly would no doubt improve on the effect! I am really quite impressed and look forward to seeing some models produced from these kits. Having erected the gantries, it's just a matter of fixing the wiring and building the trains(!), although I suppose they could be used on a layout set at the time when the electrification was in the course of installation, thus avoiding the need for any wiring or rolling stock. Work on the extensions was brought to a halt during WW1 and this delay meant that the outer part of the system was not completed and put into service until SR days, although some of the infrastructure had been in place for several years. Its life was then severely limited by the decision made in 1925 to standardise on the ex L&SWR third rail dc system.

Medyka Bahn Models is based in Przemyśl, Poland and has a website:

[Medyka Bahn – The Railways of Medyka](#)

It also has Facebook and Instagram accounts, to which links are provided on the website. There are five different kits of parts shown on the site. The UK supplier is

[Home | Thunderbolt Models.](#)

Martin Foley, who owns Medyka Bahn, is a member of the Brighton Circle and members of the Circle who plan a section of overhead electric may wish to contact him direct at

lbscr@medykabahn.eu.

L.B.& S.C.R. Station Staff

By ModelU

[ModelU](#) has paid a visit to Sheffield Park and scanned some of the volunteers in their Brighton uniforms. The resulting figures are illustrated here, with the painted versions on the following page.

The pack of 5 unpainted figures in 4mm scale is available at a price of £18.

I2280 BLUEBELL STATION STAFF

RAILWAY & LINESIDE / 1870-1922



MODELU



11241 A1/AIX TERRIER CREW

RAILWAY & LINESIDE / 1948-1968

The same visit resulted in a [crew specifically designed to fit in a Terrier](#). The two unpainted figures in 4mm scale come as a pack at £7.20.



Images copyright ModelU

MODELU

Train Times

4mm scale RTR Brighton vehicles



Photograph copyright Train Times

Although [Train Times](#) has sadly had to cancel their Exclusive E1s, work has been going on for a while on some D.1433 vans. On the previous page is a picture of the samples, which have been hand decorated and the livery will see some changes before release.

These are going to be available RTR in the range of liveries listed below and are being produced entirely in the UK, with no offshore manufacturer involved. Cost is expected to be £28 per wagon. Additional numbers in the liveries already announced may be possible, depending on demand.

If these vehicles are successful, there are plans for a range of LBSC goods stock, which could be viable, as it would not depend on purchasing large quantities from China.

Version	Running number	Train Times reference
LBSC 1870 - 1890	8205	TTLBSC001001
LBSC 1890 - 1905	8043	TTLBSC001002
LBSC 1905 - 1923	8091	TTLBSC001003
LBSC 1905 - 1923	8225	TTLBSC001004
LBSC Departmental	8145	TTLBSC001005
SR pre-1935	46389	TTLBSC001006
SR pre-1935	46293	TTLBSC001007
SR post-1935	46311	TTLBSC001008
SR post-1935	46221	TTLBSC001009
SR CME Ashford		TTLBSC001010
SR Departmental	1128s	TTLBSC001011
SR IoW Fish	46943	TTLBSC001012
SR IoW Fish	46946	TTLBSC001013
BR IoW		TTLBSC001014

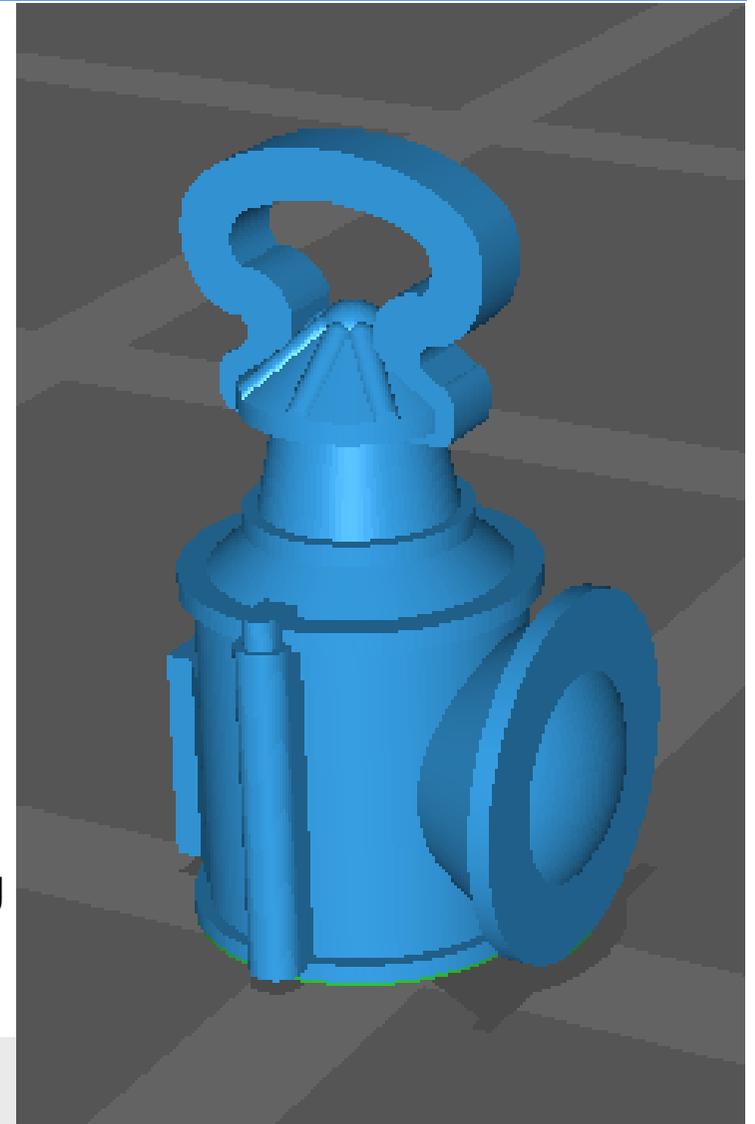
Oakhill Works

- 3D Printed Items in 4mm Scale

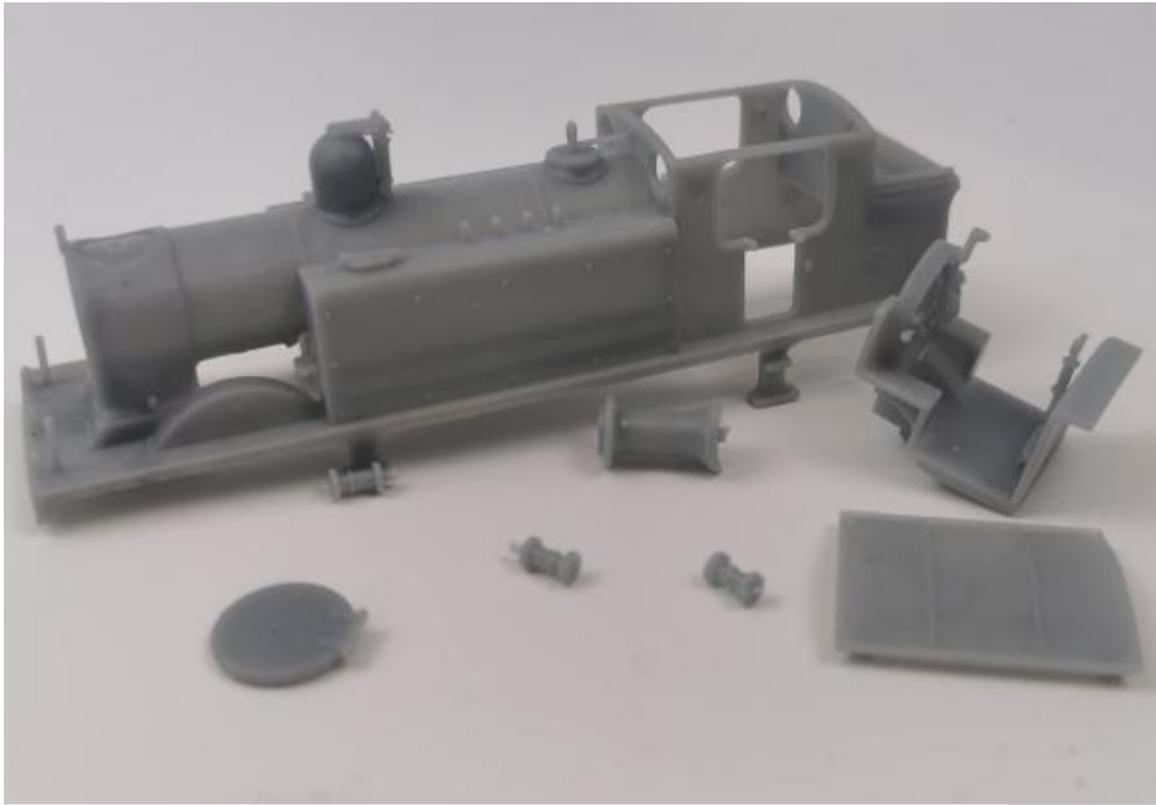
[Oak Hill Works](#) is a new kit manufacturer in 4mm. The early part of the range was shown off at the Brighton Circle's Patcham meeting earlier this year and the formal launch of the range has now taken place. It includes Inspector, Open A wagons, ballast wagons, and an E4 in original condition.

These kits are 3D printed to the lowest cost possible, and the range is ever expanding. The next additions are a Billinton goods brake van and Stroudley loco lamps. I am an LBSC modeller myself and I aim to add more LBSC kits over time, together with the ever-growing range of industrial locomotives and SECR items. Make sure to keep an eye on the website to see what's coming next.

We are also behind the RTR D.1433 being produced by Train Times Model Shop in Eastbourne, as the shop is a sister business to this one. We hope to have more RTR items coming in the future too!

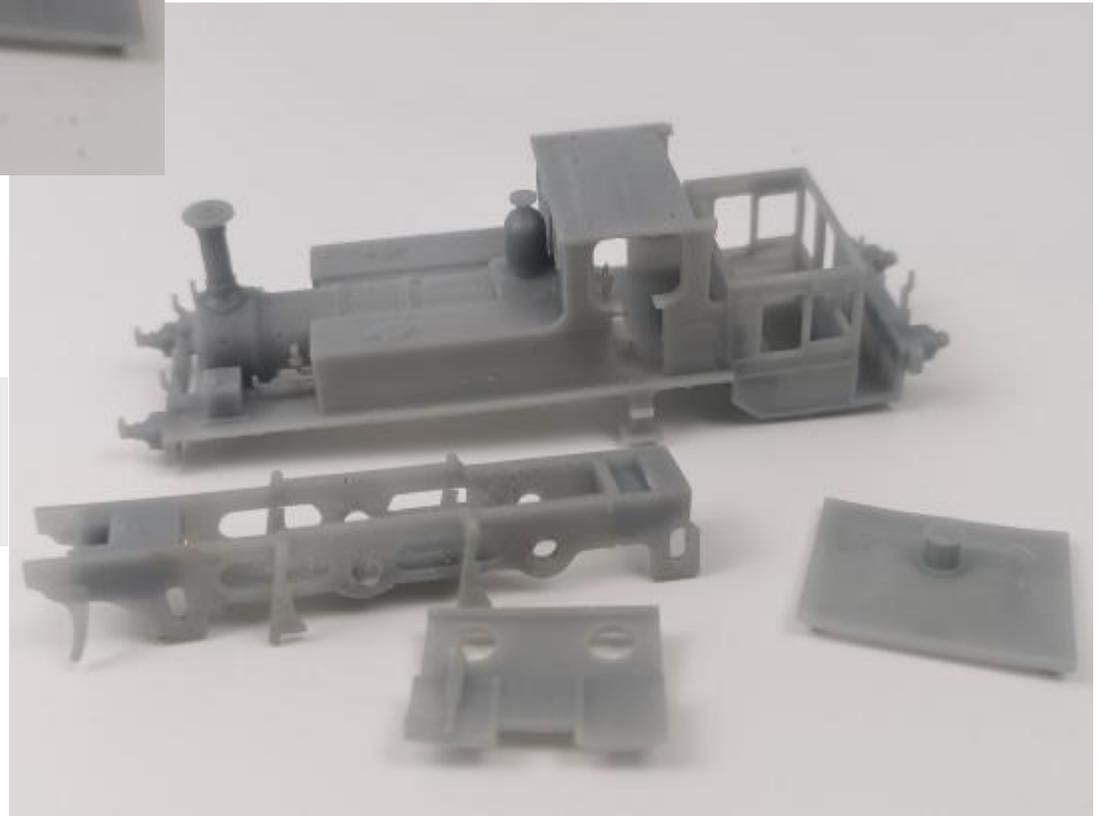


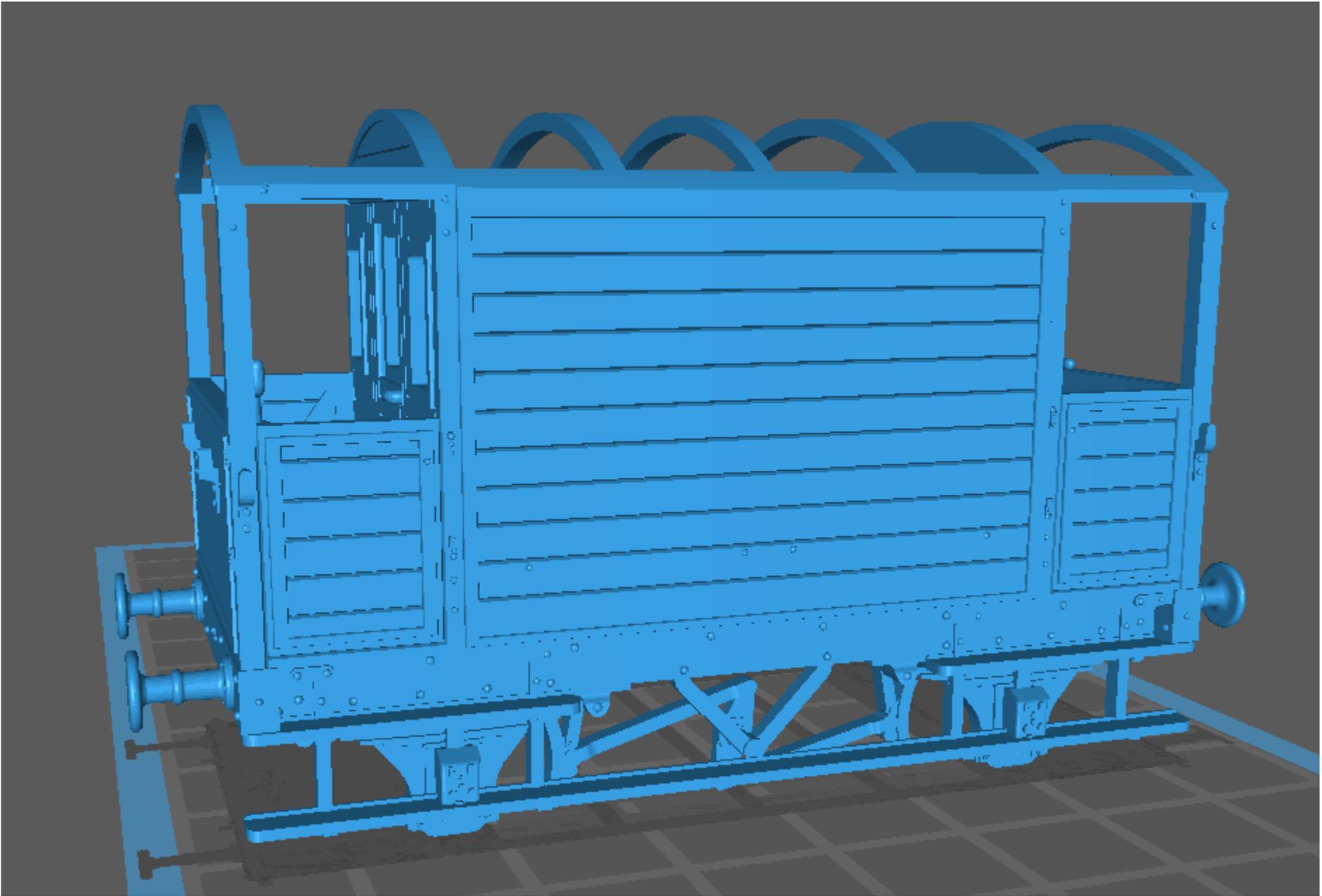
The Stroudley loco lamp



Above - E4 tank in original condition

Right - Inspector





Images copyright Oakhill Works

Forbes, Abbott and Lennard Tank Wagon

By Killian Keane



In 2mm scale!



....and in 4mm scale

Killian Keane now has available 3 D prints of the Forbes, Abbott and Lennard sulphuric acid tanker in 4mm and 2mm scales.

The 4mm version takes 51L models part number 40002 waisted pinpoint bearings and 51L part number 16515 14mm 10 spoke wheels. Versions with or without NEM pocket are available and both accept ScaleLink 3 link couplings.

The 2mm scale version takes Peco 6mm N gauge wheels.

Prices are £8 for the 2mm version and £14 for the 00 version. There is also an H0 version, which takes 00 12mm wheels and has no bearings at a price of £12.

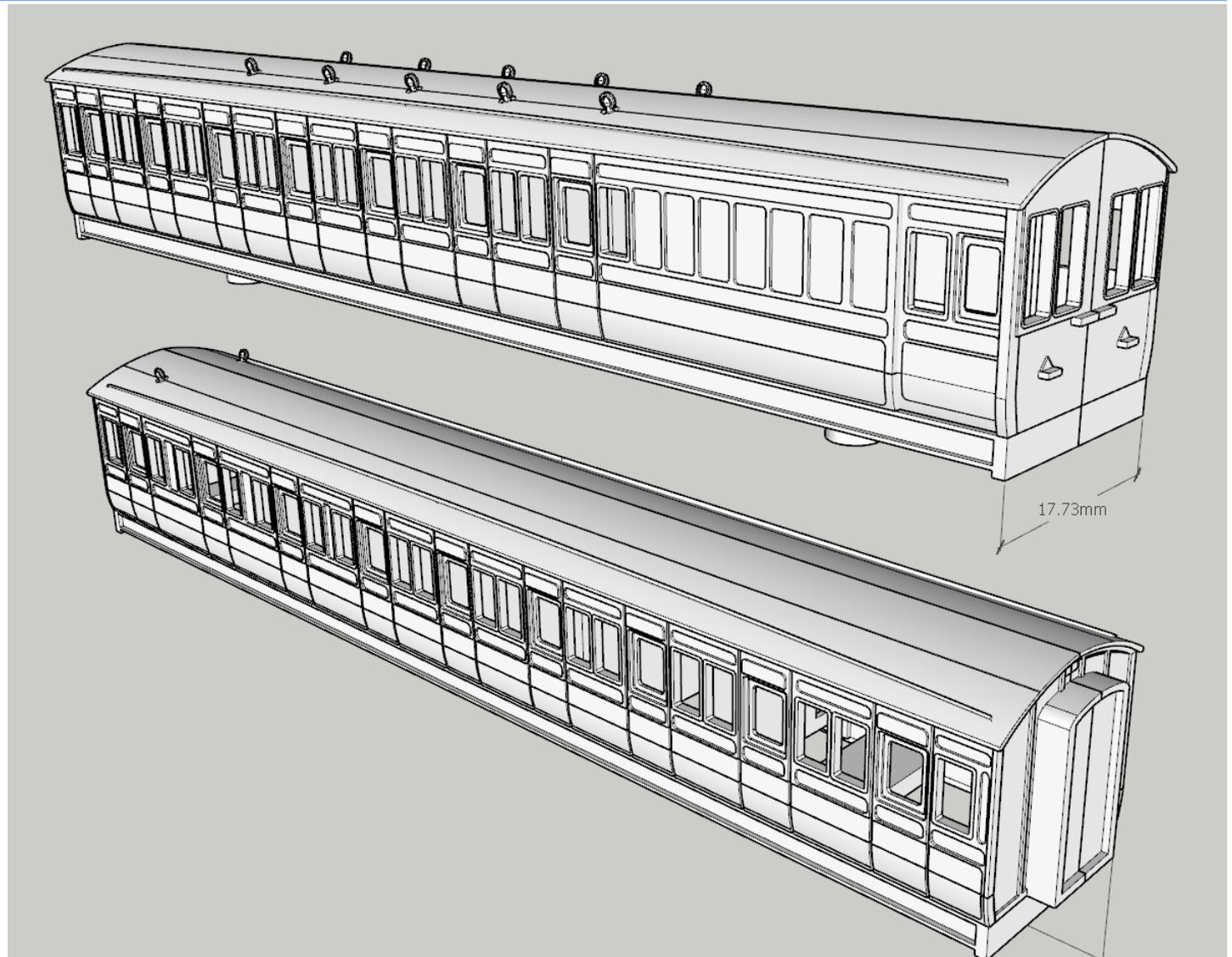
Contact by e mail to
keanekillian@gmail.com

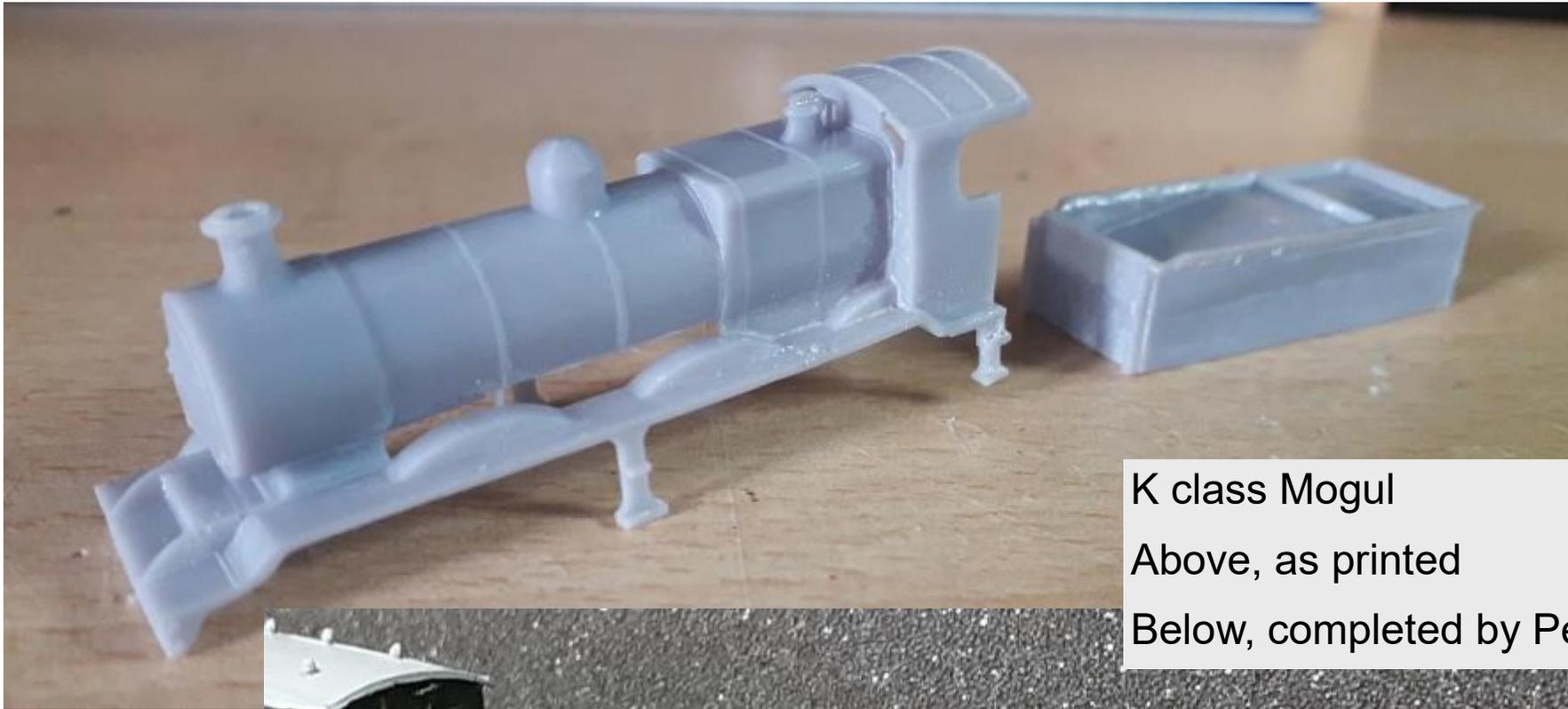
Gosport Railworks 3D prints in 2mm scale

By James Bateman

[Gosport Railworks](#) produces a range of Southern locos in 2mm scale by 3D printing. Items are made on demand and are designed to fit ready to run chassis requiring minor work to the chassis or body. Small details, such as hand rails, lamp irons and other similar items, which will not print well, need to be added.

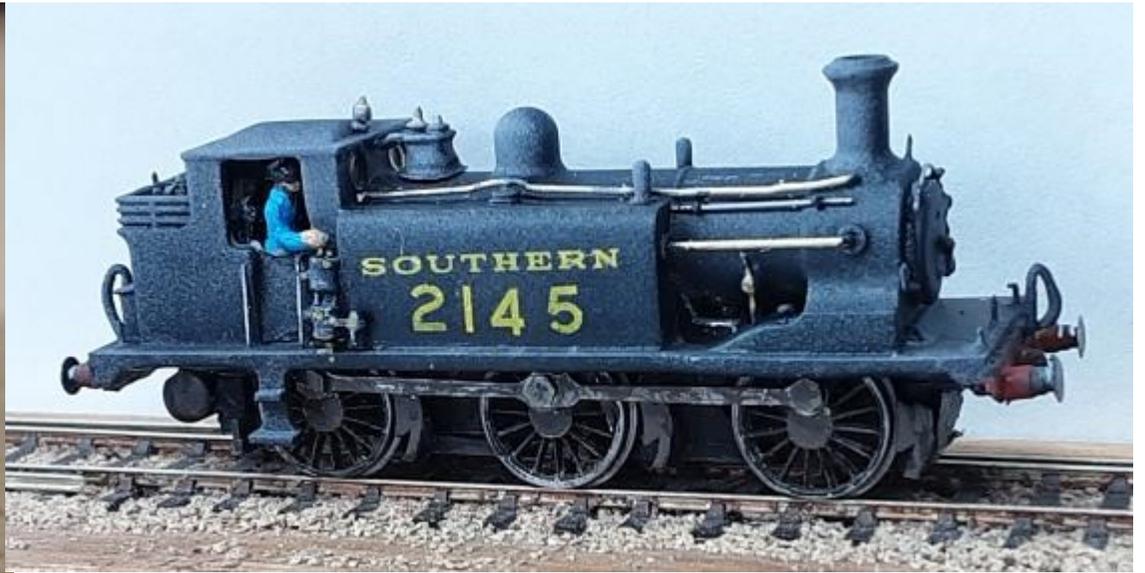
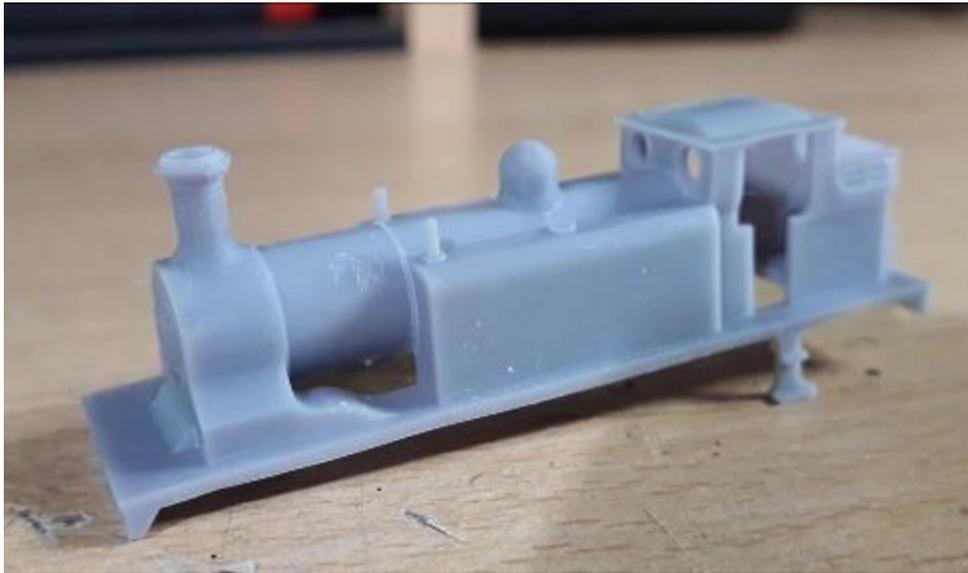
Prices for LBSC models range between £12 and £18 for locos, depending on their size. There is also a two coach LBSC pull push set priced at £30, and full details of the range are available [on line](#). A tab on the spreadsheet shows some future plans.





K class Mogul
Above, as printed
Below, completed by Peter Townsend





Above left - D tank, as printed, right E tank as completed by Peter Townsend.
Below - C3 goods loco, completed by Peter Townsend.



Photographs copyright James Bateman and Peter Townsend.

Pre-Grouping Railways - 2 Plank Ballast Wagon

By Marc Dobson

Pre-Grouping railways are releasing an LBSCR 2plank dead buffered ballast wagon. It has a HD3D printed body with brass rocking underframe with 3D printed and brass fittings. It is available as a kit in 4 and 7mm scales and as bodies in HO, S, G1(1:32) G2 and G3.

[Pre-Grouping Railways – Everything for railways built before 1923 \(pregroupingrailways.com\)](http://pregroupingrailways.com)

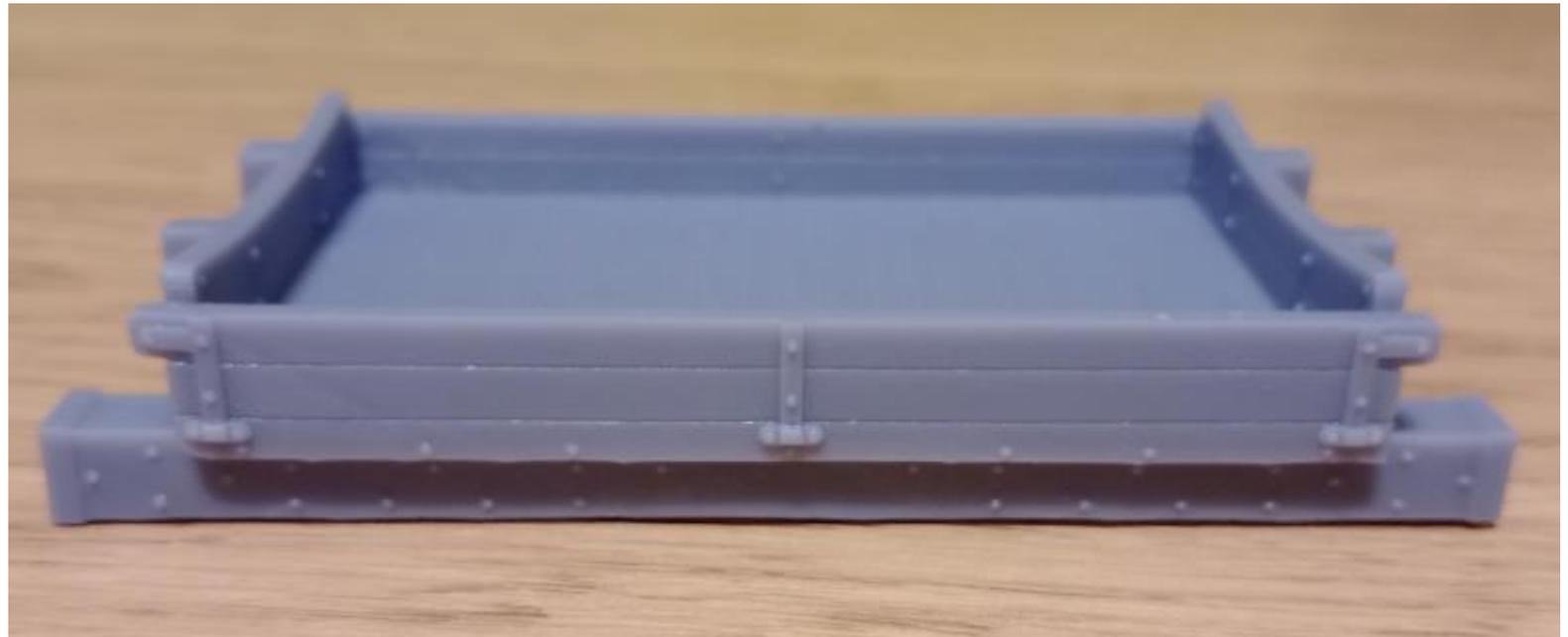
Phone: 01229 219875 **(NEW NUMBER)**

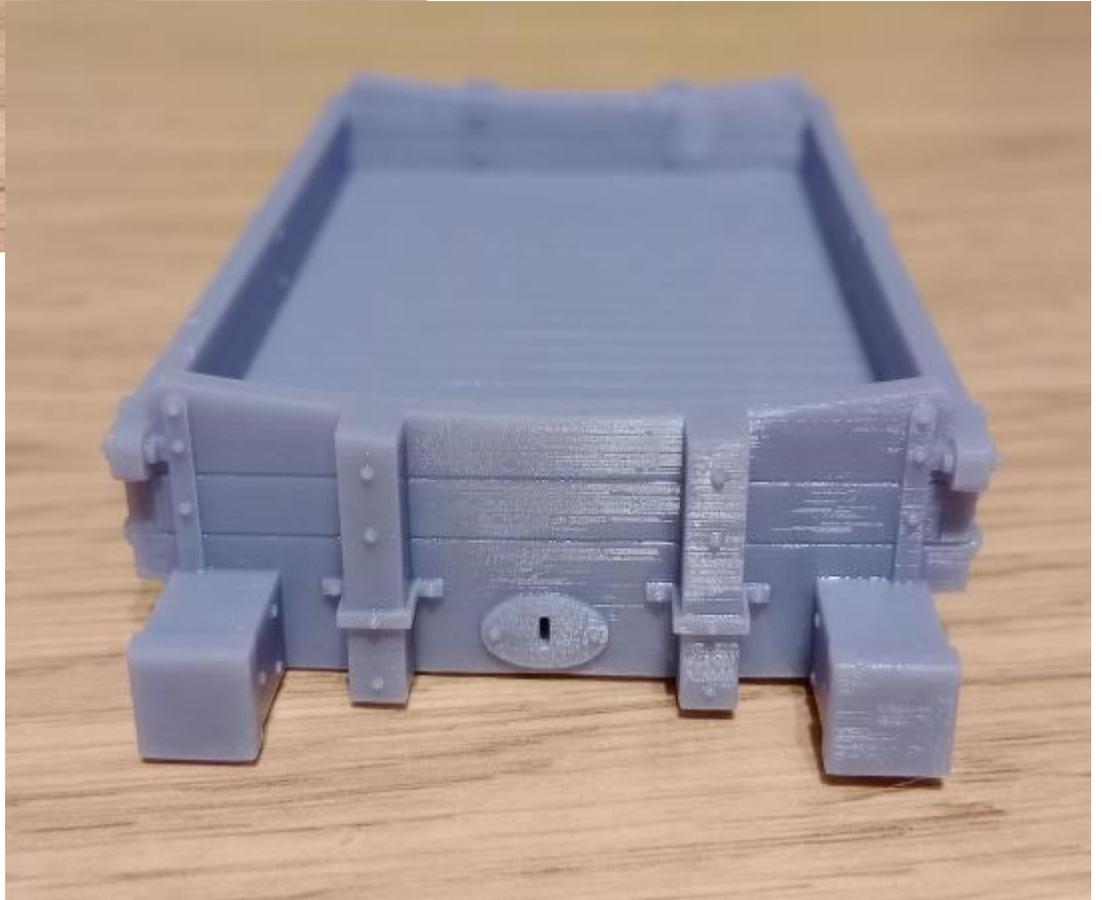
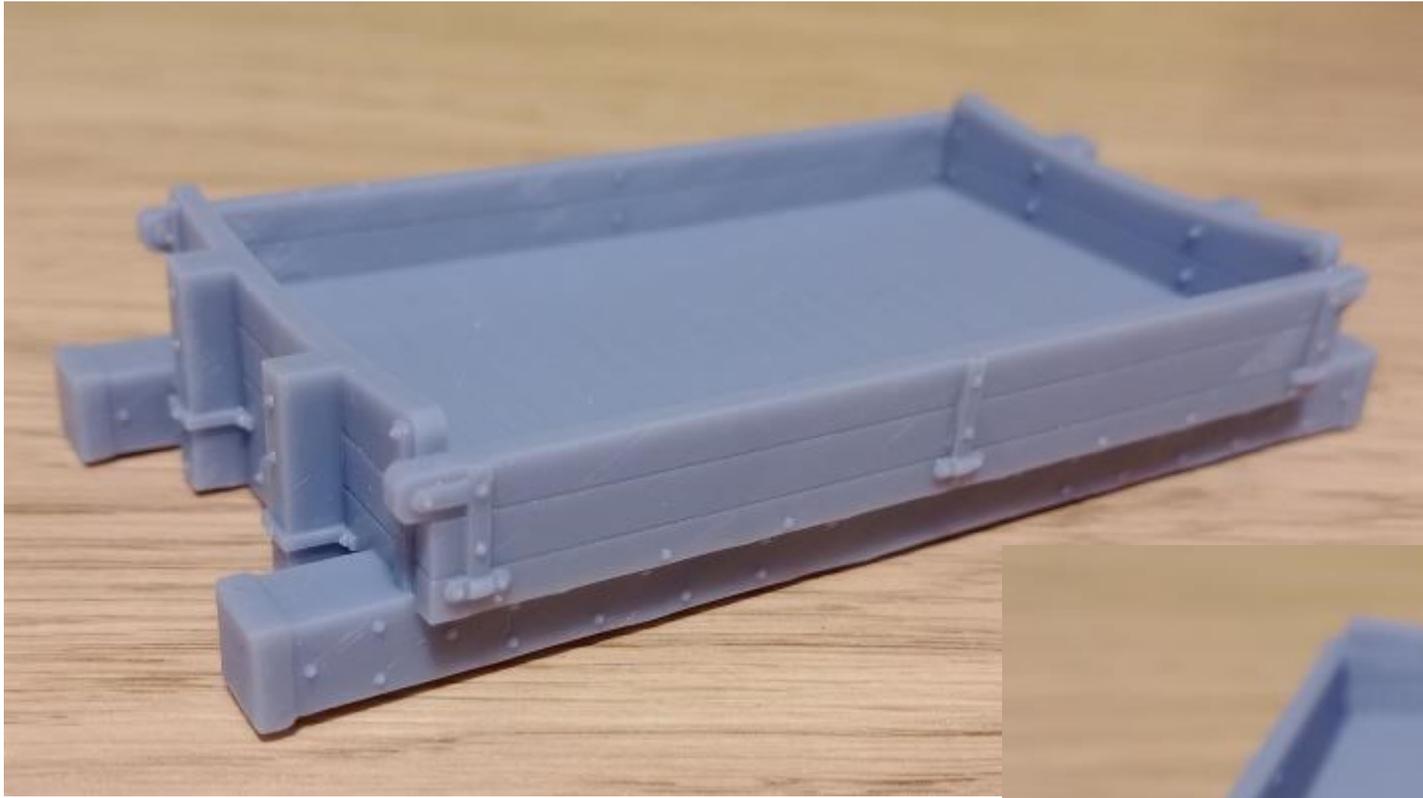
E-mail: furnessrailway@hotmail.com

Facebook:

@furnessrailway

Post: 10 Duke Street,
Dalton-in-Furness,
Cumbria, LA15 8HH





Stroudley D tank in 7mm scale

Ace Products

Ace Products is pleased to announce two new kits in 7mm scale for Brighton and Southern modellers. On the following page is a picture of Stroudley D1 0-4-2 passenger tank locomotive No 15 in the later umber livery of the LBSCR and assembled from the kit. The last one of these locomotives in service was no.252, which lasted into BR days.

The price of this kit is £169.00.

The second kit is for the Billinton D3 0-4-4 tank. These passenger tank engines also lasted into B.R. days until 1955, when loco no.32390 was being used on the Brighton to Horsham line.

The reintroduction of these 2 kits means that ACE Products can now offer the entire range of locomotive kits which were initially introduced by M.S.C. Other kits in this range include the E1 0-6-0, and the E1R, E3 and E4 0-6-2 tanks.

The revised web site for the Ace Products range of kits is at

aceproducts.org



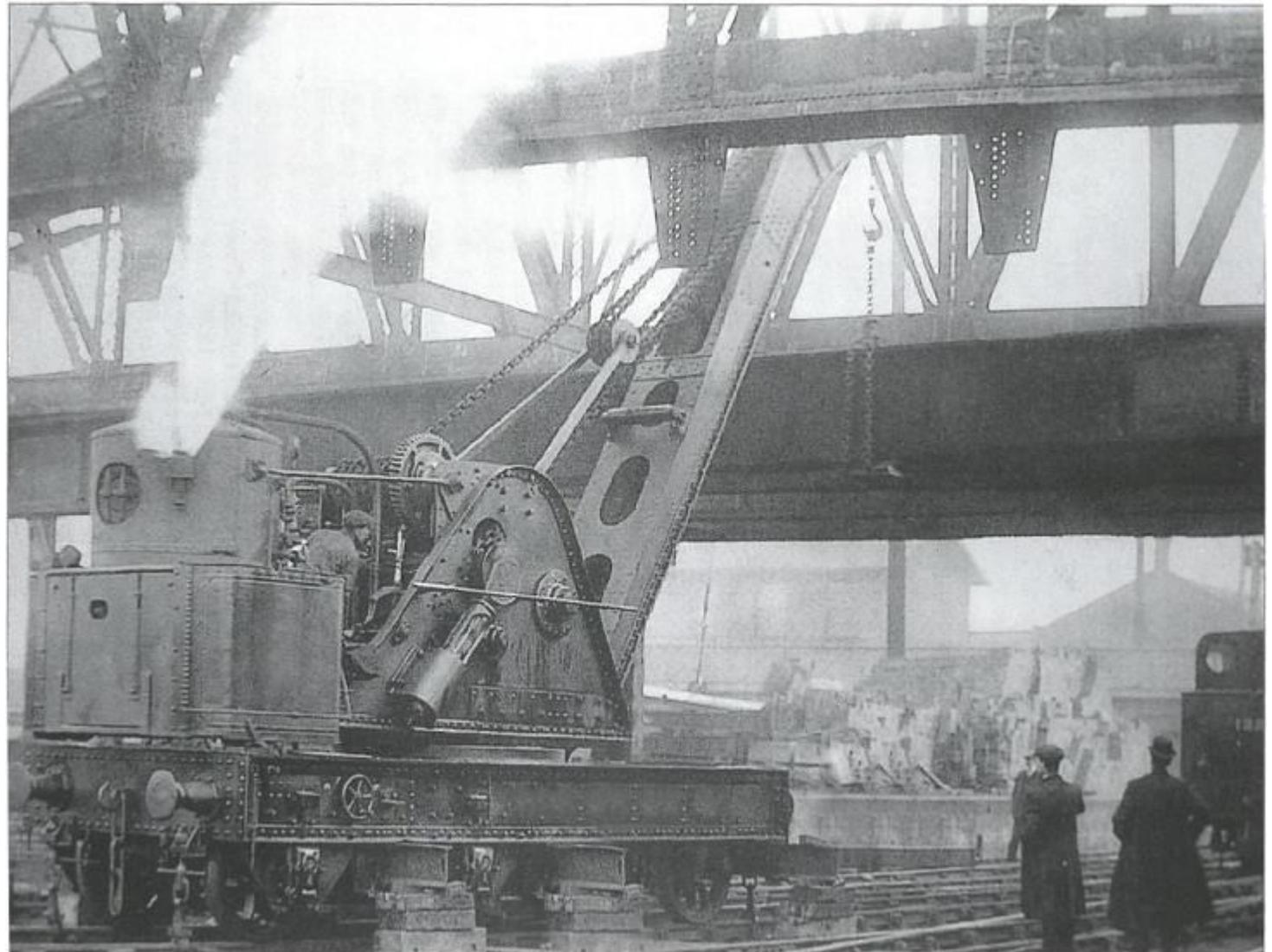
Photograph copyright ACE Products

Cowans Sheldon 15 Ton Crane

By Oxford Rail

Oxford Rail is advertising the Cowans Sheldon 15 ton crane in its list of future products. An availability date is not yet announced.

[OXFORD RAIL 1:76 Scale Standard Cowans Sheldon 15T Crane BR Stewarts Lane DS316 — Oxford Diecast](#)



The Brighton Circle Facebook Group

There is a Facebook page (search for @LB&SCRBrightonCircle) and a lively and growing associated group, which currently numbers over 1,100 members.

See <https://www.facebook.com/groups/249226986001750/>

These are aimed at giving a presence on social media for the Circle. It is a place for people, including non-members of the Circle, to post material, find out about the Circle, see some local history and to ask questions.

Please do visit the page if you are on Facebook.

The Brighton Circle

The Brighton Circle is the Historical Society of the London, Brighton and South Coast Railway (L.B & S.C.R.). It is dedicated to the research and publication of information about the company and it produces a quarterly newsletter and a historical journal entitled the Brighton Circular, which is published three times a year.

While the Circle is primarily focussed on railway historical research, there has been an important interaction with preservationists, particularly on the Bluebell Railway, and with railway modellers. The Bluebell line provides an important source of original artefacts, which contribute valuable information about the company's practice. Modellers have benefitted by access to data about the physical appearance of the company and its operations and, as a result, members of the Circle have been able to produce scratch builder aids, kits, paint and lettering on a limited run basis, which are made available among other members.

Membership of the Brighton Circle for 2024 is

£23.00 for full membership

Applications should be sent to

secretary@lbscr.org

The Circle is also in contact with local historians, industrial archaeologists, family historians and other groups whose interests intersect with those of the Circle.

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[Return to contents page](#)