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

Issue 16

Christmas 2022

Contents on page 2

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

Contents

Editorial

Richard Barton's model of Hayling Island, which appeared in the last issue of LB&SCR Modellers' Digest, has been recognised with a major feature in the recently published issue of British Railway Modelling, complete with a video! For a taster, in the form of a cab ride across the bridge and into Hayling station, see Hayling Island Cab Ride - YouTube.

Similarly, the latest issue of Model Rail features an article on a Gauge 3 Terrier by Mark Pretious, who is also contributing to this issue of the Digest.

Given the glorious Summer (now a distant memory) we have two major items on Brighton models in the garden. Both demonstrate the possibilities and the social opportunities of a garden railway.

With a steady procession of ready-to-run, pre-grouping locos and now generic rolling stock for them to pull, I hope that there will be more modellers experimenting with the pre grouping scene and dipping into the Digest. Welcome! However, please be warned that you are on a slippery slope. The Brighton Circle (and the pre-Grouping societies generally) are here to offer all the advice and information that you need to go one step further in achieving historical accuracy. All models will involve compromises but, the more you learn, the more that you will want your models to look right and groups like the Brighton Circle are here to help. Membership of the Circle offers access to a wealth of information and expertise, not only on the historical questions but also on the practical issues of modelling. (And Roxey and Branchlines will be happy to provide you with more prototypical coaches to replace the generic models!)

As a final note, on 1st January, it will be exactly 100 years since the LB&SCR was grouped into the Southern Railway.

Eric Gates, Modelling Steward, The Brighton Circle,

ericgates1310@gmail.com

Return to contents page

Lewes First Station - 4mm Scale Model

By Dave Rigler

In the last issue of this publication I described how I had created a 3D solid model of the first station in Lewes. Having spent so much time engaged with the detail of this building, I decided to model it in 4mm scale.

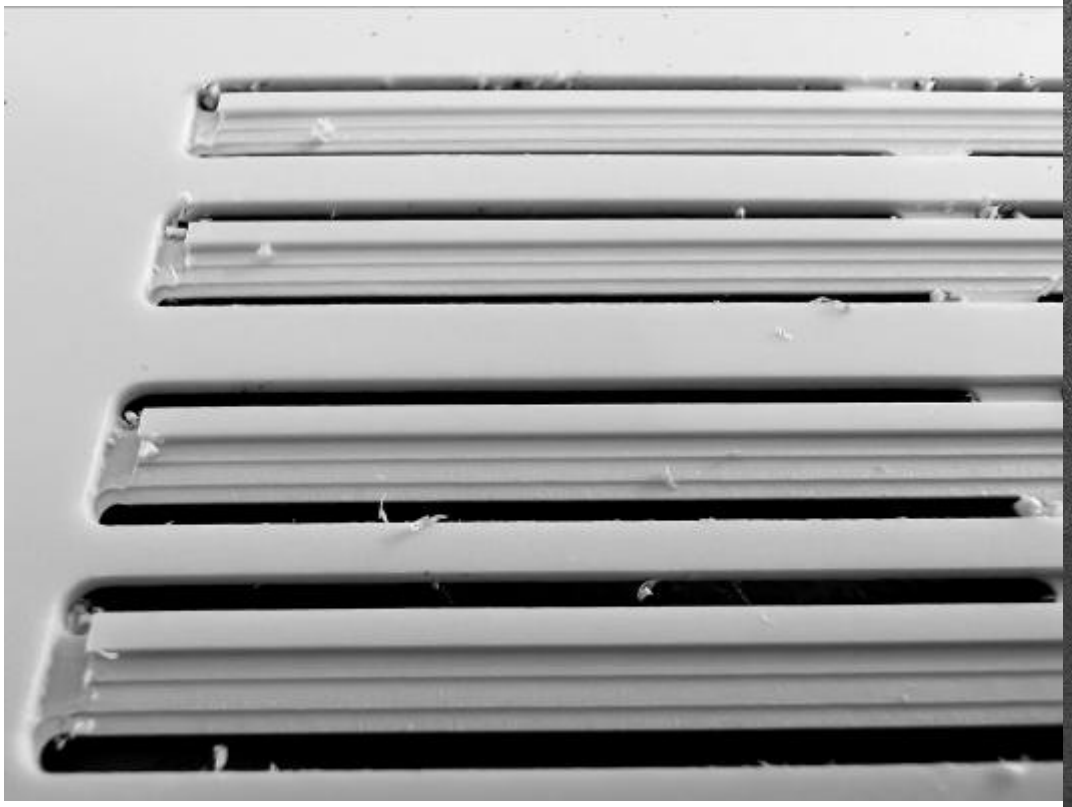
I have modelled according to the picture opposite where the render appears to be painted and the building looks pristine.

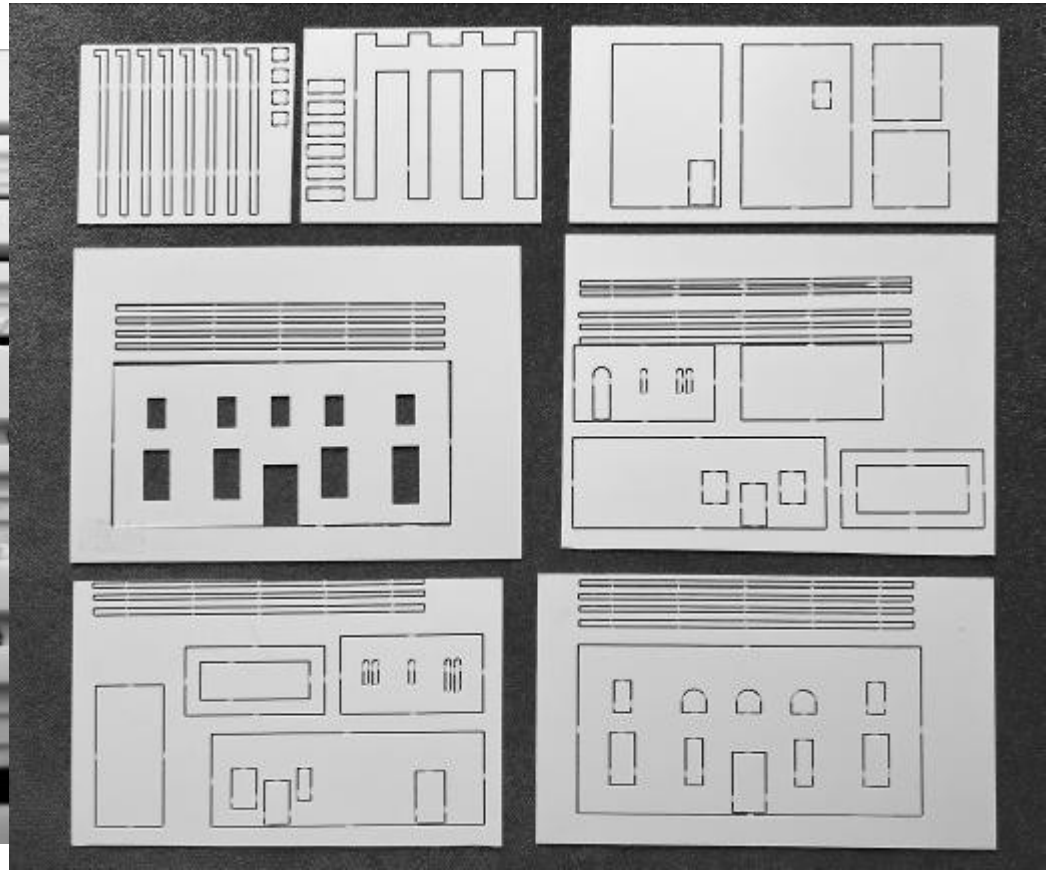
Together with the previous slide, these pictures show the best views of the station building at various times and states of repair

Having previously created the 3D CAD model, I was able to generate scale elevations and dimensions to work from, as well being able to export to other software that I used extensively to create cutting paths for my CNC router to form parts.

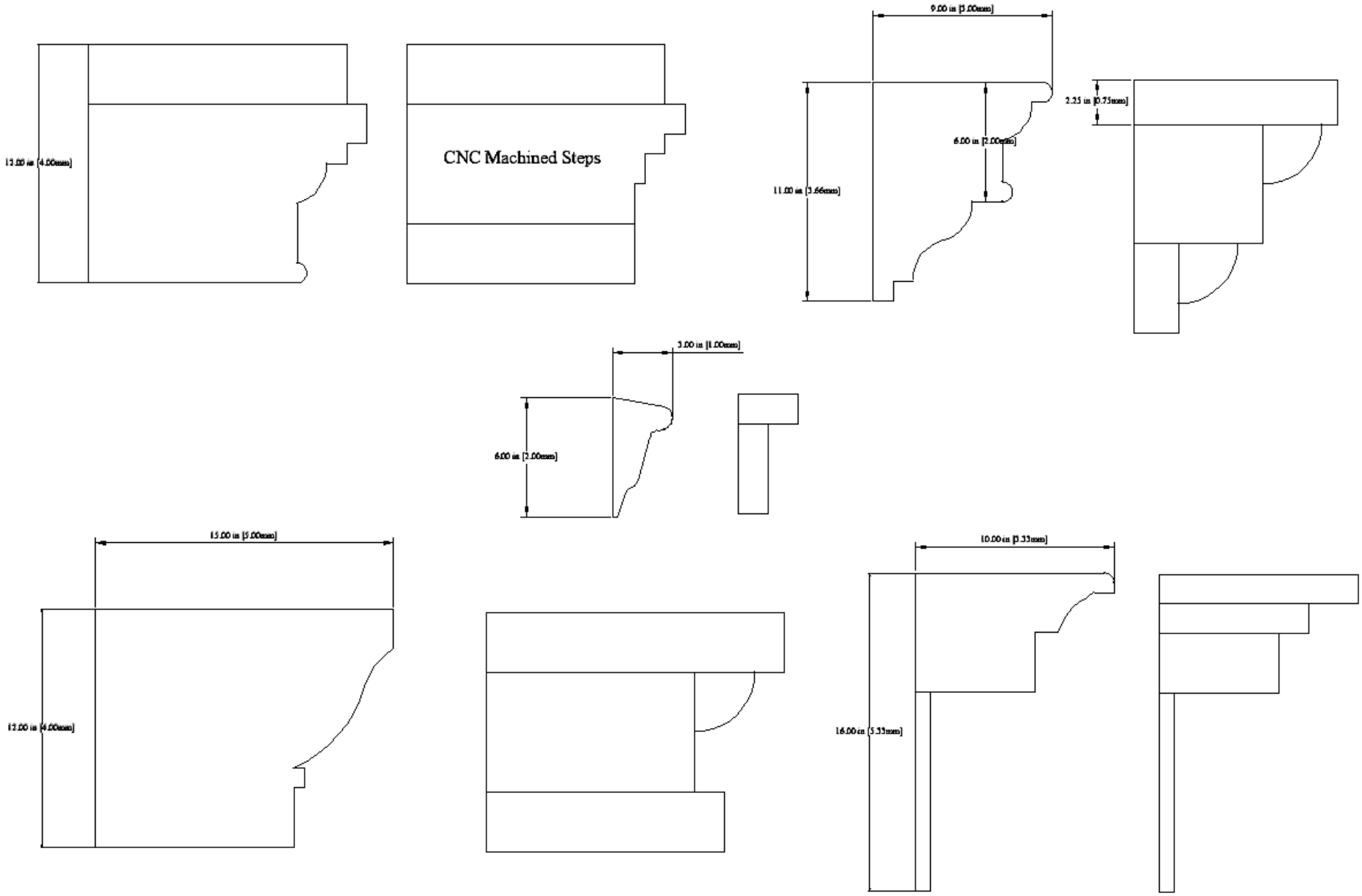
However, I constantly referred back to the photographs to confirm or change features.

For this building I decided to cut the main structure using the CNC router which enabled me to use 2mm plasticard instead of my usual practice of hand cutting using 1mm material. This gives a more rigid structure but also more depth to the window and door openings. Added to these frets were some various width strips that I would need and that are hard to hand cut in 2mm material. I also trialled cutting stepped mouldings, as I find in building up with thin strip material, detail can be lost when the solvent is applied. This was very successful and 0.25 steps were no problem. On the subject of moulding detail, of which there is a great deal on this building, choosing the right amount of simplification to give a good representation is a challenge and differs from scale to scale. On the next page are examples of my CAD model representation vs modelling simplification.

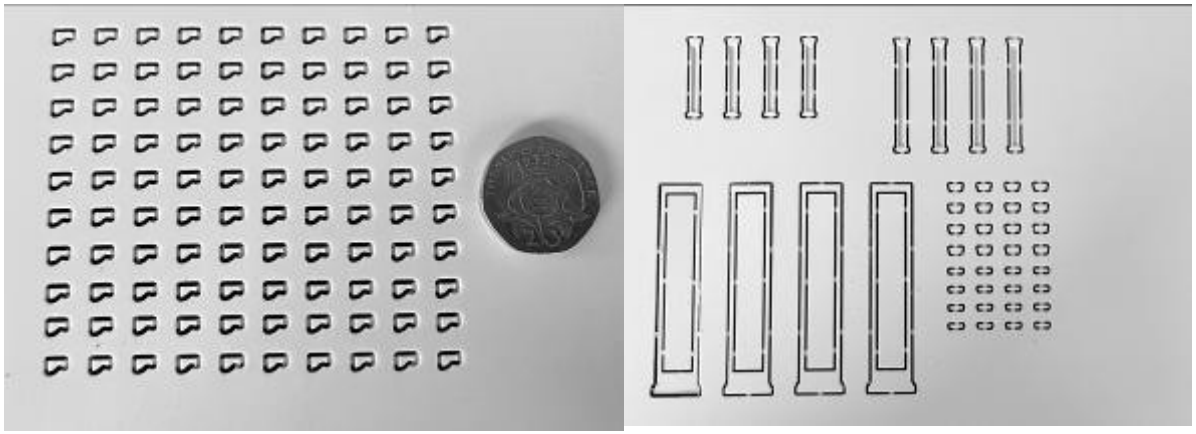




Profiles are shown in pairs, CAD interpretation on left and model interpretation on the right. The model versions were built up with a combination of purchased simple profiles and cut strips. As mentioned earlier, minimising the solvent used is important to keep edges sharp.



The most complex part of the model is the main facade so I tackled this in isolation before assembling all the walls to form the structure. The front was slowly built up using the method on the previous slide for the continuous mouldings together with more detailed elements cut with the CNC machine.

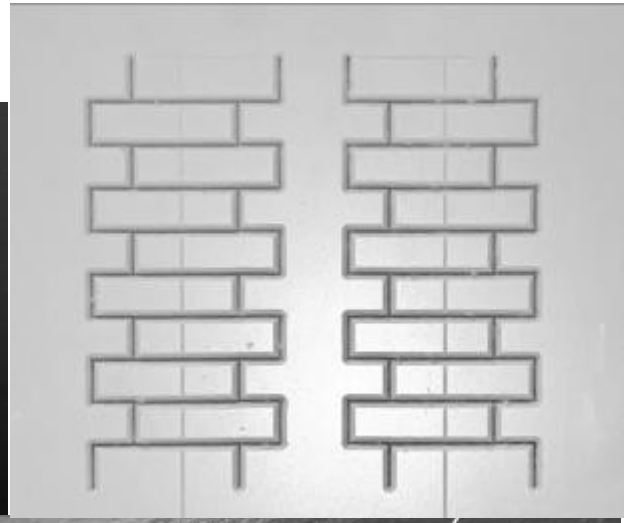


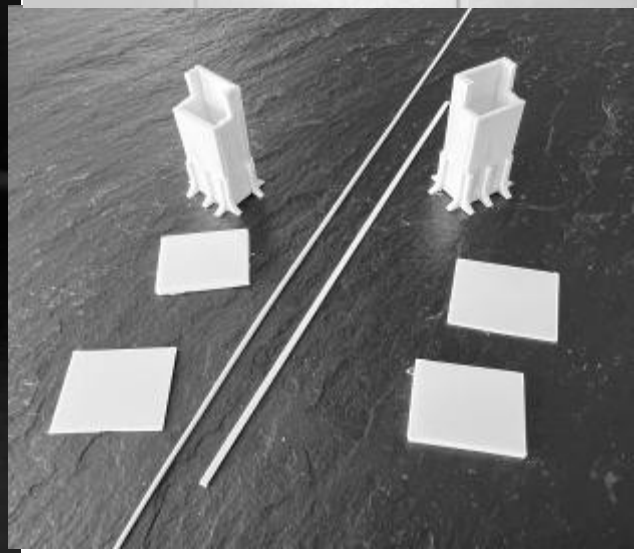
I was particularly pleased with the very small detail, the uniformity and crispness really adding to the appearance.

The quoins on the outside columns were produced by filling vee shapes into 3mm square section with a needle file.

With the main facade 90% completed, prepared architrave detail was applied to the inside of the window and door openings on the other three sides, as were window sills. The walls and base were assembled and the cornice and architrave continued around the building where appropriate. The remaining detail was added to the facade. The quoins were CNC cut with a 45 degree scribing bit, snapped out and applied to the corners.

The ornate chimneys were assembled separately before fixing in place.





The left and right hand single story extensions were then built up and detailed in the same way and then joined to the main structure.

The whole assembly was washed in tepid water to remove grease residues and sprayed with car primer. Top coats of a matt cream colour were then applied to represent the painted render and stone work.

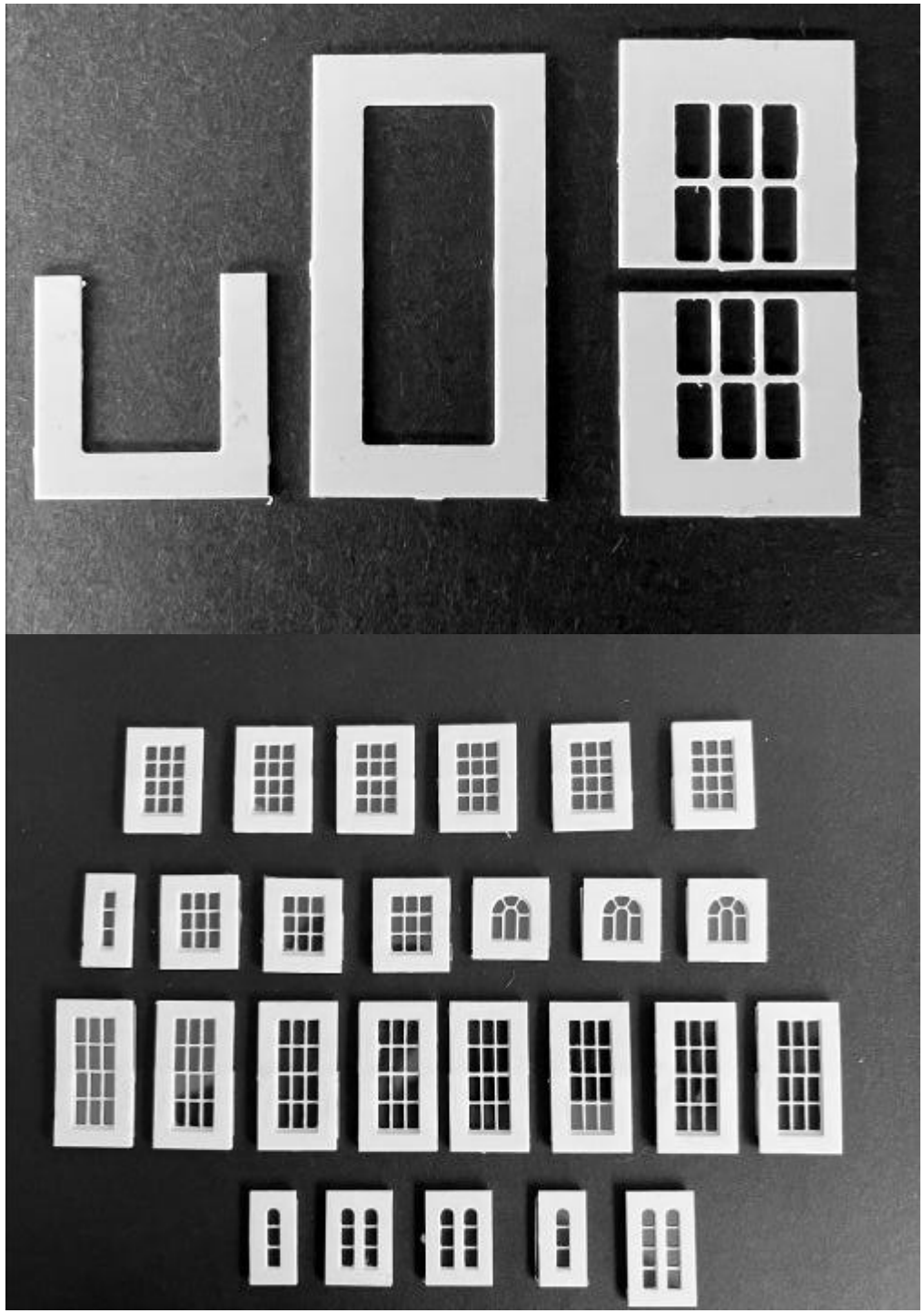
Once completely dry the work of applying brick papers to the model began. I create my own sheets from downloaded photos, usually seamless, from

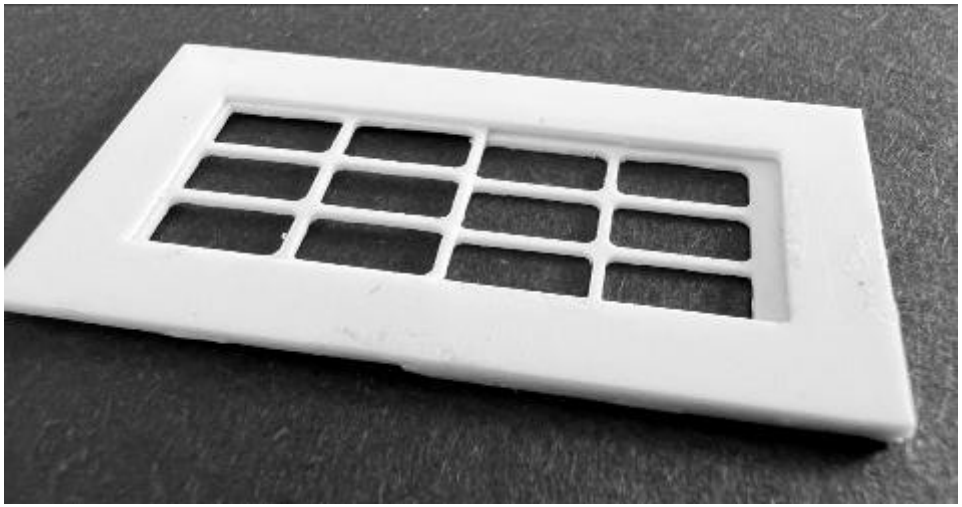
https://www.textures.com.

I then import them into Photoshop, scale to size and then repeatedly copy and paste to build up a full A4 or A3 sheet. Complete sides could not be covered in one piece of paper due to the window and door architrave not being flush with the surface of the wall. So walls had to be built up in strips. Vertical butt joins were completely avoided as they always show up but horizontal joins along brick courses are invisible.

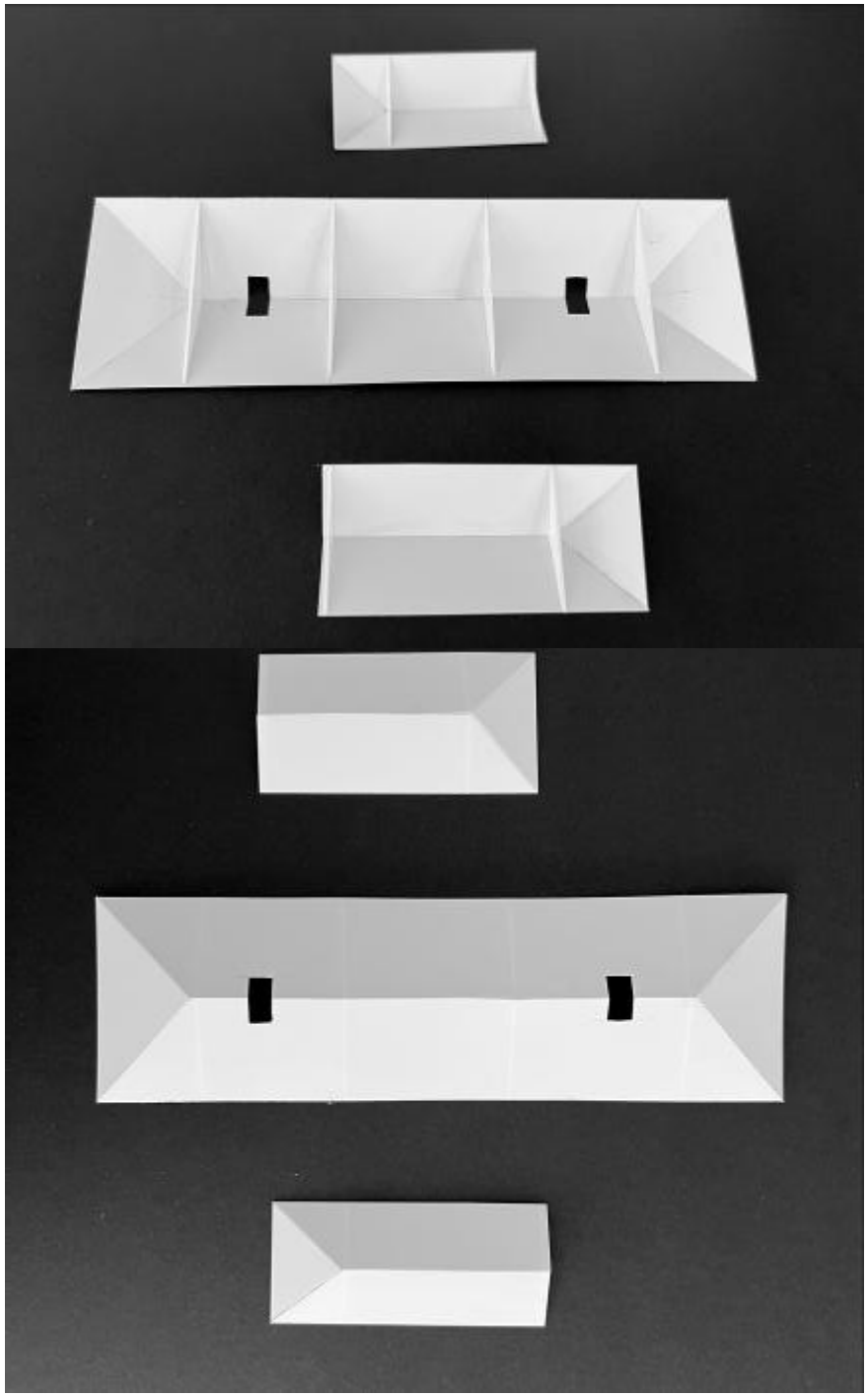
EVO-STIK was used to adhere the brick papers to the walls.

This building has a lot of sash windows! I decide to cut them all with the CNC router using the Peter Smith method which I think gives a good representation. Each sash window is made up of the four separate parts shown and assembled with solvent. The parts are sized so that the the outside edges serve to align each other to the main frame. The “U” shaped piece is applied first, its cut out being larger than the frame. The top sash applied next, butting up to the “U” piece. The bottom sash then overlays the “U” piece and the bottom rail of the upper sash. The assemblies are then painted and when dry glazing applied to the rear in two pieces. The complete windows are then glued to the interior of the model, carefully aligning the frames in the openings.



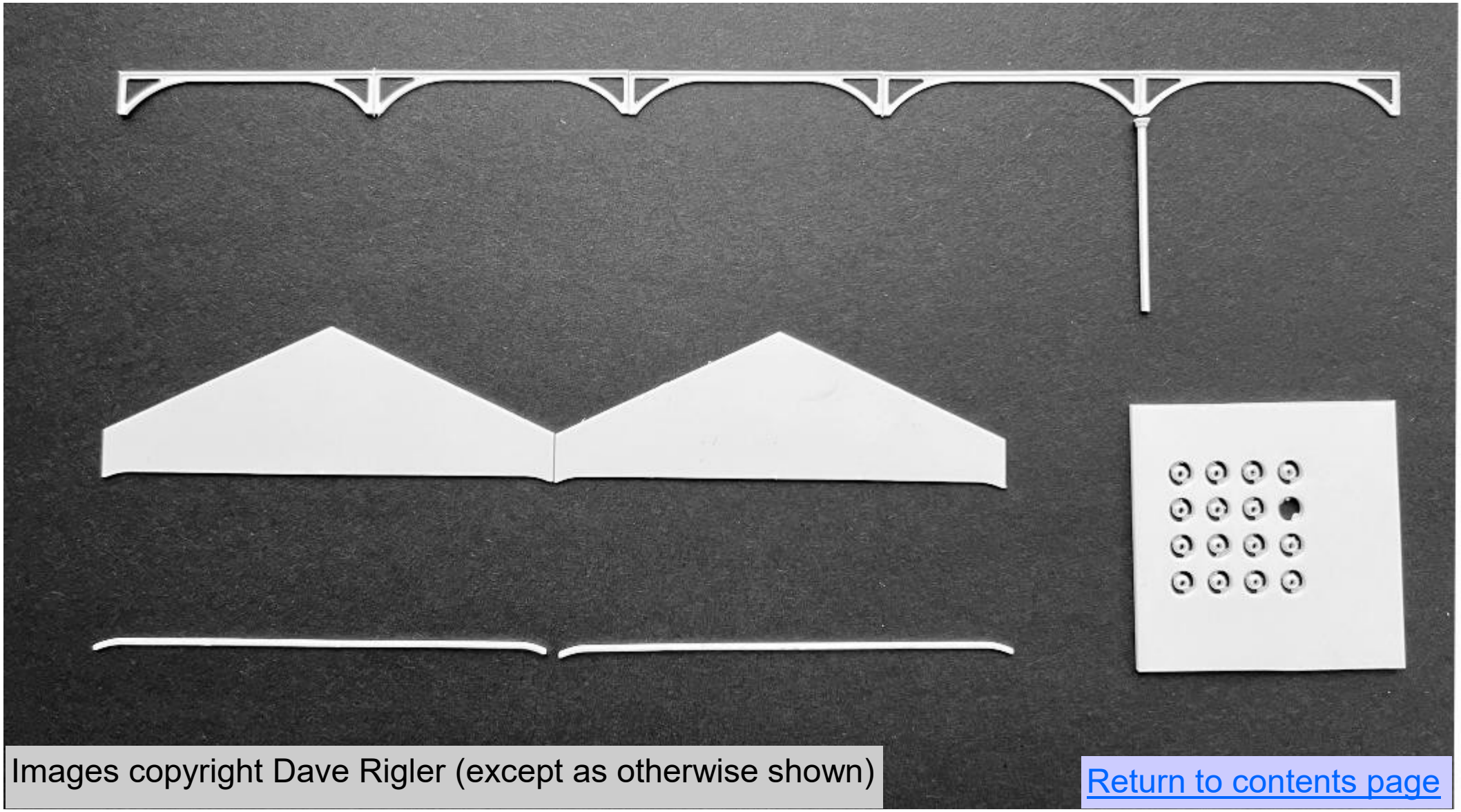


The roofs were constructed from plasticard using printed paper templates for each surface from CAD. The tiling and ridge details were applied, again using photorealistic papers produced in the same way as the brickwork. The main chimneys were constructed separately and added when all the roof detail had been completed. Chimney pots are courtesy of www.lanarkshiremodels.com



My last addition to the model was the short piece of wall and the lean-to. However still to be made and added, when I work out how, is the decoration at the top of each facade column.

This has been a very interesting build, and one of the most complex I have undertaken, but I am pleased I took it on. The big question now is do I take this further and add the canopy and platforms? I have prepared some of the parts needed as it was efficient to do so while I had the CNC router set up. Next edition perhaps?



Return to contents page

A Railway in the Garden

By Sue Rose

The outdoor O gauge railway was started last winter and we are about half way round the garden. It will be a simple continuous single track run, with one siding for loading. It is DCC radio controlled, sound fitted and is run from the same system as my OO gauge layout in the shed. When finished it will be about 100ft of track.

The O gauge stock is a mix of kit built and ready to run. The kit built stock is built by Dave (my husband) and painted and finished by me. Dave also builds in 7¼" gauge, but that's a bit too big for the garden.

Left and on the next page is a kit built Stroudley C class originally running on the Saltdean layout.

The wagon stock is all kit built by Dave including the brake van with a working tail lamp.


L B S C
L B&S C R
JAMES CHANDLER
L B & S C R
94

Below is a Roxey Mouldings Terrier kit, built and named Ashtead by Dave after where he first lived. The stock shows examples of ready to run vehicles available for the area covered by the Brighton Line.


WARNING
TRESPASSING
BOTTRILL

Below is A Dapol Terrier named Brighton with an odd set of wagons. Rose and Smith, pretty obvious why they are there, Worthington Brewery, from my grandmother's maiden name, Chatterley-Whitfield because my ancestors work in the mine there, T Mitchell of Guildford, back into Dave's home territory and finally Buxton Lime Works, back to childhood memories for me.

The track is simply to have a bit of fun on, and can be run in any weather, whilst sitting in the conservatory in the middle of winter. It is not intended as a layout, as it has no buildings on it. We also have stock from other companies, which made up the Southern Railway, with the odd bit of Staffordshire thrown in.

Photos taken on the hottest day of 2022 in Derbyshire!

Return to contents page

….and another garden

Return to contents page

Alan Brackenborough's H1 Atlantic, built from a Gladiator kit and photographed by David Thomas.

Hangleton - in the garden

By Colin Paul

From a series of photos taken on open days in June and September 2022.

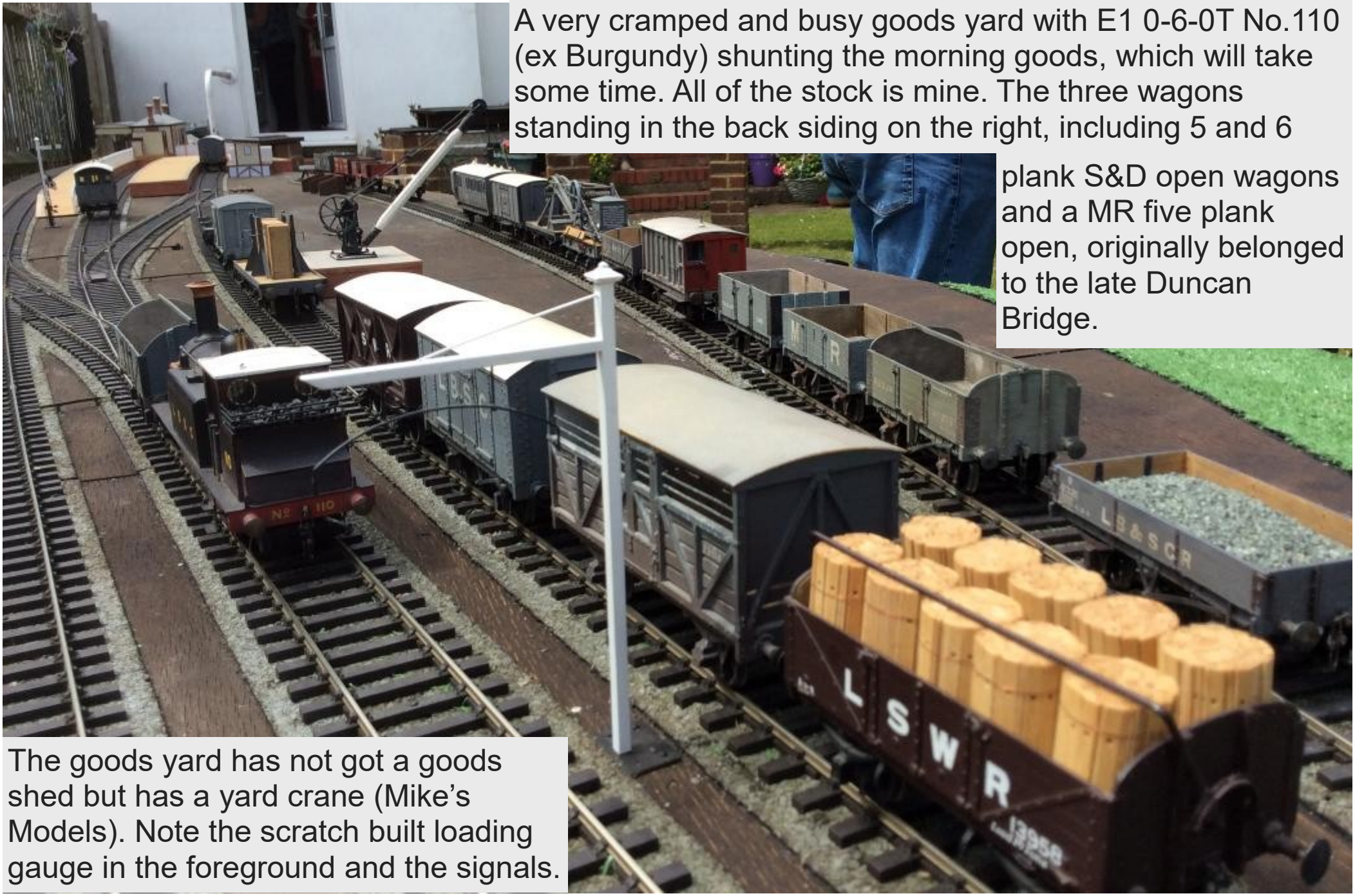
Trying to capture the essence of open countryside, Terrier No.82 Boxhill on a motor train duty, propelling a balloon carriage belonging to David Lowe.

Left

Overview looking in the ‘down’ direction.

Below

Private owner wagons Chapman & Sons of Croydon & Sutton No.22 (Dapol Ref:7F-052-004) and Chichester Coal Co. Ltd No.10 (Gaugemaster Ref: GM7410205) having unloaded coal alongside the coal staithes. Both await weathering.



A very cramped and busy goods yard with E1 0-6-0T No.110 (ex Burgundy) shunting the morning goods, which will take some time. All of the stock is mine. The three wagons standing in the back siding on the right, including 5 and 6 plank S&D open wagons and a MR five plank open, originally belonged to the late Duncan Bridge.

The goods yard has not got a goods shed but has a yard crane (Mike's Models). Note the scratch built loading gauge in the foreground and the signals.

Four locomotives simmering in the sun, parked along the long headshunt, with the mainline in the foreground. Left to right is B1 0-4-2 Gladstone No.197, D1 0-4-2T No.229 Dorking, E4 0-6-2 No 566 and, finally, another E4 0-6-2T No.510 (all the property of David Lowe. All locomotives were once owned by Peter Korrison).

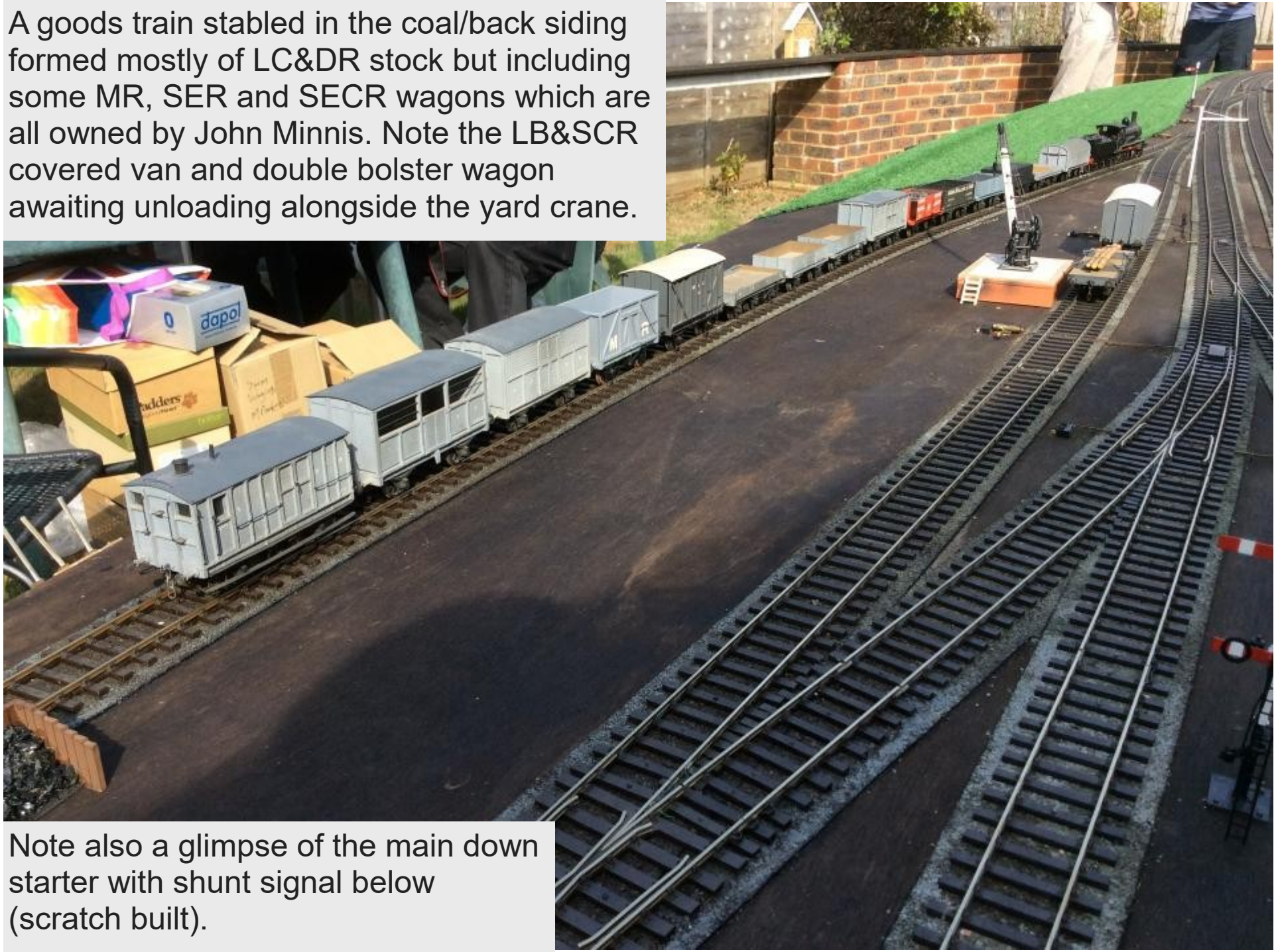
My ED train standing in the long Government siding with the mainline in the foreground. The formation as made up (from left to right) of two Craven brake vans, three 2 plank ballast opens to LB&SCR diagram 37, a 3 plank ballast open to LB&SCR diagram 39 (built by the late Duncan Bridge), a points and crossings wagon to LB&SCR diagram 32, two rail and sleeper wagons to LB&SCR diagram 42, and finally six wheel 20 ton ballast brake van No.327 to LB&SCR diagram 47.

Terrier No.57 Thames, standing in the station awaiting its trip up to the Dyke. It is hauling a mixture of Craven carriages which were scratch built by Peter Wisdom.

Terrier No.51 Rotherhithe on an ‘up’ train towards the Dyke hauling a Stroudley close coupled set. The Terrier is owned by Colin Hayward and repainted by him from a Dapol RTR loco, whilst his close coupled Stroudley set is completely scratch built and also painted and lined by him.

A pair of L&SWR Terriers celebrating a glorious summer day on the Dyke Branch. No.734 is bedecked with bunting and flags on a ‘down’ working back towards Brighton. Both Terriers are owned by Denis Tilman. Note, behind the leading Terrier, the top half of a meat van to LB&SCR 55/225.

A goods train stabled in the coal/back siding formed mostly of LC&DR stock but including some MR, SER and SECR wagons which are all owned by John Minnis. Note the LB&SCR covered van and double bolster wagon awaiting unloading alongside the yard crane.



Note also a glimpse of the main down starter with shunt signal below (scratch built).

I couldn’t resist including this photo of my B2 Class 4-4-0 No.209 Wolfe Barry hauling a mixture of Stroudley and Billinton carriages on another ‘up’ train towards the Dyke. The Stroudley 6 wheel first and full brake were Peter Korrison’s, which I repainted and replaced the chassis. It still puzzles me who built and painted Wolfe Barry.

Spoiler alert - the model of Hangleton station is complete and now painted! For further detail see the subsequent article in this issue.

Return to contents page

Terrierific - a Terrier in Gauge 3

By Mark Pretious

The Garden Railway Specialists (GRS) terrier kit has been around for a while. I personally have built ten of these kits including this one. Of the ten that I have built, three of them are my own personal models, which are all Isle of Wight Locos.

I was approached last year by a new member of the Gauge 3 Society (G3S) to build and paint this, the last terrier kit from GRS, into London Brighton South Coast Railway's Improved Engine Green (IEG) as No77 Wonersh.

Loco History, No.77 Wonersh

No.77 was one of the last batch of eight terriers built and outshopped in 1880 from Brighton Works and was pressed into service on 21st July of the same year. Once the last two terriers (No's 83 Earlswood & 84 Crowborough) of the final batch were outshopped the terrier class totalled fifty. The terriers were initially employed on commuter trains and eventually being displaced to lighter duties as train weights increased. In later life with the LBSC No.77 was added to the duplicate listing becoming No.677 and painted into the LBSC Marsh Umber Brown livery. No.677 was rebuilt to an A1X in November 1911. At grouping in 1923 No.677 took on the identity of B677 under SR ownership.

In 1930 B677 was sent to Eastleigh works along with two other terriers (2650/W9 Fishbourne and 2678/W4 Bembridge) and became W3 Carisbrooke. All of the bunker modifications were done at Eastleigh works prior to the shipping of the three terriers to the island in 1930.

The renumbering of terrier W3 to W13 occurred in 1932 along with two other terriers (W2 to W8 Freshwater & W4 to W14 Bembridge) to make way for the 4 LBSC E1 tanks that were being sent over to take the island No's W1-4. W13 was auto fitted and was regularly used on the Ventnor West branch with the LCDR 4-wheel set 484 and latterly the LBSC bogie coach push pull set 503. W13 had the distinction as being the only terrier to be painted into SR lined malachite green in 1947. W13 was sent back to the mainland in 1949 surrendering its name to the last of the Islands LSWR 02's W36 Carisbrooke which took over duties on the Ventnor West Branch.

Upon its return to the mainland W13 assumed its BR number as 32677 and still retained its lined malachite green livery until its next major visit to the works when it later emerged in BR lined black livery. She spent most of her remaining life working the Hayling Island branch until withdrawn in September 1959 and was scrapped at Eastleigh in April 1960. During the scrapping process the IOW bunker was grafted onto classmate 32662 (Martello) which is now preserved at Bressingham Railway Museum.

The Build

Having made nine of these kits previously, the instructions were superfluous in this instance as I can do the build pretty much in parrot fashion.

The chassis was bolted together in the normal way with equalising beams, axle boxes, keeper plates, guard irons, brake rigging as well as the axles, wheels and motor/gearbox as supplied. The painting of the chassis was done using Halford's etched metal primers as well as the satin black and Ford Rosso red. The wheels were painted by hand using the paints from Phoenix

Precision Paints. These include the yellow ochre, sage green and the frame claret. For the wheels I had to create imitation balance weights, these are made from 20thou plasticard and cut using a circular cutter. Once fitted these were painted green and where the spokes of the wheels meet the balance weight, the yellow ochre colour is painted as if to give the impression the balance weights are not actually there and the spokes carry on through to the rim, this is something I've noticed on preserved terriers Stepney and Boxhill, so I felt it right to do the same.

As the loco kit is designed as an A1X particularly based around No.32636 Fenchurch, a few body work details needed to be addressed. This included the shortening of the smokebox by 7mm, salvaging the smokebox door, building up the sandboxes against the front splashers and possibly the biggest alteration was the creation of the front wing plate and changing the smokebox shape to an early pattern D shape as designed by Mr Stroudley. At this point the loco is now an “A class” as built. The chimney as supplied is the later pattern so a friend of mine has agreed to create a new chimney on his lathe to show the loco off in “as built” condition.

The main body work components are comprised of four resin moulds. They are the smokebox/ short boiler section, tank/cab/bunker/toolbox, firebox back head and the cab roof. The smokebox/ short boiler section and tank/cab/bunker/toolbox parts were positioned on the steel footplate and the holes were drilled through the resin moulds to allow the self-tapping screws to hold the bodywork to the footplate in the correct position. The chimney, dome, tank vents, handrail knobs, splashers, whistle and other items are all a mix of brass and white metal castings that are glued or screwed in place. The cab floor in the loco is made up from some scrap 40 thou plastic card and scribed to represent the wooden planks prior to painting.

Radio Control

The radio control equipment that I have fitted is supplied from Fosworks. The loco is running on 11AA batteries which are located inside the boiler barrel and the tank space. Also inside the tank space is the receiver and sound card. The speaker is mounted under the footplate, which is directly below the smokebox, so the sound comes from the correct location. The switch and charge socket are located inside the bunker space.

This short video illustrates the effectiveness of sound in a loco of this scale.

Video.mov

Painting

When I was at the painting stage I used Halford's white plastic primer, once the first coat had dried it was given a light rub back and then a second coat of primer was applied to the body shell. The yellow ochre and the green borders were entirely brush painted and for this job I purchased a brand new flat wide brush from my local art shop. I was able to apply three thin coats of the yellow ochre rubbing back after the first and second coats to make sure that the final topcoat would be perfect. For the green borders I purchased another brand-new brush and painted this free hand. Once all the paint touch ups had been done the model received a spray of gloss varnish.

Lining

Prior to building this kit, I had built and painted in the smaller scale of 00 three models of the Gladstone loco kits into Improved Engine Green (175 Hayling, 181 Croydon and 214 Gladstone) from Lytchett Manor models. When it came to painting these models the base coat of the yellow ochre and the green borders were brush painted. I then approached a friend of mine from Taunton who is very good at making bespoke transfers for models.

Previously he had done some transfers and lining for a few Ffestiniog locomotives in 7mm narrow gauge. The results were superb so when I approached him about creating a transfer sheet for the 00 Gladstone he rose to the challenge and exceeded my expectations. To date he has provided transfers for numerous models across numerous scales that I have built for customers as well as for my own use.

The principle of how the transfers were designed and applied to the model is the same regardless of scale. For example, the tank panel is one single transfer which includes the lining and the name of the modeller's choice, in this case the name is 'Wonersh'. The other panels such as cab side, bunker rear, toolbox, boiler bands and splashers were all part of the transfer sheet designed and created by Mark Seward. To get the best out of these transfers the model must be painted to a good finish then gloss varnished and allowed to dry for at least a week. Then the water slide transfers can be applied but this process does take time; great care is needed to make sure that the transfer is not damaged in handling, and it is positioned correctly. Once I had all the transfers in position, I was then able to spray the whole model with more gloss varnish to seal in the transfers. Normally at this stage I would then spray varnish the model into a satin or matte finish depending upon the model, however this loco deserves to be in a gloss finish. The varnishes that I use are the Railmatch matt, satin, and gloss varnish.

The etched brass makers plates and number plates were supplied courtesy of Diane Carney and these came in an unpainted state. I had to paint the makers plates black and wipe away the excess leaving the recessed lettering painted black. I did the same process on the number plates but used blue paint instead.

It would be nice if GRS was able to reissue this kit, but I do understand that manufacturing costs are an issue so all I will say is that we, the G3S, would not be as far advanced without Garden Railway Specialists, and we all owe them a great debt of gratitude.

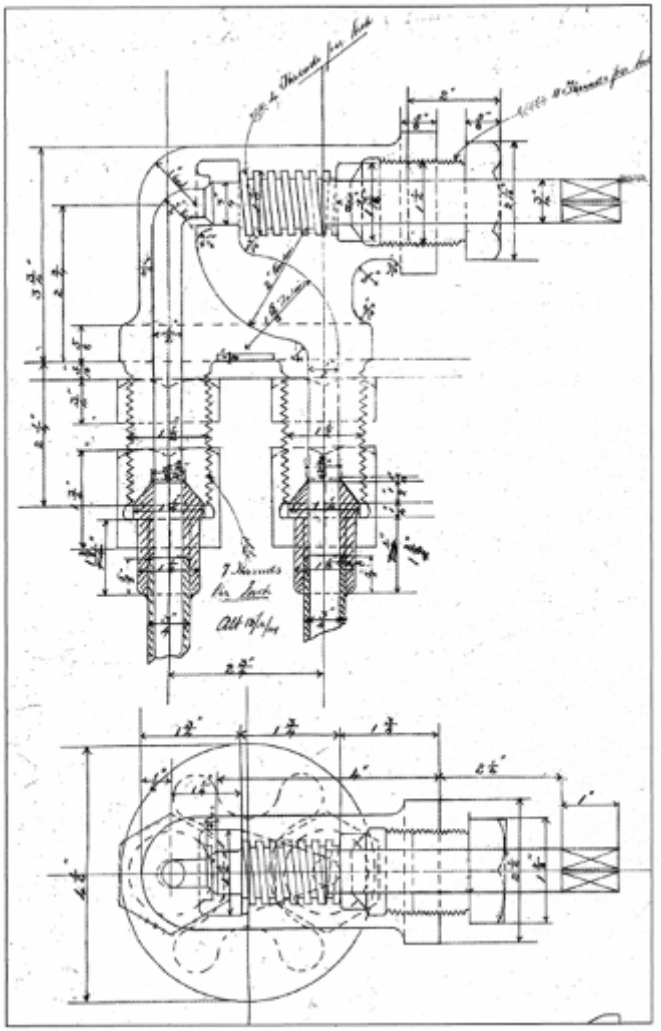
As you can see the loco No.77 Wonersh looks superb, and I am slightly envious that the loco is not *my* loco. However, I have had the immense pleasure of building a superb kit and finishing it into an instantly recognisable livery.

If anyone does want to repaint their terriers into the same livery the transfer sheets are available from Mark Seward and the tank side name can be changed to the name of the persons choice. If anyone wants Mark's details, please feel free to message me.

Return to contents page

Blowers and Lubricators

By Nick Holliday

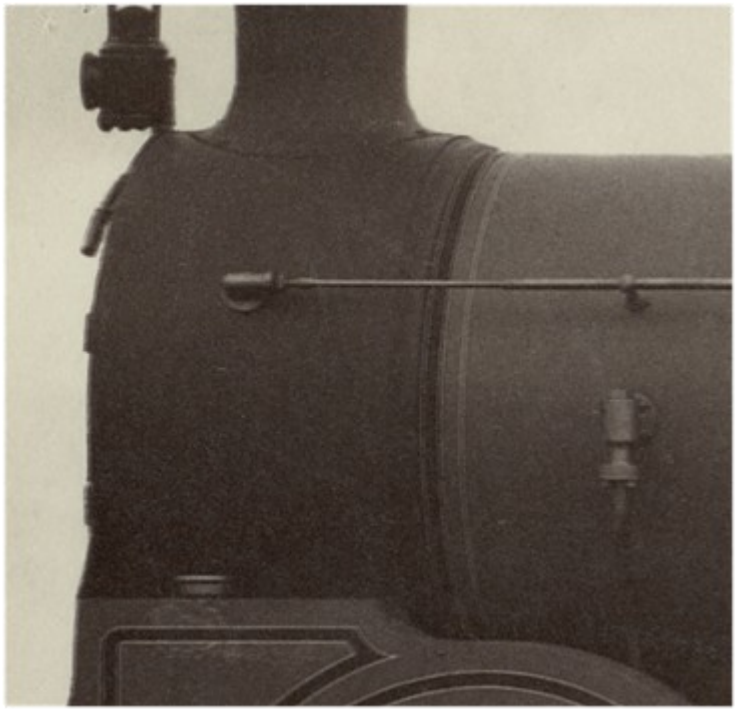


Whilst Stroudley was working at Peterborough on the GNR, around 1857, he seems to have been involved with, amongst other inventions, the development and introduction of the steam blower, and when he came to Brighton, he brought his enthusiasm for the device with him. On his first new design, the C Class 0-6-0, the first two were fitted with a blower in the smokebox, controlled by a rod carried within the boiler handrail on the left, nearside of the loco, with a simple T handle in the cab. For the first two of the class, within the right hand, offside, boiler handrail, there was an operating rod, with a spoked circular handle, for a control valve in the smokebox to control the steam being re-routed to tender but this proved unsuccessful, and was not repeated on further locos.

Subsequent locos were provided with an in-smokebox gravity

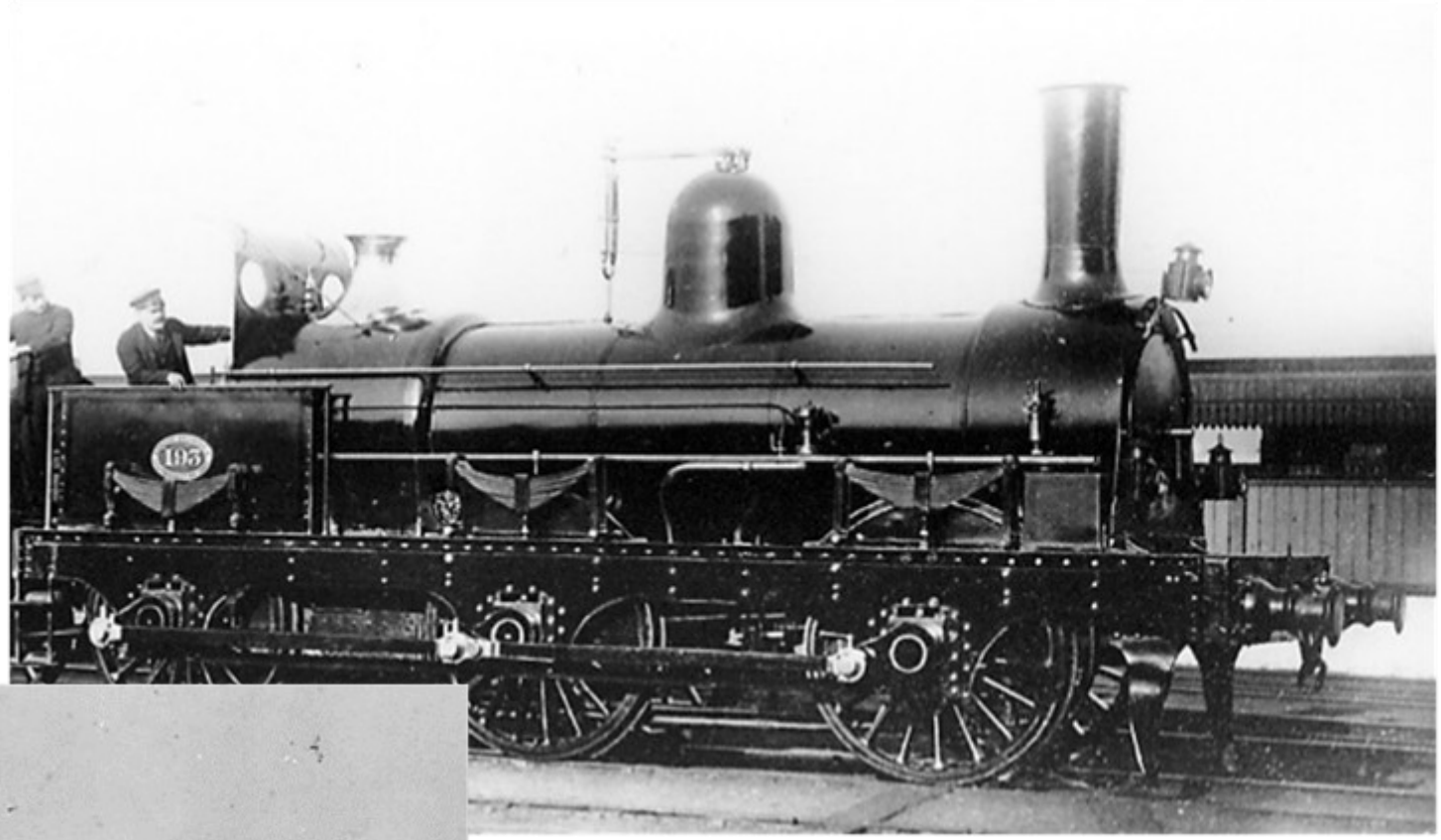
lubricator which was operated using a rod within the handrail on the right-hand side. On both sides, the handrails stopped short of the smokebox, the operating rod projecting forward to the prominent brass casting that transferred the motion to the equipment within the smokebox.

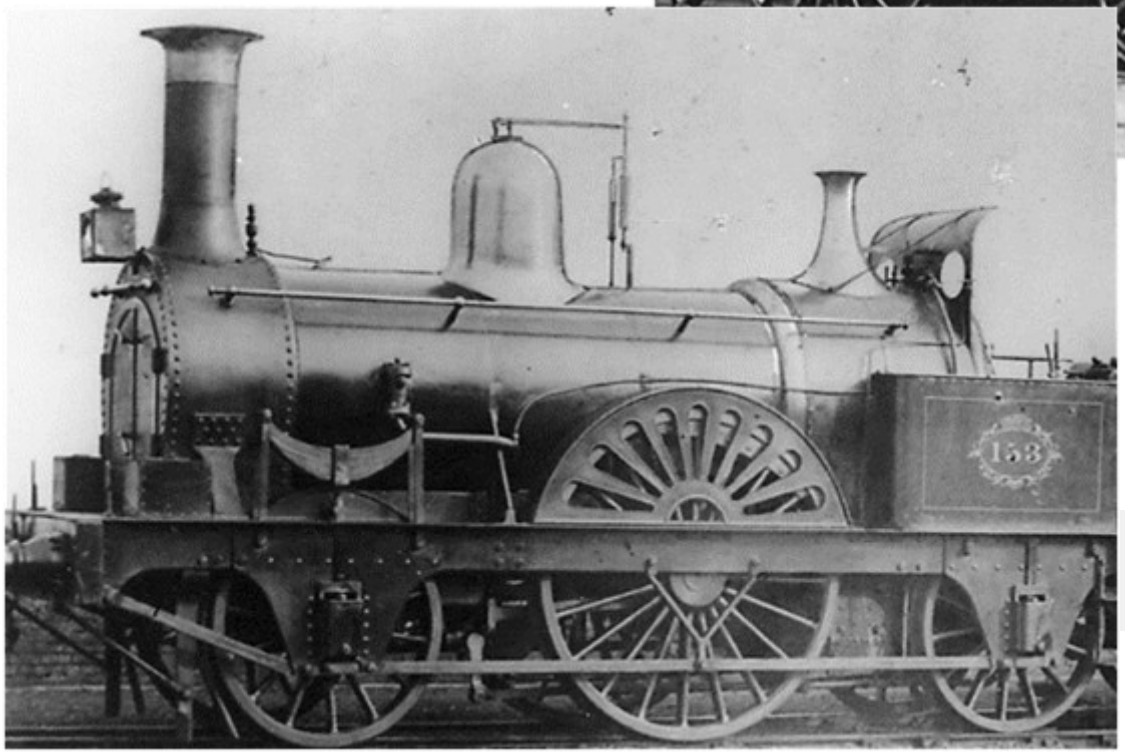
This drawing and photo show the Caledonian Railway's version of the Stroudley blower control valve, very similar to the Brighton version.



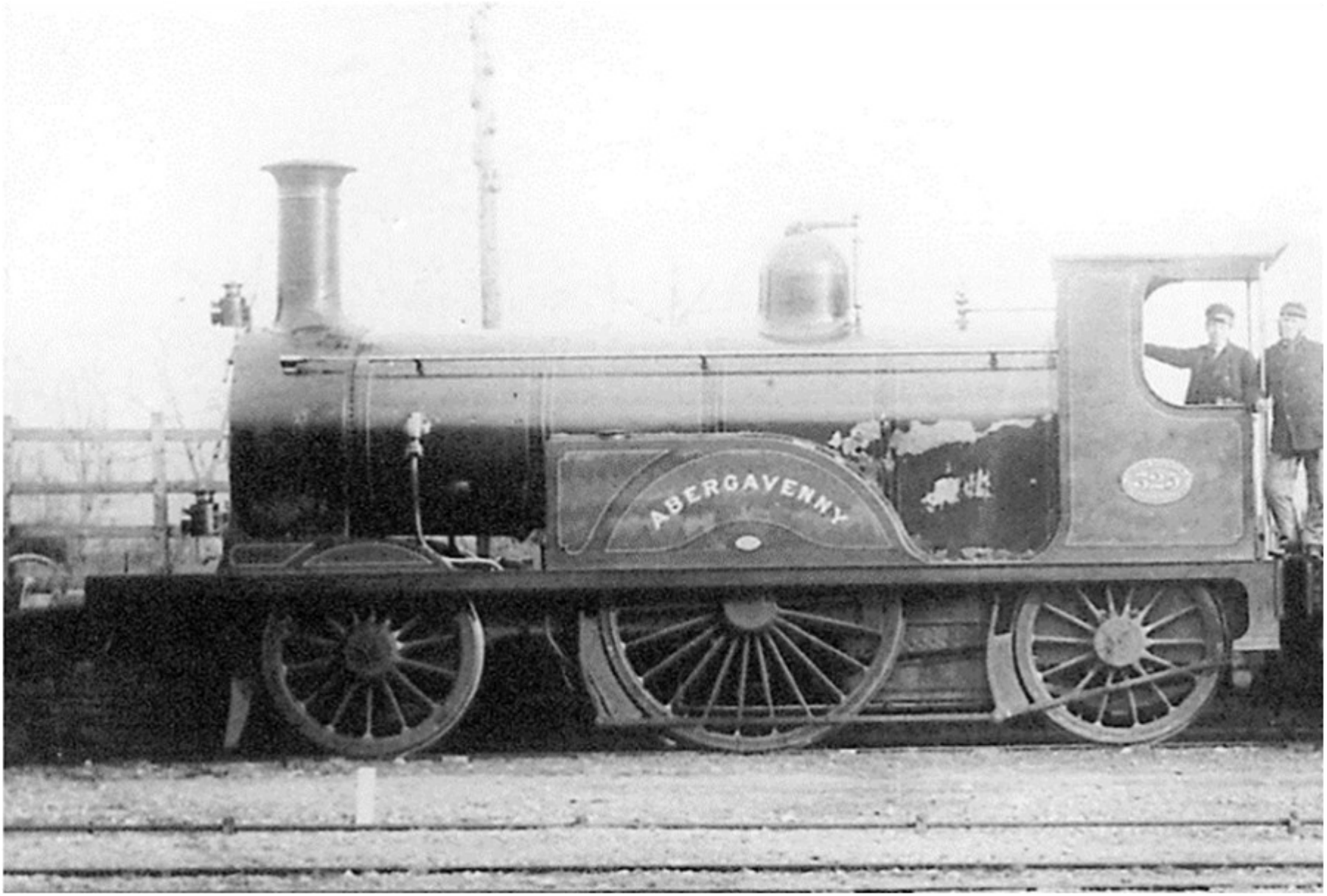
Craven locomotives originally had simple boiler handrails, many of them stopping short of the smokebox, with a separate curved handrail over the smokebox door, although some had a continuous handrail.

Craven 2-4-0 No 461, with a continuous handrail.



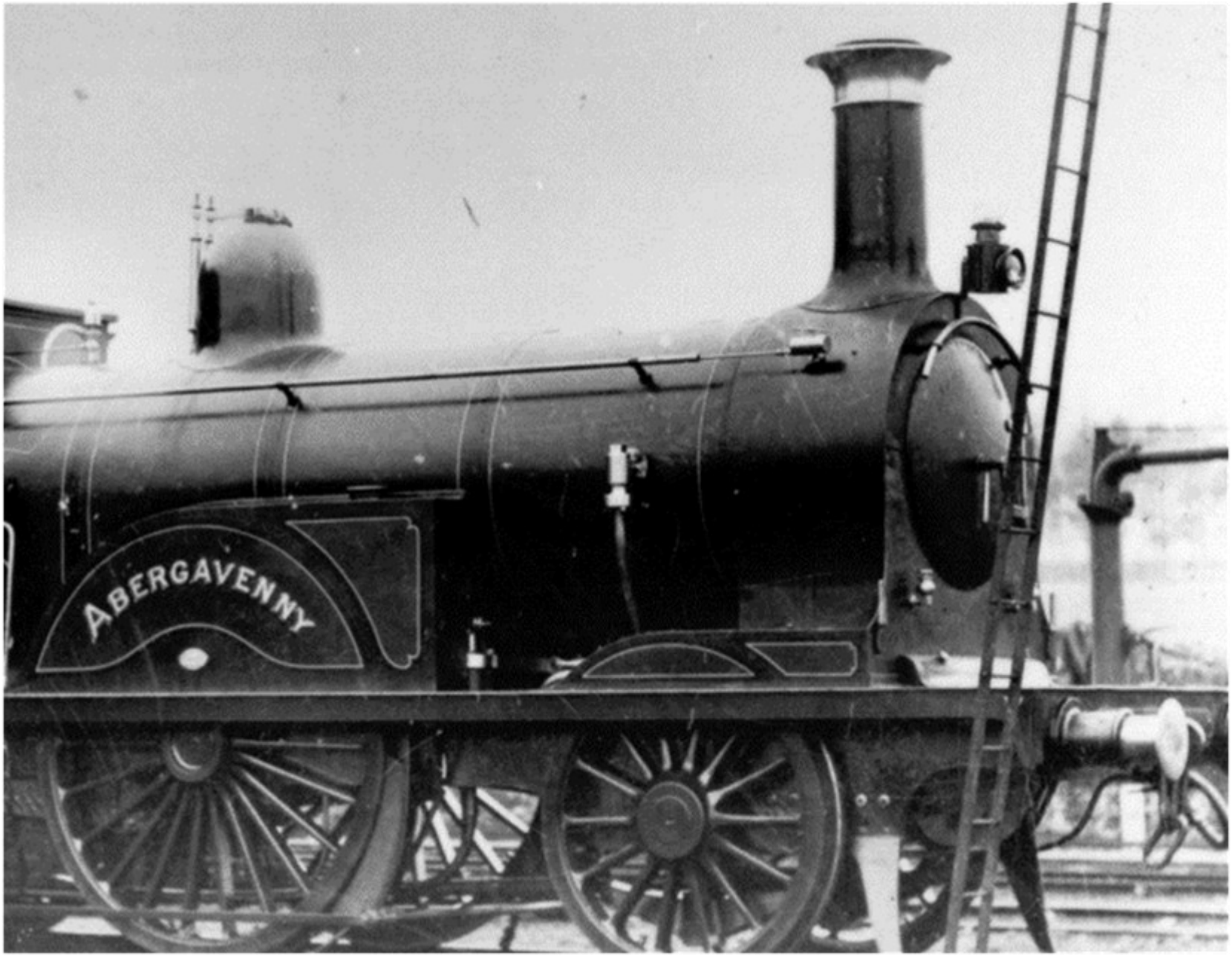


... and examples with straight handrails.



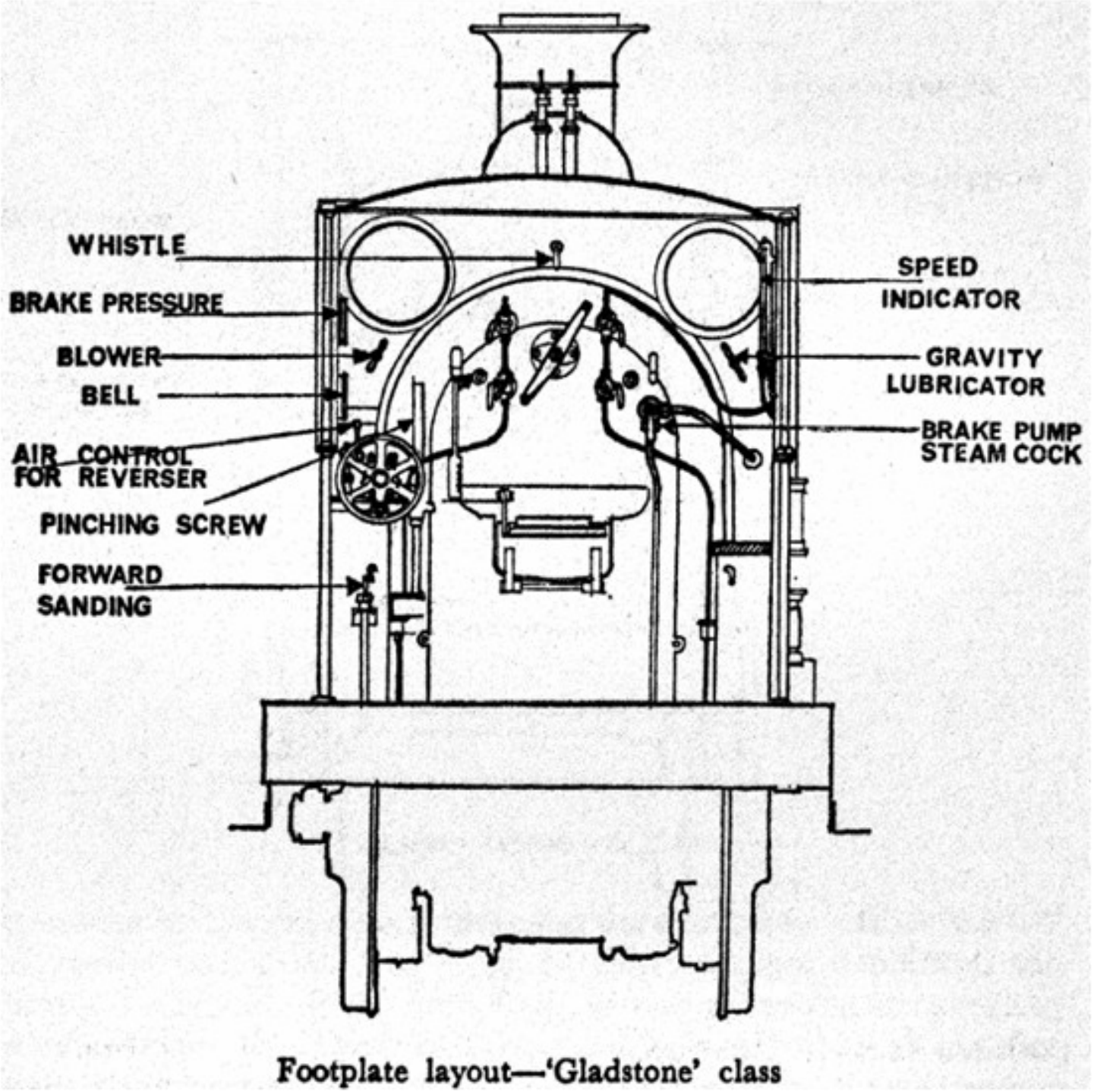
The production version on Stroudley's new locos is exemplified by these views of his single *Abergavenny* as built.

It is clear to see how the handrail itself stops short, and that the lubricator control is similar to the blower, but rather bulkier.

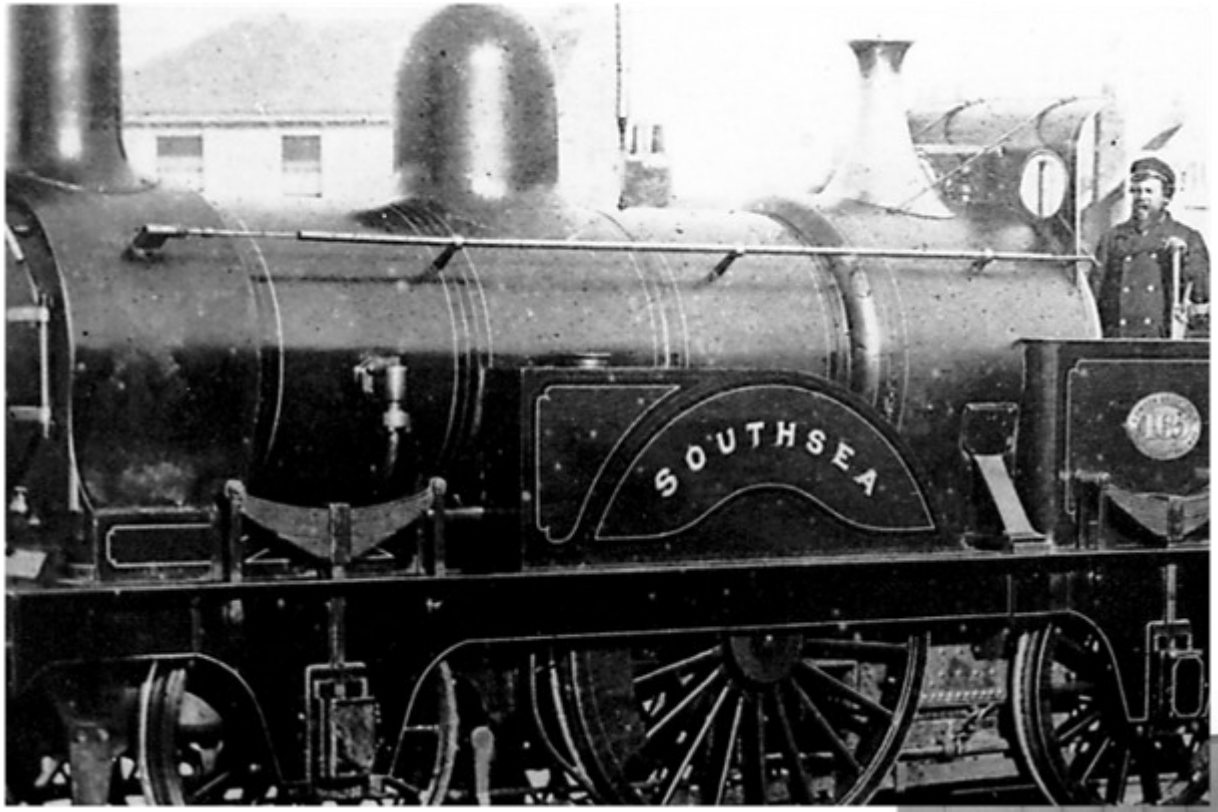


At the cab end, the handrail stopped short, with the operating rod passing through a ferrule in the cab front.

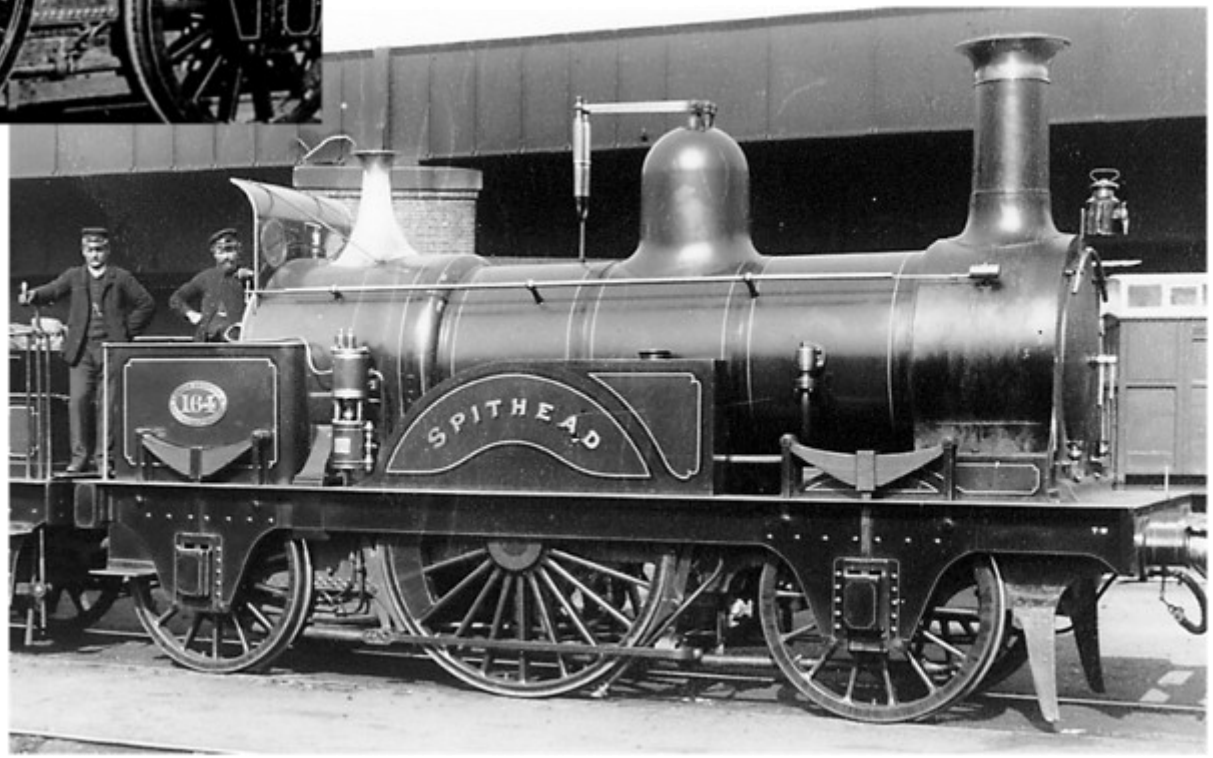
The cab controls were very simple, as this view of the Gladstone class cab shows.



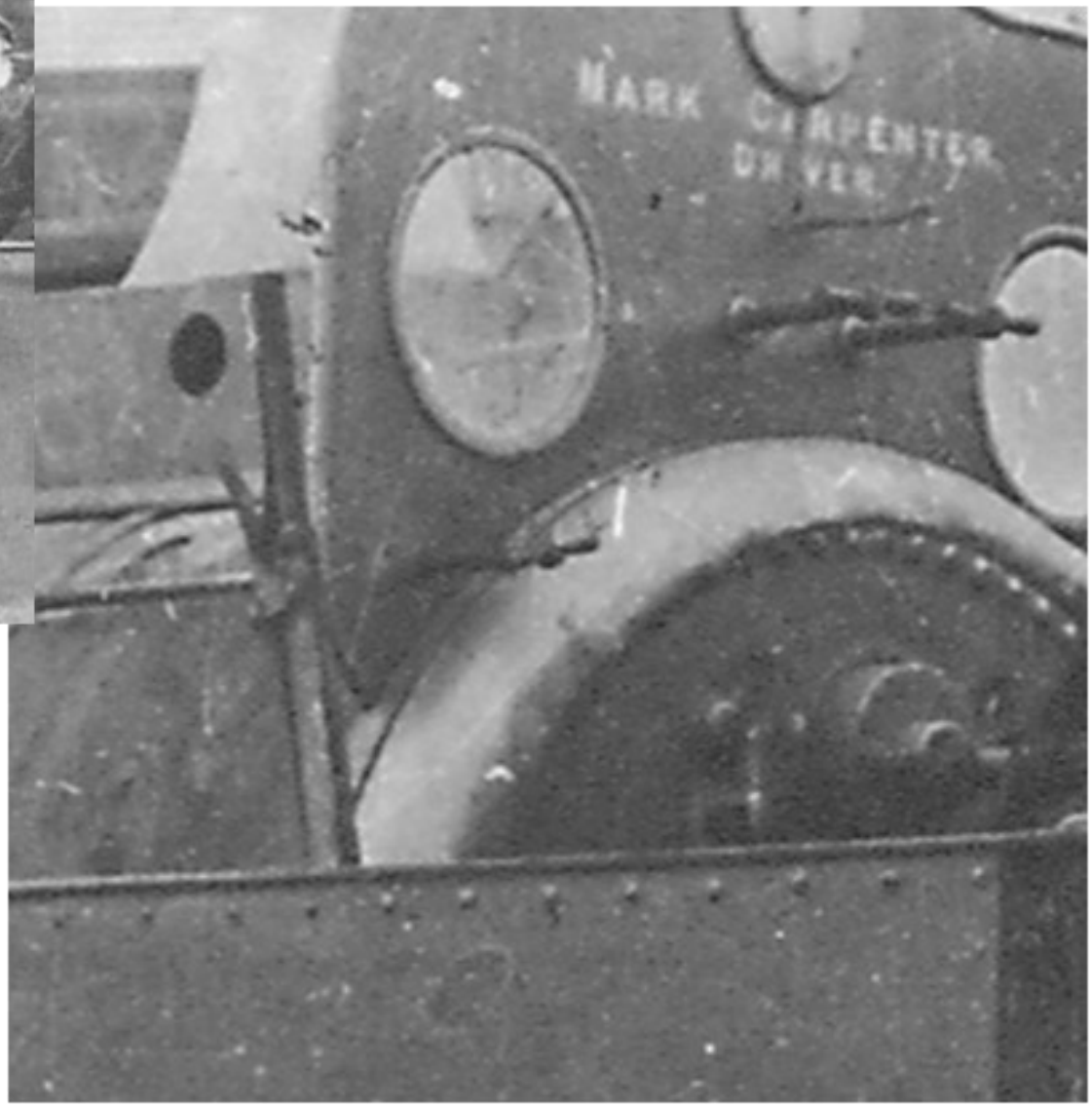
Footplate layout—'Gladstone' class



Many Craven locos, mainly tender types, were also fitted with the blower valve and their lubricators operated remotely.



And these photos of Craven goods show the operating handle more clearly.

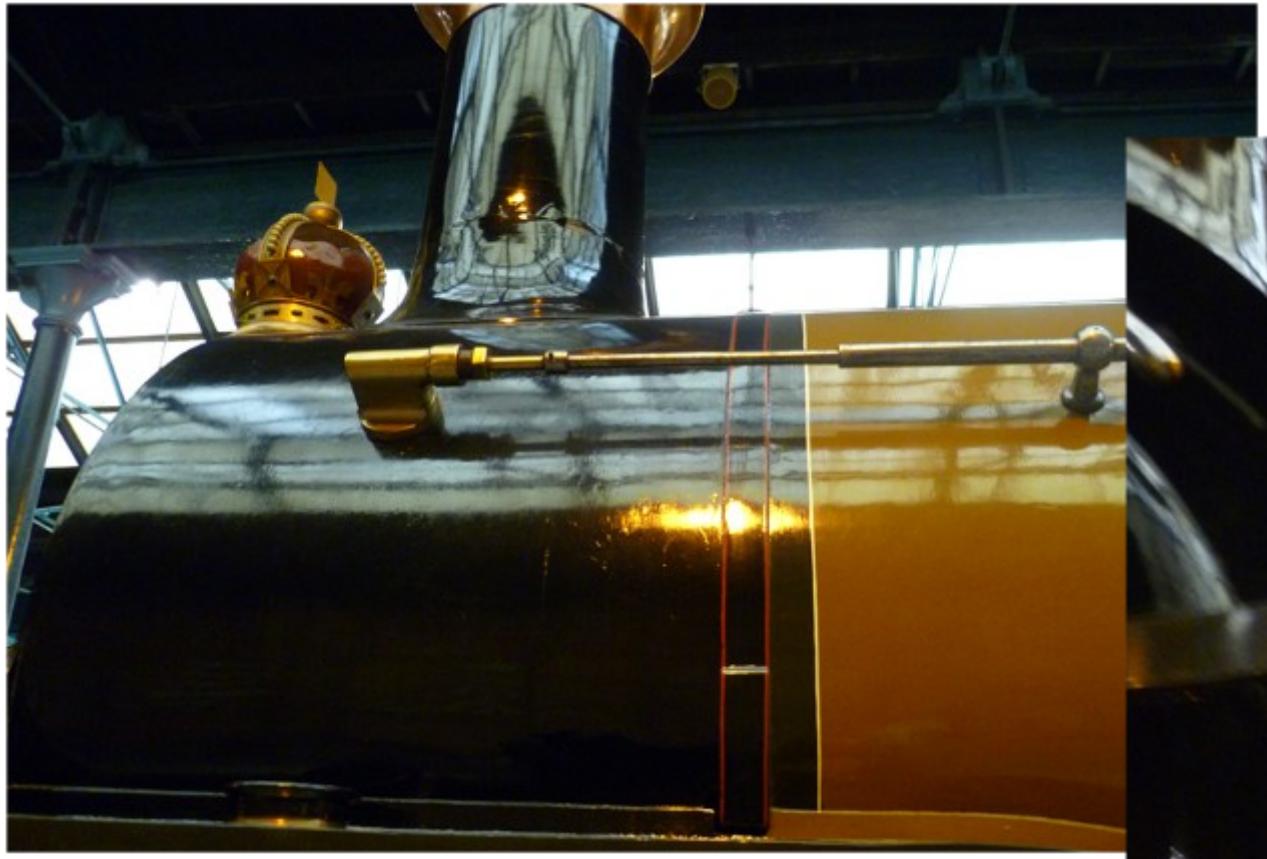


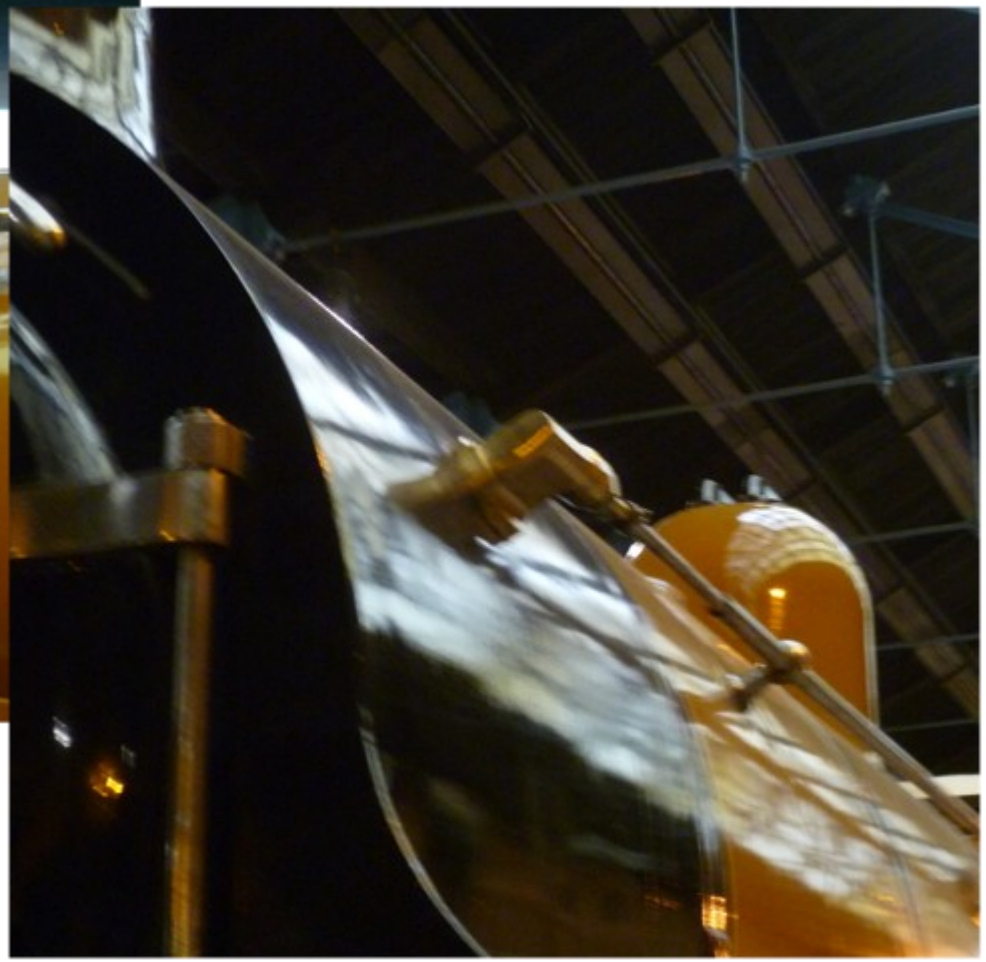
This view of the single *Portsmouth* shows how the handrail was stopped short of the cab front, with the operating rod passing through a ferrule in the sheeting.

Gladstone today.

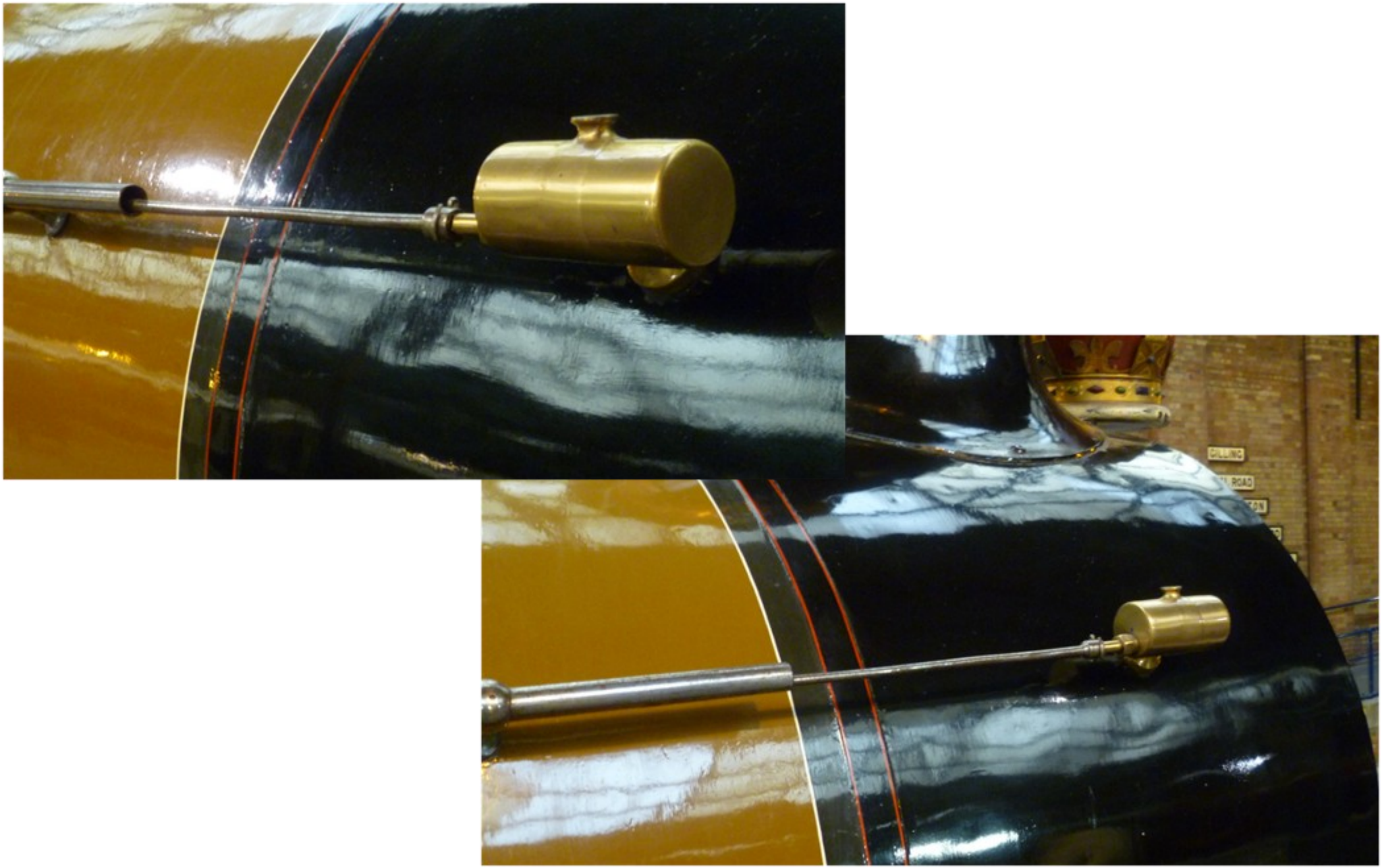
The preserved loco at the National Railway Museum at York allows us an opportunity to see these fittings in close-up, as they were reinstated for preservation.

Blower



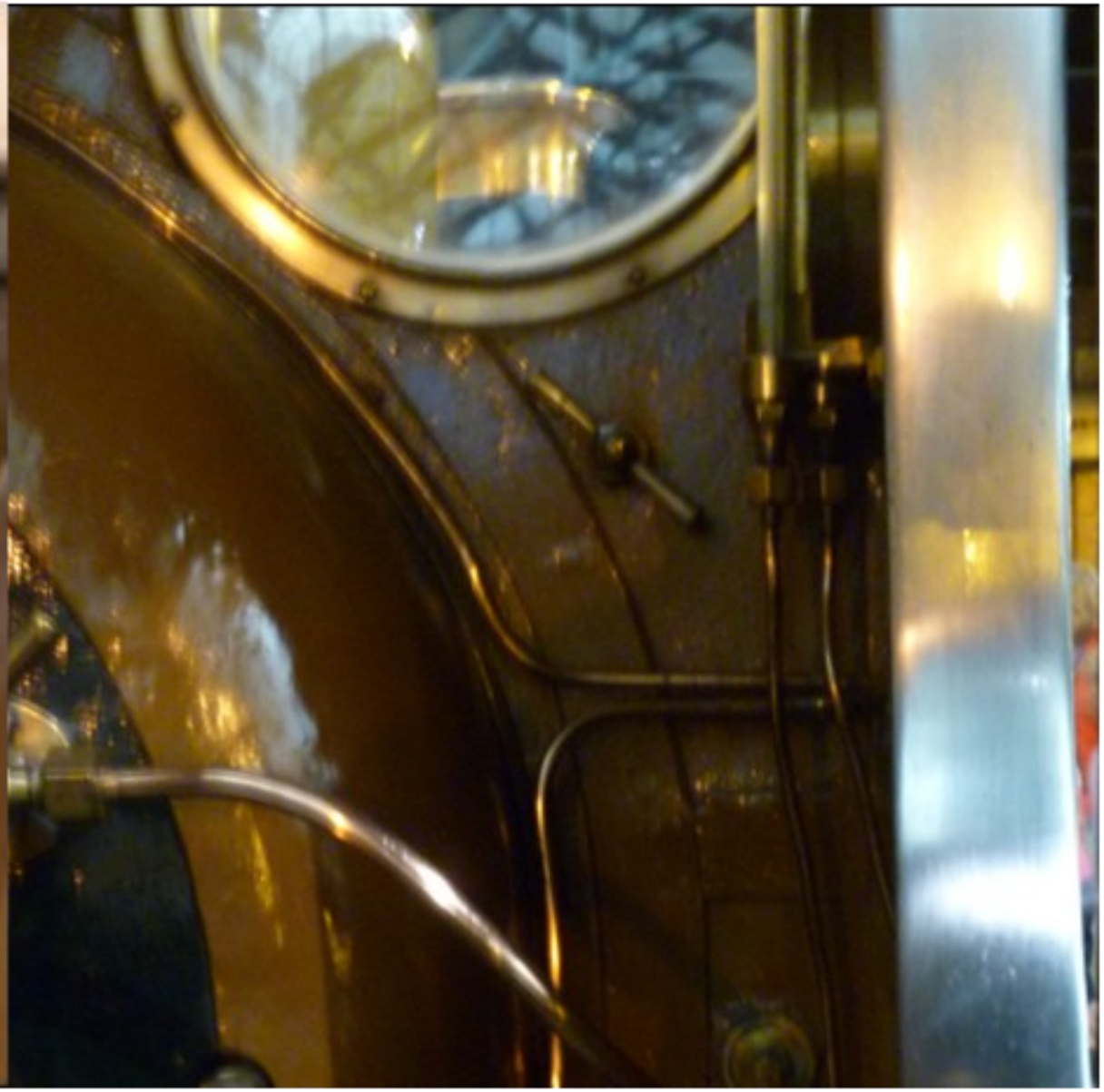


Gravity lubricator. Note the hollow handrail and the larger diameter of the brass body.



The cab

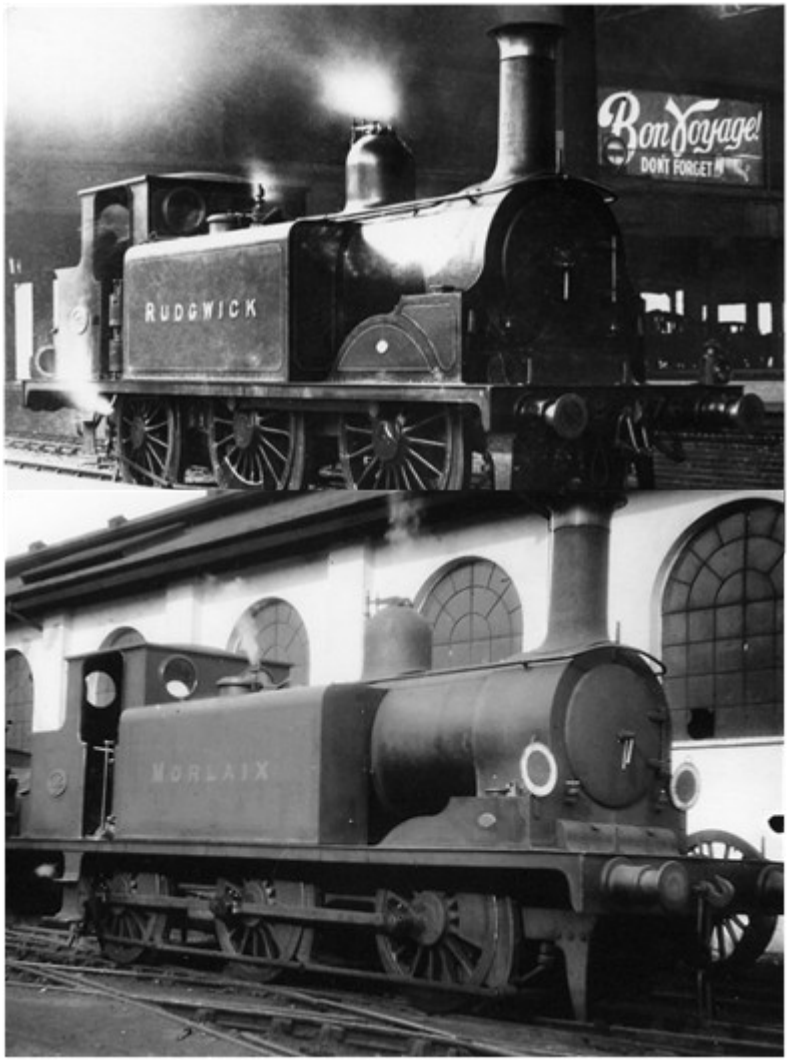
Control handles for blower to the left , and lubricator to the right.



Point of entry through cab sheet

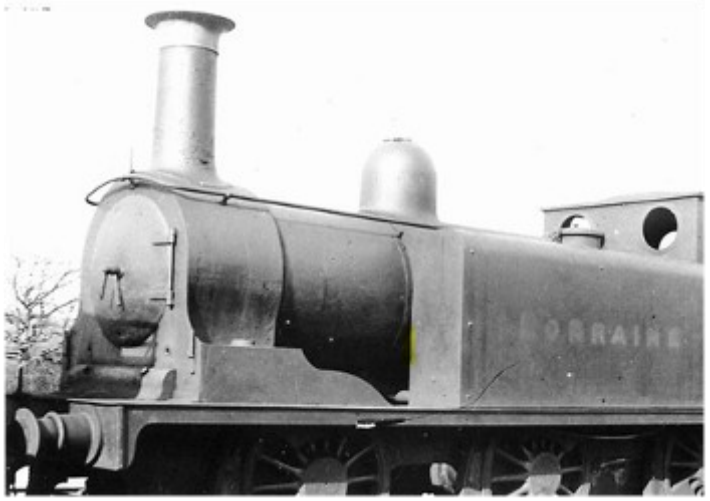
From 1872 this was the standard arrangement for all new locos, until 1889, when, starting with Gladstone No 189, *Edward Blount*, the footplate controls were changed. The introduction of a sight-feed lubricator in the cab meant that the right-hand control was no longer required, and the blower control was repositioned to the faceplate to the left of the left-hand water gauge. These changes were sometimes accompanied by making the handrail continuous over the smokebox, although in many cases the handrails were unaltered.

Bradley is strangely silent about these changes, merely noting that two D1 class, *Patcham* and *Rudgwick*, were fitted with continuous handrails in 1894 when they received new boilers, and "these were the only two of the class so modified, although the "Gladstones" and many of the singles had the continuous handrail fitted as *a safety precaution* by Robert Billinton." He does note that two E1 class *Morlaix* and *Lorraine* similarly received continuous handrails when they received new boilers in the same year.



Rudgwick and *Patcham*

Morlaix and *Lorraine*

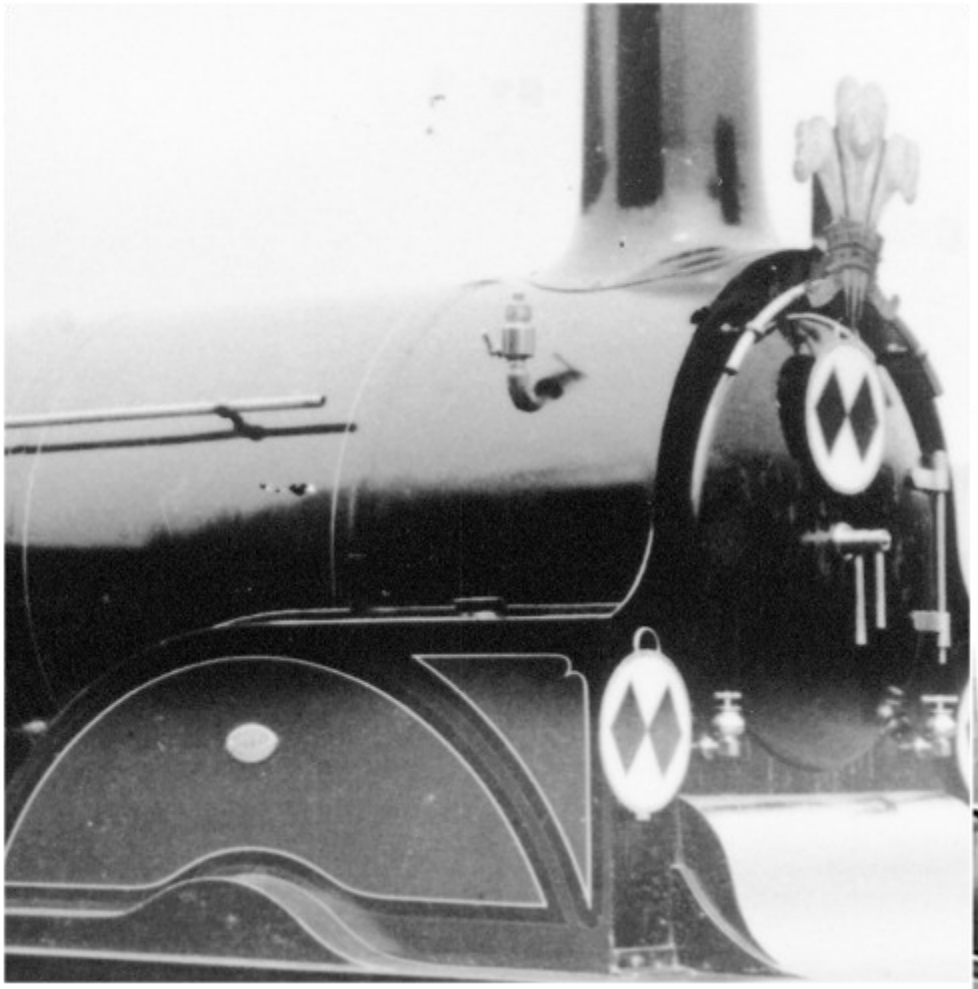


With regard to the “Gladstones”, it should be noted that the earlier examples, 190-200, 214-220, were built before the change, but for many of these the modifications came early, and so there are few photographs showing them as originally built, although some appear to have retained the blower control incorporated within the continuous handrail.

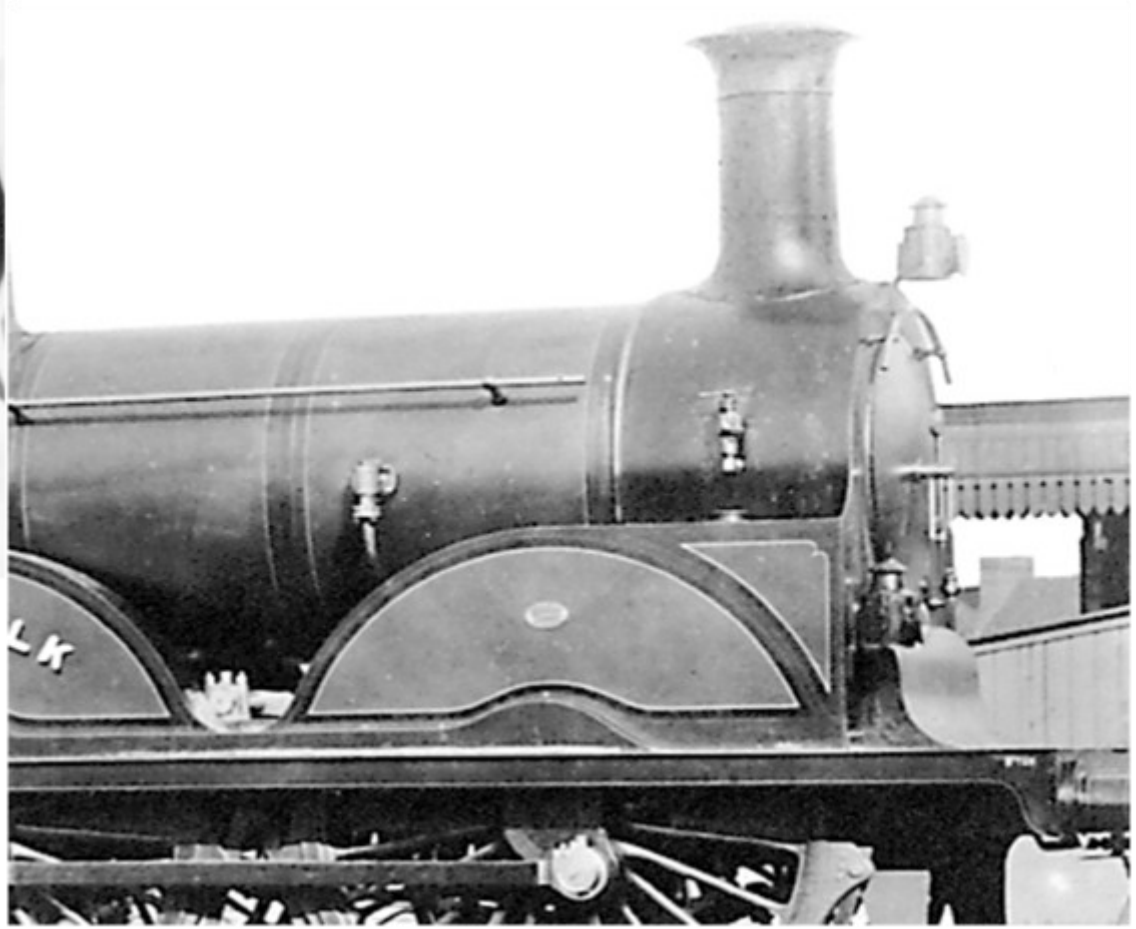
The actual alterations to the handrails were carried out in various ways. The simplest was to just remove the fittings on the smokebox, leaving the handrails as they were.

Gladstone *Arthur Otway*

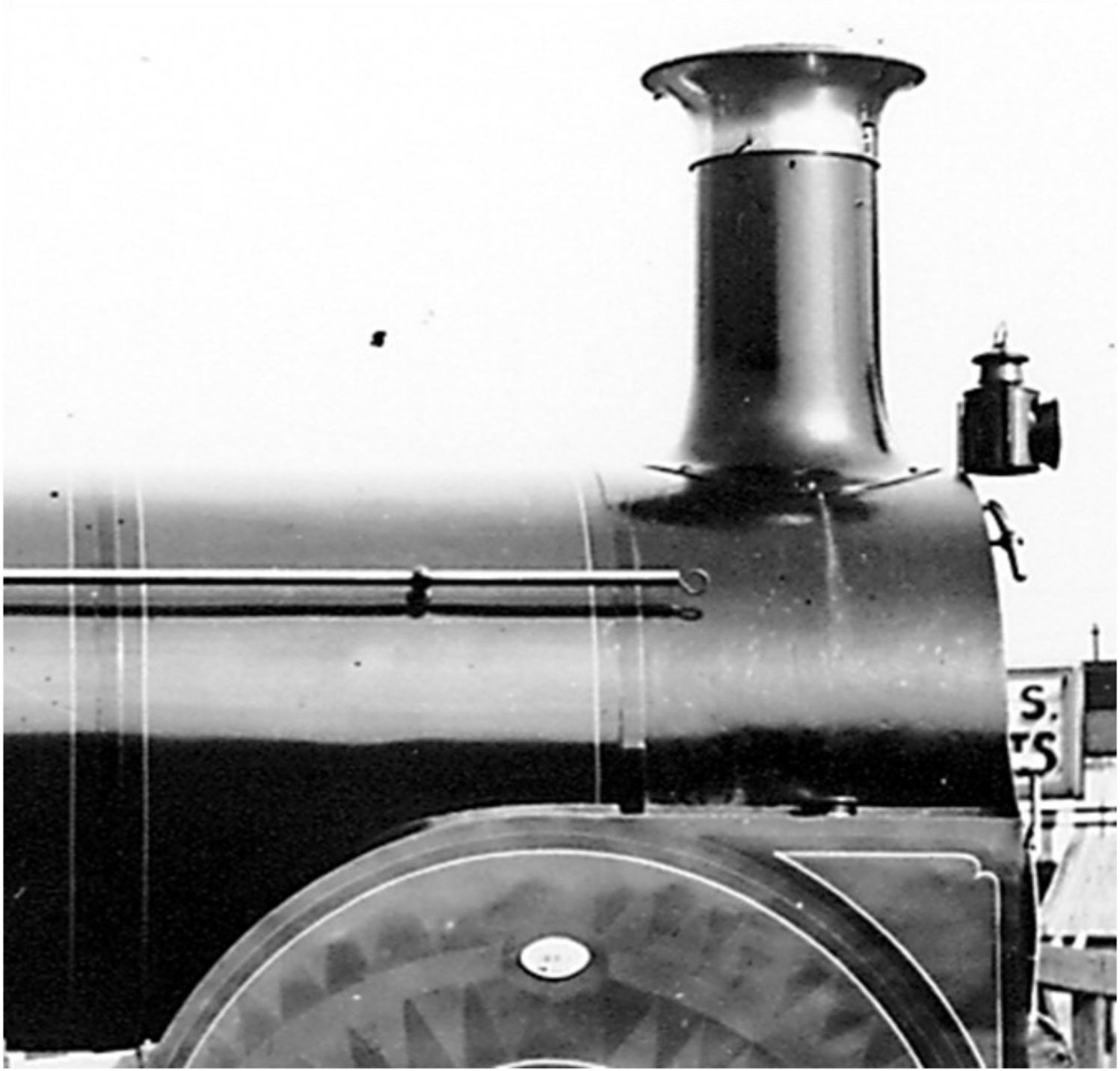
Some seemed to have had the lubricator replaced by an alternative device



Left - Gladstone *Samuel Laing* – having acquired a fitting (manual lubricator?) on the smokebox.



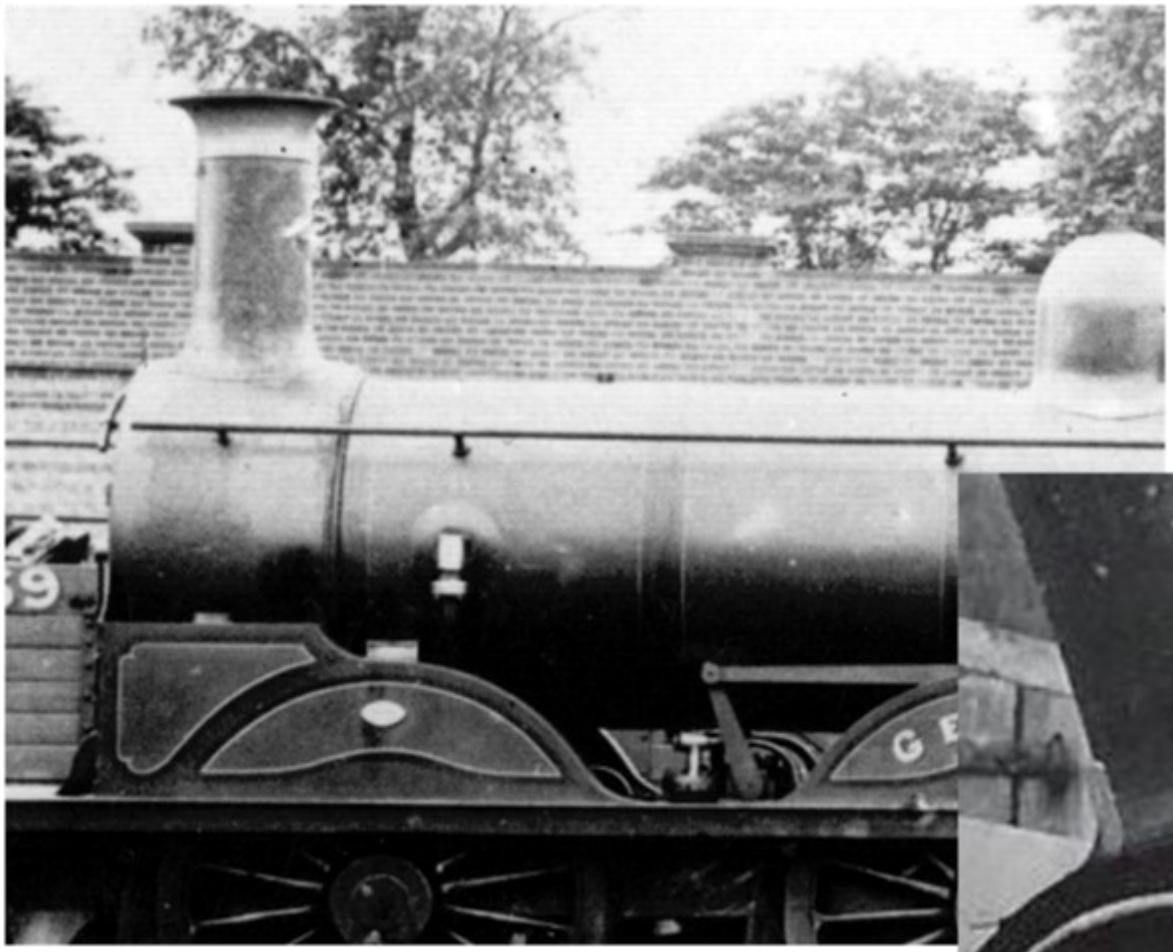
Right - Richmond *Norfolk* with a slightly different device on the smokebox

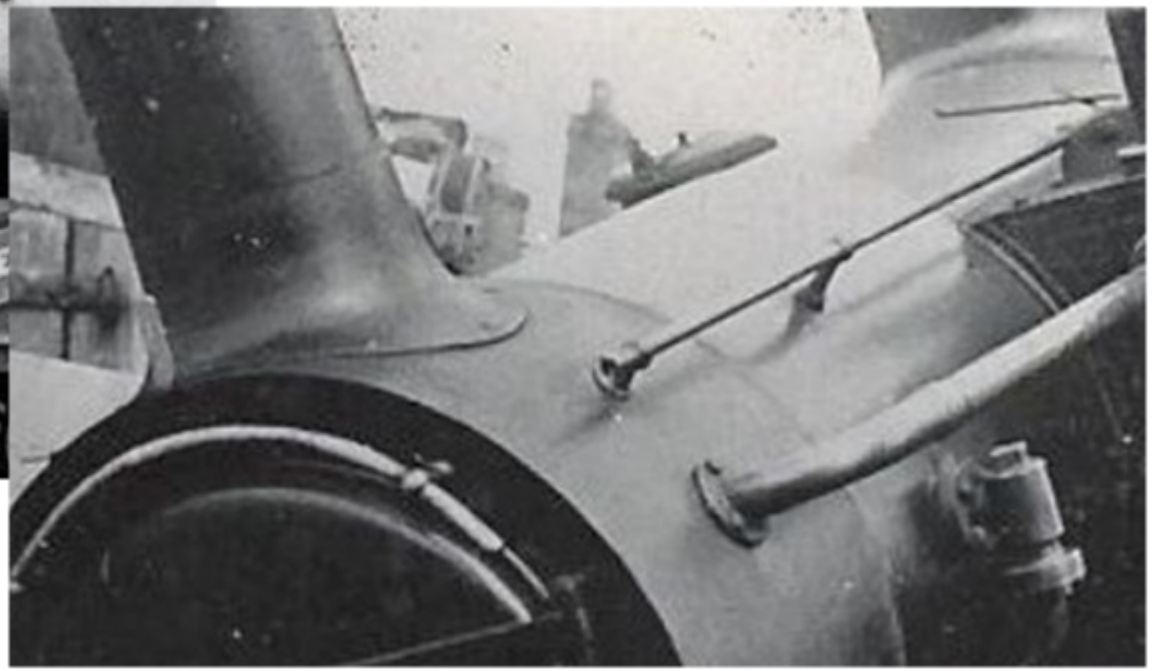


Gladstone *De La Warr* - Sometimes the operating rod appears to have been left in-situ!

With others the handrail was just extended with an additional bracket, with different lengths.

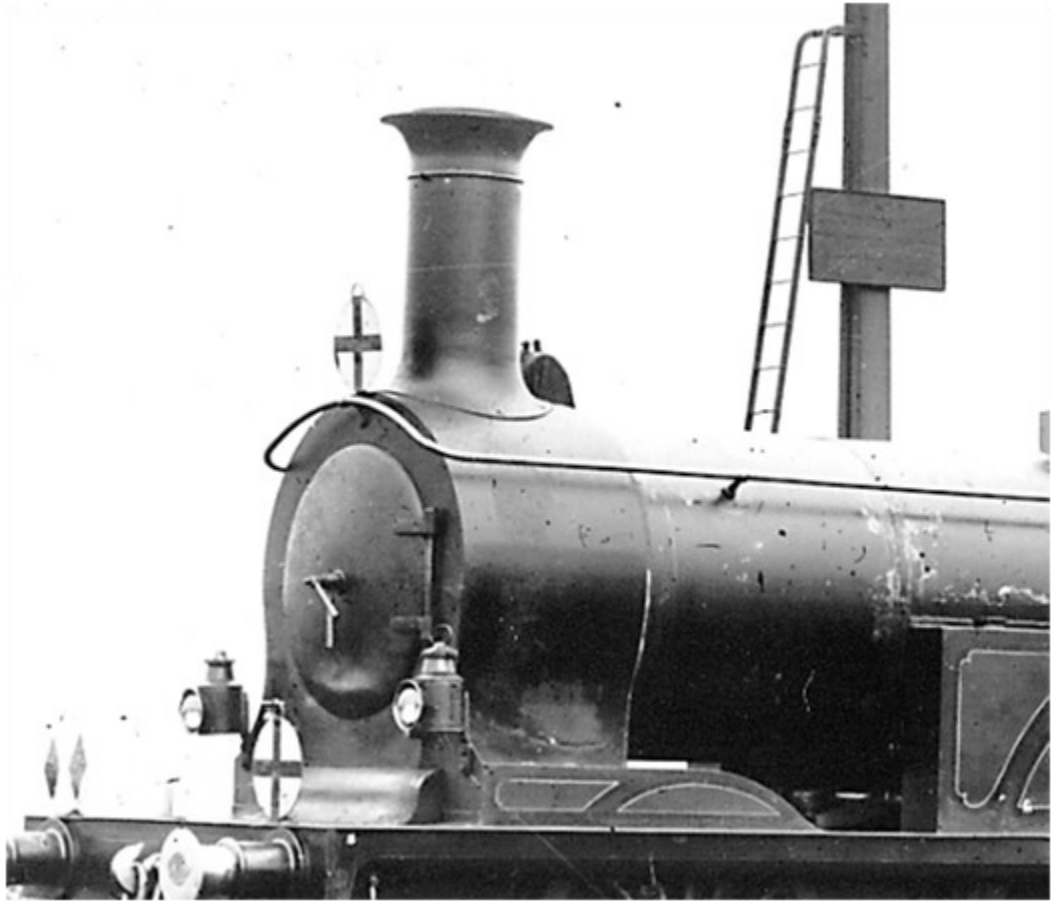
D2 Genoa



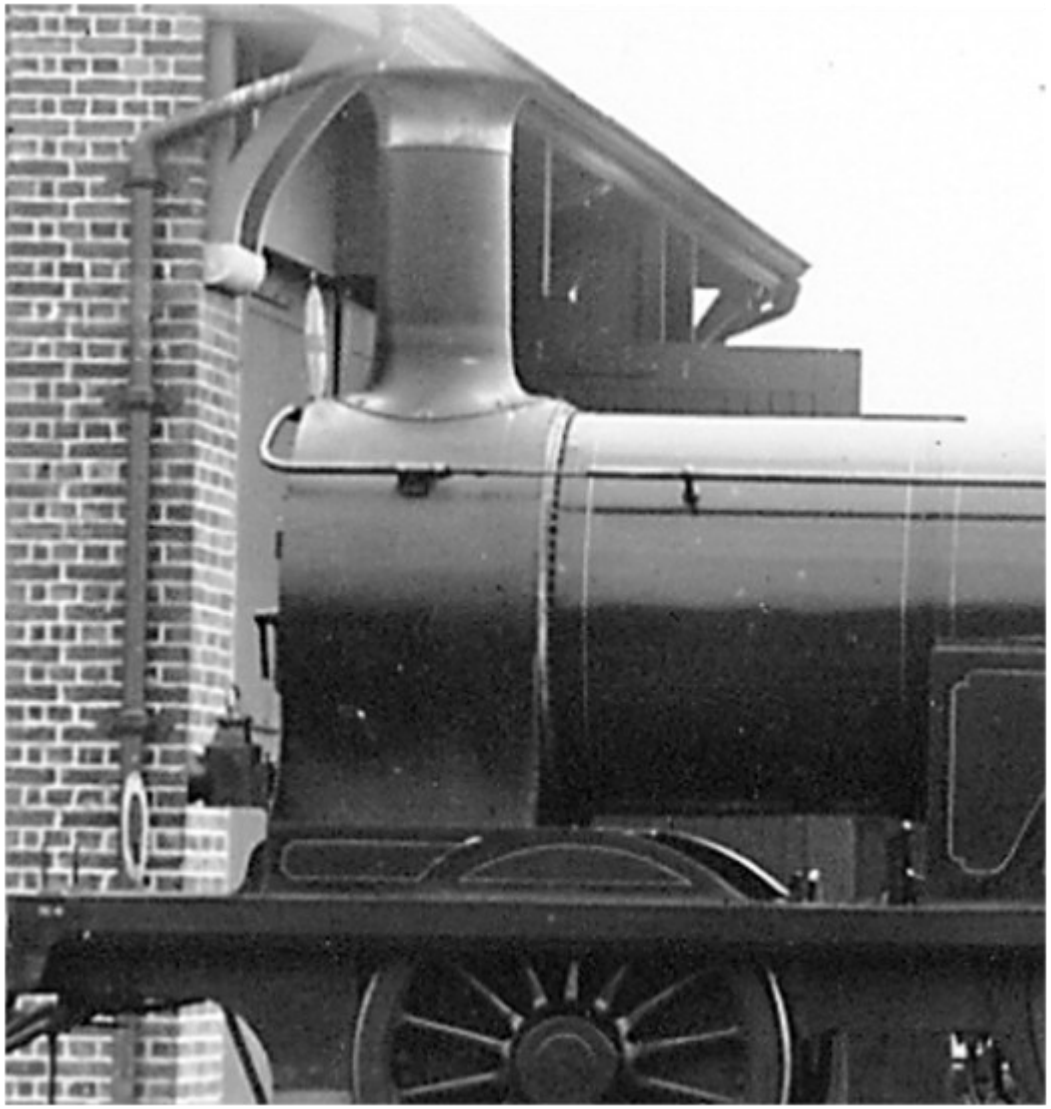


D1 No 390

The “standard” improvement seemed to be as below



Left The Single *Imberhorne.*



However, some received the continuous rail whilst retaining the blower fitting, although it appears the lubricator was replaced.

Right the Single *Lullington*

After *Edward Blount* most new locos appeared with the continuous handrail.

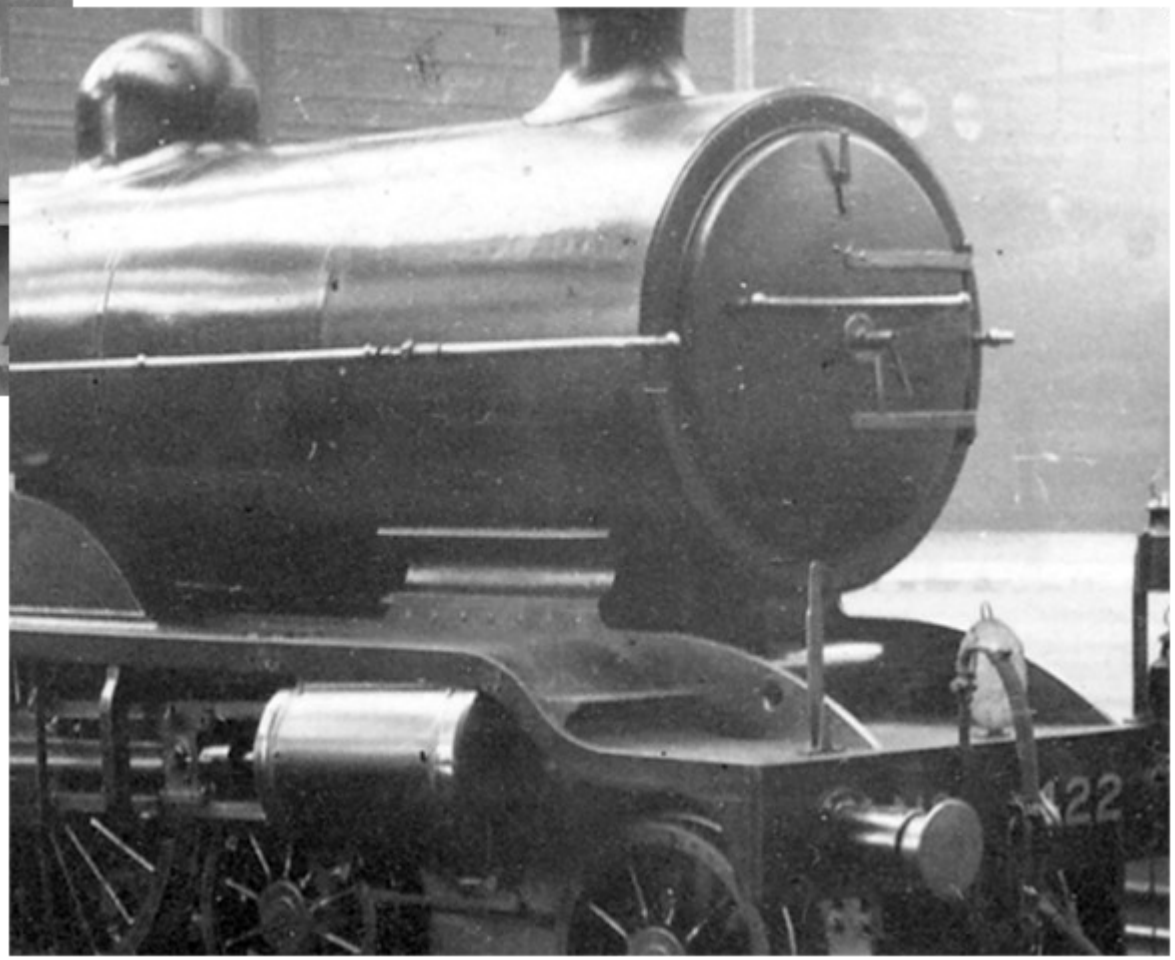
B4 No 71

Some Stroudley classes seemed to be almost immune to the alterations, Terriers in particular, and only a handful of D1 and E1 tanks appear to have succumbed. Although the above equipment all seems to revolve around Stroudley locos, the idea never seemed to completely disappear, as these odd examples of later locos show:-

Right B4X No 72

Left - B4 *Billinton*

E1 No 163



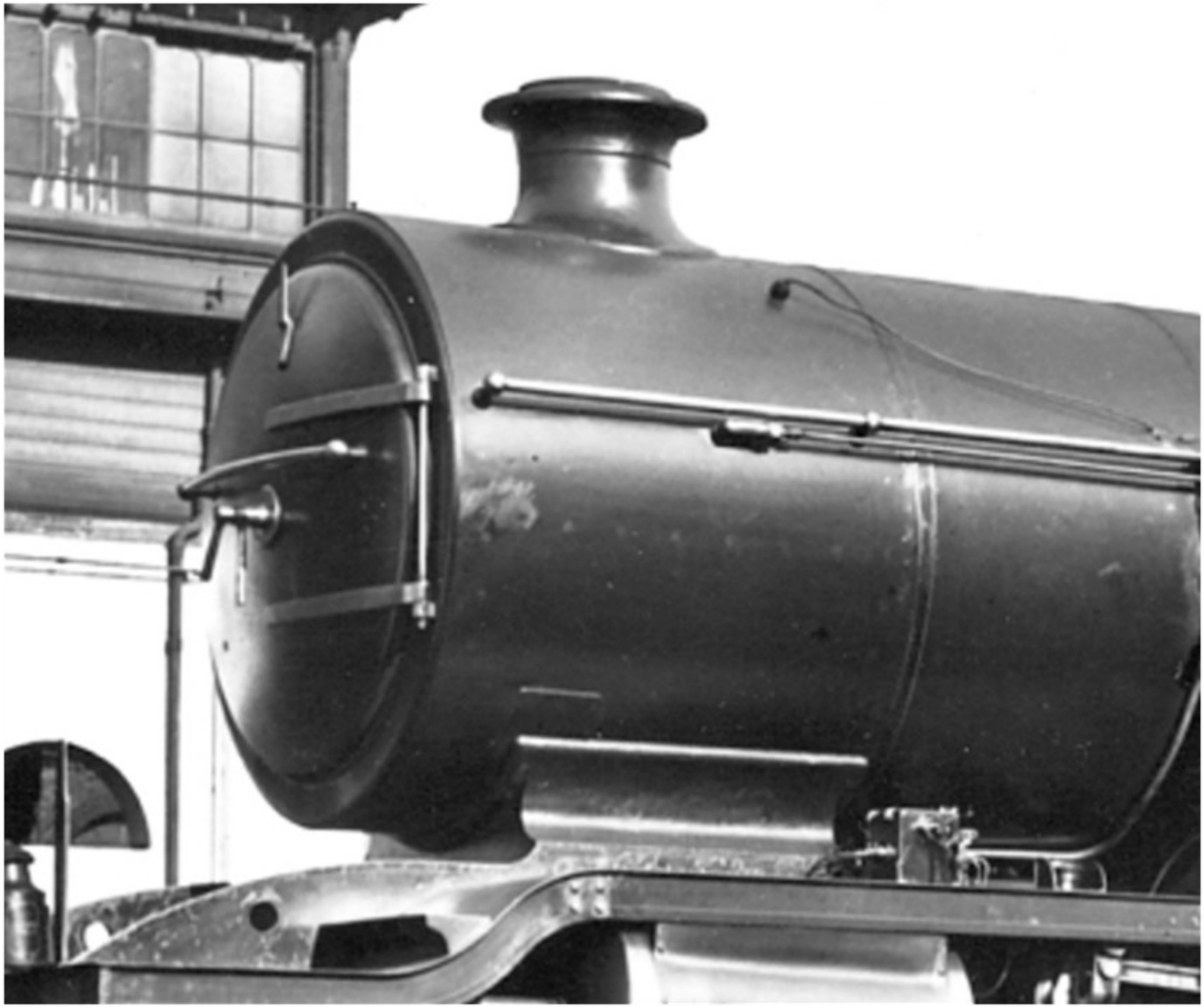
H2 No 422

I3 No 30

K No 348

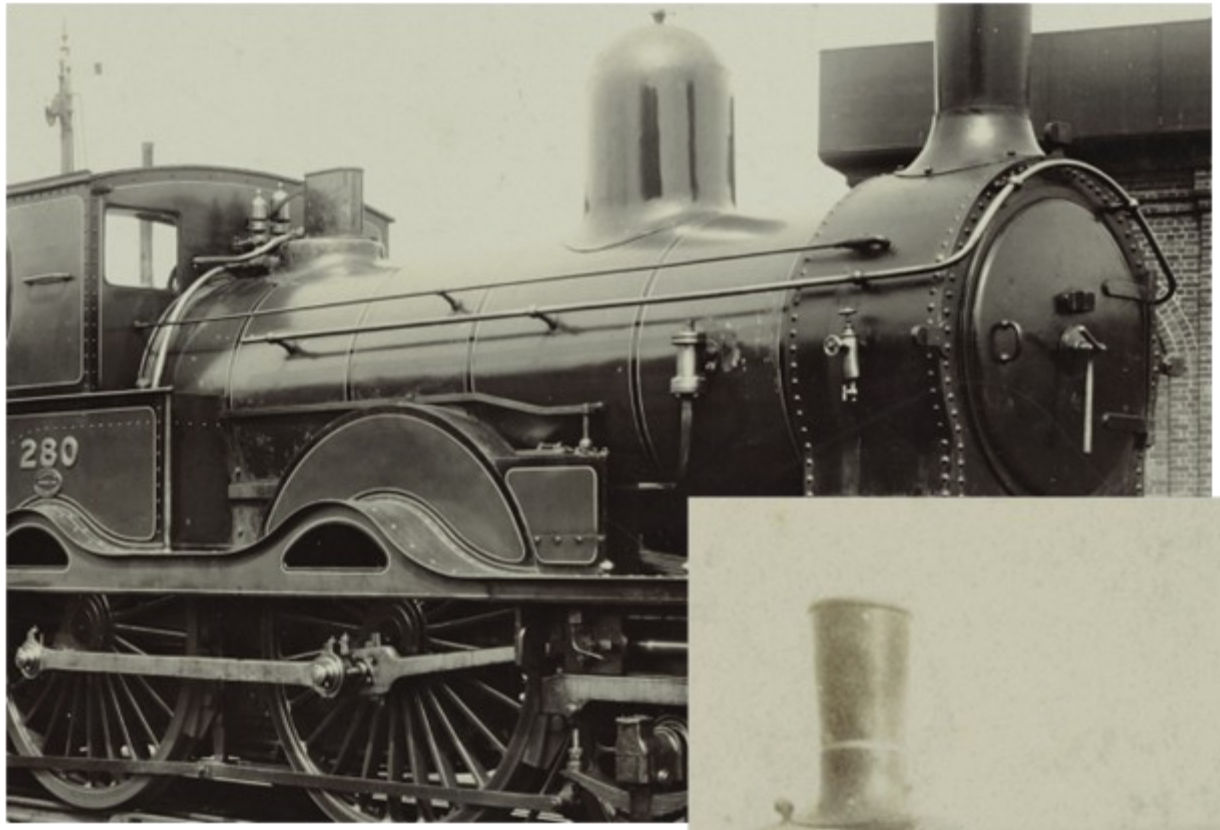
And finally

There was obviously still a need for some form of control of apparatus in the smokebox, perhaps superheating, but Lawson Billinton, on his Baltic tanks, eschewed the use of the handrail for the purpose, and instead had an independent control rod on the outside of the boiler.

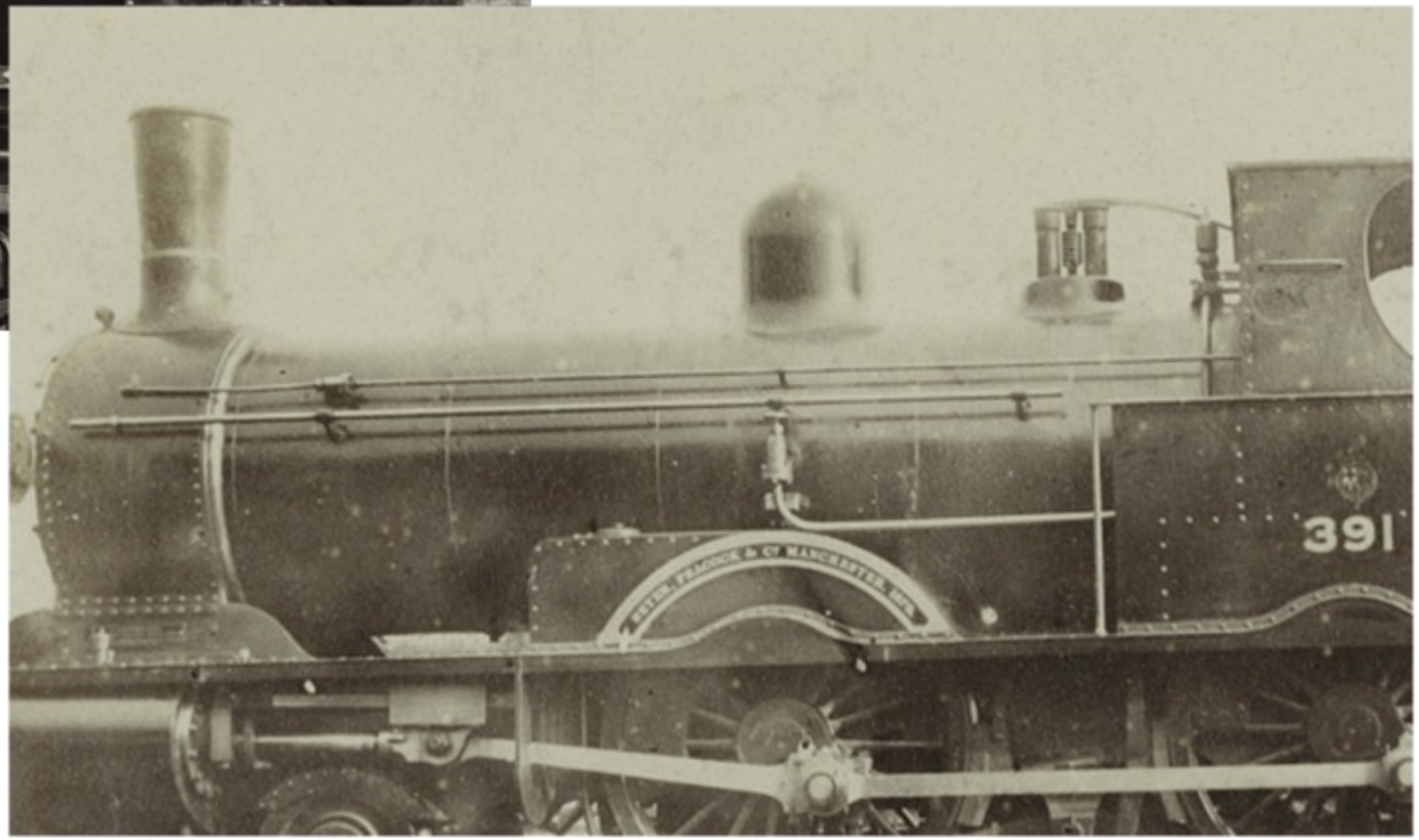


L class No 327

This was, however, something of a reversion to Victorian ways, as these LSWR locos show!



The moral of this narrative is that there was really no such thing as “Standard” on the LB&SCR, and the only way a modeller can be sure their model is correct is to work from appropriate photographs, if you can find them!



Return to contents page

Models displayed at the Brighton Circle AGM

By Nigel Hill

5 and 9 Models kits for sale!

The Brighton Circle AGM took place at Keen House (and on Zoom) on Saturday 29th October.

Aside from the business of the day, there was a presentation by Simon Turner on his recent book on the coal trade and PO wagons on the LB&SCR. A second presentation, given by Nicholas Pryor, explored some of the many items donated to the Circle by current and former members, which now form the Circle Collection .

As always, there was also a display of members models, of which a selection are shown.

Two of Chris Cox's models in 4mm scale

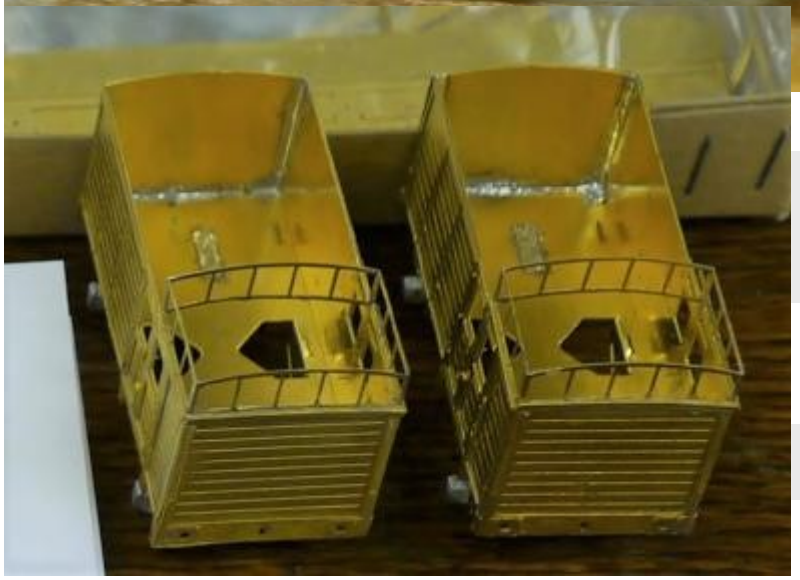
- Clarke Sharp PO wagon built by Chris for Mike Waldron and
- a London and Birmingham mail carriage of 1838 also built by Chris from artwork by Mike Waldron

Geoff Hammond's Gauge 1 models - 10mm/1 foot

Above - J class Abergavenny, built by P Forsyth

Right - Billinton 4 compartment First to D70, from a kit designed and built by Tim Pringle - see Issue 14 of the Digest.

Mike Waldron’s “Bognor set” in 4mm scale



... and the Stroudley goods brakes, with the rear light of the lantern re-profiled

For those who are thrown by the comment on the previous page about re-profiling the lantern windows on Stroudley brake vans, the photo below may help. There had been a common assumption that the front and rear windows on the lantern roof were to the same profile. The photo below makes clear that the rear windows were deeper and the roof rather flatter.

Return to contents page

Signalling Quirks and Hybrids

By Mike Waldron

Readers of the LB&SCR Modellers' Digest may be aware that two articles have preceded this one - one written by Ian White, and the other by me, tracing the progress of LB&SCR signals from the early days until c1900.

The purpose of this article is to look at some of the quirks and hybrids that so endearingly abound in much of the history of our favourite railway – in this case in signalling - as it made the change from the 'standard' slotted post designs of the 1870s and 80s to the later, and final, side-mounted designs. It really needs someone else who knows more about these things than me to complete the story from 1900 up to grouping.

As set out in the previous article, the advent of standardisation – mostly, it seems, attributable to William Stroudley's drive for efficiency and presentation of the Company's image – established the use of the standard 'wide-cheeked' slotted post signals, which formerly utilised semi-circular-ended rather than the more distinctive and later hockey stick-ended arms. These earliest ones were, of course, attached to those posts that appeared to 'grow' up out of the roofs of signal boxes, and all mounted within slots in the posts; a good example being the Montpellier Junction box just outside Brighton Station.

G class no.425 ‘Abergavenny’ pulls the Up Boat Train out of Newhaven Continental station, past classic slotted post signals – with wide ‘cheeks’ on the slots, lamps with internal rotating lenses mounted on the right of the post, below the arm, and the pivot end of the starter arm itself of classic hockey-stick shape. The ringed calling-on signal has an adapted tail design.

The large bracket signal behind Abergavenny’s exhaust steam is of standard slotted post bracket design, with both home and calling-on signals, all consistent with the above.

When I produced the 4mm scale signal etches, I had to scour photographs to find what was, and was not useful to the Brighton modeller, and particularly what would be the most useful to produce. Inevitably, this came up with the standard home and starter on a single tapered post, with single arm, and then progressed to include bracket signals, with either equal or unequal doll heights - showing that the junction was of lines of equal status, or, unequally, main and branch lines respectively. These produced a wide range of options - from the standard single post bearing a single home arm, through the platform-numbered varieties at the termini, the gallows type at Lewes, the unique tall Three Bridges ones on lattice posts, to gantries of all types, and ‘sky’ signals, of which the LB&SCR was so fond.

Progress, or the need for repairs and rebuilding over the course of time, seems to have resulted in some rather unusual arrangements, which clearly deviated from the earlier designs that we would recognise as the standard ones of the particular period in question. Study of the particular locations would be needed to conclude whether these were born of necessity, due to the location itself, or changes decided upon as progress by the Company’s signal works.

Saxby and Farmer were inextricably identified with the LB&SCR – the former had their works at Kilburn and the latter at 'Cold Blow' works (situated between two sets of tracks where the Deptford branch left the main line between Willow Walk depot and New Cross Gate) and together provided and maintained the signals required for each location. Often these resulted in quite unusual results for possible reasons mentioned above.

The practise of mounting signals on ‘sky’ posts in the London area was, presumably, in an effort to provide maximum visibility against the crowded urban background. Elsewhere, though fog frequently occurred, causing delays of trains and even collisions – frequently due to missed signals, miniature repeater arms were often a feature.

D class no. 285 ‘Holmwood’ standing by the Brockley starter bracket, with right away for the lower status left branch road.

It closely resembles the posts located at Brighton, after the 1880’s rebuild, and those at London Bridge, so much so that the major terminus locations as well as these lesser locations seem to suggest there was a clear transition phase between the former and latter styles. The arms are noticeably smaller in proportion than the older ones, suggesting this may either have been a full post replacement or slot trim, but they are still full hockey-stick profile.

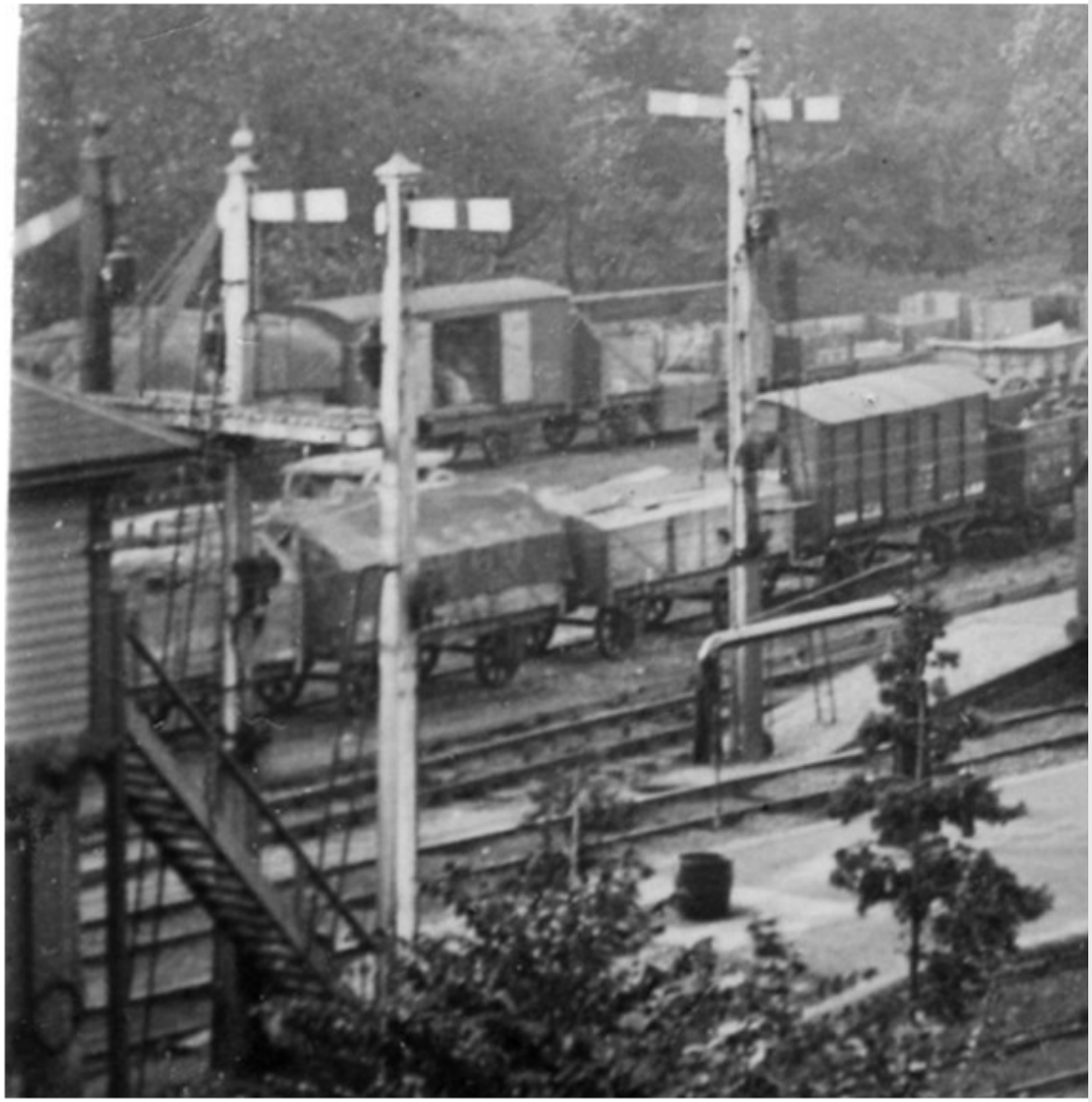
Lamps remain in the lower position to the right of the post.

A further study, for which I fear I have insufficient knowledge and resources to embark upon, would be of the use of these miniature repeaters in certain locations – the one springing primarily to mind being the set located at what is thought to be Old Kent Road station – where they are under the wonderful saw-tooth valences attached to the canopies. These appear in the background of several photographs of a D tank at that location on the South London Line.

Occasionally, these arrangements appear to have given birth to other than our current understanding of the norms of the day. The transition from the standard slotted post signals, with what I'll call 'full cheeks', to the side-mounted Acfield arms, with attached colour lenses supplanting the lamps mounted below the arms, was clearly not a simple one. The photos that accompany this article illustrate a few such inconsistencies, which, I am convinced, demonstrate the 'journey' towards the later, (apparently controversially called) post-1902 resignalling - of the type some of us can just remember in remote locations, and now displayed on the Bluebell Railway.

The mounting of the arm pivot bracket on the side of the post briefly predates the use of spectacled arms by, first, the narrowing of the 'slot box', as I have called them on the models. Brighton Station underwent a resignalling, when such posts were installed, loosely concurrent with the rebuilding of the roof in the 1880s, when the magnificent, curved structure was built.

These signal posts were very considerably narrower at the point of attachment of the pivot axles than those having the original slots of the 1870s and 1880s. The only reasons I can come up with for their change was to either to save time and timber (and, therefore, money), or to remove a quantity of superfluous timber to make the arm more clearly visible from a distance. Much of this would be known if the Signalling Department had left us detailed records – but, sadly, it seems that large amounts of its records have not survived, which included the destruction of many records during the London Blitz.

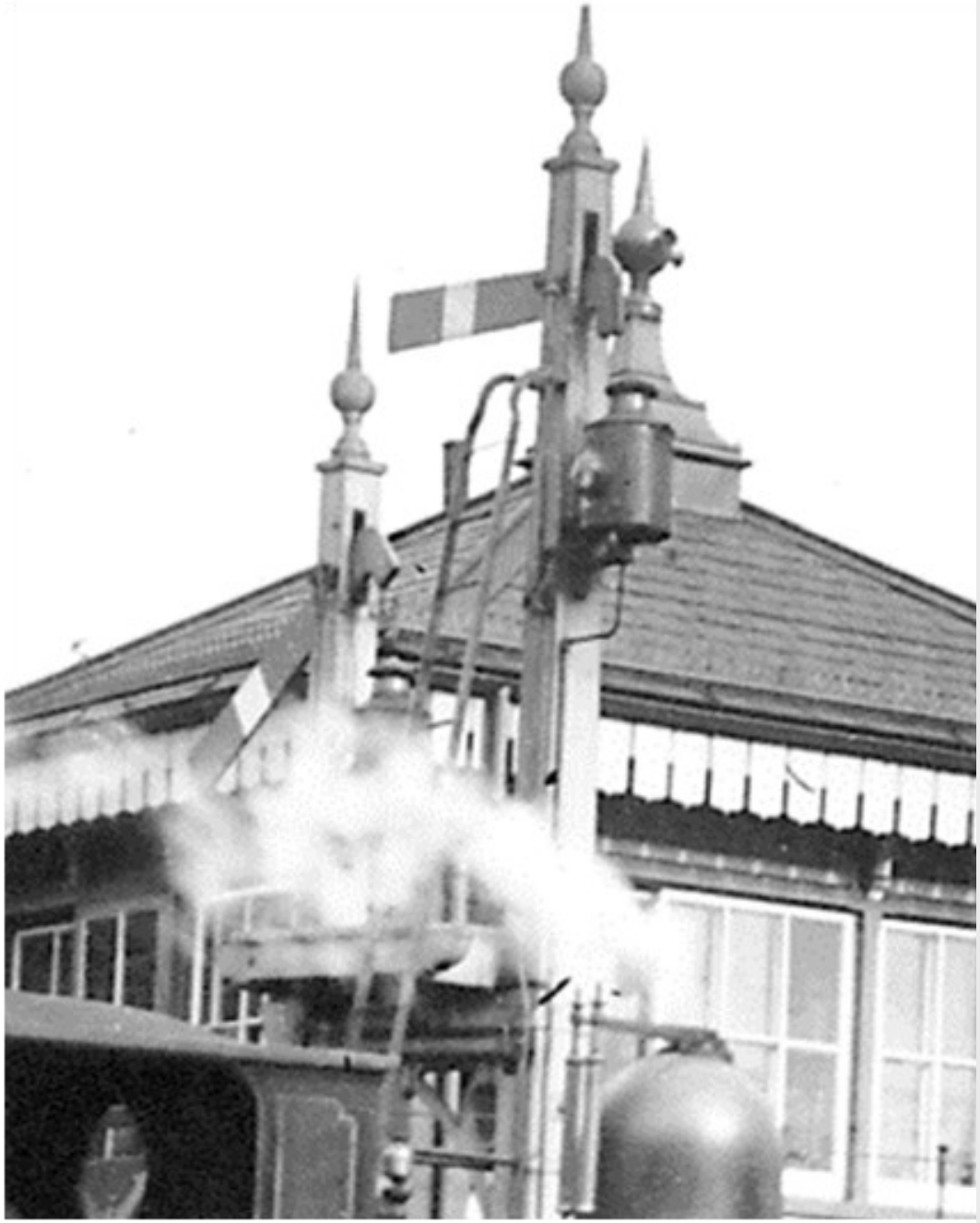


Arundel station, down platform side, looking towards the town, from Crossbush Hill, in bi-directional signal post days, towards the end of the 19th Century.

The right hand post is a classic 1870s style home and starter, presumably controlling the up bay, seen in line with the water crane. Both arms are mounted on the same axle, but facing opposite directions.

The gantry on the left is the interesting one: Arms from right to left: Bay starter, main platform starter, and the black post seems to carry the down bay home – suggesting the Arundel shuttle is to arrive shortly. Notice the right hand doll (actually the right hand post) has no ‘cheeks’ lining the slot, and a pagoda style finial, suggesting a possible repair or modification date late in the 1890s. The pagoda style of finial is associated with the styles that predominated after 1900, though it appears they may have been gradually introduced c1895 onwards.

John Minnis collection



Closer detail of the earlier photo. Bracket dolls are clearly to much the same dimensions as the later, side-mounted designs, but still retaining the traditional ball and spike finial.

Arm operating cranks are still in the former, very visible, front-mounted position, and very small by later standards. If anything, the hockey-stick ends are more angular than with the former, larger arms.

The slots seem much smaller, with the ‘cheeks’ removed – for possibly one of three reasons:

- Repairs - in which the slim ‘cheek’ edges may have rotted, removal proving a simple repair, and thus worthwhile
- A simple cost-cutting exercise on each individual post that needed the dolls replacing due to damage
- A ‘between-styles’ transition – matching those at major termini Brighton and London Bridge.

I think, on balance, I am coming round to view no 3 as being likely.

This thinning of the posts appears to have been followed by a resiting of the pivot to the left, now housed in an iron casting, bolted to the side of the post. Morticing, or building up of a slot in the post was no longer necessary, as a slot as not required to house the arm; the new mounting did this with greater simplicity. For now, the lamp remained the internal rotating spectacle type, mounted on a bracket to the right of the post and well below the arm itself. The shape of the arm remained the same, in some cases, and in others was modified to remove the lower extremity of the traditional 'hockey stick' end, and, instead, a flat lower edge was presented. The arc at the upper extremity of the signal arm tail was retained, and the pivot attached to a slightly lower position on the arm. There is certain nakedness to their appearance, but, at the same time, time a more modern look. Distant signal arms, too, were set to change. The ‘nose-up’ look of the former and usually larger arms seems to have been abandoned – and they have a much more, though not entirely, parallel look. Certainly in both cases, the lower edge of the basically trapezium-shaped arm was intended to be accurately horizontal, as opposed to the upper edge. The close-up of the Arundel signals show this well.

Inevitably, the nature of the coloured spectacle was set to change - being attached now to the right hand end of the arm, and presenting the familiar red and green aspects, alternately, over the now fixed lamp. This was mounted, instead, in line with the arm itself. In the 'on' position, all is straight and level and the red glass is, by default, in front of the lamp. Pulled 'off', the arm dips as is usual, and the green(ish) glass rises to cover the lamp lens in turn.

The lack of a really clear distinction between home and distant arms was also addressed, and the fishtail end was straightened up to form a straight, as opposed to curved 'vee', and the colour changed from red to yellow. The Annett’s reflector was later added to enhance this change.

Battersea Park Up Gantry. This presents a very clear example of the ‘in between’ style – it can no longer be called slotted post – as the signal arms are now mounted on the left side of their posts, and therefore do not require slots. The arms are clearly still of the more traditional slotted post style. Lamps are also those provided for the former design.
The final is also still to the former style. Note the extraordinarily flimsy-looking access ladders for the lamp-lighters, as well as the number and height of them! The posts must be at least 15”-18” square, if not more. That would have required considerable timber-working knowledge to either find or construct baulks that wide.

Reproduced by kind permission of the late Klaus Marx.

Whilst the evidence of this apparent transition is clear, to my knowledge there is little or no documentation that we might search in order to substantiate this hypothesis. However, there must have been sound functional or economic reasons for the changes. It could well be that in severe winters, ice and snow were apt to collect in the slots of the earlier signals, rendering them inoperable, and it would be a time-consuming process to clear an iced-up slot, with possibility of damage to the timber surround. Such failure would be far less likely to occur with a side-mounted cast bracket. Perhaps a less fanciful suggestion might be that a cast mounting would be longer lasting, and incur much less wear, particularly as the slotted-post axles were remarkably slender, and possibly needed more frequent renewal. Cast iron, too, makes a good 'running surface', as witnessed by loco steam-chest and valve surfaces, where a measure of lubrication was already present in the form of graphite trapped in the iron.

I suspect that this is something of a precursor to the progress in technological advances (albeit a very much cruder technology) to which we have become not only accustomed, but also expect to see on a regular basis nowadays.

These photos are purely representative, and others may have been overlooked, or not known about; indeed, the Arundel photograph (unknown to me before) appeared in Volume 2 of the 4 and 6 Wheel Carriages by White, Turner and Foulkes – a veritable archival treasure and modellers' gold mine.

These observations are purely personal, but we may never actually know the precise information, finer detail, and reasoning. As always, if anyone has further observations, information or observations that could broaden our understanding, please forward it to the editor.

The slot appears to have now been abandoned, and the arm pivot mounted on the left hand side of the post – the final location of all later arms.

The lamps are still located as before - below and to the right of the arm – which is also still hockey-stick shaped.

By now, the newer pagoda-type finials are in evidence – presumably cheaper to produce - and yet still required to protect the end grain of the post to delay the water ingress, and the inevitable rotting process.

I would think it likely that tar in some form was applied to the top of these, as any paint of the times would soon be stripped off by the weather; polyurethane and epoxy paints still being yet many decades in the future.

The gas lamps on the roofs and bogie carriages also help date the photo – at its earliest c 1895, and likely to be just after 1900. The large number of wires on the telegraph post suggests that there are many telephone / telegraph numbers that can now be contacted.

The 2nd vehicle is a Stroudley 6 wheel 1st, and the 3rd vehicle is one of the Stroudley full 1st bogies.

Return to contents page

Starting from Scratch - an occasional series

Part 2 Cutting and shaping metal

By Terry Bendall

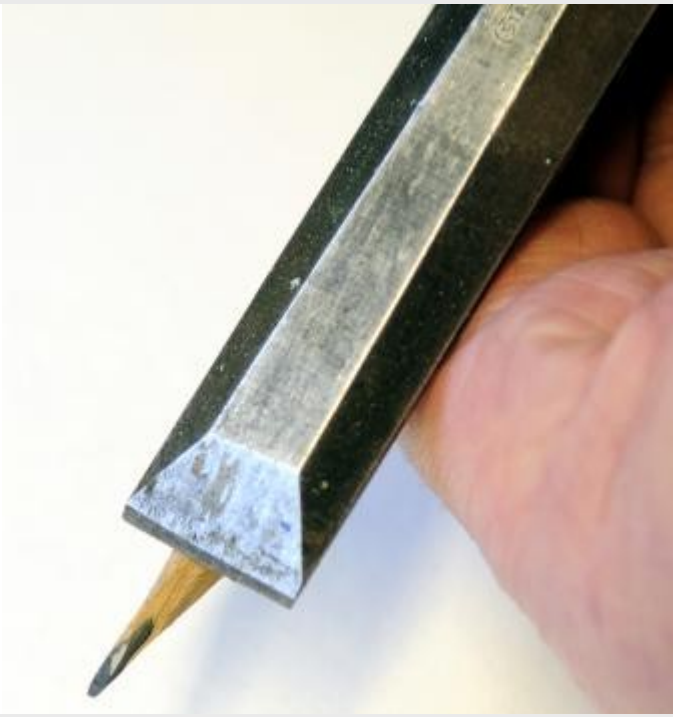
The last article on this subject appears to have been useful to members so we will continue. Following on from the article in the last Digest, this part will cover cutting and shaping, mainly of metal. As before this is a modified version of what appeared in Scalefour News.

We will begin with cutting to shape - mainly metals but with some reference to other materials. However, before we start on that, a bit more on marking out.

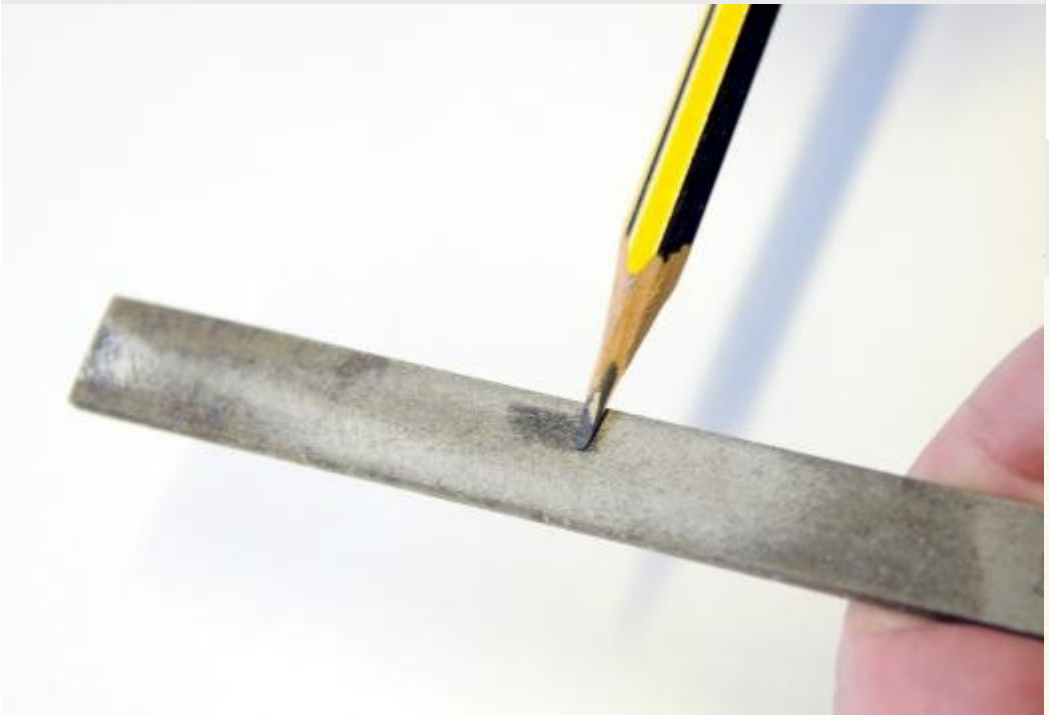
First a word about the humble pencil and its uses in our model making and for marking out. Pencils come in different grades and in Europe the general purpose pencil will be marked at one end with the letters HB. These stand for Hard and Black. The American system uses numbers with a range from 1 – 4. The core of a pencil is made from a mix of graphite and clay. The more clay in a core the harder and lighter it will be. More graphite gives a darker and softer core. In the European system the grades run from 8H at the hard end of the scale to 8B at the soft end with HB in the middle. For engineering drawing a 3H or 4H pencil will give a fine line which is what is needed for accuracy whilst the artist will do sketching normally using a range of soft pencils. The traditional wooden cased pencil can be sharpened to give a flat chisel edge which is useful since the edge will last longer than a round point. Back in the days when I taught engineering drawing in school I used to show pupils how to sharpen a pencil like this which is best done with a sharp wood chisel and the edge finished on a fine file or very fine glass paper.

Picture 18 shows how the pencil is sharpened using a wood chisel – a very good test of whether the chisel is really sharp, and picture 19 shows how the edge is formed. The same techniques can be used to sharpen the flat pencil used in woodworking and picture 20 shows such a pencil. The advantage of the flat pencil in woodworking is the same as for engineering drawing – the flat edge stays sharper for longer. The point of this digression is that when marking on styrene I will often use a 2H or 3H pencil with a flat edge but a sharp scriber is an alternative and the point of a scalpel blade can also be used.

Picture 18 Sharpening a pencil using a wood chisel



Picture 19 Creating a chisel edge on a pencil using a fine file

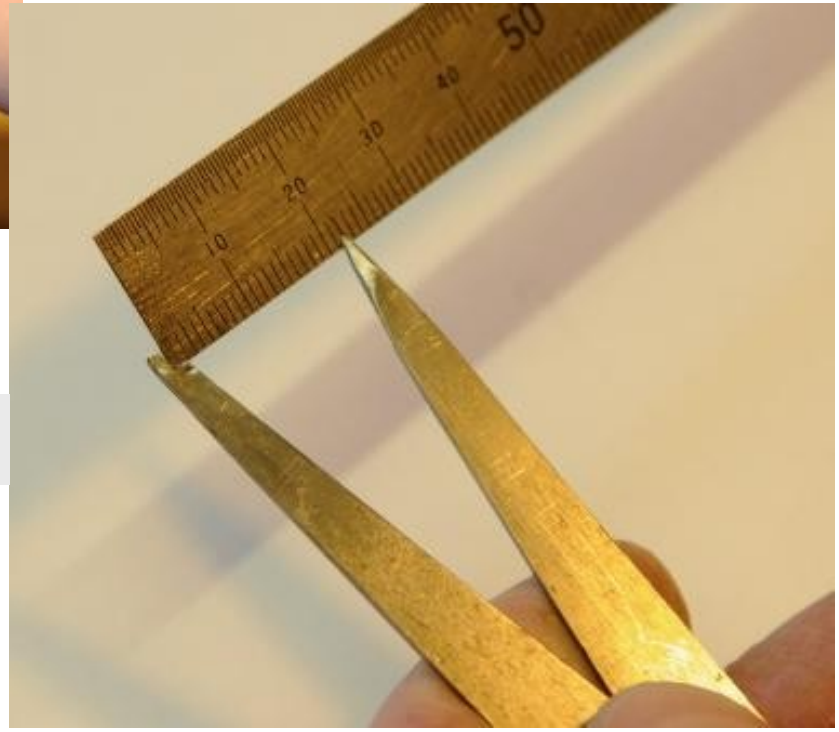


Picture 20 Flat pencil used for marking out on timber

A development of the humble wooden cased pencil is the clutch pencil and its close relative the mechanical pencil. The clutch pencil has jaws that grip the graphite core and allow as much of the core to be exposed as is required. Often such pencils will have a sharpener that will allow a point to be formed. Different grades and sizes of cores can be obtained. The mechanical pencil has a very fine core, usually 0.5mm or 0.7mm in diameter that is gripped within a steel tube to give it strength. Replacement cores are available in a wide range of grades as with the wooden cased pencil. The advantage of a mechanical pencil is that the line thickness is always constant. Both the clutch and mechanical pencils have the advantage that the entire graphite core is available for use and they will last a long time. The “feel” and balance of the pencil also remains constant. For the traditional wooden cased pencil about one third is actually used, one third is removed when sharpening and the last third is often thrown away because it is too short to be used easily! I have a mechanical pencil normally fitted with a 2H core but it tends not to get to the workbench very often.

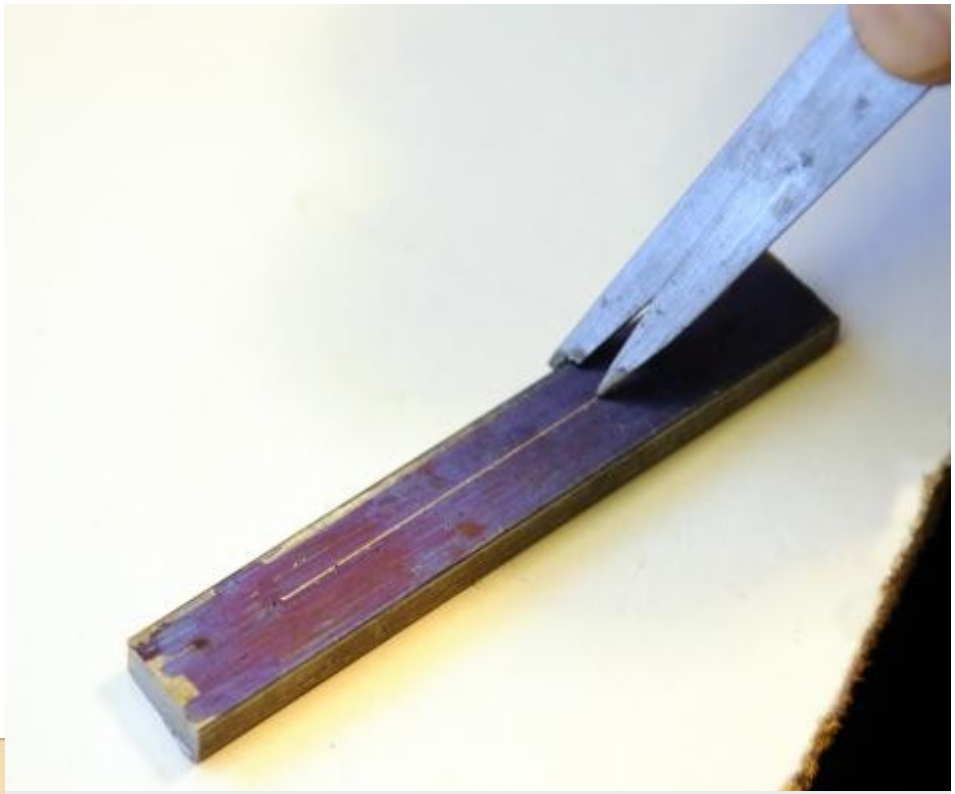
Towards the end of part one I mentioned the use of odd leg callipers, sometimes known as Hermaphrodite or Jenny callipers and what follows is a bit more about using this useful tool. The joint at the top is what is known as a firm joint and the tool is set by opening it to greater than the distance required and then tapping gently on the top of a vice to get the required distance. Pictures 22 and 23 show the tapping process and checking the distance on a steel rule and picture 24 shows how the tool is used.

Picture 22 Setting odd leg callipers to size by tapping on the top of the vice



Picture 23 Checking the distance set on odd leg calipers

One very helpful use is to scribe a centre line along the length of a piece of metal and the way to do this is to set the tool and scribe a line from both sides. If the distance set is exactly correct then one line will be marked on top of the first. If the distance was not exact then two lines will be seen and the exact centre will be between the two. Picture 25 shows this with a centre punch dot for the position of a hole. The tool can be used to scribe any line that is required parallel to the edge of the material to be used and it will work on styrene.



Picture 24 Scribing a line parallel to an edge using odd leg callipers.

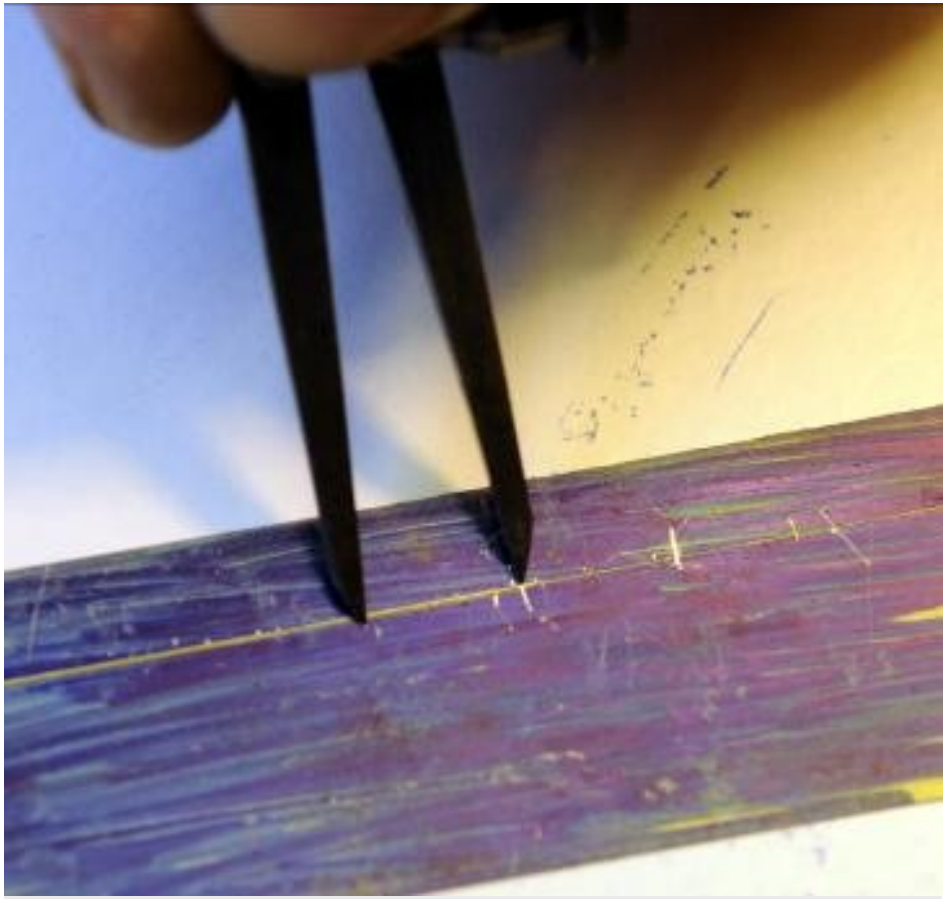
Picture 25 Two parallel lines scribed from both edges and with the callipers kept at the same setting. The exact centre will be between the two lines. In practice the lines would be a lot closer together than shown.

Picture 26 Large adjustable try square as part of a combination set. A small adjustable try square is shown below..

Picture 27 below Marking line from edge using adjustable square.

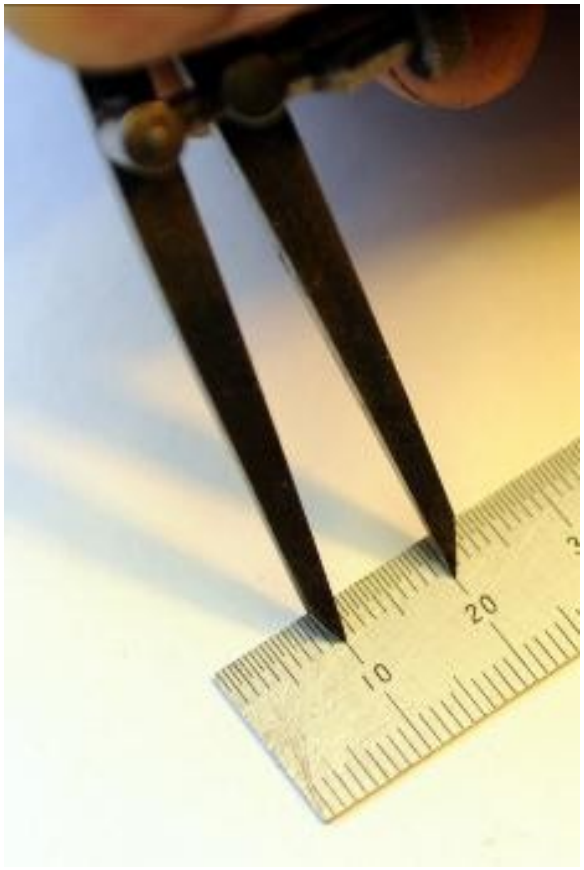
Another tool that can also be used to measure a set and repeatable distance from an edge is the adjustable try square, also known as an adjustable engineer's square. A look at the web sites of various suppliers shows several different designs of tools that have the same name. The one I have is shown in picture 26 and when supplied with the centre square and protractor shown below the tool is usually called a combination set.

To measure repeatable distances, a pair of dividers can be used. When used in this way a line is scribed along the materials and the dividers are used to step off the required distances along the line as shown in picture 28. Obviously care has to be taken to set the distance needed correctly since otherwise every measurement marked will be wrong. Picture 29 shows a useful way of setting the tool although you need to be careful to get the distance correct. Once the required distances are marked, a try square and scriber can be used to mark the lines.

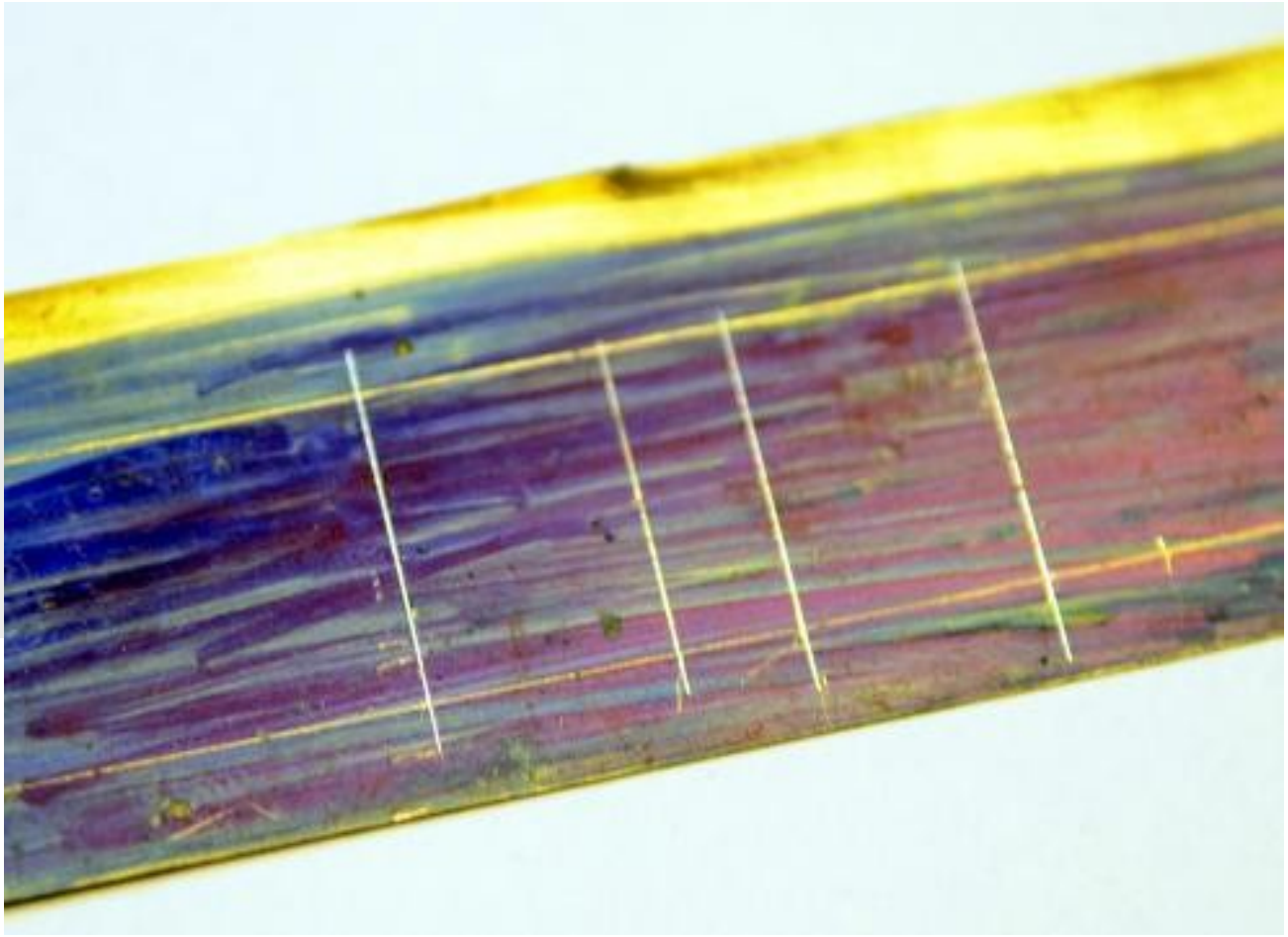


Picture 28 Marking repeatable distances along a line using a pair of dividers.

Picture 29 Setting a pair of dividers. It is easier to start a set distance in from the end of the steel rule rather than try to work from the very end.



Picture 30 shows a piece of brass with a series of rectangular openings marked out, as might be needed for the widows on a coach. Notice how the lines extend beyond the intersection which gives a more accurate location than stopping the lines at the corner. Once the openings have been cut and shaped, the unwanted portion of the line can be removed with fine abrasive paper. Whilst I do not usually use marking blue, on this occasion the brass has been coloured using a felt marker to make the lines stand out better for the picture.



Picture 30 Marking out a series of rectangles along a lengh of brass. Ideally two pairs of dividers would be needed so that the two different distances can be marked in turn.

Picture 31 Saws for metal. The top hacksaw blade is a 12 inch long bi-metal blade with 24 teeth per inch. The middle one is a 10 inch blade with 32 teeth per inch whist the bottom one is a 10 inch blade with 24 teeth per inch.

Turning now to cutting metal, the most obvious tool to use is a saw of some type. Picture 31 shows a hacksaw, a junior hacksaw, and a piercing saw, together with a range of blades for the hacksaw. The large hacksaw will have limited use in the smaller scales but when it is used, the sawing is best done standing up with the work held in an engineers' bench vice as shown in picture 32.

Picture 32 Using the hacksaw. Placing the forefinger of the right hand as shown helps to give a straighter cut. Those who are left handed will need to reverse the hands.

The ideal height for the vice is with the jaws level with the bent elbow. When using the hacksaw downward pressure should be applied on the forward stroke since the blade cuts when moving forwards and no pressure as the saw is pulled backwards. As you get to the end of the cut through the metal the pitch of the sound made as the saw cuts will change and this is when the downward pressure should be reduced. A little bit of an acquired skill but nothing too difficult. It is possible to get a range of blades for the hacksaw with teeth of varying pitches – the distance from the tip of one tooth to the next. The rule is that there should be at least three teeth in contact with the metal being cut although a useful dodge is to tilt the blade to give a larger area in contact with the material.

Picture 33 shows how the saw is angled to cut sheet material.. One use I often make of a hacksaw in this way is to cut copper clad board used for electronics. The core of this board is made from glass fibre sheet which is not kind to saw blades and the tougher hacksaw blade will make short work of cutting it to size.

Picture 33 Using a hacksaw to cut through thick sheet material. This is where a finer pitch of blade would be useful. The metal is clamped to the bench top with a G clamp.

A word about the materials used for cutting tools is appropriate here. Metals can be pure metals or alloys. Examples of pure metals are iron, copper and tin. An alloy is a mixture of two or more metals or a mixture of metals and other materials. Examples of alloys are brass, nickel silver and steel. Steel is an alloy of iron and carbon. There are different types of steel. Mild steel is the general engineering metal and contains 0.3 – 0.5% carbon. Tool steel, sometimes called high carbon steel, contains 0.8 – 1.3% carbon. High speed steel is often used to make cutting tools and a typical type of high speed steel contains 0.6% carbon, 4% chromium, 18% tungsten and 1% vanadium. In order to make a cutting tool the metal has to be hardened by heating and cooling quickly in oil or water and then some of the brittleness removed by tempering which involves heating to a lower temperature and cooling quickly again. These processes are called hardening and tempering. Hacksaw blades can be made of high carbon steel which will accept some flexing of the blade or from high speed steel which is tougher but a hacksaw blade made from high speed steel will break quite easily. A bi-metal blade combines the hardness of a high speed blade with the flexibility of a carbon steel blade and will last a long time.

The junior hacksaw, sometimes called a mini hacksaw, is a smaller version of the hacksaw and is the type of saw that I use most often. There are a wide range of designs available on the market, some of which are more comfortable to use than others. It will cut metal up to about 5mm thick. Something to remember about saws is that they work most effectively when the cut is made vertically. If a corner needs to be removed from a piece of metal then it should be tilted in the vice so the cut is vertical. Picture 34 shows the idea and also how the cut is started using a finger against the back of the blade to get the blade started in the right place.

Picture 34 Making an angled cut. This is easier if the metal is tilted in the vice so the actual cut is vertical.

The piercing saw is a very useful tool for cutting curves but is also good for general cutting of thin material. Usually a piercing saw is used with the blade vertical and the work held on a board fixed to the bench top. The jeweller and silversmith call this a peg. Because of the need to use the piercing saw vertically, the tradition type of bench used by the jeweller and silversmith is taller – usually around 940mm or so high, than the height used in other crafts.. Many of us will use a standard height table for our model making and these are normally around 740mm high. When I built my model making bench I made it 780mm high and the type of peg I use has a wooden block which is used to clamp it to the bench as shown in picture 35. When clamped in place the top of the peg is 890mm above the floor so not far off what many jewellers and silversmith would use. As can be seen from picture 31 my piercing saw has an adjustable frame which allows broken blades to be used. The disadvantage of this is that part of the frame projects downwards and hits the hand holding the saw which may be a problem. Piercing saw blades come in a range of pitches as shown in the chart on the next page.

Picture 35 Sawing tables or pegs for use with a piercing saw.

Saw blade size	Number of teeth per 10mm	Metal thickness (mm)
Grade 4	15	1.0 – 1.3
Grade 3	16	0.9 – 1.2
Grade 2	17.5	0.9 – 1.1
Grade 1	19	0.8 – 1.0
Grade 0 (1/0)	20.5	0.6 – 0.95
2/0	22	0.6 – 0.8
3/0	23.5	0.6 – 0.7
4/0	26.5	0.5 – 0.6
5/0	28	0.4 – 0.55
6/0	32	0.35 – 0.5
8/0	30	Up to 0.4

Obviously it is a case of choosing the size of blade that suits what you will be doing. Picture 35 also shows an alternative design of peg, with a saw cut rather than a vee notch. This allows for a long straight cut to be made with the metal supported on both sides of the cut. My pegs were made a long time ago from off cuts of 12mm plywood and work quite well although a slightly thicker top would be better. Using the piercing saw is an acquired art that comes through practice and the beginner should be prepared to break a lot of blades. Something to remember is that the blade cuts on the backward or downward stroke – this is necessary to keep the thin blade in tension when it is cutting so the blade needs to be put in the frame with the teeth pointing backwards. One trick for cutting curves is to keep the saw moving all the time and when cutting a curve twist the wrist to turn the blade in the required direction. Another useful dodge is to drill a hole in the corners and cut into the hole and then turn the blade for the next cut.

Picture 36 Piercing saw being used vertically.

Picture 36 shows the piercing saw in use on a peg and picture 37 cutting metal held in a vice. Piercing saws can be used on styrene if required.

Picture 37

The final tool for cutting metal is a pair of tin snips although they will cut other metals apart from tin. My tin snips are shown in picture 38. At about 8 inches long, they are probably a bit larger than needed for smaller work but since they were part of my original tool kit when I started my teacher training course I make them do what I want. If you want to buy a pair, then a 6 inch pair would be suitable. The type shown is intended for straight cuts but it is possible to buy tin snips with a curved blade to allow concave curves to be cut.

Picture 38 Tin snips for cutting sheet metal.

Picture 39 Sharpening a pair of tin snips using a file

Like scissors, tin snips work on a shearing action so the blades need to be kept in close contact. The rivet that forms the pivot for the blades can work loose and if this happens, it can be tightened by hammering as would be done with a standard rivet. Tin snips also need to be kept sharp and this can usually be done with a file although not your best and newest one. Picture 39 shows how the blades are sharpened with the file applied to the top edge of the blades only and filed at an angle. They can also be sharpened on a bench grinding machine if you have one. One point is don't be tempted to use the snips to cut wire. If this is done, the wire will put a nick in the blade which will then show when sheet metal is being cut. The disadvantage of cutting metal with snips is that the part being removed will curl away from the blade so trying to cut a thin strip that is required for use is not easy. Be careful also of the sharp edges of metal cut in this way. Cutting into a corner needs a bit of care since it is easy to cut too far.

Files come in different grades or coarseness of cut and obviously the rougher the cut, the more metal will be removed in a given time. Files are available in different lengths ranging from 16 inches, 400mm long to 4 inches, 100mm long and in different cross section shapes. A flat file is tapered in its width and has teeth on all four sides whereas a hand file is parallel in its width and has one side with no teeth. This is known as a safe edge and is useful when filing up to a vertical shoulder. For much of what we do a hand file is preferable to a flat file.

Picture 50 Four inch long hand files with different grades of cut.

Picture 50 shows four hand files, all 4 inches long and of different grades of cut. From the left we have a rough cut file, sometimes known as a bastard cut, (please don't ask why) a second cut, a smooth cut and a dead smooth cut file. Unfortunately dead smooth files in this size seem to be a rare beast, at least in the UK. For comparison picture 51 shows a 10 inch bastard and second cut files and an 8 inch smooth cut file. The smooth cut file has the safe edge towards the camera. Files are available in different cross section shapes, round, half round, square and triangular, which is actually called a three square file. Again the name of the last one is traditional but its origins are lost in the mists of time.

Picture 51 Ten inch long hand files with at the top a bastard cut and in the middle a second cut. At the bottom an eight inch long smooth cut file showing the safe edge

Picture 52 The Tang of a file.

Picture 53

Fitting a file handle.

Picture 52 shows the end of the file that fits into the handle. This is known as the tang of the file. Please don't be tempted to use a file without a handle since experiencing the tang of the file forced into the palm of the hand is not nice. Handles may be made of wood or plastic. To fit a wooden file handle, heat the tang to a dull red and push on the handle which will burn its way onto the tang. Remove the handle and allow the tang to cool down, then refit the handle by banging it on the top of the bench as shown in picture 53. Don't get the file too hot otherwise you will destroy the heat treatment.

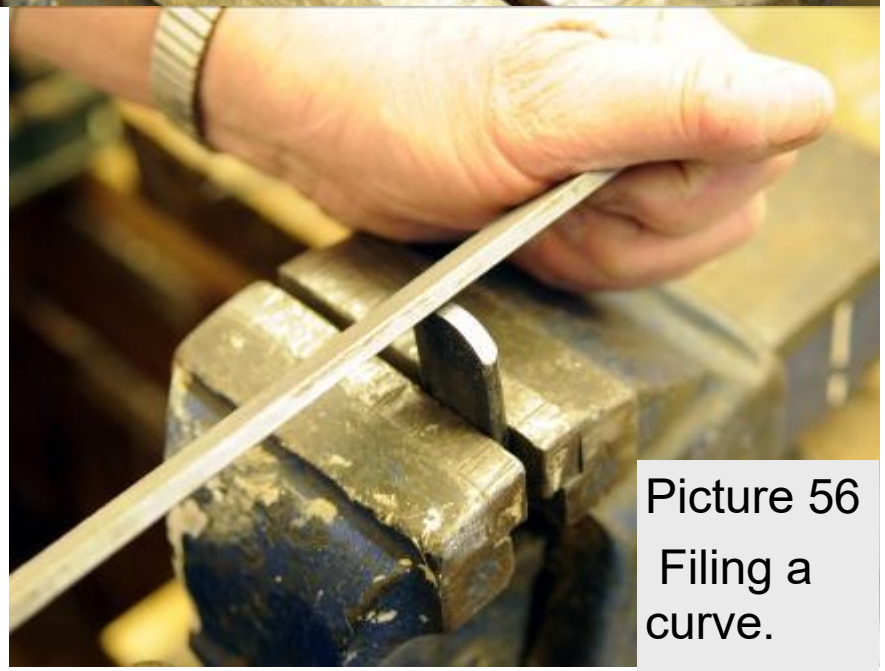
For large scale work, filing is best done standing up as shown in picture 54. Note the position of the hands with for those who are right handed the right hand is on the handle and the left hand

Picture 54 Cross filing

on the end of the file. Using the palm of the left hand gives greater pressure when taking of a large amount of metal. As with using a hack saw, the file cuts on the forward stroke so pressure is applied on the forward stroke and no pressure on the backward stroke. The file, hand and lower part of the arm should move in a straight line which is why the top of the vice jaws should be level with the elbow. The process is known as cross filing. For wide pieces of work the file should be moved along the length of the part being filed as it is pushed forward.

Picture 55 Filing an angled surface.

Filing is best done with the surface being filed horizontal, so when an angled surface is needed, the work should be positioned in the vice as shown in picture 55. Note in picture 55 the way the left hand is positioned. This gives lighter pressure which is needed for the greater control needed when finishing work to a line.

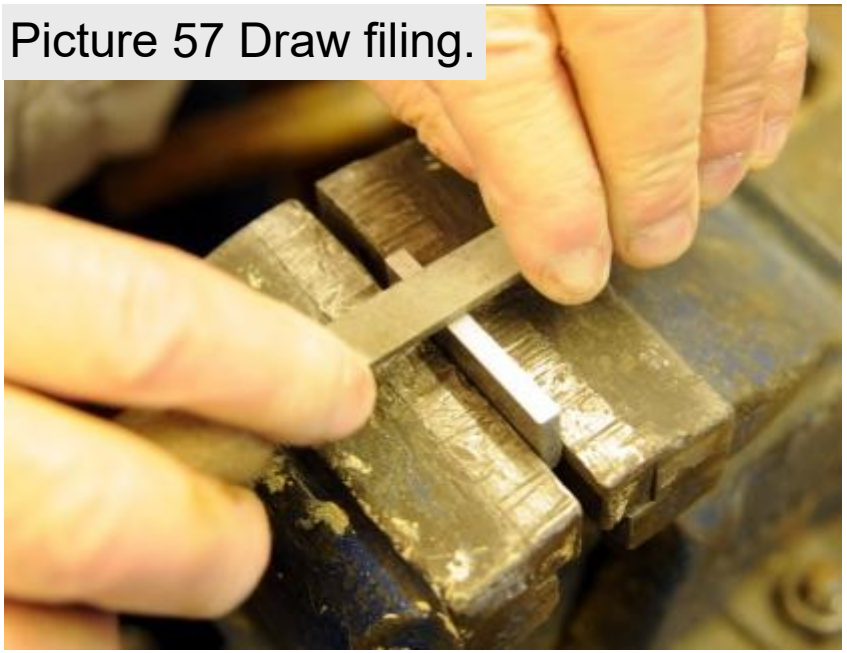


Picture 56 Filing a curve.

A round corner can be achieved by firstly removing most of the waste material using a suitable saw and then using a hand or flat file and filing across the work piece turning the wrist as the file is moved forwards. A similar process is used if a rounded hollow is needed but in such cases a round or half round file is used. Picture 56 shows the idea. Normally a fairly rough cut of file is used to remove most of the waste and a smooth file used to finish to the line.

Cross filing will leave marks on the surface and these can be removed by a process called draw filing. For this process a smooth file is used and this is moved up and down the surface as shown in picture 57. This gives a smoother finish which can be enhanced by wrapping emery cloth around the file and using the same up and down movement. Using increasingly finer grades of emery cloth will give a smooth and polished surface. Wrapping the emery cloth around the file helps to maintain the sharp corners of the work piece. This finish will be useful when making things such as locomotive main frames.

Picture 57 Draw filing.



With care and practice it should be possible to finish work accurately to size to within 1/10 of a millimetre and some people will get more accurate than that. Someone I met many years ago who had done an engineering apprenticeship told me that he had to be able to file a piece of one inch thick mild steel to an accurate one inch cube and then make it fit in a one inch square hole in a piece of one inch thick steel all ways round. He was quite good with a file after that!

The safe edge of a hand file is used when an L shaped piece of metal is required – something like the part shown in picture 58. The basic shape would be cut with a saw and the cut edges filed smooth placing the safe edge against the vertical surface. This avoids the file undercutting the vertical surface.

Picture 58 Using the safe edge of a file against a vertical surface.

Picture 59 Stages of cutting and filing a slot at the edge of a piece of metal.

For making a slot in the edge of a piece of metal, one way is to drill a hole at the bottom of the slot, saw down each side of the marked line into the hole so the waste piece falls out, and then file smooth. Picture 59 shows these stages. The bottom of the slot might be filed smooth with a square file or the edge of a hand file. A similar process can be used for a slot in the middle of a piece of metal or plastic.

The teeth of a file can become clogged in use, especially when filing soft metals such as aluminium and white metal, a condition called pinning. When this happens the teeth of the file needs to be cleaned and one way of doing this is to use a file cleaning card which is essentially a flat wire brush and one type is shown in picture 60 which also shows a clogged file. File cleaning cards do not seem to be easily available but one source is Axminster Power Tools see https://www.axminster.co.uk/file-cleaning-card-400458.

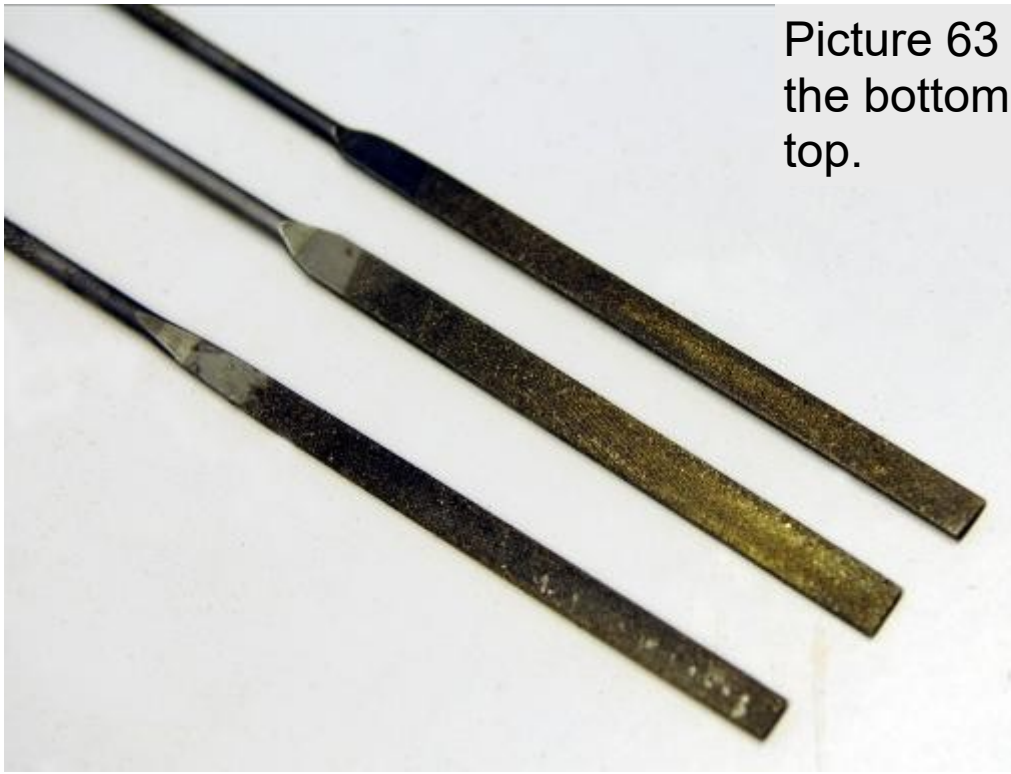
An acceptable alternative is to use a standard wire brush. Sometimes a file can become so clogged that a file card will not clean it and to solve the problem a piece of brass can be pushed over the teeth as shown in picture 61. This is a slow process but is effective.

Picture 60 Clogged file and file cleaning brush.

Picture 61 Cleaning a clogged file by pushing a piece of brass across the file.

I work in 4mm scale with a few occasional forays into 7mm and tend to use six inch and four inch files in a range of shapes and picture 62 shows those that I normally use. The six inch files are mainly of second cut with the four inch one in different grades of bastard cut, second cut, smooth cut and dead smooth grades At the left hand end is a crossing file which has curved faces on both wide surfaces, but of different radii. It is not used often but has its uses. I do have some larger 8 inch and 10 inch files used for general metalworking and these sizes will be useful for larger scale work.

Picture 62 A range of files that will cope with most model making in the smaller scales. From the left crossing, hand, half round, round and square files six inches long and four hand files all four inches long.



Picture 63 Three grades of flat needle files. A rough cut at the bottom, second cut in the middle and smooth cut at the top.

A range of needle files is useful for fine work and as with the larger types these are available in a range of cuts and different cross section shapes. Picture 63 shows some flat needle files with a range of grades of cut with my rack of needle files shown in picture 64. As can be seen from the picture this is just a block of wood with holes drilled in it but it makes looking for the one you want very easy. Needle files are used in the same way as the larger ones. except that only one hand is needed to hold the file.

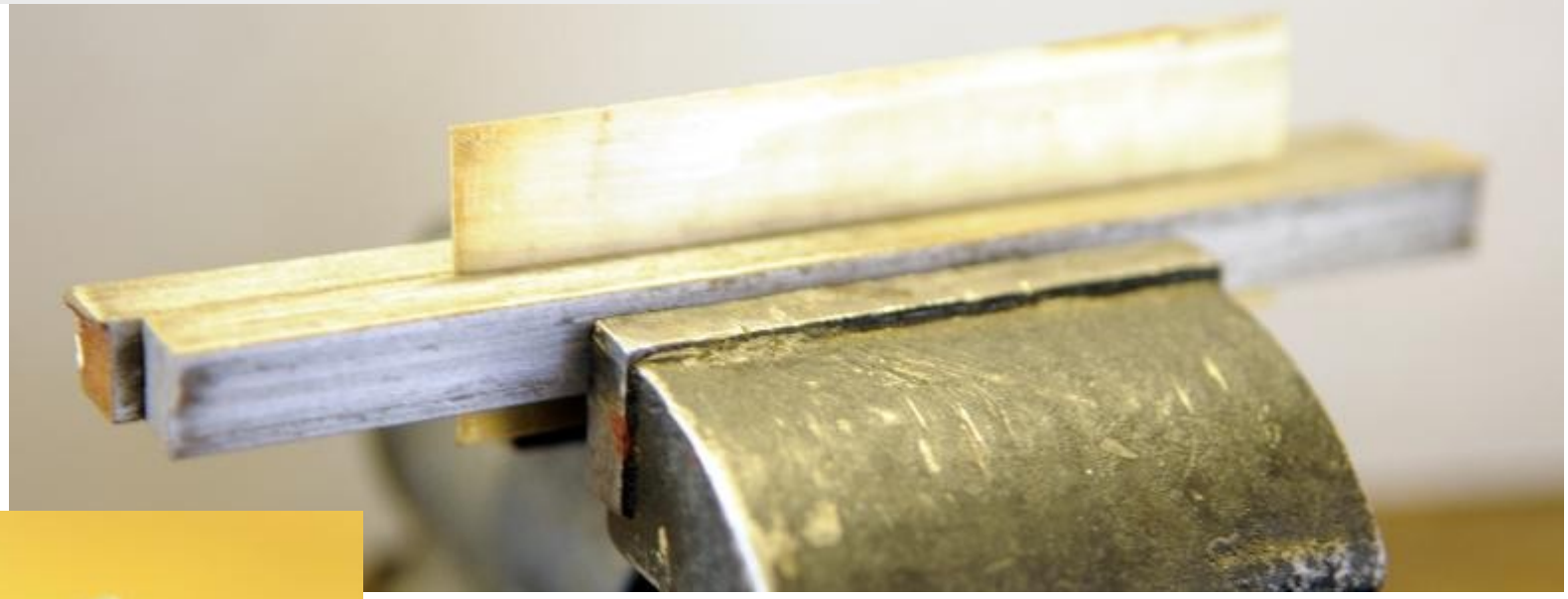
Picture 64 A selection of needle files in a storage block. Flat, round, half round, square and three square in a range of different grades.

Turning now to forming metal, it is often necessary to bend metal in a straight line. An etched kit will usually have a half etched groove to assist with this. For something small a pair of flat pliers will help to get a nice sharp corner and for things a bit longer the jaws of a vice will be useful. Sometimes a tap with a soft faced mallet or a hammer will be useful to give a sharp corner. When scratch building or when there is no half etched line, a similar aid can be created by scribing a line into the metal. Several passes of the scriber may be necessary to give a line of sufficient depth.

Picture 65 Home made bending bars.

As an aid to forming the bend a Hold and Fold tool can be very useful but they are expensive and the cost may not be justified if it is only used occasionally. A good substitute is a pair of bending bars and picture 65 shows such a device. These are made from two pieces bright mild steel angle section measuring 40 mm wide and 6 mm thick, with 6mm wing nuts and bolts to clamp the two parts together. These can be made in any convenient length to suit what is needed. The one in the picture is 300mm long.

Picture 66 bending sheet metal using two lengths of square bar.



There will be occasions when it is necessary to bend a piece of sheet material into a box section which may have three or four sides. The first bend is easy but after that a bit more thought is needed. One method for subsequent bends is to use two lengths of square section bright mild steel held in a bench vice. Picture 66 shows the method.

As an alternative, a piece of rectangular flat steel of suitable width can be used to allow the second bend to be made. This is one of those jobs where three hands may be needed to get everything set up. Picture 67 shows the method.

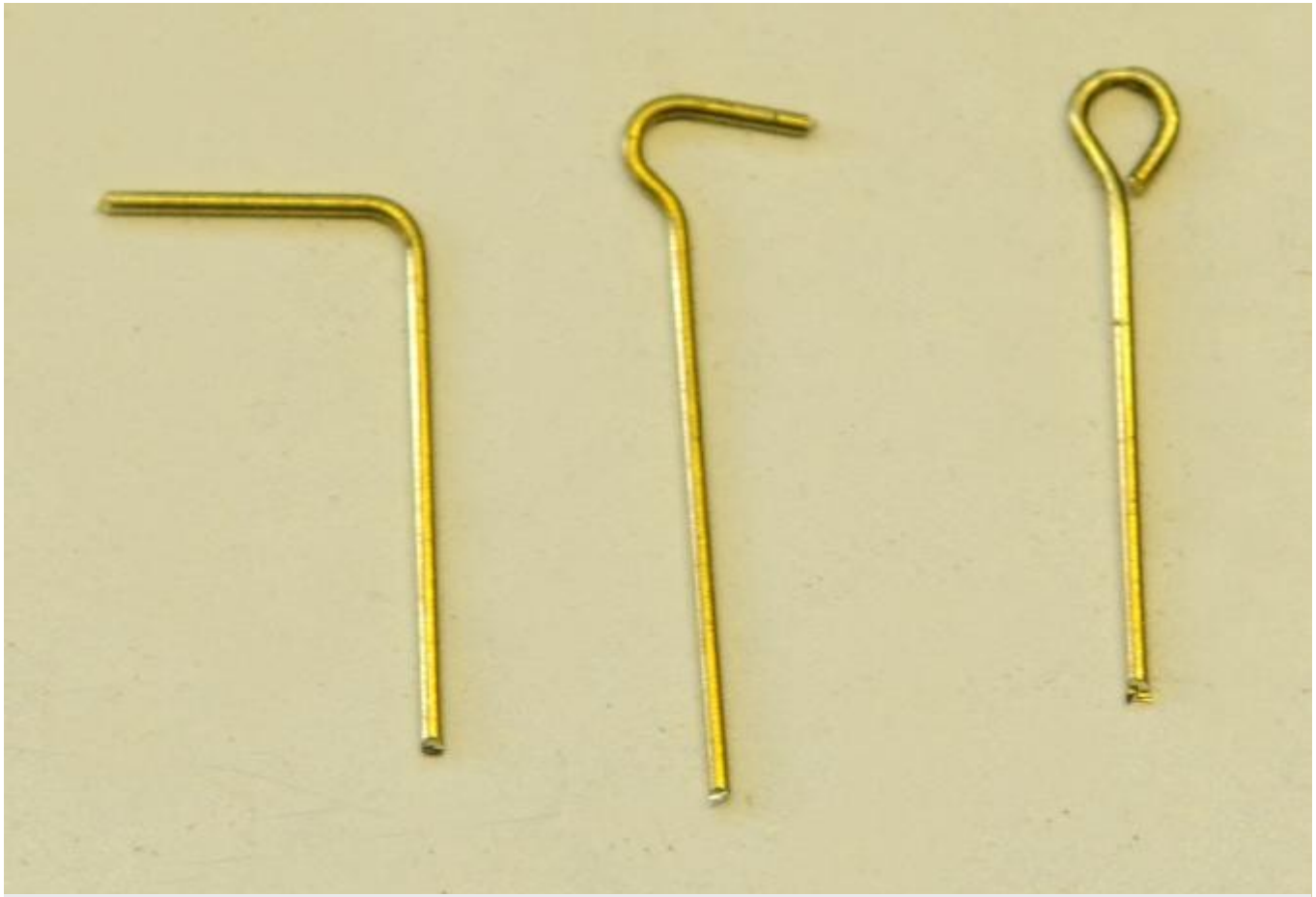
Picture 67 Bending sheet metal round a rectangular bar square bar.

For a rounded corner, as is often found on the tender of a steam locomotive, the metal can be bent round a length of round bar held in the vice as shown in Picture 68. For larger radius bends, such as the cab roof of a steam locomotive, bending over a larger diameter bar is one method but the diameter of the bar needs to be of a size to allow the springiness of the metal to take the correct size. For thicker metal a mallet or soft faced hammer may be needed to form the metal. The use of rolling bars is an alternative but again they are expensive if only used occasionally.

A round bar can also be used to form the tumbleholm of a carriage but because of the length the carriage side may not be griped sufficiently since the bars will overhang each side of the vice. One way of avoiding this problem is to clamp the rod at each end.

Picture 68 Bending a curved corner around a piece of rod.

One bending job which is a bit different is forming a ring on the end of a piece of wire or thin rod and a useful tip is to borrow a technique from the blacksmith. This involves making a 90 degree bend first at a distance from the end of the rod equal to the circumference of the ring needed. This method will ensure that the ring is symmetrical. Then form the ring using a pair of round nosed pliers. Picture 69 shows the stages of doing this. Starting with a 90 degree bend helps to make the ring symmetrical.



Picture 67 Stages of bending a ring at the end of a piece of rod or wire.

Return to contents page

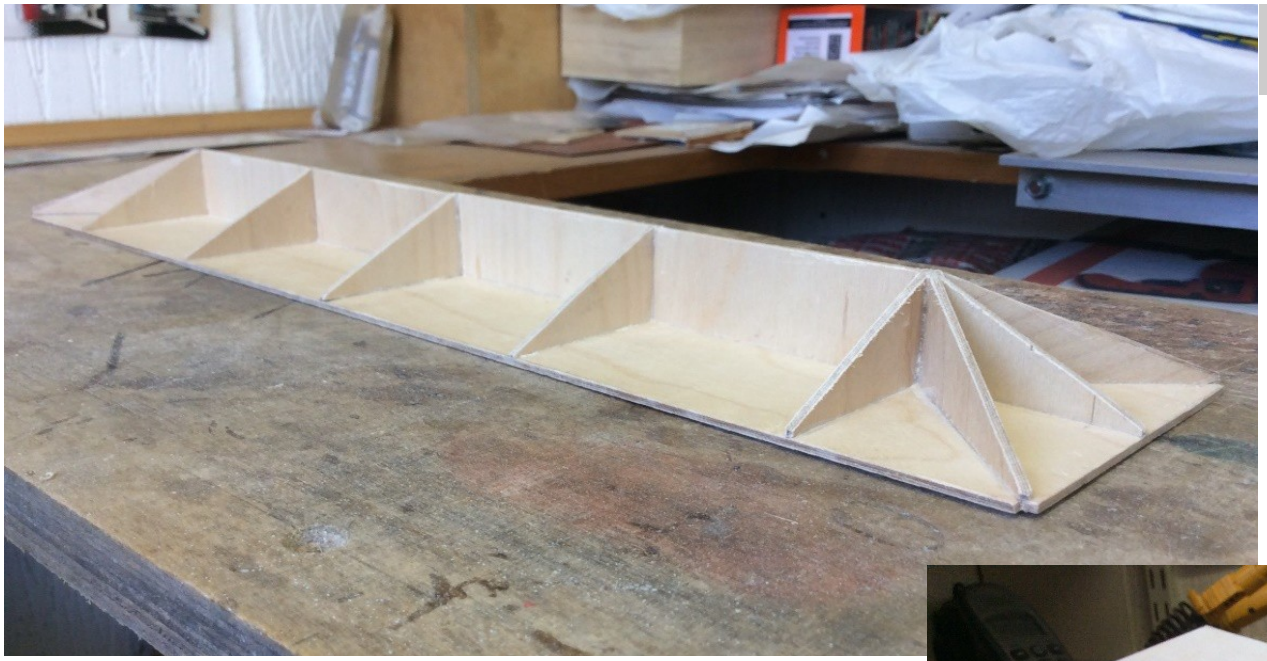
Hangleton Station Building in 7mm scale - continued.

Colin Paul

ROOF SUBFRAME

As mentioned earlier, I wanted to design and construct the roof as a complete slot-in unit. A 3/32nd plywood base was cut out that fitted snugly within the carcass of the building. It also sat firmly on top of the internal partitions at 84mm high from the floor level. The thickness of the plywood base is lower all around by roughly 2mm to the top surround of the building.

The first thing to do was to work out what the angles were of the roof from all sides. From the two known drawings and photographic evidence they all equated to roughly 25°. As an experiment, I cut out a roof support truss template from cardboard measuring 105mm long by 59mm x 59mm. The ends of each slope rested on top of the external wall and protruded out by a couple of millimetres slightly as per the prototype (in theory). Placing the template in position, everything seemed fine, so I cut out the first of five trusses from the same 3/32nd plywood base. The two furthermost trusses (forming the common rafter) were measured from the drawing and marked on the base. These were the first trusses to be glued (EVO-STIK) in position. Equidistant pencil lines were then drawn on for the three intermediate truss positions which were in turn glued on. The half end trusses (x2) were a full one cut in half. Rectangle pieces were cut for supporting the hip line of the roof.



Photos 24 and 25

The roof I decided would be a separate `slot-in` unit. A ply base was cut out first that fitted within the inner surround of the walls. It would then simply lay on top of the internal wall tops. A longitude support strip (matching the height on the drawing)

was cut to height and length then glued in position using EVO-STIK wood glue. Triangular supports were then cut and glued on around it as shown. Finally, strips of ply were then glued onto the sides and ends forming the basic carcass. Open slots were cut out on each end for the chimneys to slide into. The central chimney position I hadn't decided on so the roof was left whole. The semi open roof over the WC has been placed in position for the photo. Lastly, the chimney breast wall has been added.

ROOF SIDES and ENDS

Through trial and error, several thin cardboard templates were cut out for the roof sides and ends. It was imperative the angles were perfect on all joins. The bottom edges had to lay flat against the top of the walls when fitted. After an hour or two, the mock-up was sellotaped together and placed in position. After some time, I now felt confident to cut out the 3/32nd ply.

The two sides were tackled first matching the templates. The joints between the two (ridge beam) were chamfered for a `butt joint` then sellotaped together. I was quite surprised to see it fitted like a glove over the roof frame. The gents' end roof segment was cut out and fitted perfectly and too was sellotaped in place. After cutting out the road approach end, I noticed a slight error in the overall length of the sides which were 2mm too short. So two narrow, packing pieces had to be glued in place on each roof side end. With a bit of filling here and there, the other end fitted perfectly.

Before gluing the roof segments in place, I jumped the gun in thinking about the two end chimneys. From experience of making several cardboard mock-ups with chimneys, it was best to pass the chimney through square openings in the roof and gluing them directly onto the base underneath. It is also easier this way getting the chimneys perfectly upright. I carefully measured the chimney positions from the drawing and cut out the openings. The ends of the rafter had to be cut away slightly to avoid touching the chimney.

Time to glue the roof onto the subframe (no going back now) using Evostik again. Everything was held down overnight with bricks on top of the building. Checking the roof in the morning it was perfectly flat.

EXTERNAL BRICK CHIMNEY BREAST WALL (ticket office end)

Photos of the external chimney breast are not very clear. It appears that the brick built stack is not flush all the way up, but is built out slightly by one course. The ends of the timbers butt up to the sides and are almost flush. Measuring the drawing, the stack protrudes out by 2mm and is 16mm (w) x 89mm (h). To disguise the detachable roof line, the join is at the bottom of the bottom row of tiles. A piece of 2mm plasticard (80thou) was cut, Slaters brick sheet (Ref:0404) Mek'd on the top and a thin sliver glued on the sides. It was set in place using Evo-contact adhesive. The two thin 9mm (w) x 89mm (h) side pieces of brick were superglued straight onto the scribed wood. The brick base on the end stick out by 3mm each, so I mitred the ends of them.

OUTER CHIMNEYS

The principal dimensions of the end chimneys are:

- square base that protrude above the gutter/roof line, roughly 14mm square x 17mm (H) equating to 10 courses of brick;
- a single row of angled bricks or mortar of 1 course (H);
- the narrower area above, smaller at 11mm square x 19mm (H) equating to 11 courses;
- a single corbel course 13mm square, followed again by 2 courses of 11mm square.

Above it gets a bit complicated with four more single corbelling courses of 13mm, 16mm, 18mm, and 20mm square.

Finally, there is a cemented rendered shaped top.

Overall height 57mm (H).

As a starting point, I had some ½" square planed wood equating to 12mm which I thought would be ideal. It could be packed out slightly with differing thicknesses of plasticard to the required

14mm outer brick thickness.

I first cut the wood to 60mm (trimming down to 57mm later) and filed down the narrower section to 10mm square for the Slaters brick sheets (0407) of 0.5mm thickness which, when glued in place brings the dimensions to 11mm. The bases were packed out using slightly differing thicknesses of plasticard including the Slaters brick sheet to the required 14mm. The angled 45 degree course was then filed on. The narrower area of 11 courses were superglued directly onto the wood.

As an experiment, the first corbel course layer was cut to 12.5mm square from a solid piece of 60thou (1.5mm) plasticard. In the centre, a 10mm square hole was cut and filed out. The whole could then be slid down over the square shaft to sit perfectly on top of the 11th course of bricks. In all planes, it was horizontal and looked more or less like the photos. I cut a single line of Slaters brick and was about to Mek it straight onto the four edges when a small problem arose. The thickness of the bricks was slightly thicker than the 60thou, leaving a small protrusion above. Not wanting a thin band of bricks, the thickness had to beefed up slightly using a waste bit of 10thou (0.25mm). After it was Mek'd in place, it was re cut once again. The outer brick was then Mek'd on and cleaned up. In position it now looked perfect. This procedure was copied for the next subsequent corbelled segments. Each one was glued in place as the chimney progressed.

CEMENTED TOP

This caused me trouble from the outset. When Rod Hayward was constructing Lychmere (a fictitious terminus depicting the LB&SCR/SR set in 1923 – see MRJ No.67 1993) he too was building a shortened version of Fittleworth station. He had the same problem with these curious chimneys. His solution was to use Milliput which was subsequently filed to shape. Deep down I wanted to carry on with Plasticard. As an experiment, I Mek'd together x2 60thou (3mm) and x1 80thou (2mm) waste Plasticard pieces. When dry, a small 7mm square hole was cut and filled out in the centre. It was cut 19mm square, to sit on top of the top (widest) corbel piece. The area

around the 7mm hole is 12mm on the drawing which was pencilled on. It took sometime cutting with a piercing saw, then filing the angles to shape, matching it with the drawing and photos. After an hour it fitted like a glove so I Mek'd in place.

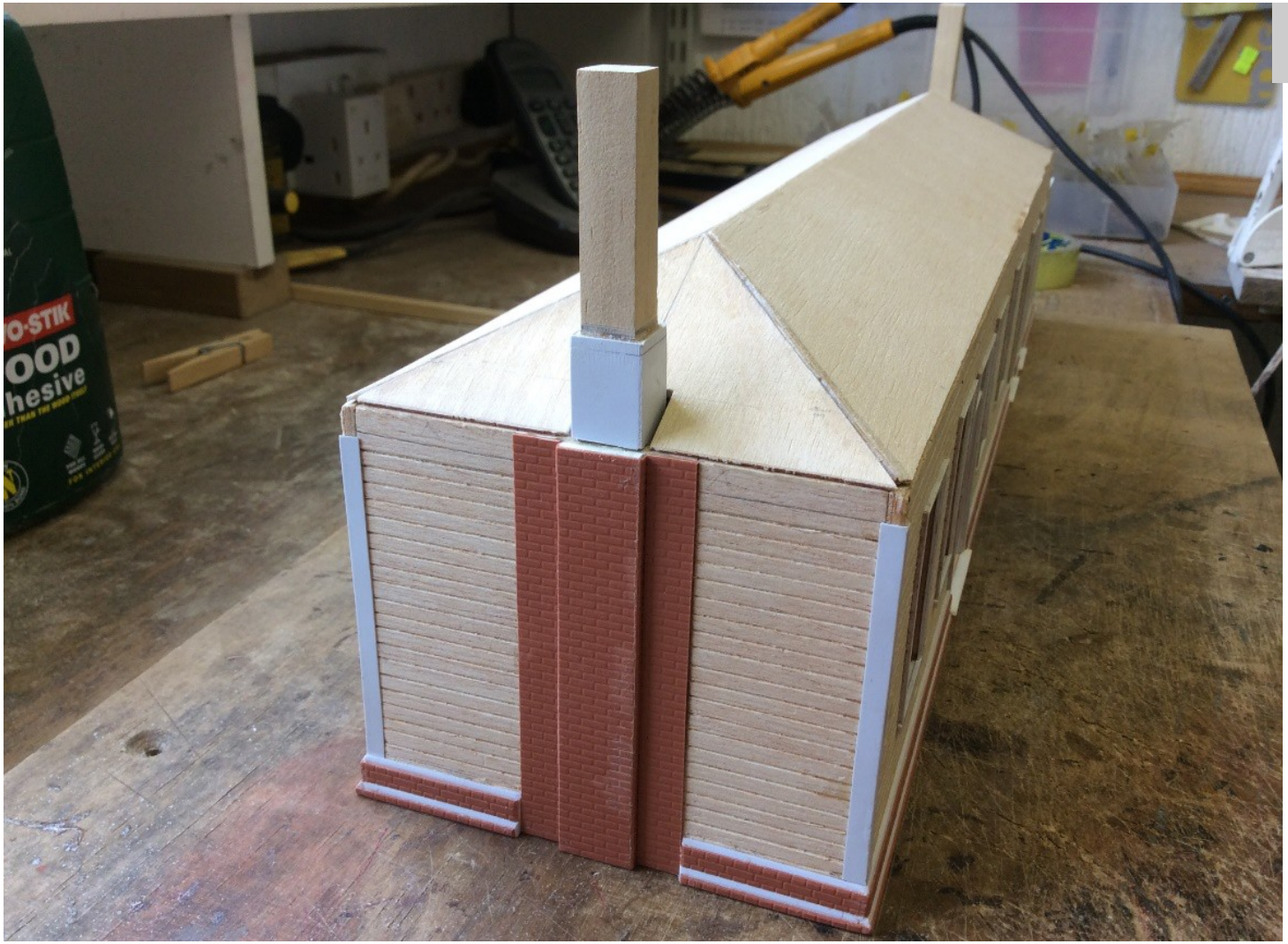
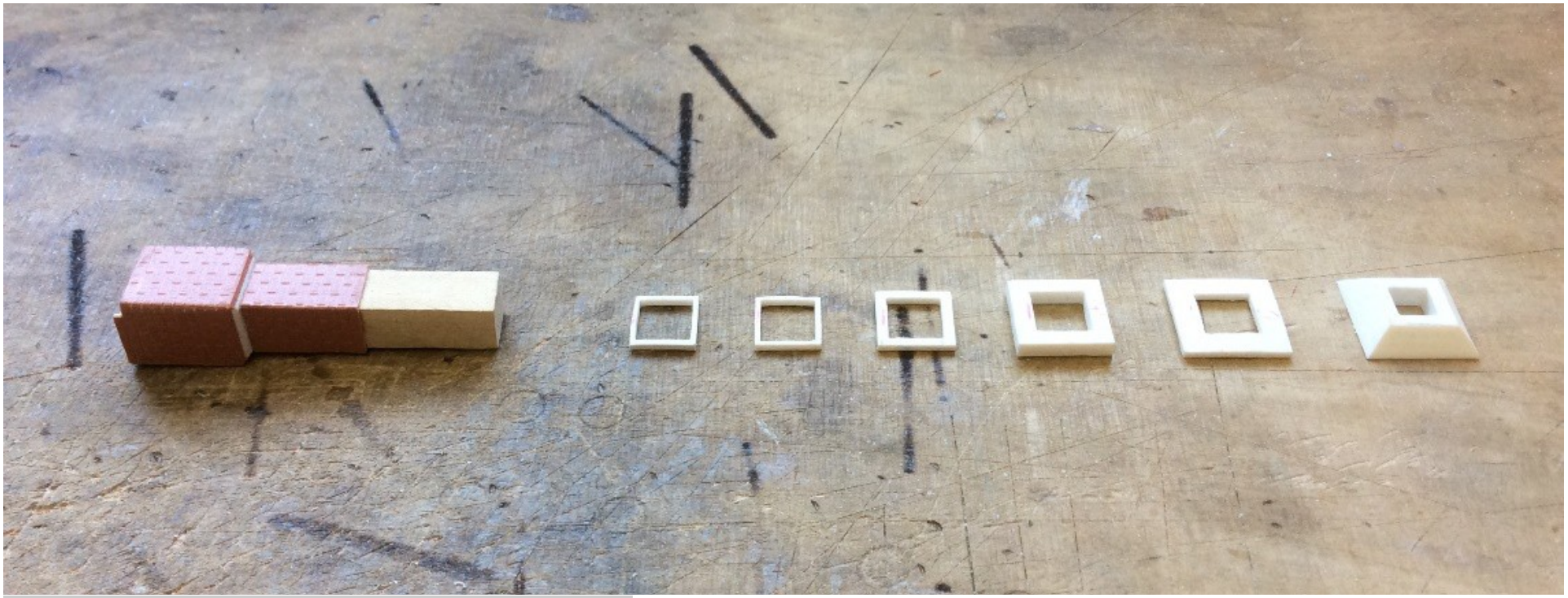


Photo 26

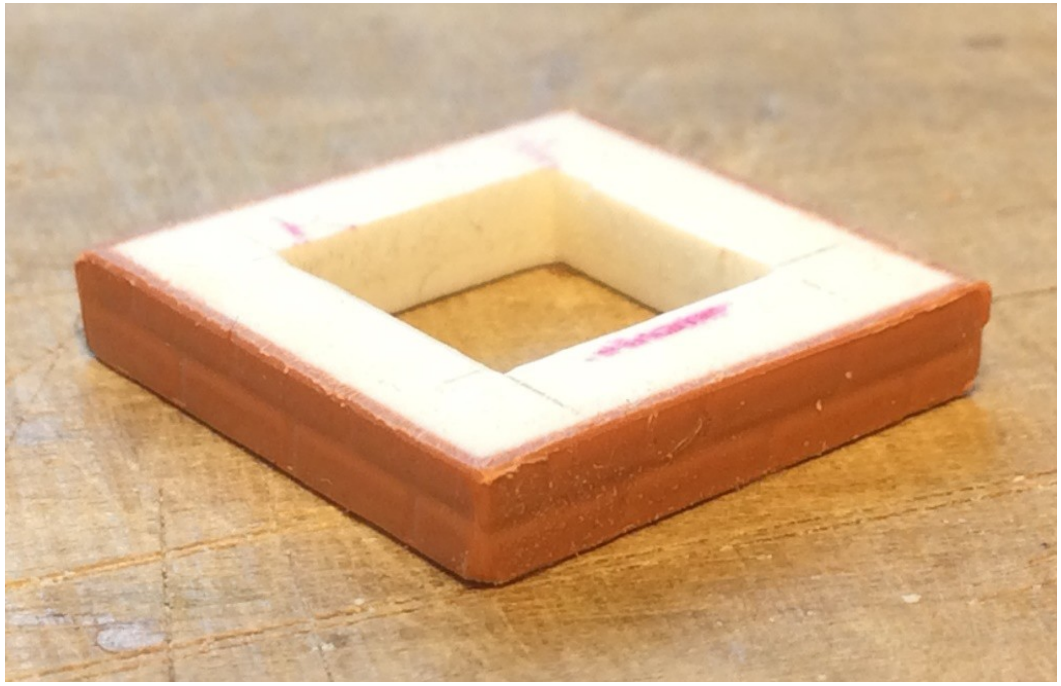
The (road approach) chimney end wall protrudes out slightly by one course of bricks from the sides which virtually are flush with the planking. The brick sheet was built up around a 40thou rectangle of Plastikard. Once glued in place the two sides were simply glued straight onto the planking.

The chimneys have also been started using 12mm square wood which are slightly over length at this stage. They simply slot into the square openings on the roof. The base has been thickened using scraps of Plastikard using Superglue. The brickwork will eventually be Mek'd in place matching the top course.



Photos 27 and 28

As described in the main text, the chimneys were quite complicated to make being built up from differing courses of brick followed by single and or double courses of corbeled layers. Trying to match their position on the drawing took some time to achieve. Each one has a 12mm square hole cut out in the middle which slides down the wooden former. Each one being slightly wider/narrower it was inevitable there were some discrepancies in the brick lengths.



MIDDLE CHIMNEY

After the trials and tribulation of working out how to make the end chimneys, it was down to the middle one. From what I can see and from the limited close-up photos of the sides, it looked identical to the others in style, but it definitely looked slightly chunkier from a couple of angles. I think the builders have stretched out the bricks slightly but keeping the same number of bricks per course. Remember this chimney is fed by the two fireplaces below, one in the booking office/ waiting room the other in the ladies' waiting room. Viewing the courses of bricks on the end-on elevation, it appears identical to the end chimneys but the two drawings confirm it is larger on both sides. As for height and corbelling spacings, it matches the end chimneys 100%. The side-on view of the base shows 7 courses of brick with an 8th course hidden behind the lead flashing. So I took the decision to compromise the measurements slightly, getting it near enough to look in proportion. I also thought it was easier making it square!

I used the same 12mm square wood strip as used for the end chimneys. Luckily for me, I did not have to cut and file away any of the wood. On the drawing, the thinnest part of the stack is roughly 13mm wide. With two thicknesses of 20thou brick plasticard (0.5mm each) either side, it brings the overall thickness up to the drawings, but more importantly I can use 2 full bricks and a half brick on each course.

From the outset, I decided the best way of securing the chimney to the roof was by cutting out an inverted V on the underside of the base. It could then be glued directly onto the roof with securing pins. I did not like the idea of cutting a hole in the roof and slotting in the chimney in place as a lot of butchery would be involved.

After cutting out the V in the chimney base for a snug fit, it was packed out as before with various thicknesses of Plasticard followed by two layers of brick, bringing the base to 16mm square roughly matching the drawing. This measurement conveniently has three full bricks each side for

each course. Not dwelling too much, the rest of the chimney was made in exactly the same way as for the end chimneys with slightly larger corbelling layers.

Photo 29

Just for the photo, all three chimneys have been placed in position. The central chimney is slightly larger than the end ones but has been constructed in the same way. The only difference is with an extra thickness of Plastikard surrounding the wooden core. The cemented tops are layers of Plastikard filed to shape. The chimney nearest the camera may appear odd and not at all flush with the end wall but it is perfectly aligned.

SLATING THE ROOF

The next problem to face was how to tile the roof but more importantly what to use. I like the printed paper tiles that are currently available via Kirtley Model Buildings (www.kirtlymodels.co.uk) but they are obviously paper. If applied, the covering would have to be varnished over the top to protect it from a shower since the building is for a garden railway. There is also the problem a flat representation. This is not too serious from a distance, but, close up, it would look odd not seeing some form of shadow on the bottom of the tiles. Slaters (www.slatersplasticard.com) sell tile sheets that are 6mm square with an overall thickness of 0.5mm in red, grey, and white colours. I have read on the internet that, when applied, the overall thickness of the material is way too thick and over scale for 7mm. Laser cut wood tiles are also available from York Modelmaking (www.yorkmodelrail.com) and Laser Cut Railway Models (www.lasercutrailwaymodels.co.uk) with the former having a self-adhesive back (I am not sure what the thickness of the wood is on either product). I also did not like the idea of seeing grained wood, but I am sure they could be sanded down. The same problem still arises with varnishing after painting. The last idea was to cut and apply individual 10thou Slaters Plasticard tiles. Thinking life is too short, there must be another way.

Thinking the best solution would be the Slaters tile sheets, I simulated the thickness of the tiles using 20thou (0.5mm) Plasticard Mek'd on a base. The overall thickness was way too thick. So I pared down the edges. This looked much better but not really good enough. Taking the plunge anyway, several sheets (enough for all of the buildings on the layout) of Ref:0429 roofing were ordered from Slaters. When they arrived, the thickness was thicker than the stated 0.5mm coming in at just over 0.65mm. Repeating the latter trial, this time using the pukka Slaters product, it was clear that the thickness was way over scale. This did not look very prototypical and I was not happy with the result. Back to the drawing board.

Another trial piece was attempted. This time I cut the waste areas off a tile strip. The first line of tiles were Mek'd onto a base. A thin 10thou x 1mm wide Evergreen strip was glued on the base simulating the roof battens. Each batten touches the top edge of the first row. When dry, the next row of tiles were then glued in place. I glued on two more rows just to see what the overall appearance was. The end result is a perfect row of neat tiles.

Going down this route, the plywood roof (in several segments) was covered in 10thou plasticard using superglue. When done, I was surprised how flat the plasticard was on the wood. The three chimney openings were then cut away.

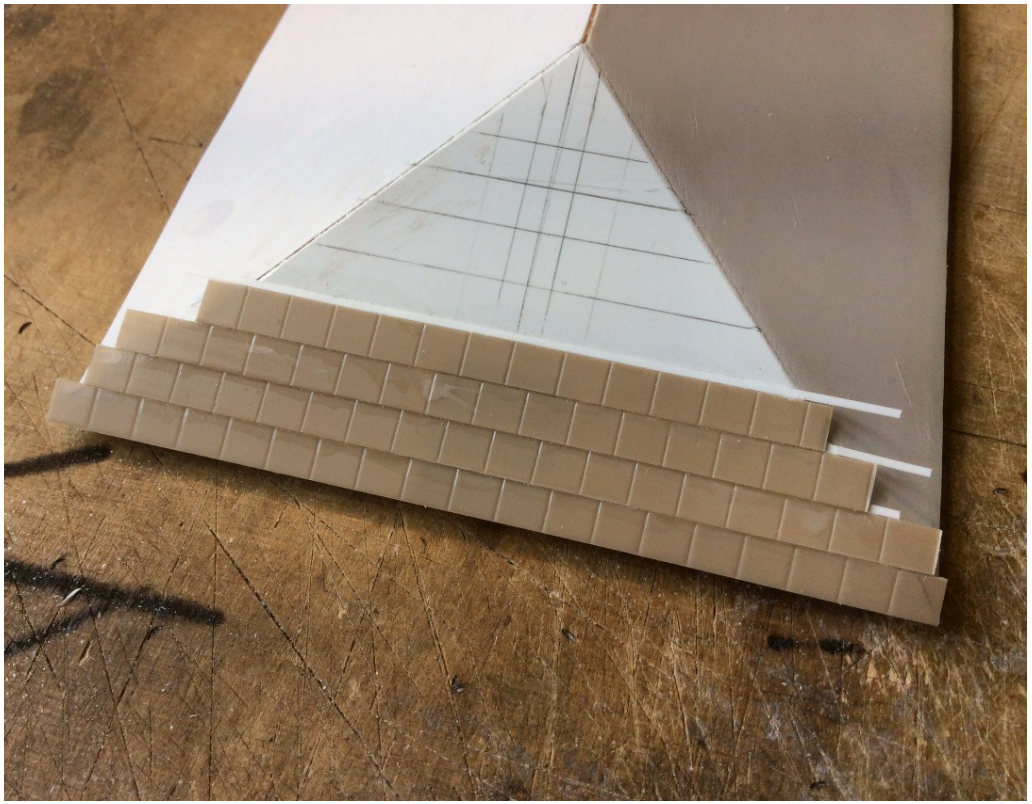
SLATING PROPER

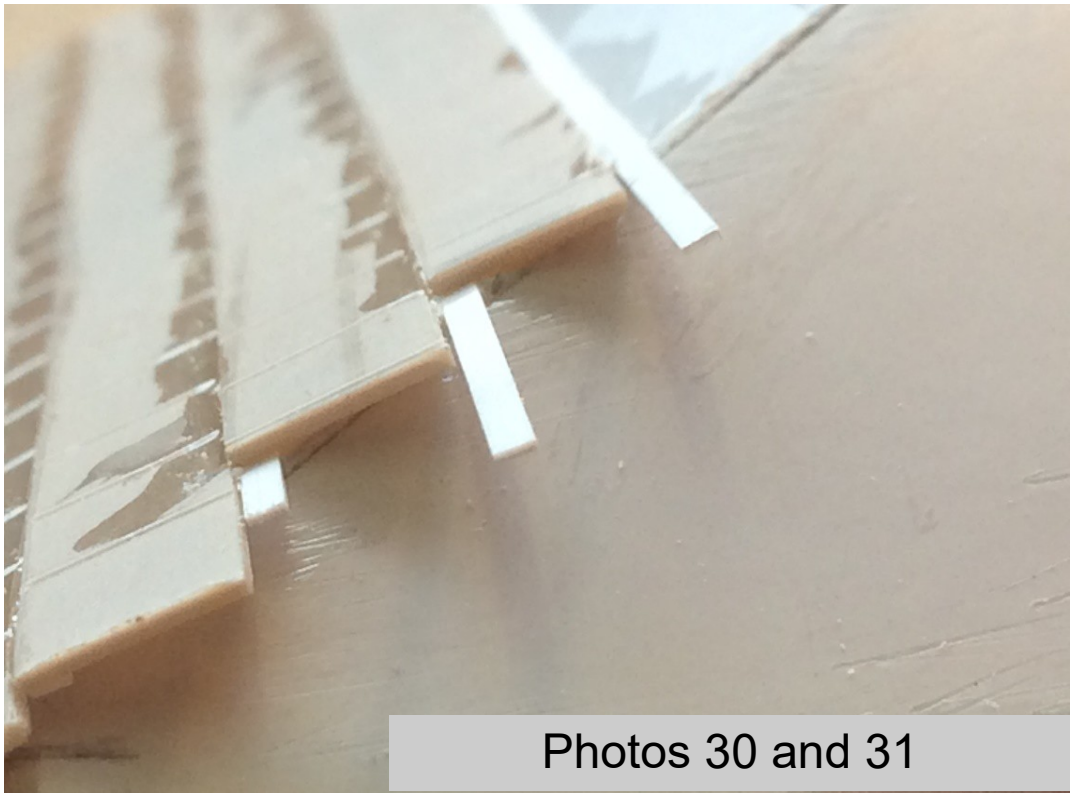
I was very nervous about the next vital stage of the build i.e. tiling the roof itself. Any mistakes here would result in a partial or total rebuild.

The most obvious and easiest area to start was an end (the gents' urinal). Firstly, I marked several horizontal and vertical lines across the end which would give me a guide to fit horizontal strips and keep in line the vertical segment of the slates. With a row width of 5.5mm, eleven equally spaced courses could be fitted in up to the ridge.

The first step was to Mek on a strip of Evergreen 10thou x 1mm wide plastic batten along the bottom edge of the Plasticard sub roof (Sadly no photos were taken of this strip in situ).

A bottom strip of slate was carefully measured from the centre line outwards, making sure the end slates were exactly the same. The excess ends would be cut off when the whole end was completed.





Photos 30 and 31

Deciding on how to slate the roof, I thought of Supergluing the Slaters slate strips directly onto the wood. After much thought I decided not to and to cover it (as shown) in Plastikard. The strips could then be spot Mek'd in place which allowed some for tweaking. It was imperative the strips were perfectly straight. Horizontal lines were first drawn on which gave me a guide for each course of slates. Wanting to slightly overlay each row of subsequent slates, I noticed the thickness of the Plastikard was very thick and over scale. Thinning down the ends was not a success. The only solution was to butt each one as each row progressed. Not wanting a perfectly flat roof, 10thou x 1mm batten strips were glued on which raised the bottom edges slightly. Note, the chimney hole has now been covered up which will be cut out and removed when completed.

Lining the top edge of the tile strip with the pencil line, the first crucial strip was tentatively spot-Mek'd in place in one corner (no turning back now). Working my way along this pencil line, the strip was again spot Mek'd in several places. At each stage of the gluing, it was viewed low down checking for straightness as I went along. It was imperative the strip was perfectly straight with absolutely no wavering kinks. To my amazement it was dead straight. Once happy, the whole length was then flooded with Mek along the top edge and the batten strip beneath.

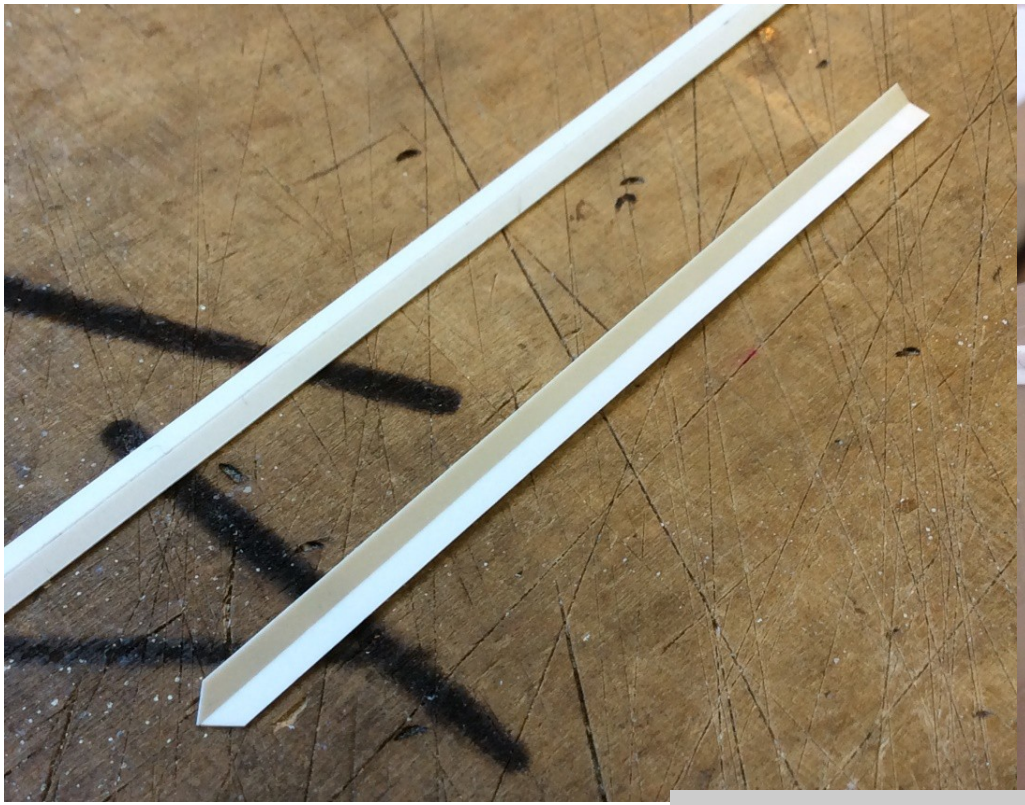
The next batten strip was Mek'd in place touching the top edge of the first row of tiles. The second row of tiles was butted up to the top of the first row, having a nice straight edge for it to press against. Again, the top edge had to marry up along the pencil line. When done it was again spot Mek'd in place, checking once again. The bottom edge of the tile strip was flooded (not too much) with Mek with a small brush. This procedure carries on up to the very top row.

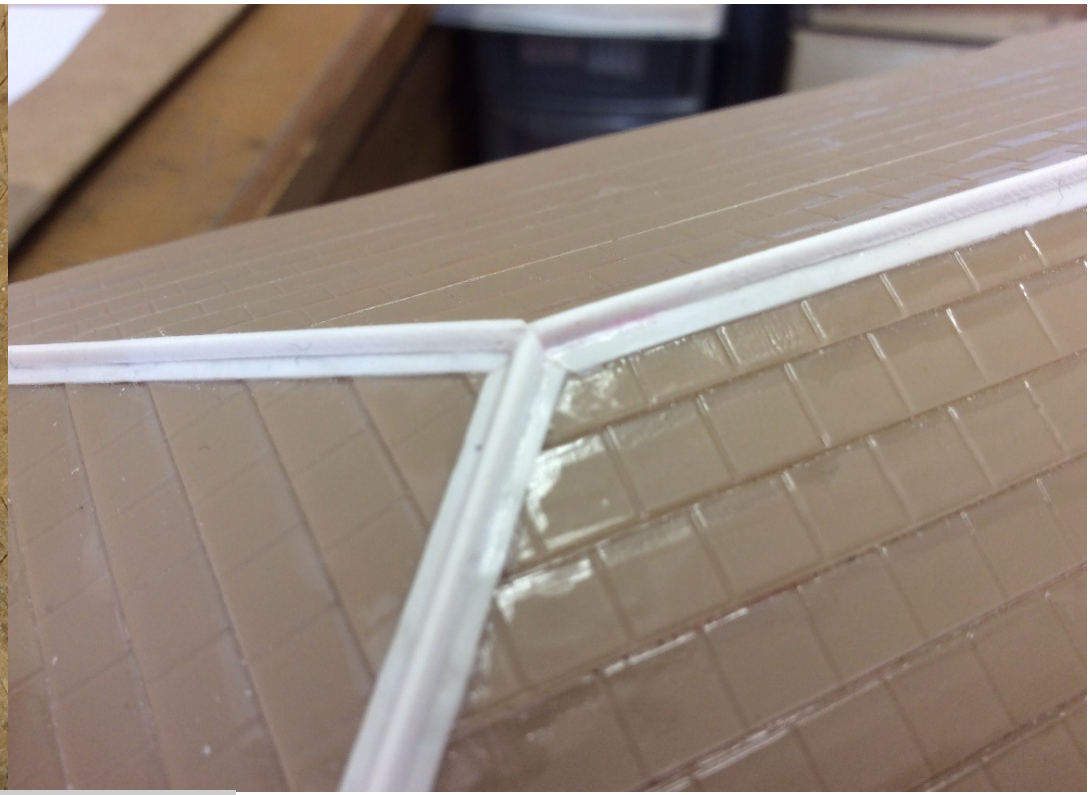
Leaving overnight to dry, the ends were trimmed away leaving a small 1mm lap for the hip tiles. The small end chimney openings were re-cut and filed out for the pre-made chimney to fit into. The other end was then made in the same way.

SIDES

Horizontal lines were marked on with a pencil. For some reason the pencil lines did not show up very well so I used a red biro instead. The same procedure more or less applied as for the ends. The only difference was mitring the ends matching the angles of the hips, as each row was built up.

A square blank area of just under two tile widths was devoid of slates and left clear for the central chimney to sit into. Eventually it would be glued in place.





Photos 32 and 33

On some of the photos I have gleaned from of the real Fittleworth station, either side of the ridge and hip tiles there appears to be a narrow flat area (flashing?). To represent this feature 5mm wide x 10thou Plastikard strips were cut and scored down the middle then pre bent to the angle of the roof. Each strip was then Mek'd in place. As explained in the main text and after experimentation, the ridge tiles were home filed from 1mm x 1.25mm Plastikard. When Mek'd in place, this gave an excess area of 2mm either side which matched the photos pretty well. I decided not to individually score each length of tile leaving a plain strip.

LEAD FLASHING

On either side of the ridge and hip tiles, there would have been a thin narrow strip of lead flashing which is not very clear on early old grainy photos. Any flashing would have been so thin it would not show up any shadows. The photos I have of Fittleworth are not very clear either. The clearest photo I have found in LB&SCR days is the North Signal Box taken at Horeham Road. From this photo, another trial mock-up was made from various widths of 10thou Plasticard scored down the middle and formed at an angle. Visually, 2mm each side looked perfect. I started with the ridge strips first either side of the central chimney, spot Mek'ing as I went along. The four hips were then done in the same way. I noticed in some areas the plasticard had melted and dropped down slightly (prototypically?) onto the face of the tiles simulating the lead flashing had been formed around the tile shape. To me it looks very convincing so was left alone.

RIDGE & HIP TILES

To simulate the rounded ridge and hip tiles, plastruct half round strips of various sizes would be ideal. Not knowing which size would look best, several packs were bought. Although not too expensive, I have several packs I did not use. Experiment time again. Using various off-cut thicknesses and widths of Plasticard, each one was rounded off, then placed in position. In the end, 1mm wide (40thou) x 1.25mm (H) looked visually the best. Only having 3' 0" in total to fill, it did not take me too long to accomplish the whole lot.

Before each strip was Mek'd in place, the corner edges of the flashing were filed with a 1mm flat so the bottom of the ridge tiles could sit flush onto them.

CHIMNEY LEAD FLASHING

Lead flashing was also placed around the base of the chimneys. With one chimney in place various widths of plasticard were placed alongside, to see what widths I was happy with. 2mm x 10thou looked about right, matching the ridge and hip tile widths. Each segment was cut and

glued in place. The tell tale ‘saw blade’ flashing on each course of the chimney bases was painfully cut out. I managed (barring one course on one chimney) to match them up perfectly with each course. The middle chimney was slightly different with stepped flashing that required a paper template first to get a perfect fit.

Apart from gluing the chimneys on, this completes the roof.

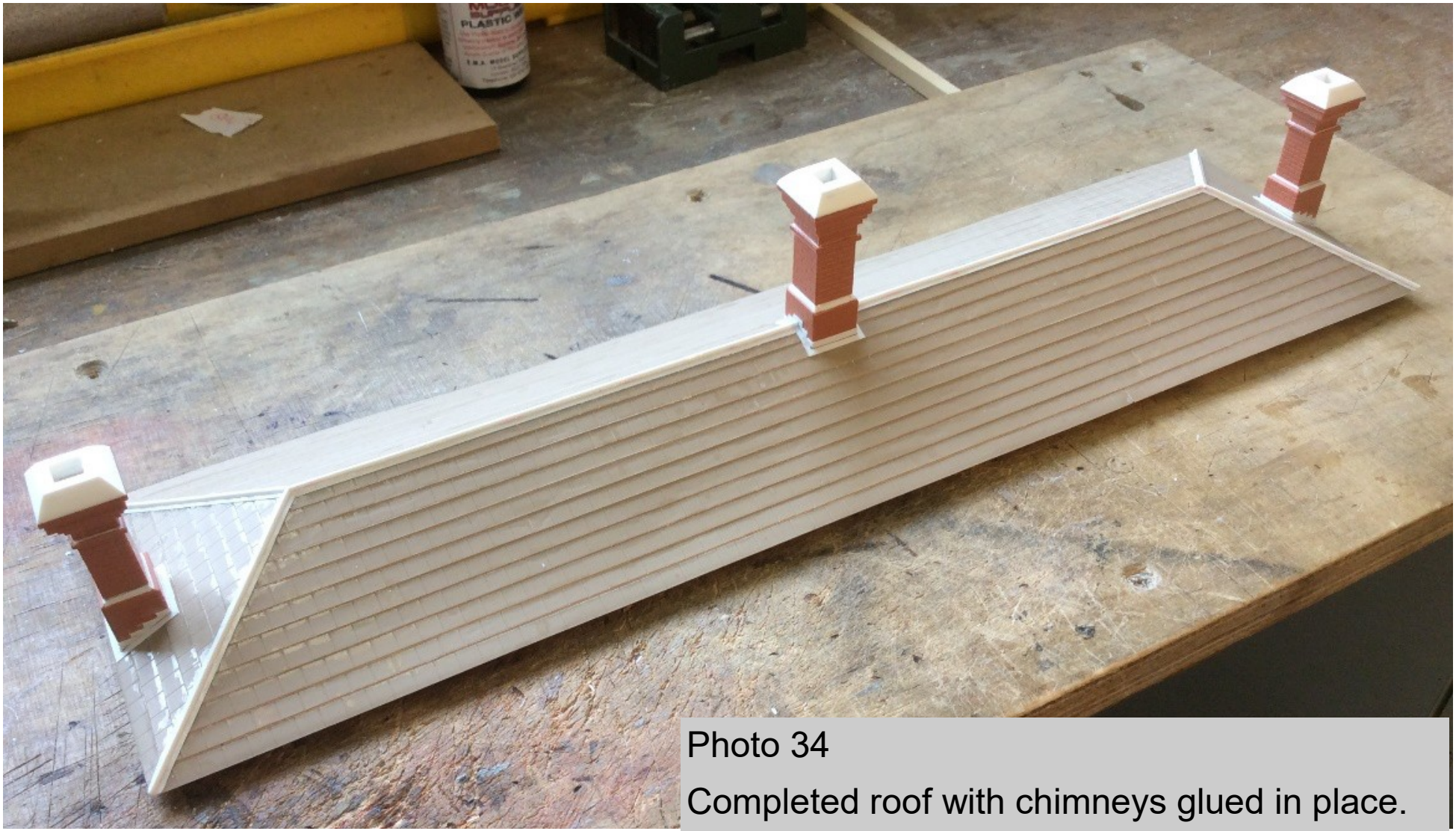


Photo 34

Completed roof with chimneys glued in place.

PLATFORM CANOPY

As some of you will know, the cardboard mock-up of the station building has stood the test of time for the past five (plus) years. Even the flimsy canopy hasn't really suffered at all and has stayed perfectly straight throughout which is amazing for cardboard. I am also amazed the thin wooden supports (x5 in all) have not snapped off or got broken. It`s a real shame it cannot used it with proper valancing fitted and a simple paint job. At quick glance it is perfectly acceptable.

The first thing to do was to look at the available photos, double check the measurements, then amend the drawings where necessary.

From the photos, there are clearly 26 segments of valancing on the ends of the canopy. Having two segments of Fittleworth valancing (Yes, pucker Fittleworth valancing I obtained on a visit in the 1980's) they measure 6½" wide which equates to roughly 13' 6" (94mm) overall. Vivien Thompson's drawing of the canopy works out at 13' 9" (96mm) wide which is not too far out. For some strange reason though the canopy has been drawn 1' 2" (8mm) out from the front of the building which in reality should be mounted directly against it. The radius of the roof too looks more or less correct at 17' 3" which I will copy.

The British Railway Journal's (BRJ) sectional drawing on the other hand is much wider at 14' 0" (98mm) with a much shallower curve of 33' 0" radius which to me is way too low. It too is also strangely positioned slightly out from the front of the building by 9" (6mm).

As for overall lengths, both appear to be roughly 55' 6" which again I have copied.

Scouring the internet for views underneath the canopy, I came across one very dark and gloomy photo and a painting. They both show a thick longitude wooden beam mounted directly on the front face of the building (just above the window architraves) with a lattice of timbers attached by halving joints. From what can be seen, the roof itself does not appear to be supported in any way

as, strangely, no beams can be seen in either protruding vertically touching the underside of the roof. Perhaps the roof was built so rigidly it did not warrant additional timbers. The BRJ drawing hints at two longitudinal beams measuring 1’ 5” x 4” that are resting on lateral beams, but these are not fitted on the actual roof from what I can see.

VALENCING

From the outset I knew the valancing would cause me problems as no commercial LB&SCR ones are available. I thought I’d have to scratch build them from brass like Rod Hayward had to do on his Lynchmere layout. Many years ago whilst at the Gauge O Guild show at Telford, I visited the Slaters stand. To my amazement they sold MR Station (Awning) valancing (Ref:7A27) that virtually matches the LB&SCR style (packs were obtained well before the advent of 3D printing). At a quick glance they match the ones at Fittleworth. The only problem is that each valence width was slightly narrower at 5¾” wide. Placing a strip on the drawing, there are 29 segments of valancing instead of 26. With life so short, I could live with this slight error.

CANOPY CONSTRUCTION

CANOPY 1

I thought long and hard about its construction and what materials to use (not unlike the building). The roof of the modelled canopy would have to be supported somehow to stop any sagging so some compromises would have to be considered. It also has to be strong enough to stand the rigors of handling and the weather (hot/cold/damp) on a running day. I also thought it would start to bend and bow over time so it had to be made from perhaps metal i.e.brass section? Having successfully built carriage and wagon underframes using 7mm x 1.6mm C&L double-sided copperclad sleeper strip and having some in stock, I thought of using it again. A latticework of strips could then be cut and soldered up making in effect a model aircrafts wing. Pre-cut curved

segments of Slaters Plasticard could then be mounted on top then the valence strip could then be glued directly onto the front and sides of the frame.

Not wanting to dwell too much on this first canopy, a canopy jig was designed and the basic frame was built up as described above. The supporting curved roof supports were glued in place then the roof covering applied. After a day or so, I noticed the whole roof was beginning to sag downwards in the middle by around 2-3mm which looked prototypical at first. I think the sag was due to the Plasticard roof shrinking slightly in between the numerous curved supports below, forcing the copperclad to deform. The canopy was put aside for a few weeks before a start was made on the valancing. I assumed that the sag could not get any worse but it did. Re-checking it again the sag was getting worse still by this stage at around 4-5mm. It got so bad I felt it looked awful and looked more like a banana. After removing the whole roof, straightening, and semi starting again, I gave up. So it was back to the drawing board.

THE 2nd CANOPY

Not wanting the same mistake to happen again, I decided the new canopy had to be solid and not hollow. Any fine detailing underneath could be added later giving the impression of trussing. A piece of prepared planed wood was sourced measuring 93mm (W) x 12mm (H) which was cut to 392mm (L). To within a couple of millimetres, it matched the dimensions of the original canopy perfectly. Any differences could be built up with thin ply.

Being slightly thicker than the original C&L strips, the two long side edges had to be chamfered at an angle disguising this error. Using the original Plasticard rib template, 27 1/8th plywood ribs were cut out. After gluing on the two outer ribs (EVO-STIK wood adhesive), equidistant pencil lines were drawn on the remaining 25 ribs positions which were then glued in place.

Photo 35

The 2nd canopy was made from a length of 93mm x 12mm planed wood cut to a length of 392mm long. 27 pre-cut 1/8th plywood ribs were then cut out and glued in place. The top side of both edges were then chamfered giving a lower profile to around 9mm deep. Two 1/16th round brass securing dowels (as shown) secure the whole canopy into the front of the building. A hole for a middle securing dowel (as noted by a drill bit) was drilled out but not used in the end.

REMOVEABLE CANOPY & ITS DESIGN

Before adding anymore of the roof proper, I wanted to copy my original slot-in cardboard canopy design. The canopy had four 1mm n/s securing dowels protruding out from the back which located into corresponding holes on the front of the building. Once in place, it was quite secure and never once came apart during a running session even if knocked. As this method was so successful, I thought of using the same for this project.

Also at an early of the design of the canopy, I thought the bottom of the new wooden canopy base could rest on top of the three window architraves as per the prototype.

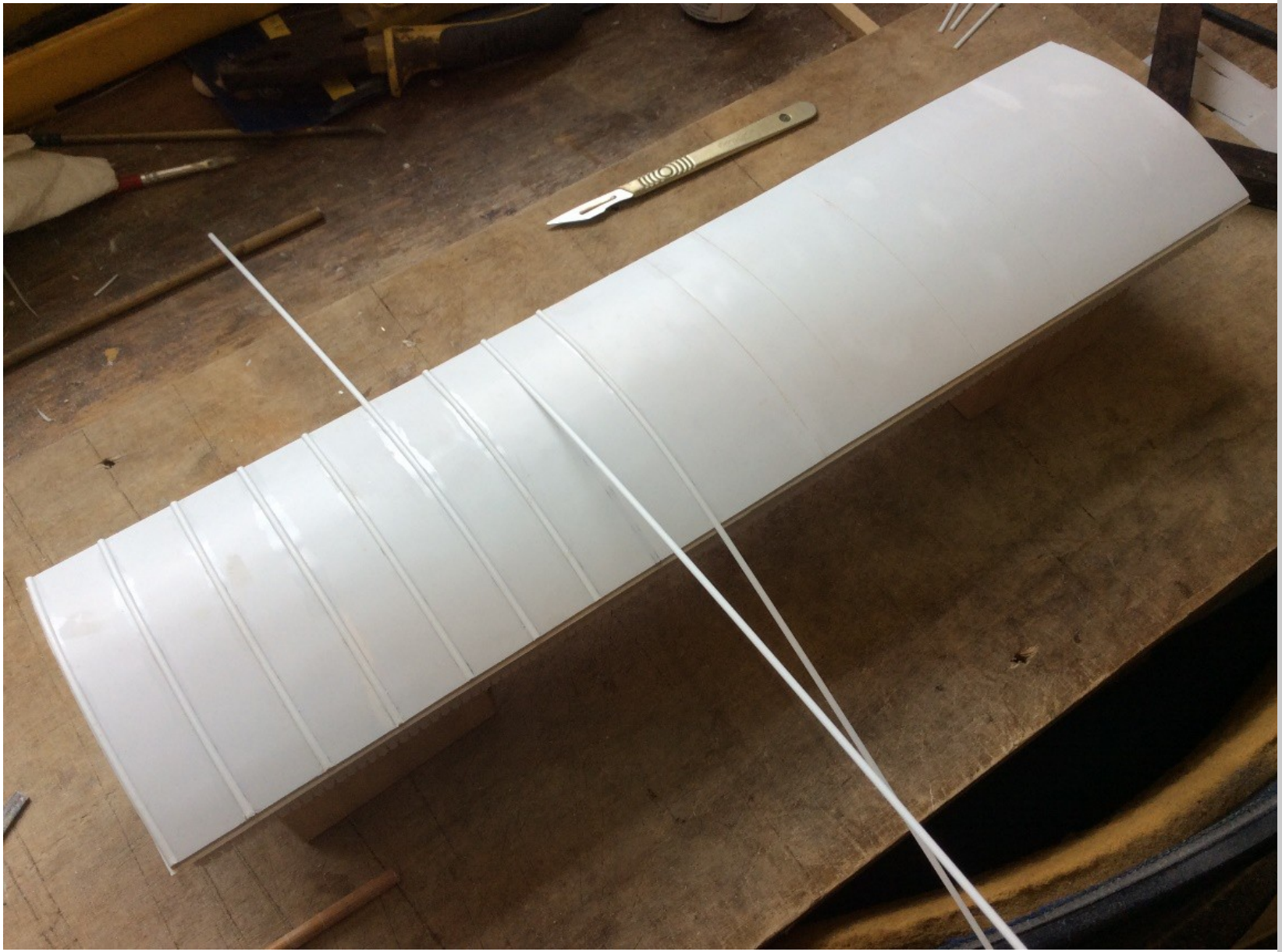
SECURING DOWELS

Thinking 1mm n/s rod on the mock-up would not be strong enough, this time around I chose 1/16th round brass tube (KS 125). Three dowel positions were decided on, one in each corner and one in the centre. Holes were drilled out on wooden base which the tubes would eventually be glued into.

The position of the canopy was determined. Pencil marks were marked on the buildings front which corresponded with the securing dowels positions. It was imperative the canopy was equidistant in from both ends. Viewing the canopy in position all looked fine.

ROOF COVERING

The roof covering was now added. Ideally, a thickness of 40thou (1mm) was about right so again, two layers of 20thou Plasticard sheets would be used. The first layer was Superglued onto and over the ribs followed by a second layer (in convenient strips) Mek'd over the top. Erring on the side of caution, the roof covering was over long by a couple of millimetres all-round at this stage for trimming later.



Photograph 36

The roof was covered in two layers of 20thou Plastikard (eventual thickness 1mm). The first layer was Superglued over the plywood ribs, sides and ends followed by the second where Mek was (sparingly) used. The oversized roof was then trimmed to size all round. It was then marked off in equally spaced 2' 6” segments (17.5mm) which can just be made out. A start has already been made on the 2mm wide Plastruct half round lead seams.

VALENCING/AWNING

Before adding the valancing, strips of 12mm wide x 20thou Plasticard packing pieces were Superglued onto the facing edge of the wooden base. At the same time, the ends were done in the same way matching the curvature of the underside of the roof.

In readiness for the building many years ago, I purchased (as stated above) packs of Slaters MR Station Awning (Ref:7A27 – qty 6 x 125mm strips) which matched the Brighton's design accurately. Upon opening the packet I thought they would be quite thick and over scale which they weren't. Instead, they were very thin measuring between 0.75mm and 0.8mm and very flimsy. The bottom of the awnings were thinner still at 0.5mm. They would eventually require thickening later. Not wanting to waste any strips, I first printed off several scanned paper template copies of them for trial fits to see if they fitted i.e. equally spaced.

From the drawings they measured approximately 2' 9" (19mm) down from the gutters' bottom edge down to the curved tip. This measurement was transferred to the sides. It was obvious that a small curved segment of packing would be required along the top edge of the template matching the curvature of the roof. Double checking on the modelled canopy and the photos I was happy with the templates.

The awnings first had to be thickened up with a 40thou (1mm) Plasticard backing piece. Before gluing the backing piece in place, the two horizontal moulded guide lines on the inside face had to be filed off leaving a flat back.

All subsequent awnings were then Mek'd in place over the packing piece, making sure the corners married and butted up perfectly.

ROOF TRIMMING

The plain roof could now be trimmed to size. Looking at the photos, the overhang on each end is not very much judging by the shallow shadowing, so I plumped for 2mm.

Knowing the guttering was going to be quite wide, the platform facing edge had to be slightly wider at 3mm. Again, this could be trimmed back further when the guttering proper was fitted.

CANOPY ROOF

From every photo I have collected of Fittleworth, none of them show a defined outline of any roof detailing on the canopy itself. Photos were taken either low down at platform level or from a long distance away. Zooming in the photos tended to blur, which was not very helpful. What is shown on black and white photos is either a plain white or light grey top and nothing else. I have a very blurred photo of Hampden Park's curved roof which is identical to the one at Fittleworth that shows very faint lines on top suggesting lead sheet (I could be wrong). The lines could be the curved supports underneath with the covering showing through? The 4mm model of Fittleworth constructed by Nick Holliday clearly shows seam lines (x10) which indicates lead sheeting, which to me look prototypical.

The majority of the canopy roofs on the Cuckoo Line (*) appear to be covered in lead sheet with quite high raised seams which I wanted to copy. Scaling the drawings up to 7mm, the majority of seams lay 1' 3" (9mm) apart. Drawing 1' 3" pencil lines on the modelled roof they appeared very close together and looked very narrow. Anyway, to represent the seams, half round Plastruct seemed ideal. Having plentiful stocks of 0.8mm (90879), 1mm (90880), 1.5mm (90881), and 2mm (90882) widths, a couple of each size were temporarily placed in position on several lines. Viewing each size in turn, 1.5mm wide looked the best, but appeared too low and shallow

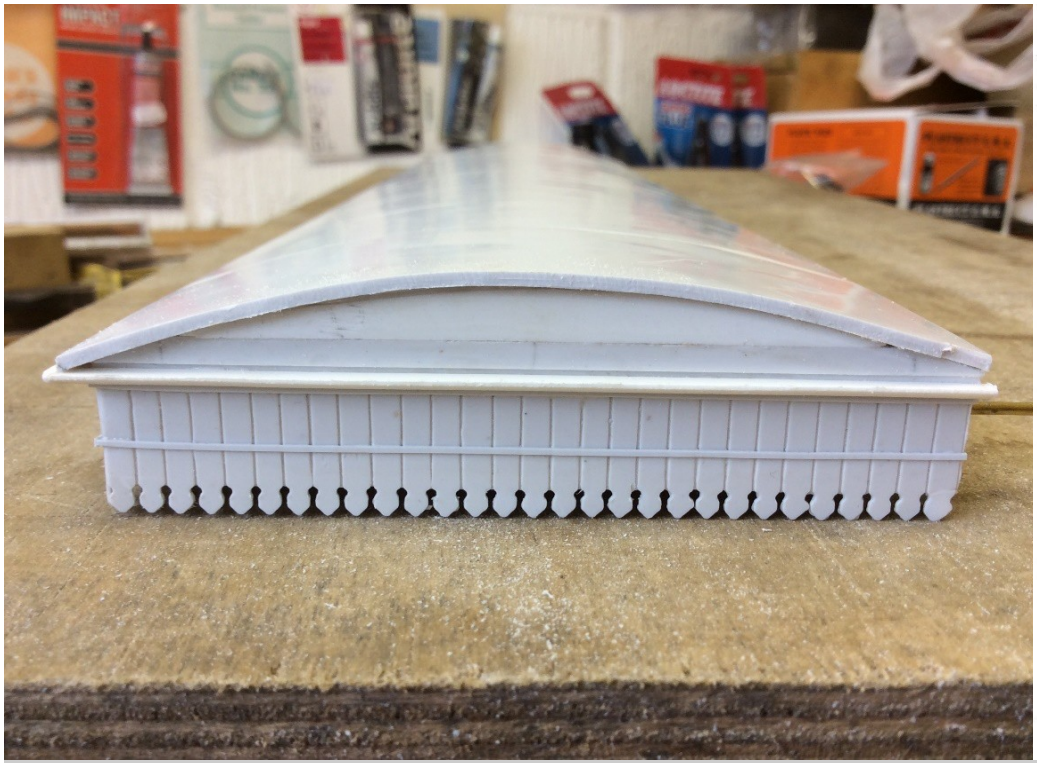
(*) The Cuckoo Line by A.C.Elliott, Wild Swan Publications. ISBN 0 906867 63 0.

compared to the photos. The 2mm wide ones looked the best for height accuracy but they did appear slightly too wide but not by too much. Deciding on the 2mm ones, I found the spaces were too close and cramped together so they were increased to 2’ 6” apart. To my amazement, 20 equally spaced lines fitted within the whole length of the roof perfectly. Re-checking once again with temporary positioned strips, the spaces looked correct to my eye. Now happy, each strip was then Mek’d in place over the pencil lines.

CANOPY GUTTERING

When visiting Fittleworth station in the late 80’s, I also picked up a small length (just over 1 foot) of broken cast iron guttering from the canopy which has sadly been mislaid. I remember clearly it was triangular in profile having a flat back and an angled front towards a flat bottom. One of the drawings clearly shows the same profile which I wanted to replicate. After a lot of head scratching, several short lengths of Plasticard mock-ups were tried out from various thicknesses. The attached drawing (Fig 5) was the best I came up with that looked more or less correct.

For the guttering, 1.5mm looked about the correct thickness, so a piece of 60thou Plasticard was chosen, then cut to 3mm wide. Filing the back edge square brought the overall width down to just about 2.75mm. A 1.5mm pencil line was then drawn on the underside (in from the front edge) which gave me a file line to go by. The sloping front was then filled away, touching the line. It was very hard filing the same profiled angle along the whole strip so I prepared six of them and chose the best ones before fitting. I did not attempt at a hollow trough gutter!



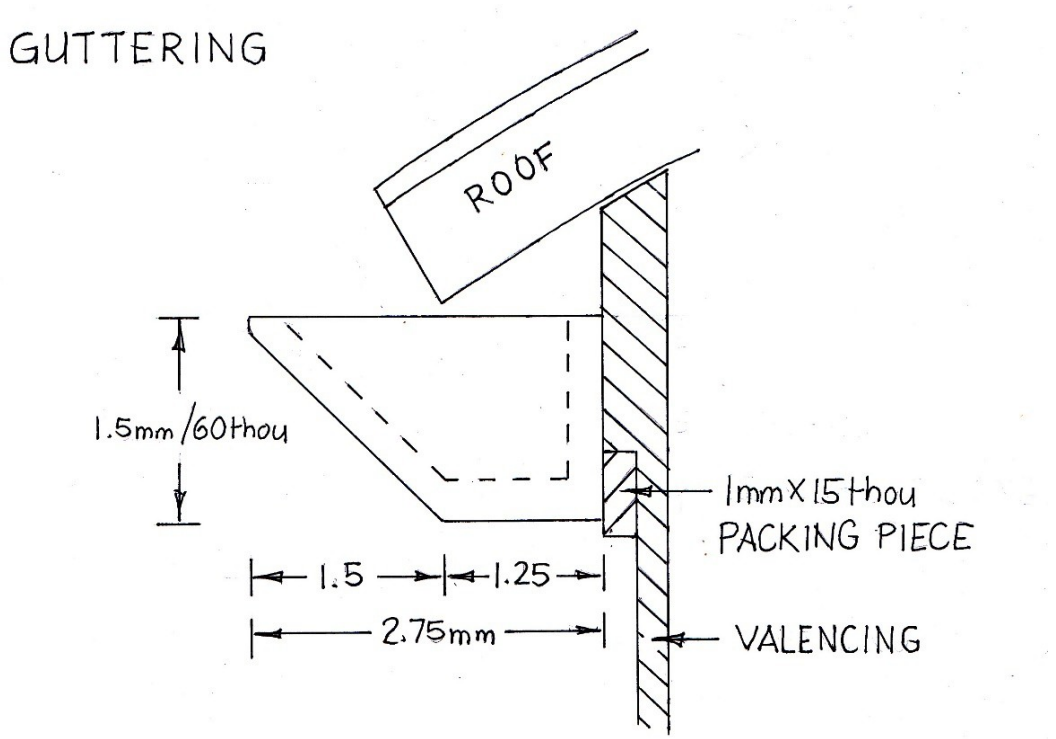


Photo 37 and Fig 5

Slaters MR Station awning (Ref:7A27) was used for the canopy. As mentioned in the main text, it was pretty close to the LB&SCR's in style but slightly narrower which is hardly visible. I wasn`t overly concerned either, thinking it jumps out as “Brighton”. Due to the strips being 21mm high, a packing piece had to be inserted above (shown slightly whiter). The batten strip and guttering have also been added. The overall thickness of the roof matches the photos.

Figure 5 shows how the guttering was built up. Although I have drawn a hashed line depicting the gully, it has not been modelled and left as a solid section. The 1mm wide gully will eventually be painted matt black.

GUTTER FITTING

Choosing the best prepared pieces for the long platform edge, I mitred one corner at 45º. When placed in position, it looked and matched the photos perfectly. However, the back edge was unsupported on the front edge of the awning moulding by 1mm, so a thin 1.5mm x 15thou packing strip of Plasticard was Mek'd on the valancing front. Replacing the gutter again it was properly supported. The first guttering strip was strategically Mek'd in place making sure it was perfectly straight. The mitred edge protruded out further by 0.5mm for filling back when the end side piece was fitted. The other long strip was fitted in the same way.

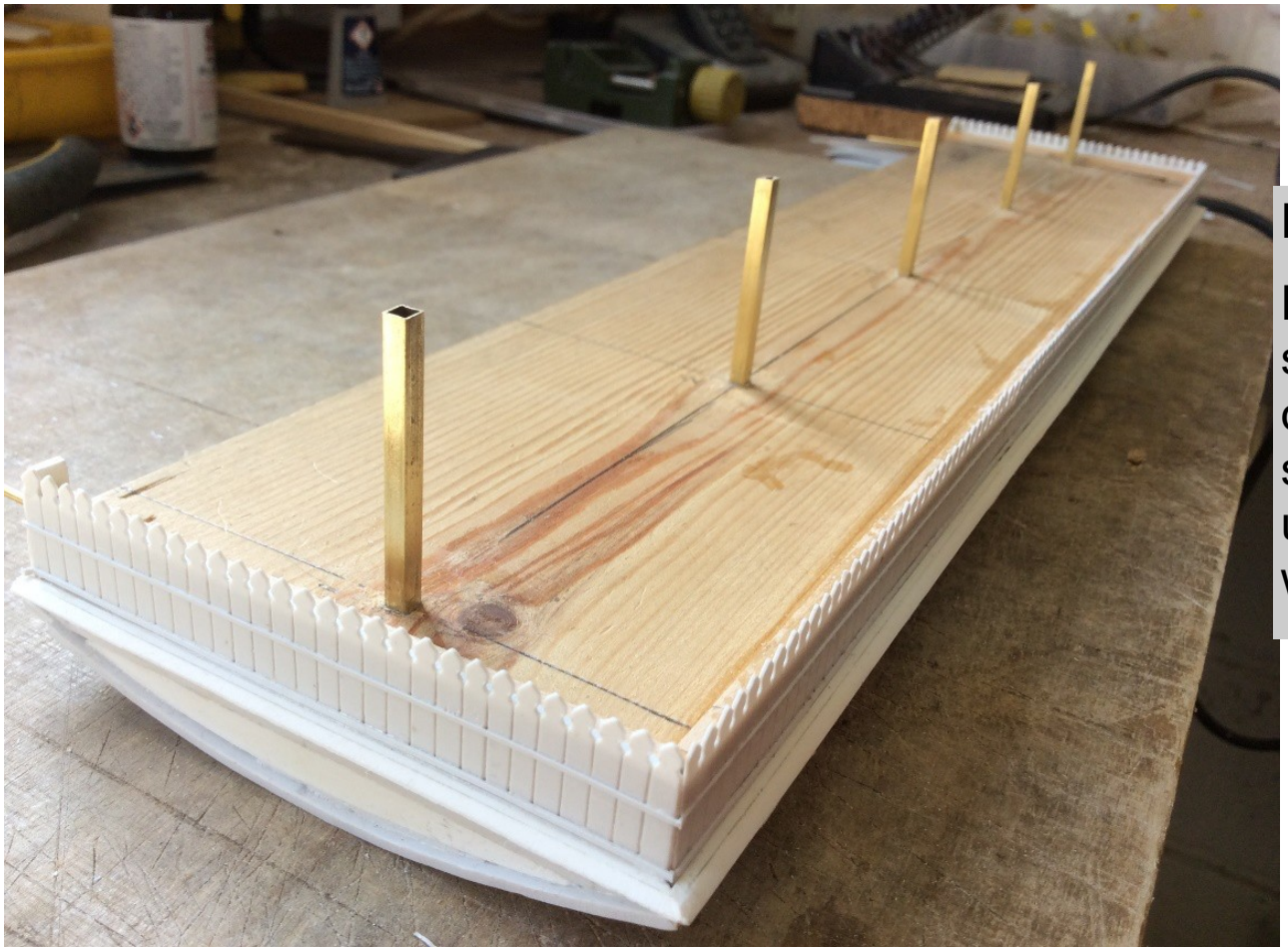
BATTEN STRIP

On the front face of the valancing (front and sides), there is a thin horizontal wooden (moulding?) strip approximately 2/3^{rds} down from the bottom of the guttering. Scaling the best photo I have on screen to 7mm, the width equated to 1.5mm. It also gave me its exact positioning because the drawings were not very accurate. Trialling 10, 15, and 20thou thickness, 15thou looked the best. Strips were then cut using a brand new scalpel blade. A 5.5mm wide piece of card was used as a template (that rested on part of the moulding underneath the guttering) so that the strips, when glued in place, were parallel to the guttering.

The other area of the canopy has had a few additions made to it. On the front two small vertical projections which are downspout elbows have been added (they are for diverting rainwater down from the guttering proper which then pass through holes/slots in two awnings. The pipes then carry on down towards the rear of the two off centre support columns). I have since made and added the elbows from 2mm diameter round Plastruct rod (MR-80P). I am toying with adding the down piping behind the columns but they are hardly visible. What appear to be two small diameter (black) holes to the left of the left elbow are a mystery to me so, for the time being, they have been left off.

COLUMN SUPPORTS

For storage purposes I decided the five supporting columns could be made removable and semi loose fitting. The two outer supports would determine that the canopy was level, whilst the middle three could raise and lower with any deviation in the platform height. They would simply drop down on the platform surface. The measurement of the columns on the drawing were around 4mm square, so 5/32nd (KS152) square brass tubing was used. To secure the outer columns in place, the next telescopic size down to support them are 1/8th (KS151). Five holes were then drilled into the canopies base in readiness for them to be glued into.



Photograph 39

Pencil lines were drawn on for the five supporting column positions. After drilling out the holes, 1/8th square section brass were glued in place using Araldite. It was imperative they were at perfectly right angles.

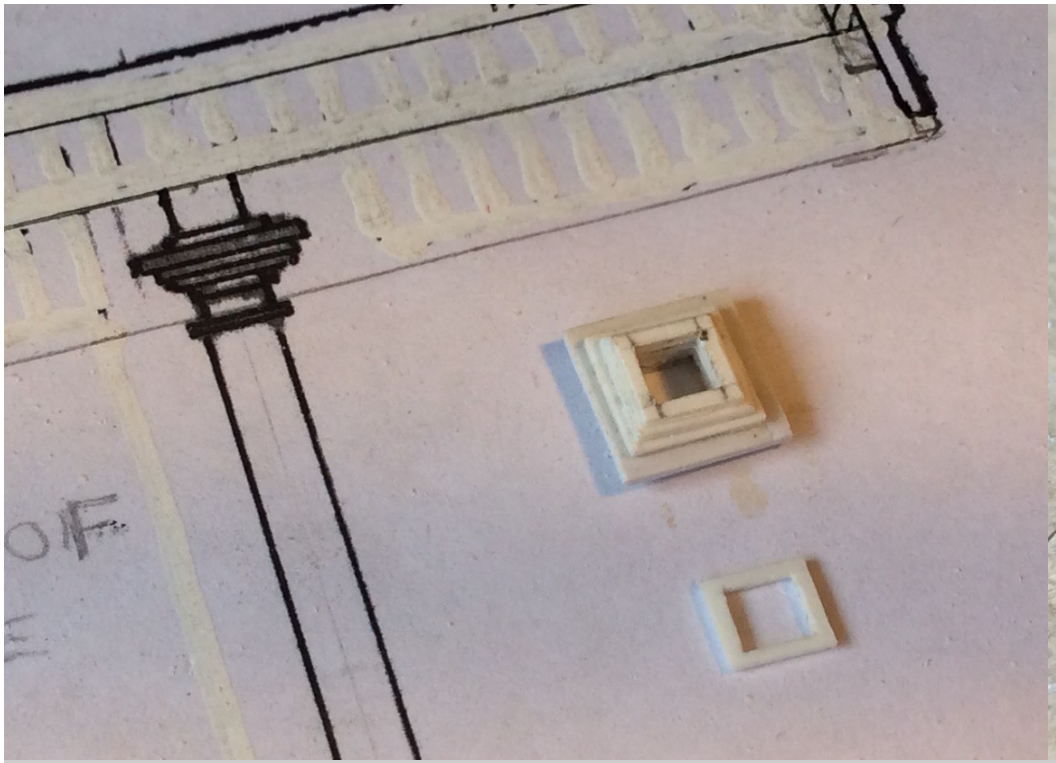
WOODEN SUPPORT BEAM

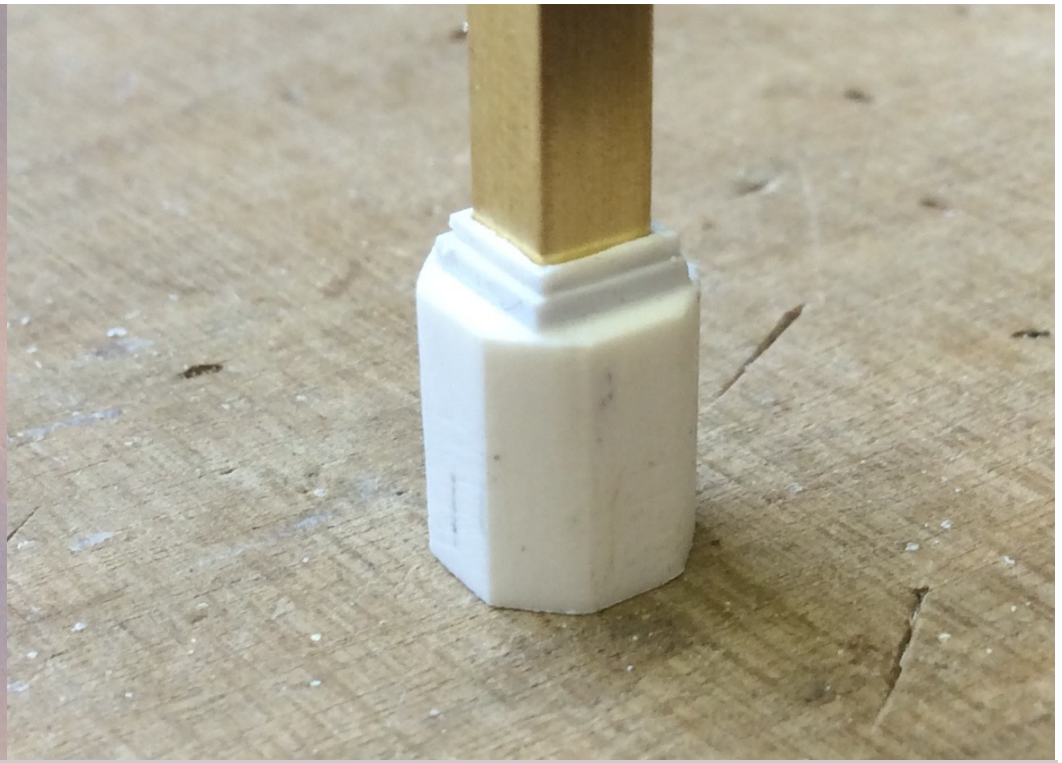
Looking at the underside of the canopy painting, there appears to be longitudinal and lateral wooden beams that support the whole roof. From the intersection of the beams, the support timbers are located and supported by a large capitals on each one. I represented these timbers using 1/8th square close grained wood strip superglued in place on the wooden base. In reality this timber should be above the top of each support and not butting up to them. These joints would eventually be hidden anyway in the gloom by the capitals.

SUPPORTING CAPITALS

Each capital is made up of 5 squares of Plasticard Mek'd together. They measured (from top to bottom) 6mm, 8mm, 7mm, 6mm and 5.5mm square. The largest square appears to be thicker than the rest so I used 40thou (1mm) with 30thou (0.75mm) for the rest. 4mm holes were cut and filed out in each one for a very tight fit over the 5/32nd brass tubing. When all were cut out they were then placed in order over the tubing and then Mek'd together. When removed, the inside face within the opening required filing smooth. There is a single square 2mm lower below the main capital that also measures 5.5mm square. Both were then superglued in placed on the brass tubes matching the drawings.

Sadly, the capitals cannot be seen from normal viewing angles because they are positioned slightly higher up behind bottom of the valancing but I know they are there. If photographed very low down though they can be seen.





Photographs 40 and 41

The square section capitals that are positioned around the columns top were built up from five layers of various thicknesses of Plastikard which ranged from 5.5mm – 8mm square. The drawing hopefully shows their widths and how they were made. The hole in the middle measures 5/32nd square for the brass column to slid through. The bases were made from, again, thickish Plastikard then filed accordingly. Note the brass 5/32nd brass tube inserted.

CAST IRON SUPPORT BASES

The cast iron support bases would appear to be octagonal in shape not square as first envisaged. Clearly shown on the drawing are to two vertical inner lines within the 7.5mm (w) x 9mm (h) base. To date, I have not found a clear enough photo can confirm this. On top there are three more narrowing layers which definitely appear to be square.

Not having a lathe to turn them up, I used four oversized 12mm x 7mm rectangles of 80thou (2mm) Plasticard glued around the 4mm square brass tubing. When dry the excess waste areas were cut off then filled smooth. Each corner was then filled off forming the octagonal shape. Each of the eight flats worked out roughly 3.5mm wide. The top and bottoms were filled flat down to 9mm high. Two small squares measuring 5mm and 6mm (not three on the drawing) were then cut out and Mek'd on top.

Photograph 42

On the real Fittleworth canopy, the underside is completely hollow with a lattice of framework. To represent them on the flat underside surface, 1/8th square wood strip was used. The five supporting columns now completed are simply slid into position for the photo.

STATION BUILDING FACIA and GUTTERING

The guttering as mentioned before had already been designed and made beforehand but left off until now. The main reason for the delay was to avoid damage.

FACIA

Around the top of the building there would have been a facia board onto which the guttering would be attached (photos collated of the real Fittleworth were not very helpful due to shadows). When I designed the guttering, I too planned on gluing the strips directly onto the facia.

The design and brickwork on both chimney stacks are mirror imaged. The brickwork on the Gents urinal end is almost flush with the wooden cladding which butts up to it (top to bottom). The facia is in one piece here running along the top of the building which appears to cover the front of the brickwork. The brickwork on the ticket office end juts out slightly by one course of bricks. Here the facia is split into two separate halves that butt up to the brickworks edge. The guttering is then simply bolted onto the front face of the facia all around as mentioned above.

The facia measures 6.5mm wide. 20thou (0.5mm) Plasticard was chosen which matched the corner thickness. Strips were cut then Superglued in place around the top of the building.

GUTTERING

The Gents urinal guttering was tackled first. One corner was mitred first at 45°. The other end was then carefully measured, cut to length, then mitred. Temporarily Blu-Tacking the gutter strip in place and with the roof on, it looked strange at first and slightly overpowering, but it seemed to match the photos pretty well. Happy to proceed, it was then removed and Mek'd in place using a long straight edge.

The long road approach side (two pieces) was done next which went well with no real problems.

The hardest bit was getting it straight. In reality the guttering should have a slight gradient for the water to flow into a downpipe. On Fittleworth, there is only one visible down pipe that is located in between the porter's/lamp room and ladies' waiting room WC windows which will be fitted later.

Again looking at the front photo, the guttering on the ticket office end seems to run along the whole length of the end as noted by the gutter edging in front of the brickwork. On every other photo I have, this edging was subsequently removed. Wanting to construct the building 'as new', the guttering here would require modifying. The rear of the guttering was gradually cut and filed away to clear the chimney. I wanted a nice snug fit so the glue could adhere with the brickwork. The ends were cut and mitred in the same way as the other end then Mek'd in place.

The two short lengths of guttering either side of the canopy (platform side) had to be cut and filed around the canopy ends. 1mm gaps were left for the canopy to slide past when fitting.

Photograph 43

Not the best of views but it hopefully shows the partial hidden capitals high up on the supporting columns to good effect. It's a great pity they are not lower down. Remember, the two outer supports hold up the canopy horizontally with the remaining three middle ones free floating. Just visible are the lattice of beams which hopefully captures the essence of the real Fittleworth canopy. Small additional items have still got to be added to the canopy which, at this stage have not been done.

Photographs 44 and 45

To secure the guttering, 6.5mm wide x 20thou Plastikard strips were first Superglued all around the top of building. The pre-made guttering strips (as shown in photo 16) were then cut to length, mitred on the corners, then Mek'd in place.

Photographs 46 and 47

Two final views of the completed building before painting.

Return to contents page

Hattons Genesis coaches
- a review of the LB&SCR versions

Andrew Garrood

In October 2019 Hattons of Liverpool announced their range of ‘Genesis’ coaches, which were an attempt to make generic 4 and 6 wheel coaches to go along with the many Pre-Grouping locomotives being made. A bit like with the Rails Terriers, not long after Hattons, Hornby announced their generic 4 and 6 wheel coaches and we now have two similar product ranges.

After a rather eventful 3 years, Hattons have finally delivered the first of their ‘Genesis’ range and amongst the first batch are the LBSCR liveried models. In October 2022 these have started to be delivered to customers who had pre-ordered and most versions appear to be sold out.

In Modellers’ Digest 12 (Christmas 2020), Nick Holliday reviewed the planned Hattons Genesis range and discussed where compromises would have to be accepted or adjustments made to accept the models as Brighton ready. Having read through his very detailed, and useful, analysis I decided to order two of the four wheelers that seemed to involve the lowest level of compromise. As a luxury I bought the versions with lighting.

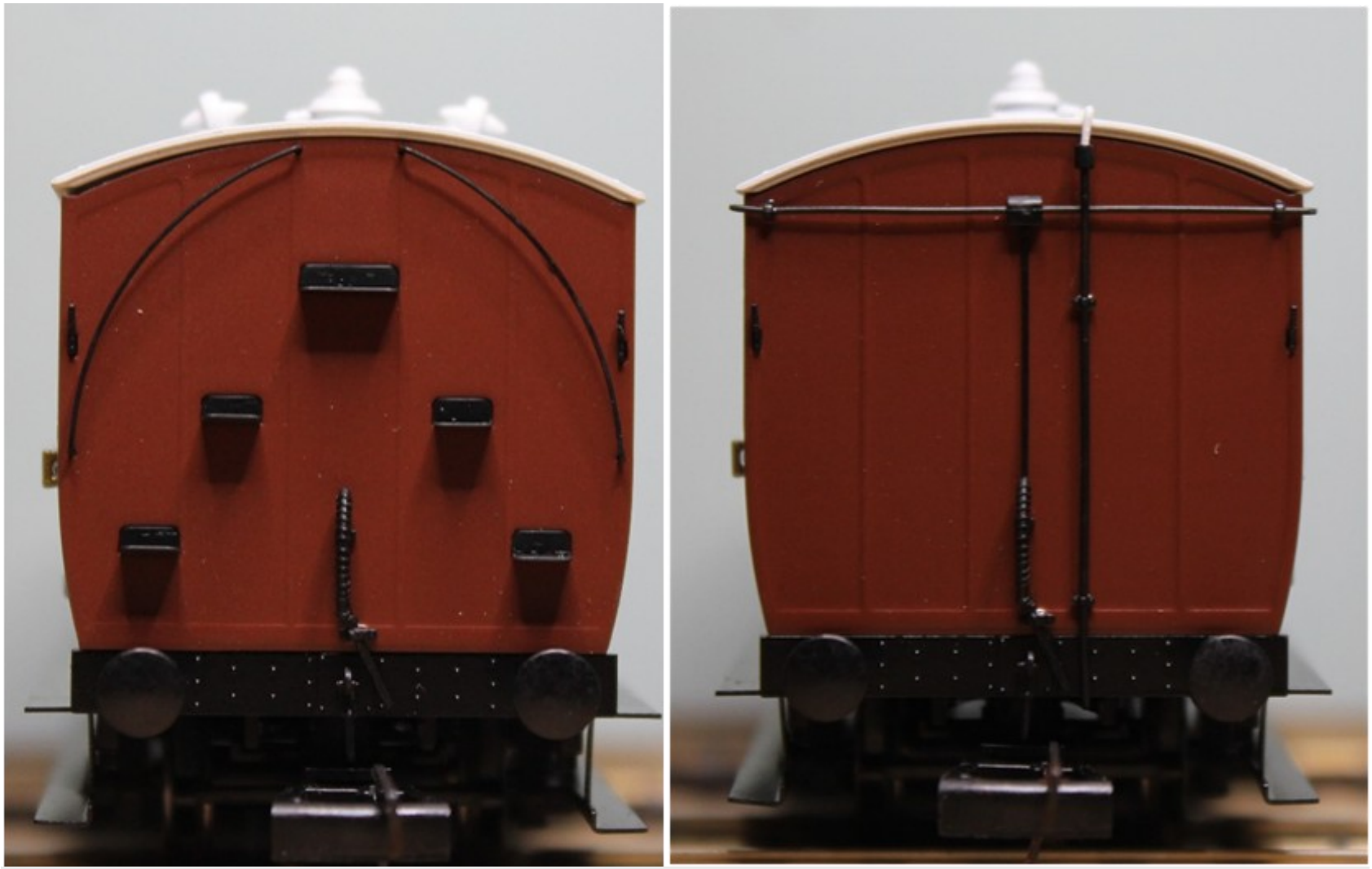
After a minor delay in delivery due to yet another Royal Mail strike, the coaches finally arrived. What follows is a short review of the coaches, with a comparison against two of the Hornby LBSCR generic coaches I purchased back in Spring 2021 from the sadly missed Morris Models.

First impressions were good with neat compact packaging holding the coaches secure. In the packaging was also a short instruction leaflet, mainly about opening the coaches up to add a DCC chip for controlling the lighting. Opening the coach up to add people or extra detail appeared to be easy, however I have not tested that yet.

Picture 1 Hattons First 4 wheeler

As Nick Holiday recently posted to the Brighton Circle eGroup the coaches do represent a hybrid between Stroudley and Billinton eras. Lengthwise the 4 wheel First coach is correct for Billinton Diagram D56 although some of the compartments spacing is incorrect and the ends are closer to Stroudley Diagram D30. The 4 wheel Third matches Billinton Diagram D58 dimensionally and has the correct number of compartments. Again, the ends match Stroudley Diagram D30.

Picture 2 Hattons Third 4 wheeler



Picture 3 Hattons end views

Finish of the coaches looks good. I'll defer to Peter Wisdom on whether the mahogany livery is correct, however the lining looks well done, as does the lettering. In some windows, visible only with the camera zoom, are the smoking compartment signs. The fine details on the coach, handles, pipework etc. are well done and picked out against the overall colour. Steps are also picked out in black at one end of each coach. There has been some commentary on RMweb about the couplings, held in NEM pockets, being a bit droopy. However, on my versions there didn't seem to be any issue. Adding link couplings should be possible although buffer locking on short radius curves is likely.

Picture 4 Hattons Left - Hornby Right close up

Lighting, without DCC control, is on whenever the train is in motion and looks very effective. When lit, you are able to see the inside detailing which includes seats and the overhead luggage racks. First class seats are picked out in blue compared to the duller brown colour of the third class seats.

Something noticeable is that there is no light bleeding through any gaps in the corners or sides of the coach. This is especially noticeable when compared to the Hornby models which seem to be made of a much thinner plastic and where the light bleeds through the paneling quite badly.

Picture 5 Hattons Left - Hornby Right close up

Running the competing ‘generic’ coaches from Hornby and Hattons together in a rake allows the differences in shape, livery, lighting and detailing to be seen. However, it’s not so jarring as to make them unable to run together in my view. With some additional detailing and weathering the differences would likely become less noticeable. The only real problem with the two sets when used together is that the Hornby lights are either always on or off, versus the Hattons, when without DCC, they are only on when the train is in motion.

Picture 6 Hattons Left compared to Hornby Right

Overall, the build quality and detailing of the Hattons model is superior to the Hornby offering. Especially when comparing how they look when illuminated.

In summary we can be grateful that two manufacturers have made the effort to create LBSCR 4 wheel coaches that look the part where previously only kits existed. Hopefully they will spur an explosion in small LBSCR based layouts just in time for the 100th anniversary of our favourite railway company's demise. Let's hope these production runs are not one offs and we have a continuous supply of low cost coaches to improve upon. Combined with 3D printing, resin kits and the range from our friends at EBM models there is definitely no excuse now not to model the LBSCR, no matter what your modelling skills are.

Looking to the future, with luck, we have to hope that someone will be even more adventurous and next time give us RTR LBSCR bogie coaches to run with the Bachmann Atlantics.

Return to contents page

Hattons Genesis coaches
- some further comments

Nick Holliday

A personal appraisal and comparison with the Hornby range

Further to Andrew Garrood's excellent appraisal of the Genesis coaches, I have just received my pre-order of Hattons' Genesis four-wheelers, all fitted with lights. I can only comment on this stock, although it would appear that many points are applicable to the six wheeled stock.

My first impression was fairly positive, although the biggest disappointment is the roof profile that has been chosen. The lighting works well, although to my eyes it is too bright for early gas lighting, and, unless you install a DCC chip in each coach, will be on whenever there is current to the track. The Hornby lighting is battery powered, and there is a handy magnetic device to turn the lights on or off, although the effect is again too bright, especially as the current batch is oil lit.

Livery

The Hattons models carry a fine representation of a painted mahogany finish, but, for some reason, it is marketed as "Umber", which it definitely isn't, and the lettering used appears correct for the period up to 1899, with the number in the centre of the well-printed garter. One oddity is the use of both words Guard and Luggage on the two doors to the brake van section – I haven't found any use of this combination in various albums, and it doesn't seem as if the Luggage

labelling was applied to many pure brake or luggage vans in this livery. The livery also highlights a weird and pointless vertical moulding in the centre of the blank door panel to the guard's compartment. Otherwise, the colour is reasonable, and not too far from the Hornby shade, although the latter could probably do with a light wash to tone down the lining, and blend the mahogany colour.

Roof Profile

As I detailed in Modellers Digest 12, I had anticipated that the four-wheelers would make a useful contribution as Billinton's version, which were longer (28') than the Stroudleys, (26') and had bolections, as moulded by Hattons. However, I now find that the roof profile is virtually identical to the earlier stock, and therefore doesn't show the distinct height difference between Stroudley and Billinton stock that is so characteristic of mixed stock trains. Ian MacCormac is investigating how the roof profile might be corrected, as well as providing correctly shaped end duckets, which don't appear to match anything on other railways either. However, this will result in some work to be done on the bodies, problems matching the colour and finish of the body, and perhaps doubling their cost.

The six-wheelers

Whilst the 4 wheeled stock is a different length from the Hornby coaches, the six-wheeled carriages are also 32 feet long, and the arrangement of compartments in the two ranges are very similar, so, apart from the full brake, the Hattons' 6 wheeled stock is almost identical to the Hornby ones. They will need modification to make them more Brighton like, apart from the changing of the door grab rails, which are both definitely non-Brighton, although the Hattons ones are more discrete and could perhaps be left. Hence it will be down to the buyer to decide which to plump for, based on personal views.

Footboards

As supplied each coach comes with an excellent set of metal double footboards. However, the majority of Brighton stock ran with only one footboard, at or just below the bottom of the solebar. Fortunately, Hattons have provided a spare set of single footboards, and it a reasonably simple task to undo the six tiny fixing screws, and fit the replacement. It may be a challenge to reproduce the double height footboards at the guard's end, though. Ian MacCormac has produced a 3D print for the Hornby version, perhaps a similar one will be available soon for the Hattons' range.

Details

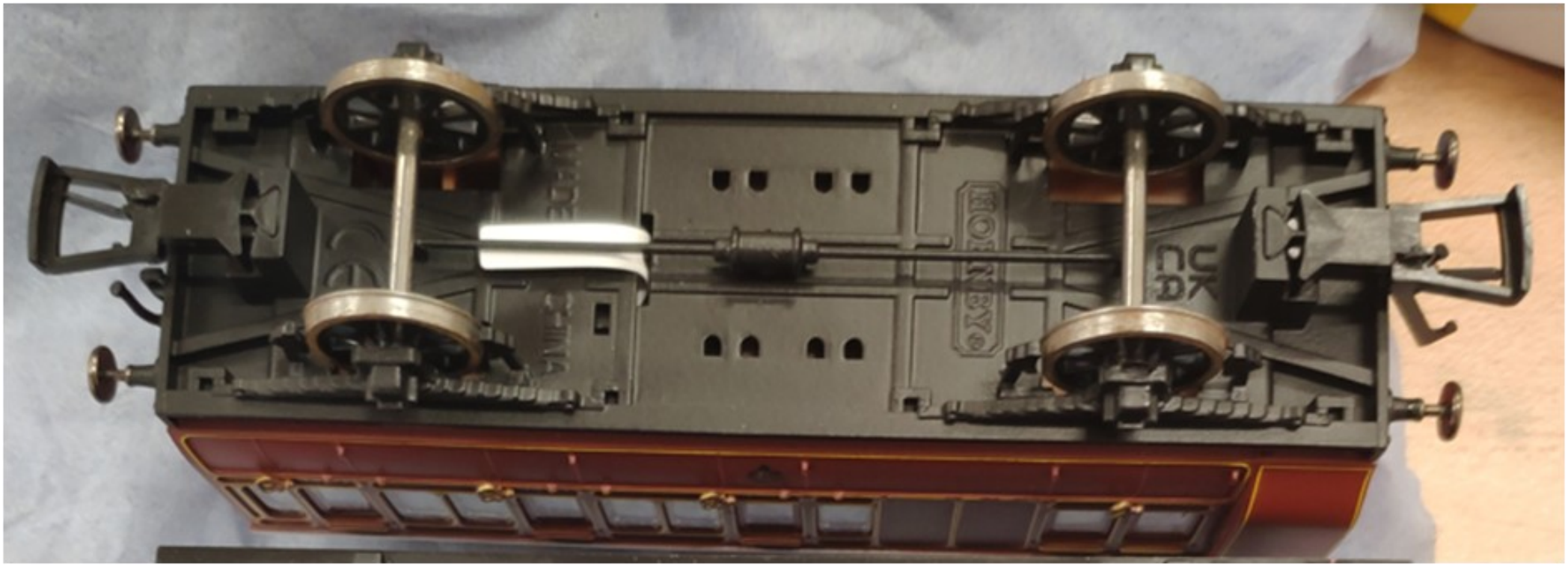
Many people have heaped praise on Hattons for the amount of detail that they have incorporated on their models. Sadly, most of it is too much for a Brighton vehicle and should really be removed, whereas Hornby, although facing unwarranted criticism, have generally followed Brighton practice, with steps on one side of an end, and lamp-irons at a fairly low level, rather than at the top of the end as Hattons have them, albeit that they are moulded on, unlike the Hattons fittings which are separate mouldings. As can be seen in Andrew's photos, they have chosen to paint the various fittings on the end in black, contrasting with the mahogany finish, unfortunately highlighting them. The fastidious Brighton modeller might want to remove some of the steps and end handrails, and probably dispense with the emergency alarm detection gear, as this didn't come into general use on British railways until after 1900, and probably, given the use of the Stroudley-Rusbridge system, never installed on the four wheelers, although it might be appropriate for the six-wheelers if they appear in a later livery.

One feature of the Hattons range is the adoption of vacuum braking, which is much more visible than the Westinghouse type, which Hornby have done quite a good job of. It is relatively simple to prise the vacuum cylinder off, and sharp cutters will quickly dispose of the V-hangers.

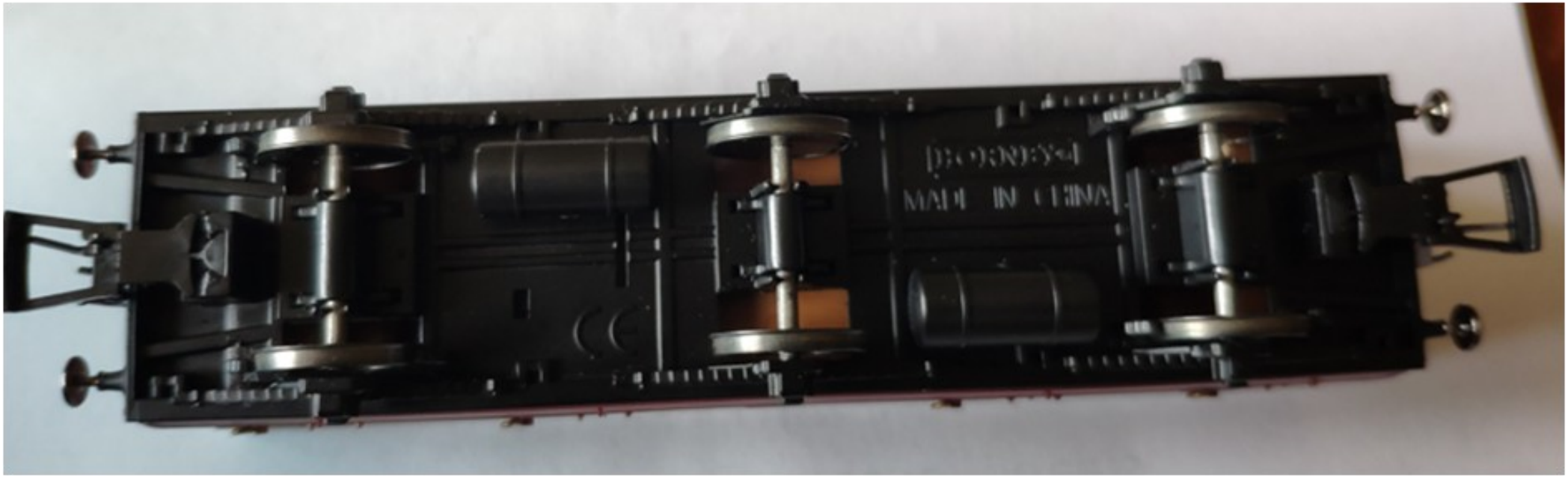
On their gas lit examples, they have nicely incorporated a single supply pipe, which runs down the end as well, although this really limits the appropriate timeframe, as the incandescent light fittings were being installed from around 1905, with the secondary supply pipe for the pilot lights. Hornby have not provided any roof pipework on their gas lit examples.

Altering wheels

People may want to carry out various modifications to these coaches to suit their chosen gauge or era. Changing the wheels on the Hornby four-wheelers is relatively simple, particularly if you are happy to leave the plastic bearings. The wheel opening in the chassis may require a bit of trimming, and a slice needs to be shaved off the rear of the brake blocks, but they are moulded fairly wide and line up very accurately with the face of a P4 wheel. The Hornby six-wheelers are a bit more complex, as all three axles run in inside bearings. But, with a bit more trimming of the outer wheel openings, and shaving the brake blocks, P4 wheels on short axles will fit. Preliminary trials have been successful, but at the moment I have not carried out extensive running tests, so it may be necessary to introduce some washers to limit side-play a bit. These coaches are only a few grams heavier than their four wheeled cousins, and I suspect an extra 25 grams or so might improve stability and running.

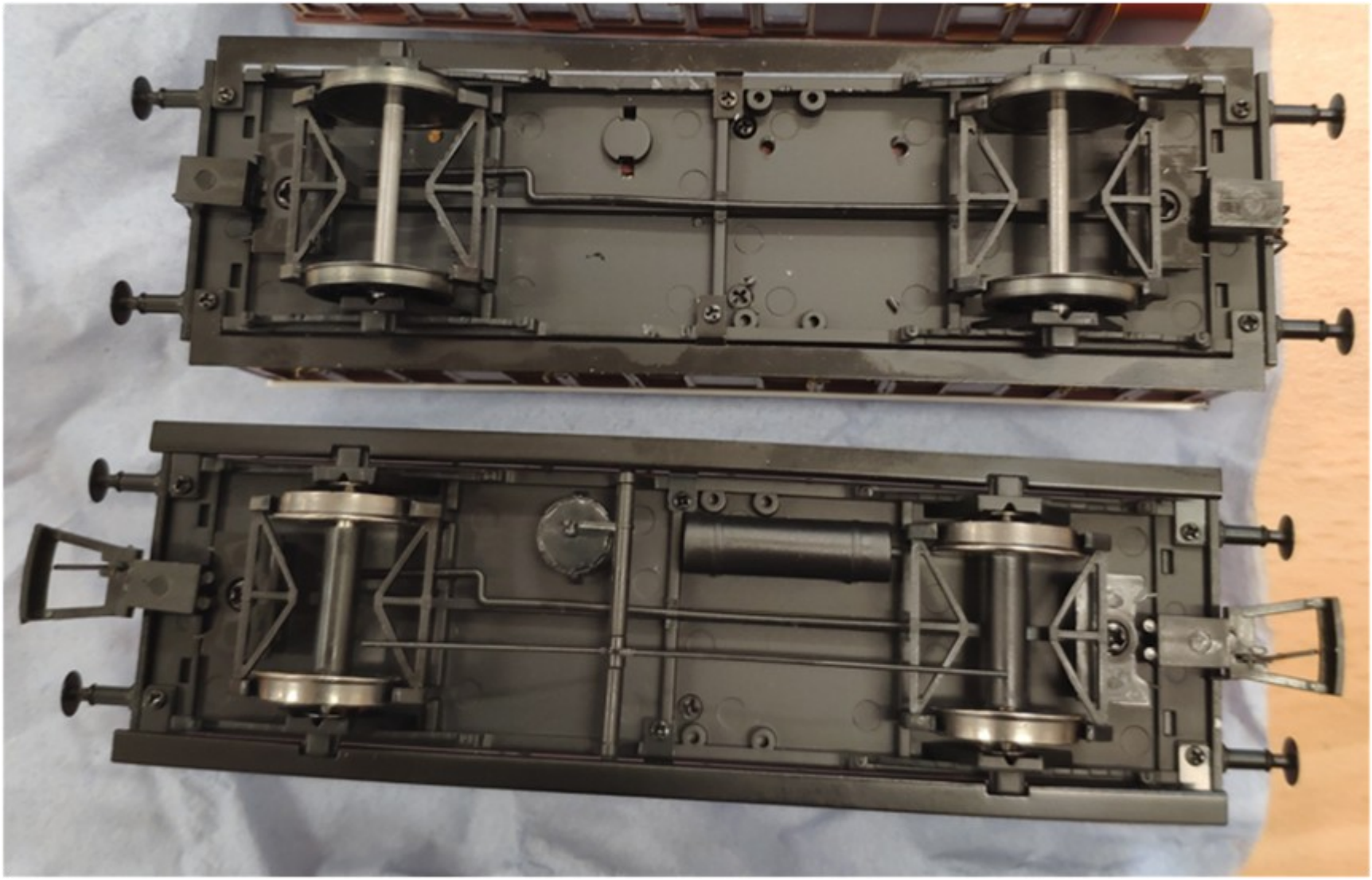


This view of the underside of a Hornby coach shows how easily the wheels can be changed, and the way the brake blocks line up with the wheel treads.



This picture shows the underside of a Hornby six-wheeler, with P4 wheels fitted. The inside bearings can be seen, the centre one being shorter to allow greater movement of that pair of wheels. Again, the brake blocks line up with the wheel tread with a minimum of trimming, the end wheel openings need trimming to accommodate the wider wheels, but it cuts easily, if the body is removed to get better access.

Because of the lighting arrangements, the Hattons four wheelers are rather more complicated. The first problem is that the axles run in metal pressings to connect to the electrical system of lighting, and, at least on the lit examples, the axles provided are much shorter than the standard for 4mm wheels. It is relatively easy to remove these bearings, as they are screwed into the chassis, and once taken out, there is a moulded bearing hole which can be used, with enough play to suggest that a brass bearing could be inserted for better running and longevity. However, the space available for wider wheels is insufficient, and a fair bit of carving is required to get the wheels running smoothly. It is probably better to remove the chassis from the body, for easier access for this carving. To do this the body can be levered away at each end, but there are screws in the middle, and you will have to remove the gas tank, if fitted, to get to one of them. The brakes are a bit problematical, as they are only about 19mm apart and clash with the wheel flanges. They can be trimmed, but they do not look as good as the Hornby ones, so it might be worth considering more drastic action to get them to align properly with the tread.



This picture shows, top, a Hattons four-wheeler after fitting P4 wheels. The gas tank has been temporarily removed to obtain access to the screw which releases the body from the underframe, which allows access for the removal of the metal bearings/ contacts. The single footboard is in place, and the vacuum brake gear removed. It is clear how the brake blocks really need modification to make them more realistic, and ensure the free running of the wheels. The lower picture is the model as it comes out of the box.

Unfortunately, neither Andrew nor I have invested in Hattons six wheelers, so I cannot comment on the ease, or otherwise, of converting them to EM or P4. They have adopted a more sophisticated sliding central bearing, but there are reports that this is not always satisfactory, so there may be further problems to resolve.

Acceptable compromises

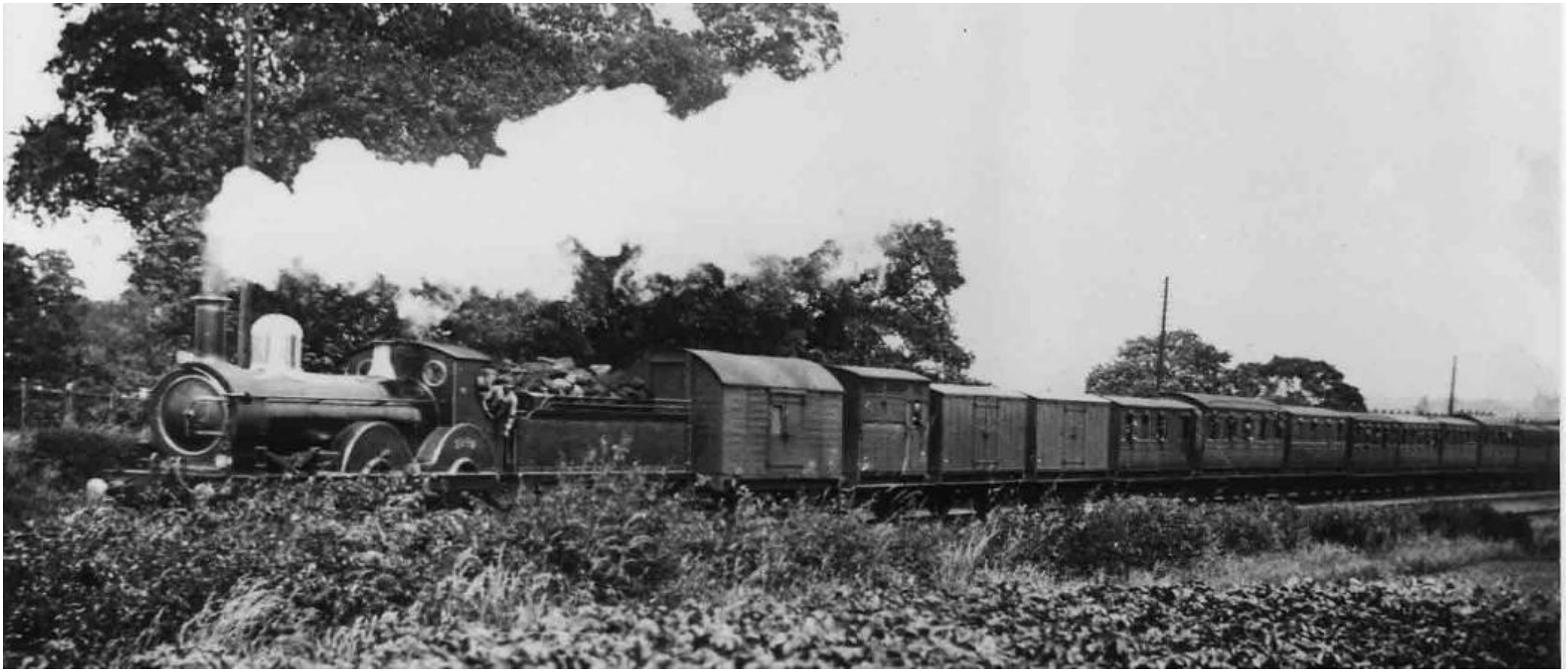
Given both ranges are marketed as generic types, it is inevitable that the purchaser may have to accept compromises. Details can be removed or installed as preferred, but compartment layouts and overall lengths are less soluble. From a personal perspective, I consider that length could generally be liveable with, the 32' length of the six-wheelers in both ranges could pass, at a pinch, as between 30 and 34 feet. However, with a Stroudley roof profile the only appropriate six-wheeler is the D42 Lavatory Composite, which was 30' long, the full firsts and full brakes were all 28', which may be a compromise too far, but it does suggest that the four wheeled first could provide a suitable starter for a main line first, with a new chassis.

The four wheelers, particularly the Hornby ones, apart from the rather ridiculous full brake, require no compromise regarding length, but it all comes down to the roof profile. Whilst variations in length are fairly hard to detect, although some "experts" profess to having perfect pitch in this regard, the height is very prominent. The Stroudley roof has its centre around 11 inches higher than the cant rail, whereas the Billinton roof, and the majority of similar vehicles on other lines, were around 17 inches higher, a 50% increase which is clearly visible. Running these coaches alongside later designs shows how much smaller they look.

And finally

A view of the Hattons first, with footboards and wheels changed, and the vacuum brake gear removed.

I notice that Hattons at the time of writing seem to have sold out of all LBSC items, apart from a couple of 4-wheel brake thirds and loads of 6-wheel brake thirds, although they do have plenty of their boxed sets of four, the two brake thirds, a four-wheel third and a six-wheel lavatory composite and ten six-wheeled full thirds.



Finally, to illustrate the point about the difference in roofline between Stroudley and Billinton stock, this photo provides the contrast. The photo shows a troop train from the LB&SCR at Acton, GWR - hence the loco. There is a complete mixed bag of stock, starting with a Grande Vitesse van, a horsebox, two luggage vans and then an assortment of Stroudley and Billinton passenger carriages.

Return to contents page

Scalescenes cottages card kit

Graham Bowring

I needed a row of cottages for my layout and after looking at those available on the market decided to try the one made by Scalescenes, ref T019. At £4.99 plus the cost of some sheets of card you need to buy yourself separately, its very reasonable and although I think the cottages are rather generic, I'm happy with the result. Once payment is made, the sheets all need to be downloaded and self-printed. See https://scalescenes.com/ for full details of the range, construction tips etc and the owner answered a few questions of mine quickly.

Before starting, it is really helpful also to print all the instruction pages, so as to have them ready at the workbench. Building it all is a fairly long process, starting off with a lot of glueing of sheets to card but once you get to the main assembly stages, it is quite rewarding. I did not keep a diary but I would guess it all took around 15 – 20 evenings work. The precise fit of some of the parts was not very good, caused I think by slight differences in the thicknesses of card I used, but card is quite forgiving and it is no problem making it all fit. I decided quite early on to get a separate pack of their improved windows and mixed them with some I had from York Modelmaking. Also, the gutters and downpipes were awful in card but I had some old stock of fairly fine fittings from, I think, the Ultrascale range. I used chimneys from another supplier, a pack of white metal castings of different designs. Interiors are not included except wallpaper and pictures but unless you fit lighting it is very difficult to see interior detail. I have kept the roof removable. On the exterior, various effects can be achieved with coloured pencils and artists materials.

A small warning: the windows pack I ordered was out of stock and took a few months to arrive,

from Australia. Overall impression: a very good kit and I may get a few others. He even does a few small kits to download free, see the website.

Return to contents page

After a 3 year gap, the OO wishlist is back. Over the years, there has been an interesting correlation between the results of the poll and subsequent new releases.

This time, LB&SCR locomotives in the list include a Gladstone, E2, C2x, E3, E6, the Js and the K class moguls (surely a good bet?).

Carriages include Isle of Wight 54’ bogie stock, push-pull sets, 4 wheelers and balloon stock.

To see the full list, follow this link. Note that the poll closes on 30th December

Albion Kits - by Roxey Mouldings

Welcome back to the range of Albion kits, in both 4mm and 7mm scales, now being produced and sold by Roxey Mouldings.

Loco	4mm	7mm
A1/A1x	£ 97	
B1 Gladstone	£140	£320
D tank 0-4-2	£ 97	£285
E tank 0-6-0	£ 97	£285
E5 0-6-2 tank	£ 97	£285
E6 0-6-2 tank	£ 97	£285

For those wishing to upgrade from their “generic” Brighton coaches, Stroudley 4 wheelers remain available in the Roxey range. However, prices will rise at the end of January as it has been necessary to move etching to a new supplier.

There will also be a new website shortly.

Dave@roxeymouldings.co.uk

www.roxeymouldings.co.uk

E tanks - by Train Times, Eastbourne

Train Times of Eastbourne have specially commissioned versions of the Rapido 4mm scale E tank in the later Brighton lined black livery. Two versions will be available. One will be lettered as “Loco Dept New Cross” and the other will be numbered 113. Note that there will be a unique piece of tooling for these locos, to provide the base for the whistle.

The price will be £164.95 and pre-orders are going steadily.

Train Times Exclusive LB&SCR Lined Black E1 Identities break cover! (traintimesmodelshop.co.uk)

traintimestoo@gmail.com

01323 722026

4mm scale etched inside valve gear

by Mike Waldron

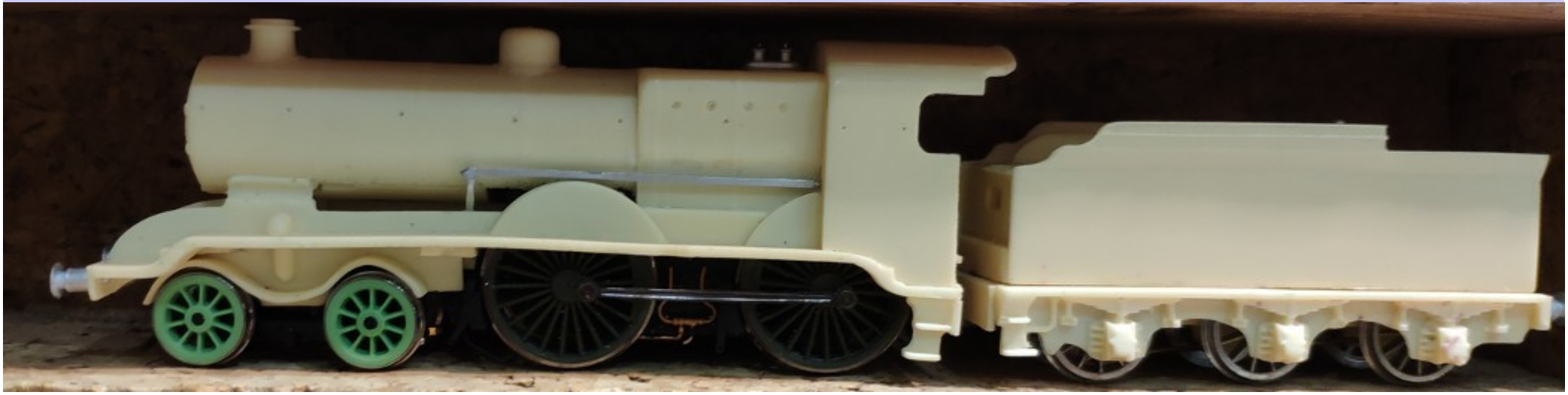
Mike Waldron has reissued his frets of 4mm scale inside valve gear to fill the space beneath early boilers.

Frets are priced at £6 each and are available from Mike at

mike.mjwsjw@gmail.com

B4x in 4mm scale

by Golden Arrow Models



Seen at the recent Tolworth show, Golden Arrow had this kit for the B4X on sale at £60 (without the Hornby chassis).

It is based on the T9 chassis, which does have the same coupled wheelbase as the B4x. However, it reuses the Hornby bogie, which is 6' 6" instead of 6' 0". It appears that the front bogie wheel is in the correct position for the B4X, therefore the spacing between the rear bogie and the coupled wheels is correspondingly reduced.

4mm and 7mm Scale Wagons by Pre-Grouping Railways

Pre-Grouping Railways has been expanding the LBSCR Range which is now available from the online shop at pregroupingrailways.com. Kits are available in 4mm and 7mm and wagon bodies in HO,S and G1(1:32). Kits feature 1 piece HD 3D printed bodies with brass 3 point compensation units and brakes

PGR-48 SECR/LBSCR 7 plank (Currently only available in 7mm kit price £55)

PGR-82 LBSCR/SR 3 plank dropside (Steel underframe) currently being retooled (Should be ready by the end of December)

PGR-83 LBSCR/SR 5 plank raised ends (Steel Under-frame) available in HO, 4mm, S, 7mm and G1(1:32) (kit price £19-£55 RTR price on request)

PGR-101 LBSCR/SR 6 plank coal (Steel Under-frame) available in HO, 4mm, S, 7mm and G1 (1:32) (kit price £19-£55 RTR price on request)

PGR-117 LBSCR/SR/BR Billinton brake van (4 Wheel) currently being retooled (Should be ready by the end of December)

PGR128 LBSCR 8 ton coal wagon (Dead buffered) available in HO, 4mm, S, 7mm and G1(1:32) (kit price £19-£55 RTR price on request)

PGR129 LBSCR 8 ton timber truck (Dead buffered) available in HO, 4mm, S, 7mm and G1(1:32) (kit price £14-£45 (kit price £19-£55 RTR price on request).

Work is in hand on an LBSCR cattle van, box van, dead buffered ballast wagon and the 6 wheel Billinton brake van.

Phone: 01229 219875 **(NEW NUMBER)** **E-mail:** furnessrailway@hotmail.com

A future attraction

by Ian MacCormac

Featured on Ian's blogsite. Ian is experimenting with 3D printing and has recently printed this early Pullman. More in the next few months.

Note that the new website for EB Models is now

Exclusively Brighton Models (ebmodels.blogspot.com)

Seen at the Warley show

By Peter Warren

Amongst other tempting models, a decorated sample of a 7mm scale 4-wheel Stroudley 2nd was in the Dapol display case at the Warley show last week and I asked Richard Webster about it. He said the production samples were due to have been at the show but had not arrived yet. I was able to inspect the model and took the attached photos. The vehicle was incomplete (no buffers or couplings for example), but the detail was impressive and I thought the grained timber finish, lining and lettering looked good. Items such as the door vent bonnets are separate mouldings.

The roof is removable to reveal a large circuit board for the lighting bar and beneath this the interior detail included seating, which looked quite luxurious for 2nd class. A fine looking model, which is expected to be available in the first quarter of 2023.

Wanted 7mm scale E4 radial kit

By Ian Metcalfe

Stroudley Park needs an E4 Radial Tank.
Has anyone got a started or preferably unbuilt 7mm scale MSC E4 kit they would be will to sell?
Please email iam_ianm@hotmail.com or telephone 07926352876.

Brighton Layouts that you may see at Exhibitions

The following LB&SCR themed layouts are due to be exhibited over coming months.

FERRING (P4 scale Marsh era)

PLUMPTON GREEN (P4 scale Marsh era c1910)

PULBOROUGH (P4 scale Marsh era)

Return to contents page

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 350 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 2023 is

£20.00 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.

LV

Return to contents page