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

The L.B.& S.C.R. Modellers’ Digest

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Summer 2024

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Editorial

The latest issue of the Brighton Circular commemorated the 50th anniversary of the Brighton Circle, for which the most important single catalyst was the appearance of Peter Jessop's EM Gauge model of Selsey-on-Sea at the Westminster Hall Easter exhibition. All of the stock on that layout was kit bashed or built from scratch, developing the ideas that had previously been published in articles in Railway Modeller by Vivien Thompson, describing her model of Eastbourne.

It is a measure of the progress that has been made, that the layout featured in this issue shows what can be done "out of the box". Building any convincing layout requires background knowledge, technical skill and (dare I say it) some artistic talent. Rusper Road successfully demonstrates what can already be done with 'Ready to Run' stock and a quick glance at the pages of new or forthcoming releases shows how much more will be available in the near future. Taking the first steps in building a model of the LB&SCR has never been easier!

A very valuable element of any historical modelling, is being able to tap into the knowledge that is available from others with the same interest. The Brighton Circle held one of its annual meetings at Patcham in April and there is a short feature later in this issue. These are great occasions to see and hear what others are doing, both in modelling and prototype research and, as always, the two activities feed off each other.

Eric Gates,

Modelling Steward, The Brighton Circle,

ericgates1310@gmail.com

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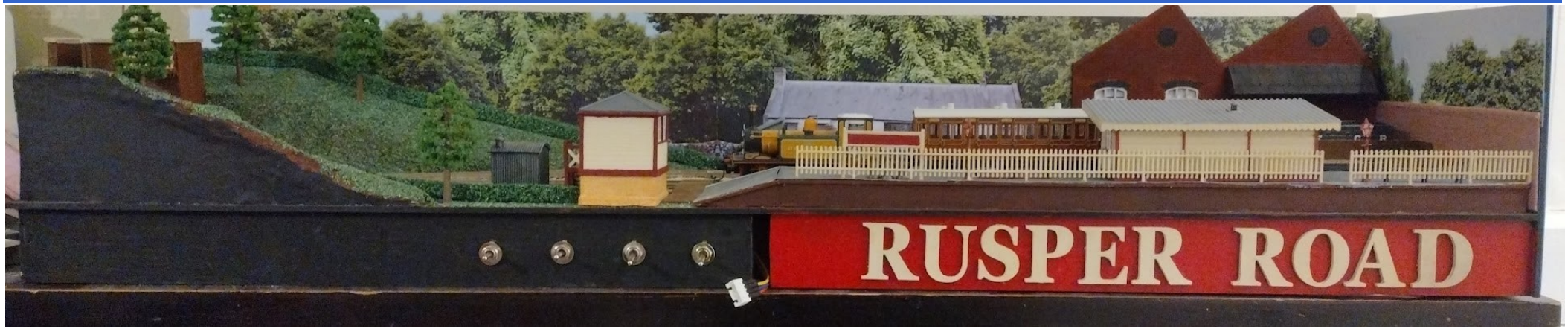
Rusper Road - a Micro Layout

By Gary Smith



Rusper Road is a micro-layout measuring 80cm long by 20cm deep it has all the features (albeit somewhat compressed) of a country station or halt. In my mind the history of the line is that it was a part-built light railway promoted by the landowners in and around the village of Rusper, which was by-passed by two separate railway projects. So they resolved to build their own line, which predictably ran out of money when facing a landowner who decided he wanted more than originally agreed for his land. As a result the project stagnated and Rusper Road station was built to serve the villages of Rusper and Lambs Green.

Functionally the station is complete, shoehorned in between a cutting and the boundary wall of the landowner who refused to sell. The station has a full-height platform, a wooden shelter building with small office, a brick-built goods shed with its own siding and loading platform, a small coaling stage and a diminutive signal box to oversee the station environment.

Passenger services run often, to and from Horsham - there is a triangular junction with the Horsham, Dorking and Leatherhead Railway which does allow services to head northwards to Dorking as well - but this is the exception rather than the rule, the occasional train can be seen from both the LSWR and SECR as they both have agreements to run on the branch.

During those long days of the lock-down, I was inspired by some of the layouts I was seeing but didn't think I would be able to achieve anything similar myself. A chance encounter with the YouTube channel 'Budget Model Railways', and its six-part series on a Railway for an Absolute Beginner, sowed the seeds in my mind. I was going to have a go at modelling the Pre-Grouping era in 00 Gauge/4mm Scale.

The baseboards came from an on-line seller on eBay and are laser-cut 4mm MDF. They were glued together and coated with a few coats of acrylic black paint to seal them. At this time, a major issue was getting a hold of components as there were issues in the supply chain. Taking the budget inspired option, I used what I had to hand; Hornby Code 100 Track. Initially, power was fed from the fiddlestick and I used manual points - but I later went back and revised the arrangements adding in power feeds, two isolating sections (for the siding and coaling stage), as well as point motors and a small CDU under the board.

The track-work is Code 100 and has had the sleepers painted in a mid-brown; I intend to add some oil patches where locomotives would stand as time goes on. I have also invested in Kadee couplings and these have been a game-changer for operation on the layout. Even now the uncoupling seems almost magical: the feature of delayed uncoupling and being able to shunt an uncoupled wagon to precisely where it is needed is fantastic. The track has been ballasted with Woodlands Scenic buff ballast, as I know the LB&SCR obtained its ballast from Eastbourne beach and it was the closest approximation colour-wise that I could get at the time.

One problem I had is at the back, where there is a siding but only 23mm of space between the sleeper ends and the backscene.
Fortunately I was able to find, again via eBay, a number of sellers that offer inexpensive laser-cut structures, that can be used and adapted, including some carriage cleaning platforms and a low-relief warehouse end. I feel I have managed to achieve my goal of fitting a goods facility in such a small physical location.

Furthermore, using a free download from Kingsway Models, I have attempted to show some sort of interior within this goods shed, as well as stacking some crates and the odd barrel outside waiting to be processed.
I did manage to use part of the spare carriage platform and some laser-cut sleepers to make a coaling stage. I have tried to be careful with my painting and even tried some dry brushing on the goods platform that has been well-received and I will continue to add this to other locations.

Basic corrugated card formers and scrunched up paper for support under the land forms.

Basic landforms were created using scrap card from the recycling and waste paper for support and papier-mâché. After it had set, the whole lot was covered in the same base brown paint I had used for the bare land. This was then covered in scatter material from Woodlands Scenics, (meadow green & brown earth). I also used the Jarvis hedges to represent young hedging, that was planted after the railway was built but hasn't fully matured yet.

LSWR Terrier No 735, showing off the contrast between its livery and the bare earth of the hill.

I also have some small trees/ saplings to suggest the newness of the scene.

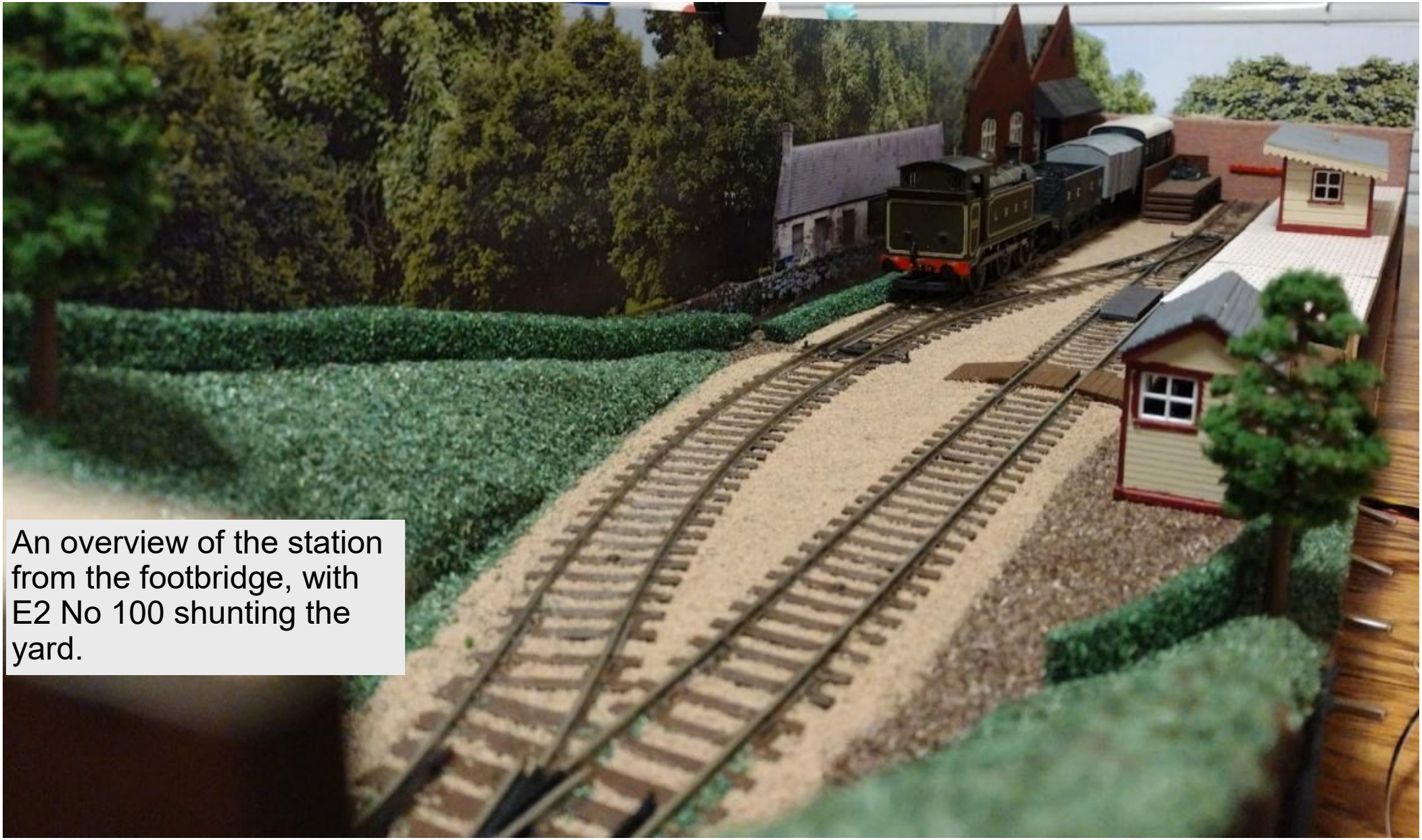
The exit off scene is masked by the hills and crowned with a small footbridge. For extra details, there are wooden boards for walkways from the platform end to the signal box steps and across the front running line.

There aren’t very many structures on the layout. The main one is the signal box from Bachmann Scenecraft (44-182G), which I have repainted it into LBSCR colours.

The other main structure is the Station Building which is a repainted Hornby R500 Platform Shelter. It looks great in its LBSCR colours, for which I have used Citadel Paint from Games Workshop - Screaming Skull for the cream and Khorne Red for the maroon.
I have also attempted to suggest an interior within the office of the station building.

I have obtained a custom 3D Printed station running-in board of ‘Rusper Road’. I tried to copy closely the painting scheme of Sheffield Park when it came to painting my own version of the sign.

I have added some details to the station platforms including gas lamps and benches from Hornby's Skaledale range and some 3D printed conical milk churns have been painted a dull silver. The only things missing are staff and passengers; just a few are needed and I am working on this.



An overview of the station from the footbridge, with E2 No 100 shunting the yard.

I’d like to thank the editor for the opportunity to present Rusper Road in the Digest; as a novice layout builder this has been a fantastic experience, taking this project from an idea on bare boards to where we are now.

I wanted to record that it is possible to produce a reasonable Pre-Grouping era model using RTR components and some basic modelling skills. It has been a learning process and I'd like to think I have developed skills to take forwards to a new project in the future.

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Brighton Trafalgar

William Ayerst

The largest and most significant structure on my layout is the station building which caps one end. The inspiration for my layout draws very heavily upon the pre-1894 rebuild of Brighton, and so it was natural to look to it for design cues – and I was very pleased to find that the Royal Institute of British Architects have made available series of drawings by David Mocatta for the original building.

It was from these architectural drawings that I formed the basis of my initial plan to copy the footprint of the building and the relative widths of the station platforms, but I soon realised that the building could be represented almost verbatim on my layout and still fit within the available space.

The Real Building

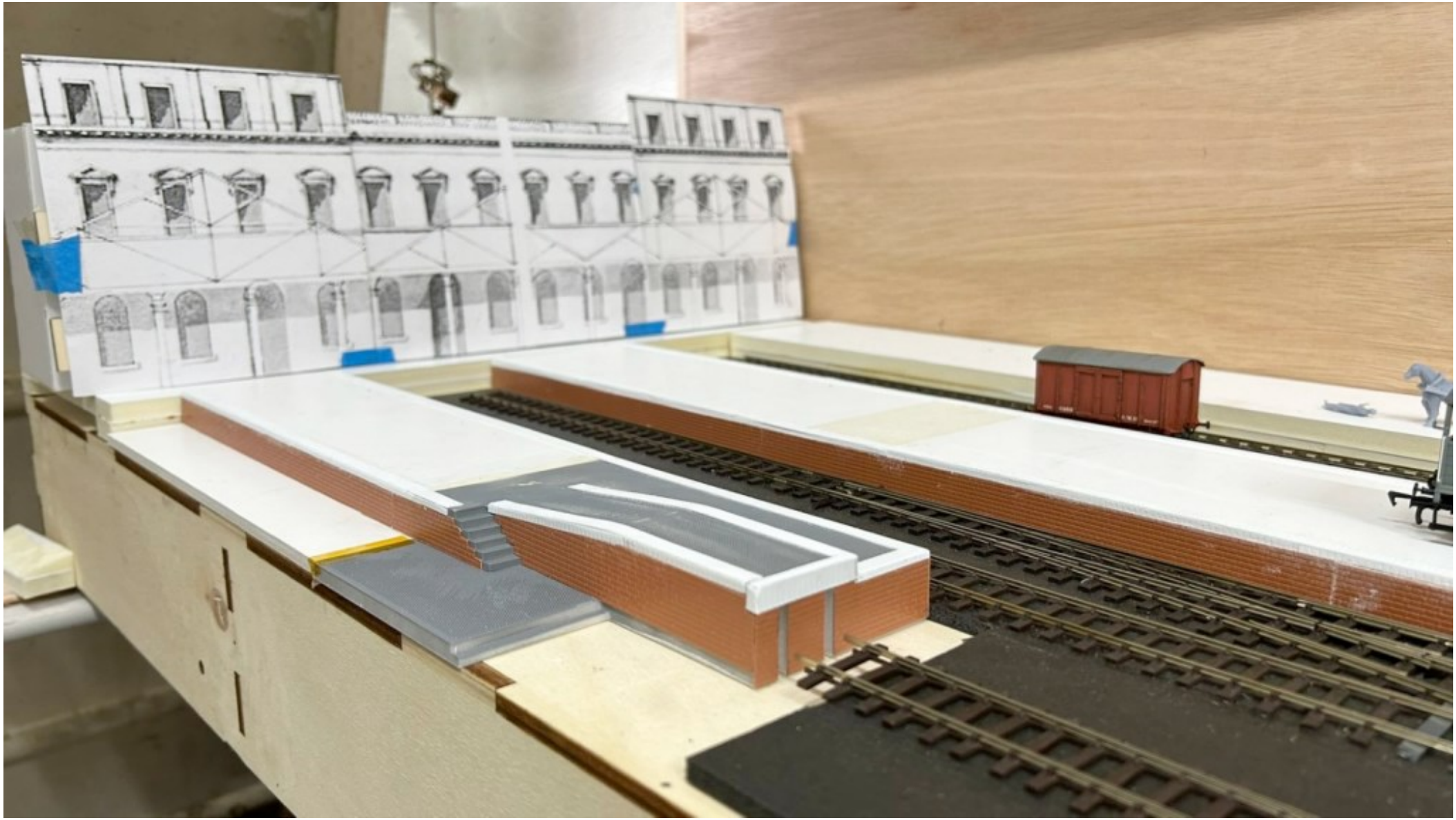
In plan, the building is mirrored down the centre – the west side being dedicated to Shoreham, and the east side to London. The ground floor of each half has a booking office, ladies and gents waiting rooms, a parcels office and a staircase. The upper floor consists of offices, with the central area hosting a board room and secretary's room.

One of the most distinctive aspects of the station as built was the wraparound covered way, decorated with balustrades, vaulted under the road entrance and supported by Tuscan columns. This covered way separates the trainshed from the station building, and delineates the meagre platform-end concourse.

George Earp Junior's Engraving of the original Brighton Station building, courtesy of the Regency Society.

The Mock Up

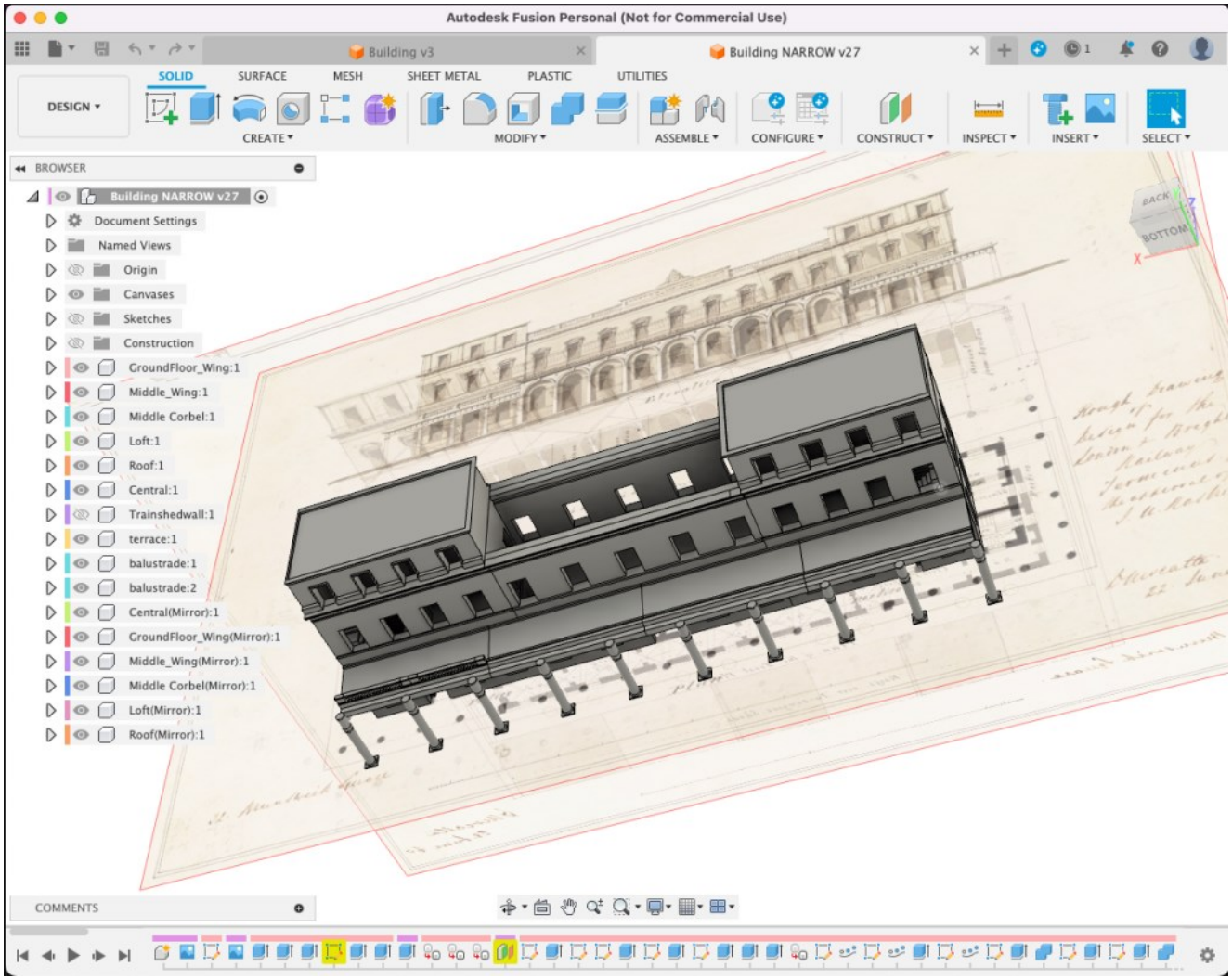
In preparation, I created a paper mock-up using a scaled print-off of the plans:



Visible behind are foamcore carcasses used to validate the concept in 3D – and it was very useful, as I realised that I would need to reduce the depth of the real station building slightly, and, overall, scale the structure down by about 10% – both of which being needed to clear the up-and-over door to my garage.

3D Printing Setup - Hardware

That proven (with a long interval), I needed to get started. My original plan was to hand cut styrene, and then, with so much repetition of features, my thoughts turned first to Cricut or Laser Cutting, and then to 3D printing. I recently purchased an Elegoo Neptune 4 Pro, which is a very simple but high quality filament printer, and had reasonable success in printing other people's designs and very simple components for myself. I decided to give it a go to model this building in 3D and print it off using the bog-standard Elegoo PLA filament.

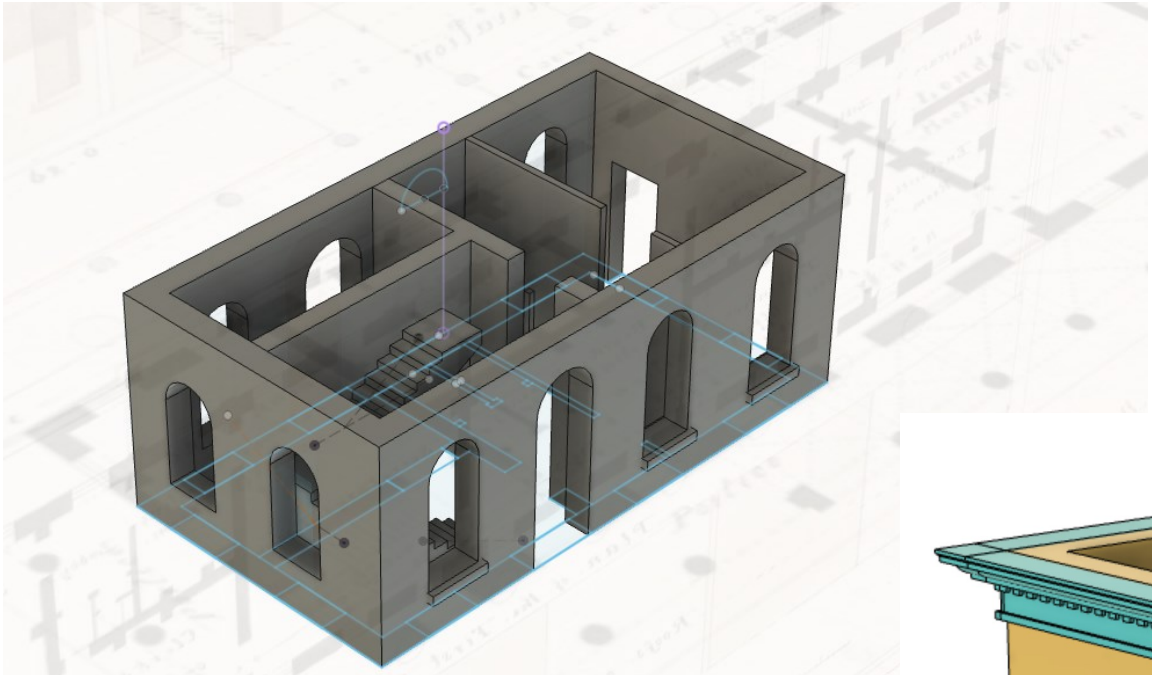


Software

Fusion360 is my tool of choice for anything more complex than a couple of primitive shapes (for which I find Trimble Sketchup more suited). There are many excellent tutorials for F360 and it is free for non-commercial use, so I won't make a pig's ear here by trying to explain what I've done inside the tool itself – I should really emphasise however that I am a beginner, and there was nothing difficult about this at all and I would urge anyone who is remotely interested to have a go.

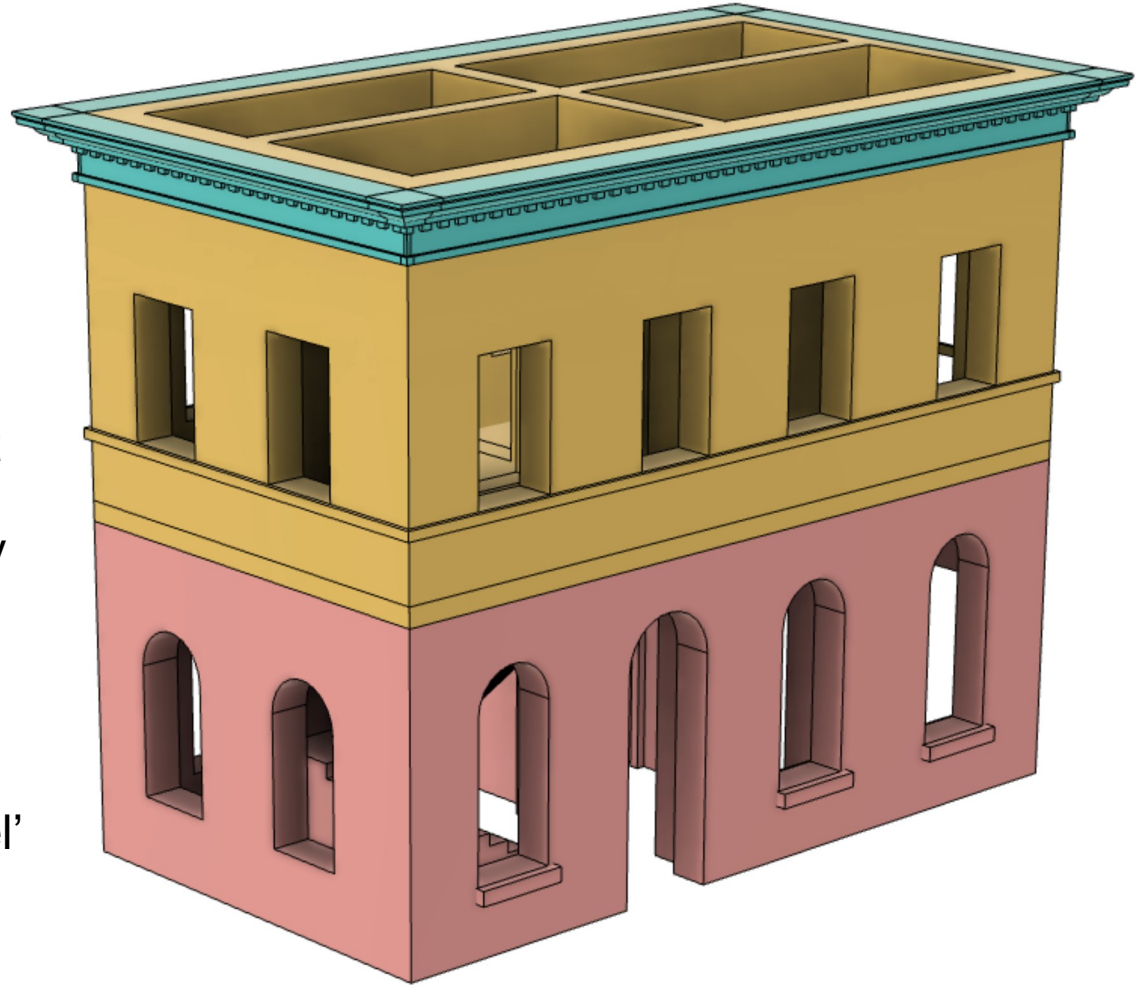
A screenshot of Fusion360 Modelling the Building

It was a relatively simple process to import the blueprints from RIBA into the software, trace them and then extrude into the third dimension. I did this for each of the floors of the wing, then set about sketching the window voids and 'cutting' them out of the modelling. Decorative features such as corbelling were done in a similar manner – by extruding along one dimension and then repeating as a pattern around a path drawn in another.



Left - a drawing extrusion example

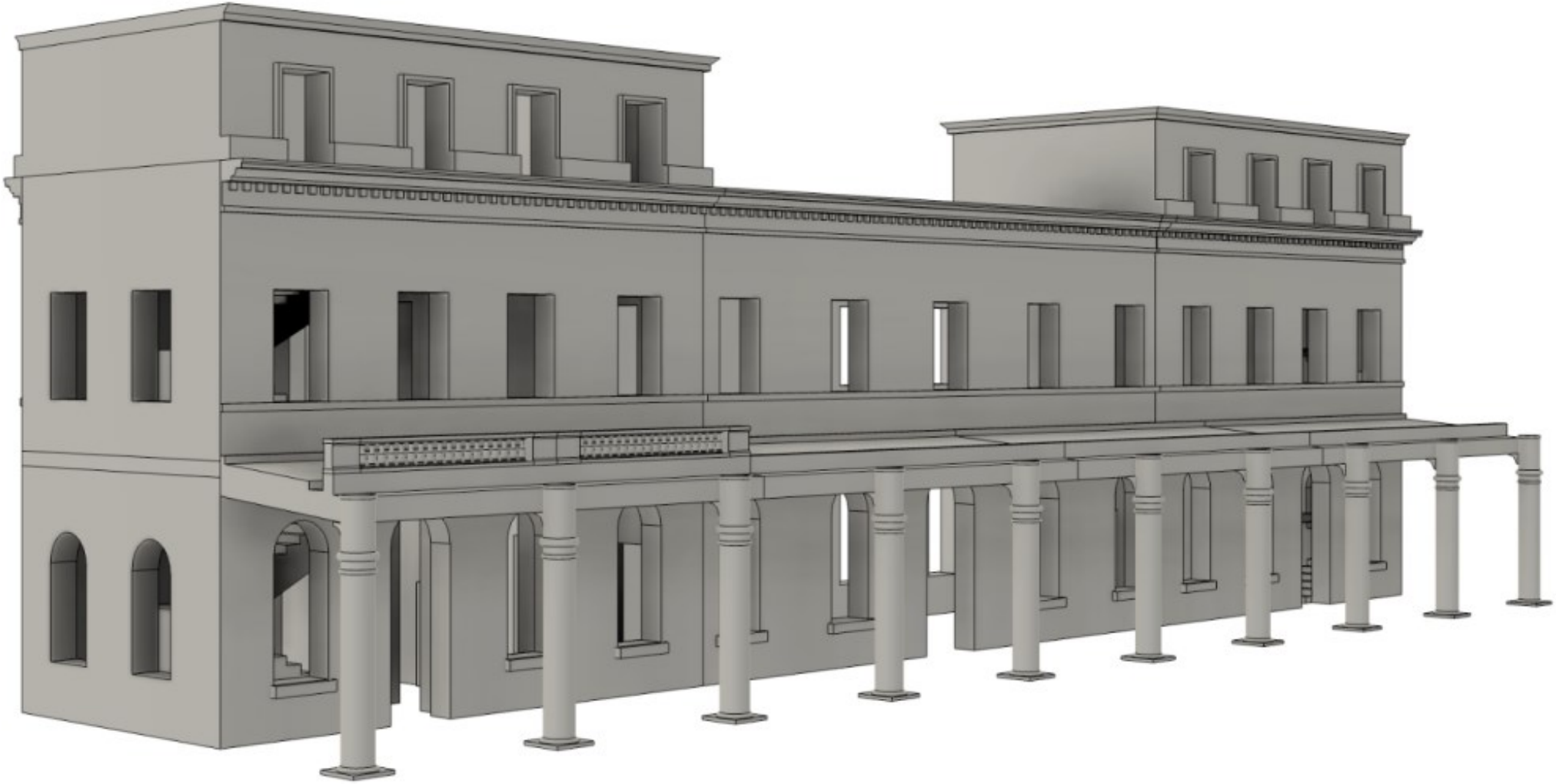
A simple way to manage the construction is to make each piece a ‘component’, which can be keyed off each other.



Right - Component Construction Example

The biggest challenge was to ensure that features matched up with each other, and it was to my demerit that I did not discover a cross-section drawing with more thoroughly detailed the internal doors and staircases until after I had finished the principal modelling, which made that more difficult than it needed to be.

Luckily, Fusion360 allows you to ‘time travel’ back and forward so you can go back and change or reorder actions you’ve taken!



The carcass, mostly finished.

The 90% finished carcass gives a good impression of what this station would look like. During the modelling process, I made some small changes, to allow the station to fit better into the space I had available and the needs of ‘my’ station:

- I have no need for separate booking offices, so the centre section is joined and made slightly narrower to better fit my baseboard width.
- There is no need for two sets of waiting rooms and conveniences, so the duplicates are removed which allowed me to reduce the overall depth of the building by about 25% to clear the up-and-over door of my garage.

PRINTING

The process of printing was iterative, with each floor of the wings, the front and back of the central section, the corbelling and roof, pillars and covered way all being printed over the course of a week or so.

The first part I printed was the ground floor of the east wing.

A view through the station entrance and out of the booking hall doors onto Platforms 2 and 3.

Andrew Stadden figures pose on the ground floor of the east wing. Behind the two ladies, you can see the WC dividing wall, and the stairs up to the second floor on the left. On the right is a doorway into the booking hall.

A wider view of the station (with some stand-in trainshed walls).

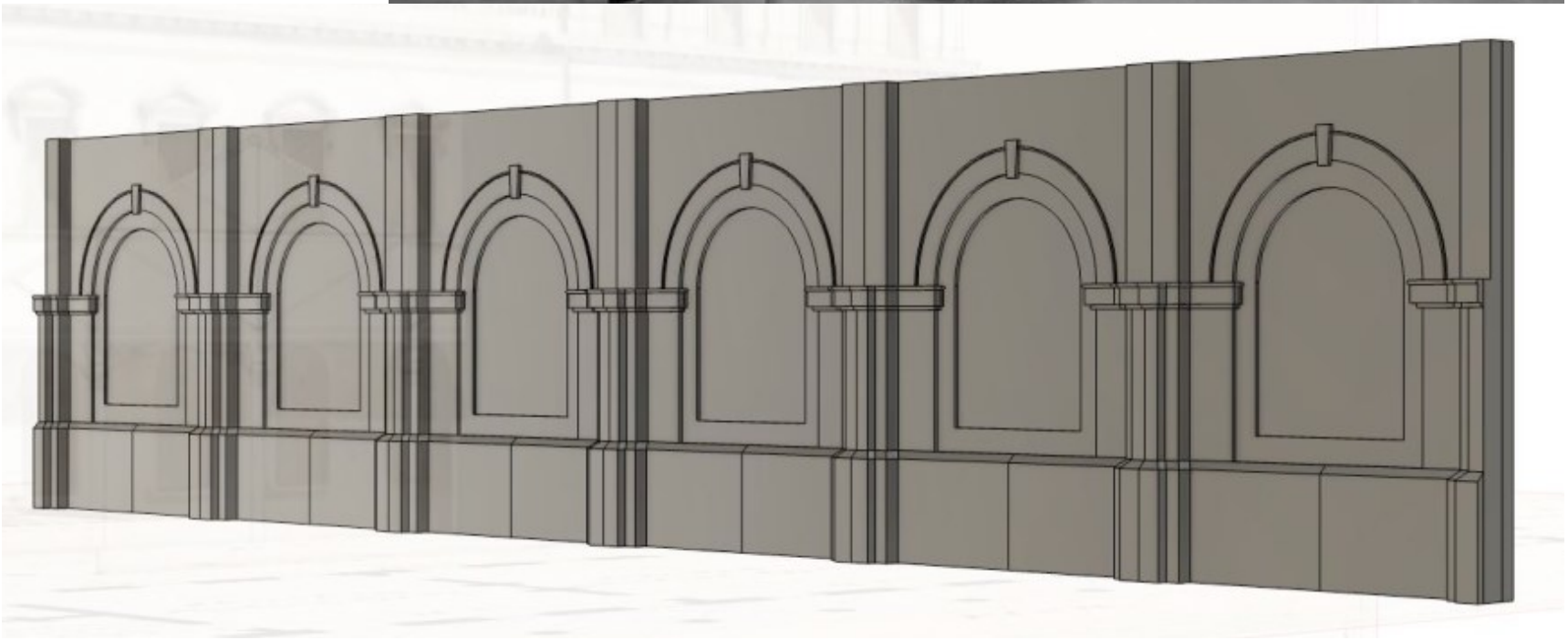
Though the covered walkway is printed, it requires to be fixed permanently in place and so is not fitted. The next step on this journey will be to add details – internal floors, window and door inserts and hipped roofs.

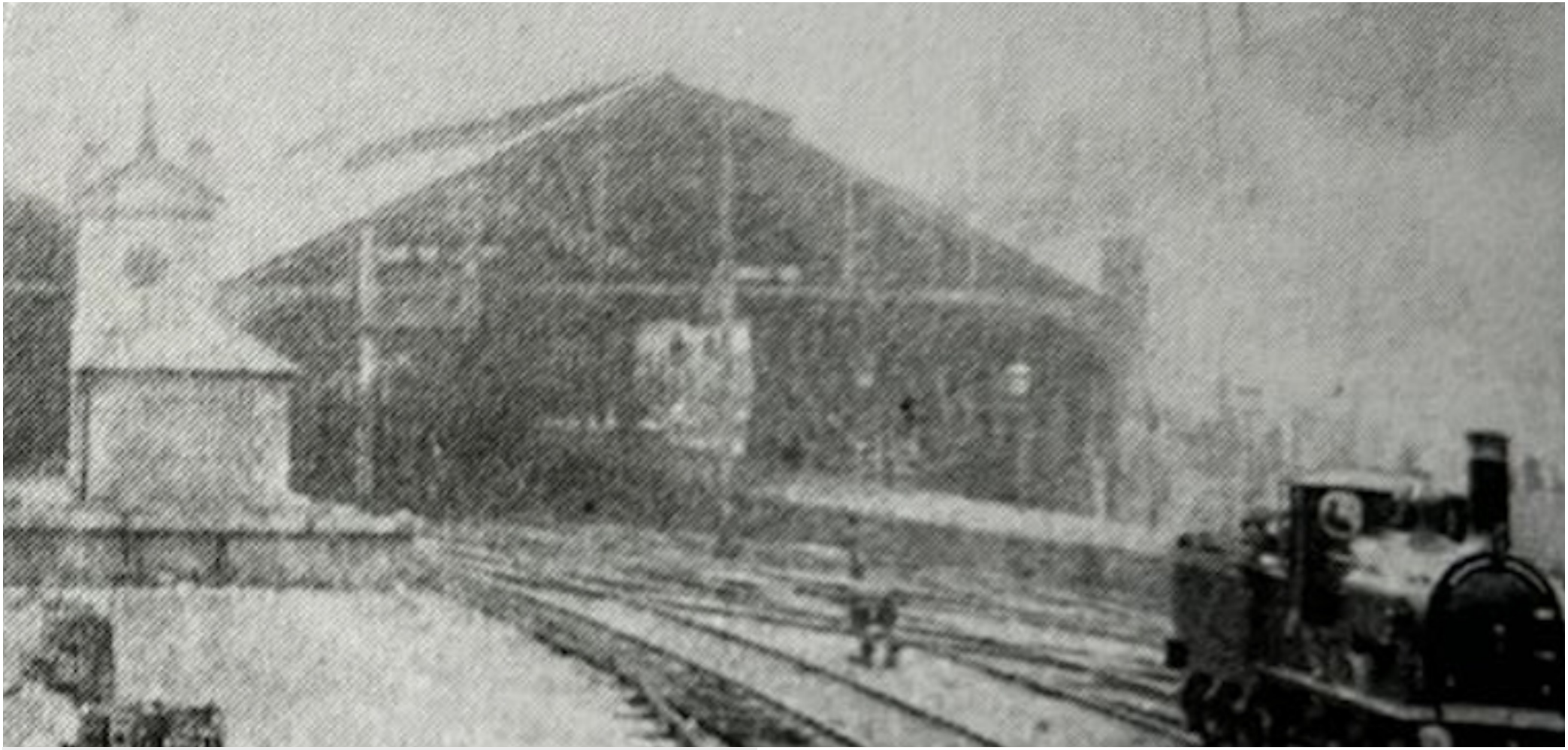
The Trainshed

I have treated the trainshed as a separate part of the project.

My original plan was to use a shortened version of the ‘new’ Brighton station trainshed walls as a backscene for the rear platform. I measured the centres of the roof trusses using Google Earth, then used the following photo for dimensions of the arch detail.

Using the column height from the station building plans, I was able to establish a potential height for the pilasters, and this resulted in the 3D model on the right.





Section of a photo of the 1894 reconstruction.

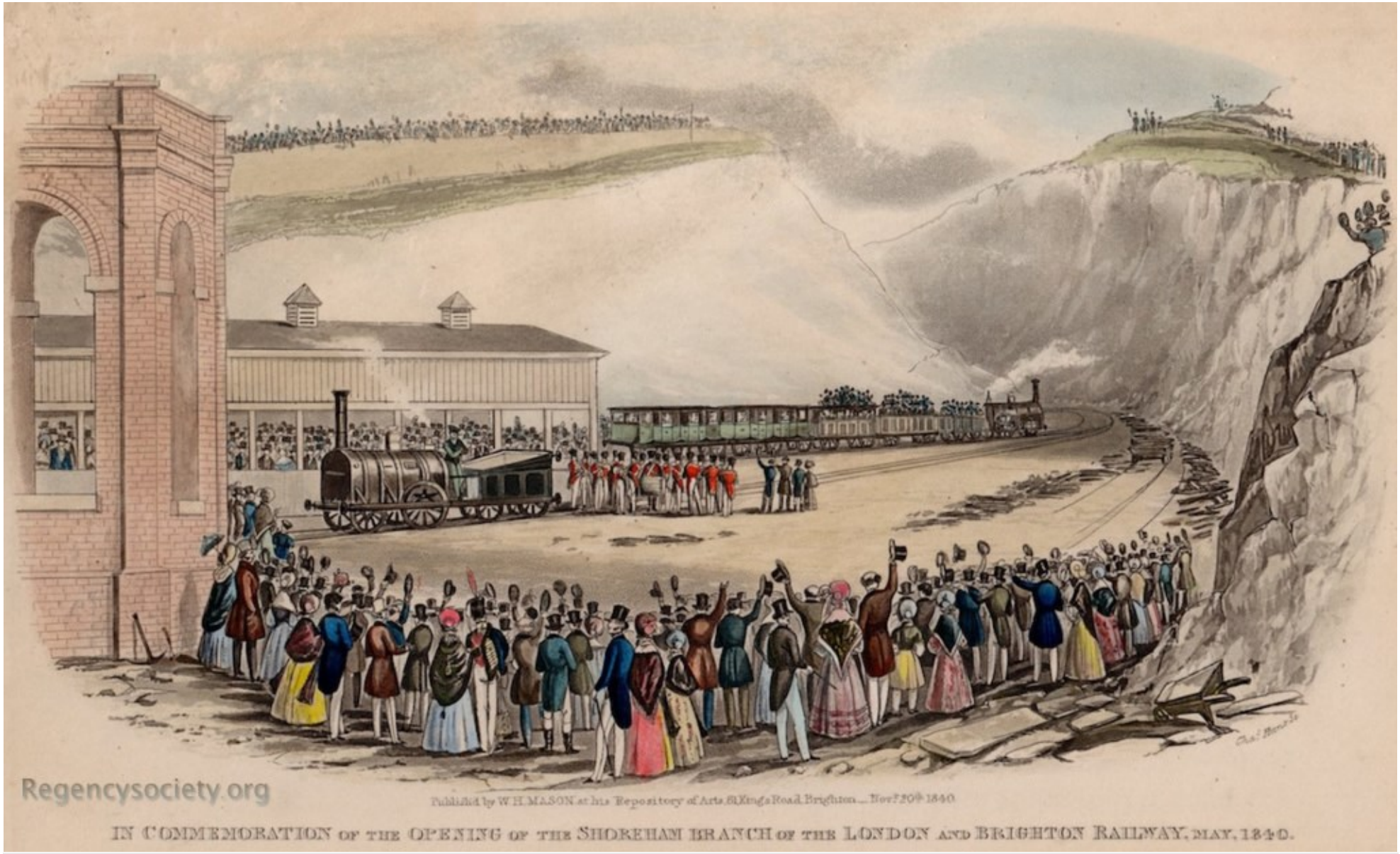
Upon reflection, however, I realised that this was probably the wrong choice. The pilasters yield a much higher roof than the earlier style I would like to model, shown above.

Note also the void in the rear wall, which was provided for a cab road. The wall is not part of the structural support of the roof, as it was originally built free-standing on more pillars.

A slightly later 1854 engraving of the South elevation shows the addition of a two storey extension on the west side, a boundary wall and the bridge over Trafalgar Road in front of the forecourt. Presumably the wall behind the trainshed was built as the future 'Terminus Road' was laid out.

Engraving by one of the Dalziel brothers c.1854. Courtesy of the Regency Society.

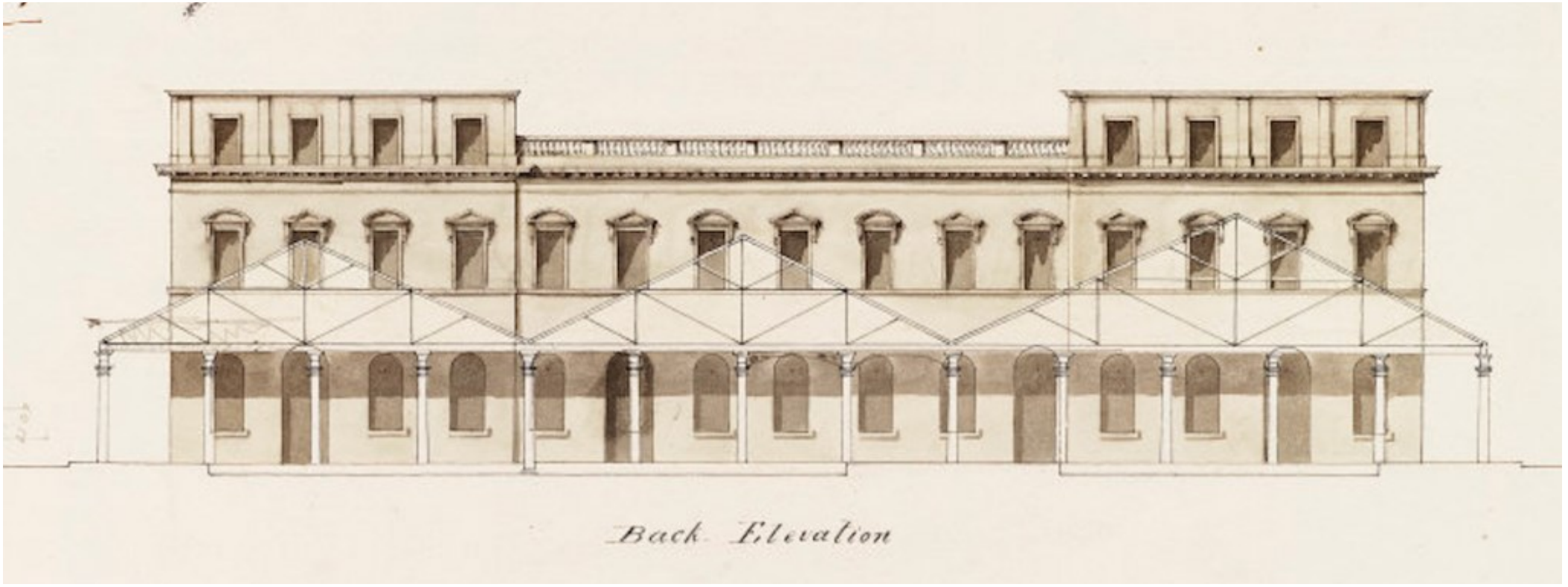
Though not totally relevant to this discussion, an earlier 1840 engraving shows the same trainshed under consideration looking more like a wooden carriage shed with cupola vents. Note that in this engraving, only the Shoreham side of the station is in use.



Engraving of 1840 probably by H G Hine. Courtesy of the Regency Society

Based on the pillars on the trainshed-facing end of the covered way and the trusses resting upon them, the height of the crossmembers is 16′ above platform level. The rear elevation of the 1840 Mocatta drawing shows the pillars supporting the outer edge of the covered walkway, and the outline of the roof trusses and supports.

Note the asymmetry with the right hand canopy 12′ wider and the apex rising above the line of the windows and an asymmetric pitch, and that the support columns of the covered way do not correspond to the trussing of the roof. By referring to the Earp engraving above, it seems that the centres of the pillars along the length of the platform were more widely spaced than those of the covered way.

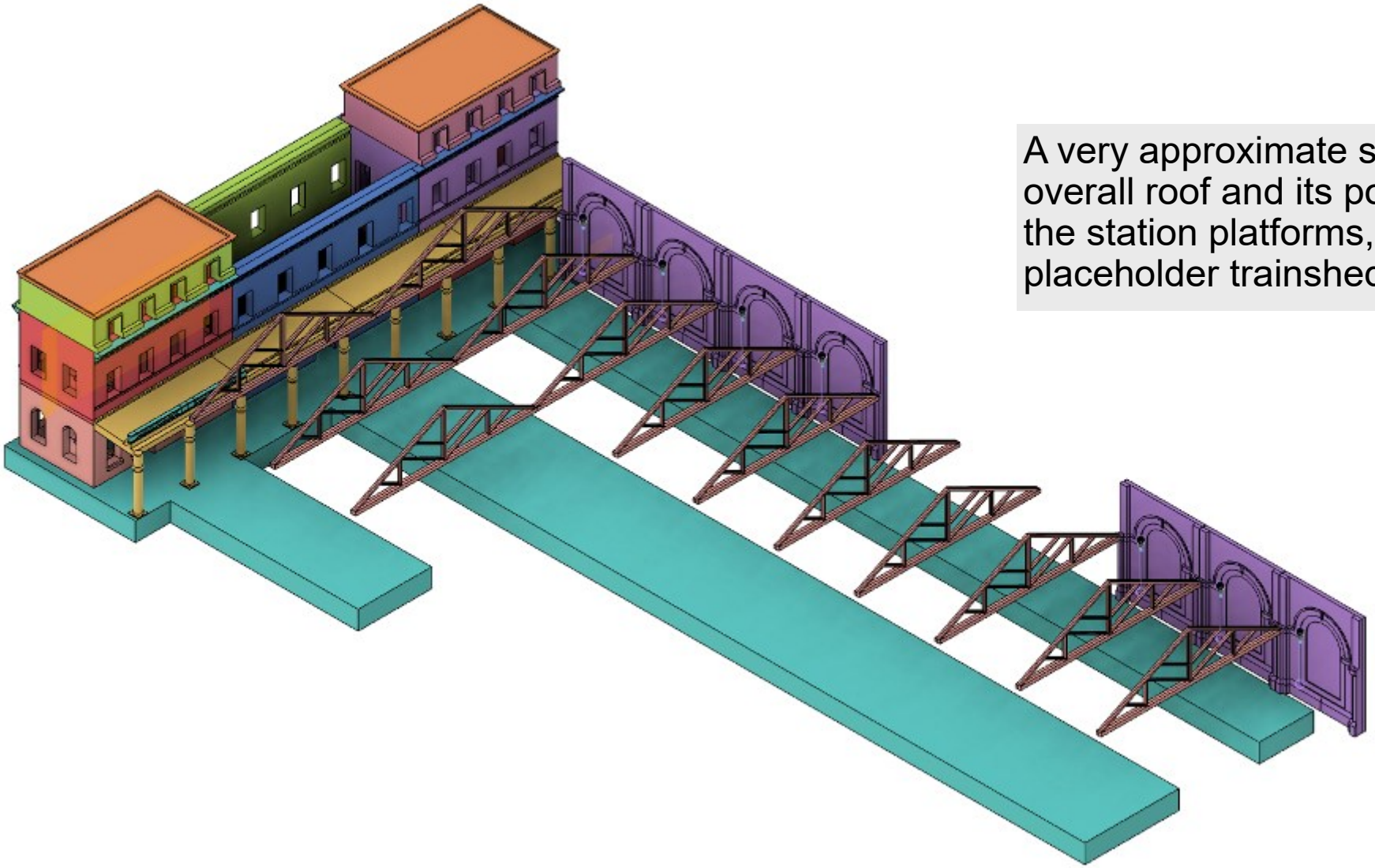


1840 Mocatta drawing of Brighton Station, Rear Elevation.

Courtesy of Royal Institute of British Architects, British Architectural Library.

Though I believe it is plausible that the platform canopies would have been positioned on top of the trainshed wall, I can find no evidence for or against this supposition. Another snapshot of the pre-1895 station shows the London side, with open columns supporting the roof (far left, below).

Since I am invoking the spirit of Brighton Central (so named on the 1890's OS maps), I am happy to use the wall to support my shed to simplify and increase the robustness of construction. In order to facilitate the opening for a cab road, this trainshed wall is brought forward a little from the backscene, which also narrows Platform 1 to a more natural width.



A very approximate sketch of the overall roof and its position over the station platforms, with the placeholder trainshed walls.

The trussing for this roof matches that in the original architectural designs, but it will need some finessing to fit the space. I hope to follow up this article with one showing the finalised trainshed walls and positioning on the layout, and the construction and mounting of a removable overall roof.

If anyone has any further information about the Mocatta-built Brighton station, I would be glad to see it - please contact me at willayerst@gmail.com.

Progress is also recorded on Facebook at Brighton Station Model | Facebook.

With thanks to the Regency Society

Railway station – Historic images of Brighton and Hove (regencysociety.org)

and the Royal Institute of British Architects

Search | RIBA pix

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Chipstead Signal Box

Peter Wisdom

My requirements for a medium size signal box for my 4mm layout, Chipstead, led to the purchase of a brass etched fret of doors and window frames from EBM models. I drew up a plan using the main window frames as a datum and then drew the rest of the box around it. The height and width of the box were taken from 4mm plans of Saxby & Farmer signal boxes.

The body of the box was of 30thou Plastikard clad with Slaters brick Plastikard and the "wooden" upper part from appropriate size Evergreen styrene sections. Painting was carried out with an airbrush in the correct colours for an early BR layout, which were the same as Southern colours. The

brick plasticard was painted in Humbrol flesh (61) and coloured with water colour pencils.

I used GS Hypo cement to glue the plastic glazing to the brass frames, which was successful, but later found that the very fine tube applicator glued itself to the cap of the tube. I have now reverted to superglue. The roof is built up from 30 thou Plastikard with a chimney from a 30thou core, covered in brick Plastikard. I started to lay individual layers of tiles but failed to align them at the corners and so used a printed version. The ridge tiles are made from filed down brass tube.

The steps are built up from Evergreen section with the treads cut on a guillotine to ensure that all were the same size.

My apologies for supporting the steps in the photo but I am not ready to fix the box in place yet.

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Lampirons and Headcodes

Nick Holliday

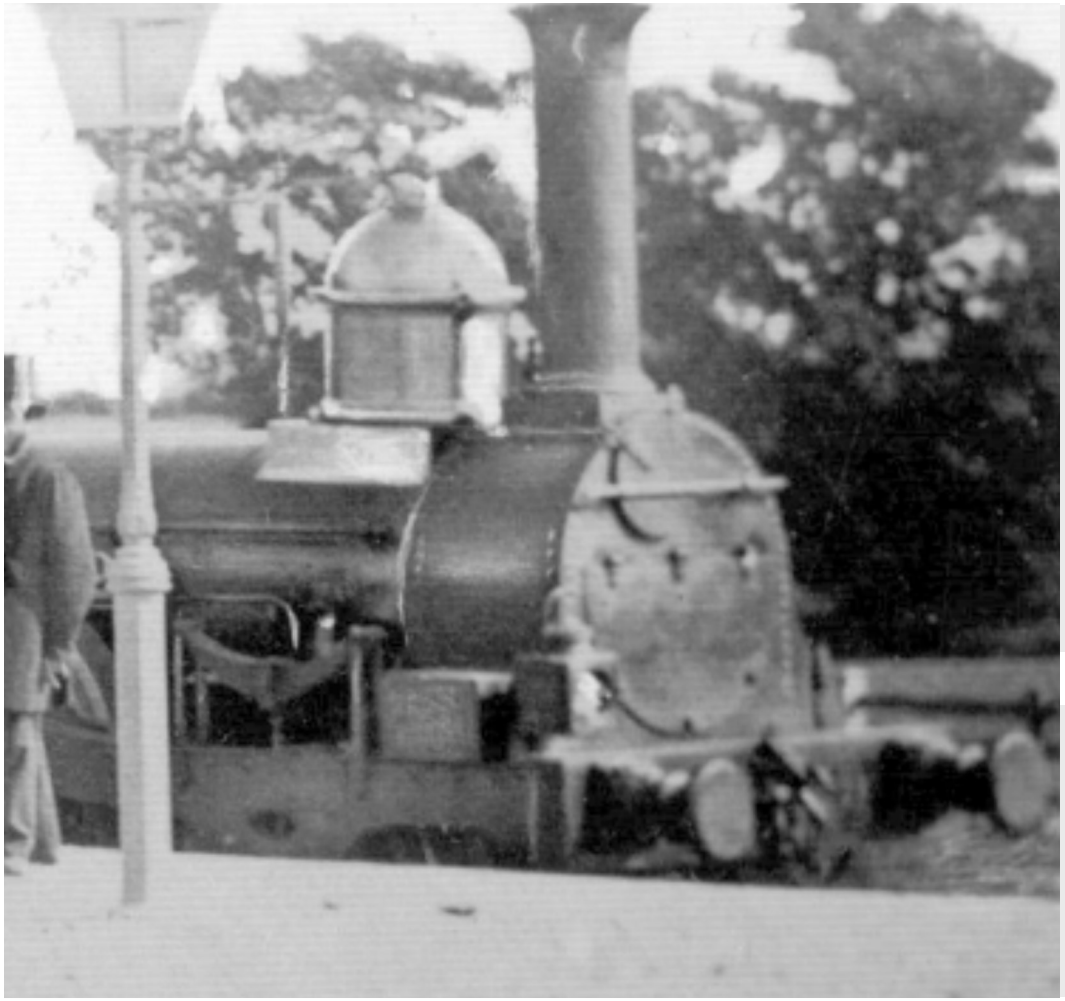
In the last issue of the Modellers' Digest Issue 18, John Shaw, in his article "The Renaissance of Imberhorne" hinted that the Brighton's approach to the provision of lampirons to display head-codes was rather more complicated than that of most other lines. This seemed to suggest that an outline of the subject might be worthwhile, as it does seem to cause confusion.

Headcodes, either using lamps or boards, or both, were an early introduction in the history of railways in the UK, providing the necessary information for the 'Bobby', in the absence of telegraphic communications, to recognise the identity of the approaching train, so that the signals and points in his direct control could be appropriately operated. It is often overlooked by modellers that whistle codes were an important safety provision, generally being audible over greater distances than vision lines from signal boxes. Each junction would have its own codes, sometimes into double figures, and the Appendix to the Working Timetable (WTT) would have pages of them, which the drivers had to know.

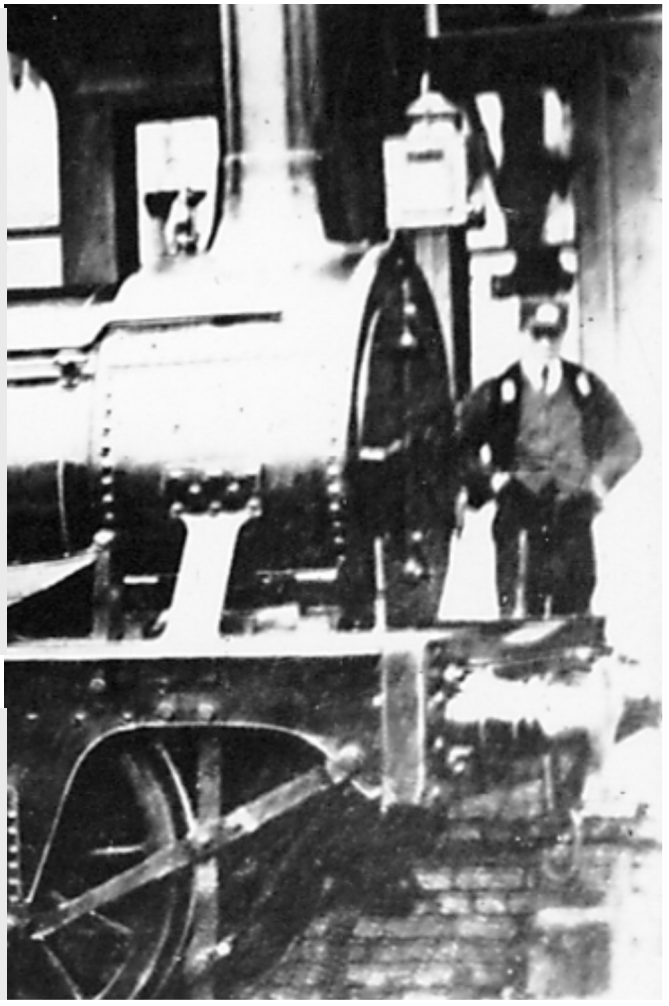
PORTSMOUTH, EAST BOX.	Trains or Engines requiring to cross on to the Up Main Line from the Shunting Siding South of the Down Main Line between the Town Junction and East Box.	One short
	Trains or Engines requiring to cross on to the Up Main Line from the Siding next to the wall between Town Junction and East Box.	Two short
	Trains or Engines requiring to proceed from the Shunting Siding mentioned above to the single Line leading to Fratton.	One long
	Trains or Engines requiring to proceed from the Siding next to the wall to the Single Line leading to Fratton.	Two long
	Trains or Engines requiring to proceed from the Shunting Siding to the Siding under the wall on the South side of the Single Line leading to Fratton.	Three
	Trains or Engines requiring to proceed from the Siding next to the wall, between East Box and the Town Junction, to the Siding under the wall on the South side of the Single Line to Fratton.	Four

Extract from the 1881 Working Timetable, showing whistle codes at just one location.

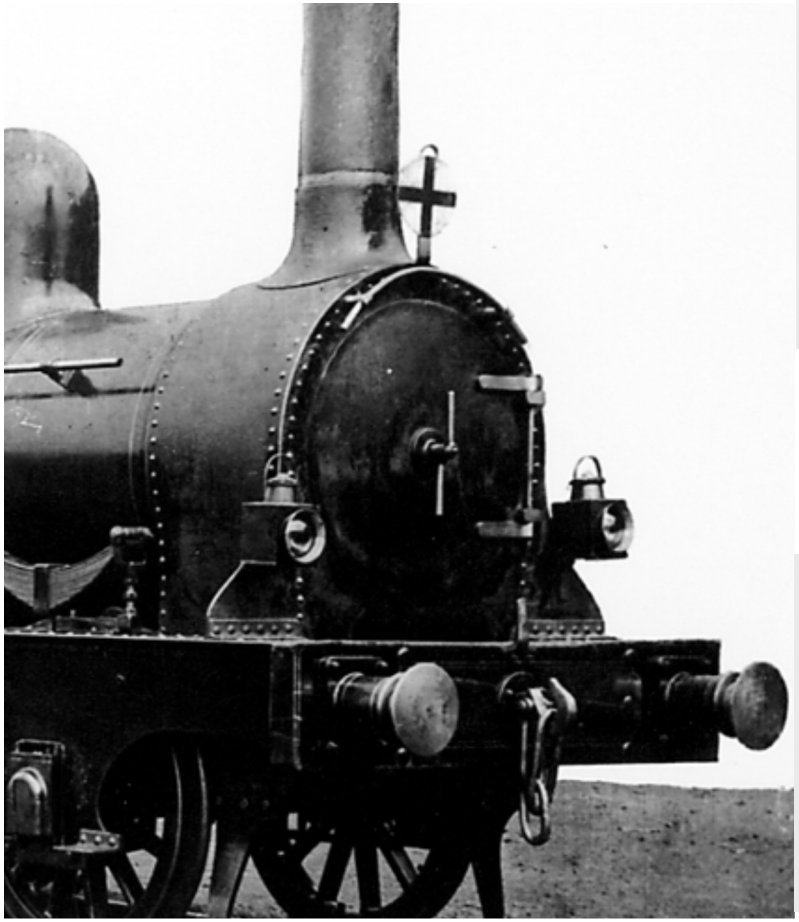
As the railway system developed, and signalling improved, the various companies adopted their own displays, either to identify the type of train (express passenger/goods etc.) or the route to be taken. Most adopted a way of identifying the type of train, and, in the interests of compatibility, the codes were gradually standardised. However, in some areas, particularly around London, the complexity of the lines made it necessary to differentiate routes, and an elaborate coding developed, on the southern companies, Brighton, South Western, Chatham and South Eastern, as well as the Great Eastern. Even some of the other lines might have local route variant codes in areas of complexity, such as Manchester and Glasgow.



Left - Early photographic evidence of the use of head-codes. Irons on each sandbox and one at the chimney. A Board appears to be hanging off the chimney iron.



Right - Another early view, with tall irons at each end of the buffer-beam.

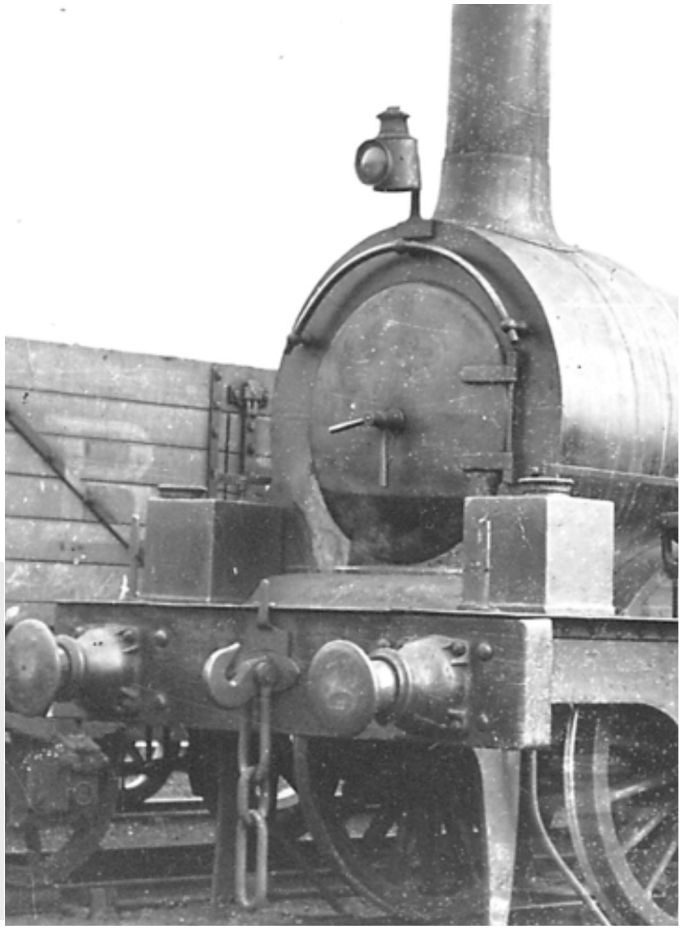


Left

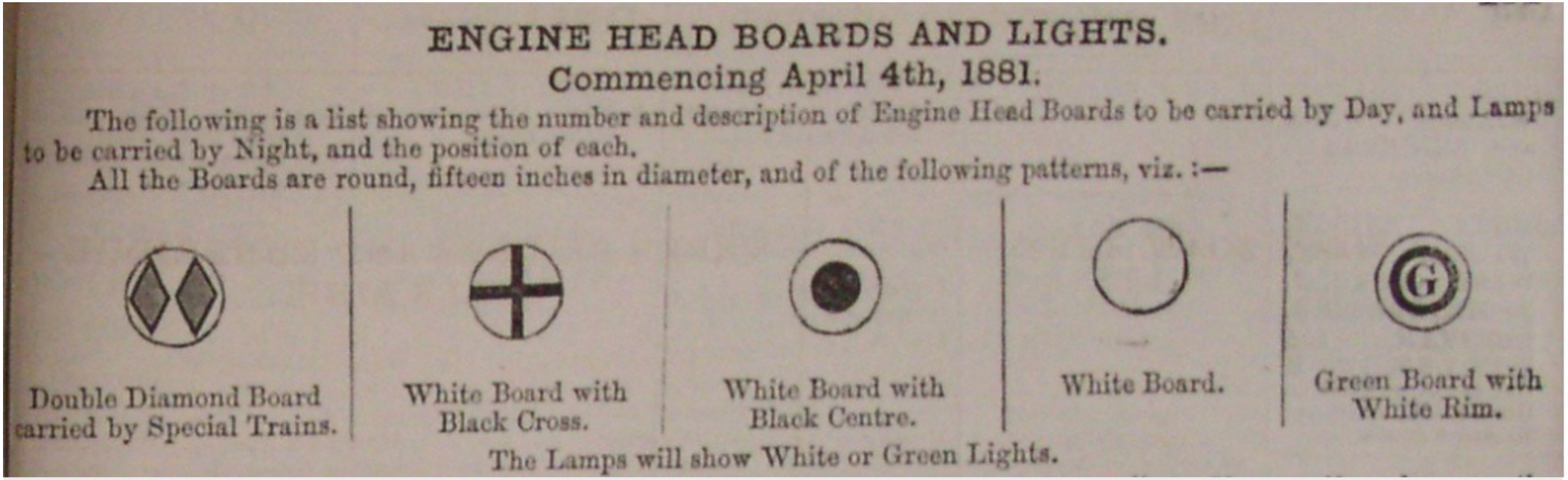
Irons on the smokebox wingplate. Note that the central iron is fixed to the bufferbeam, just below running plate level.

Right

Tall irons in front of sand-boxes. Again, note central iron is fixed to the front of the bufferbeam, just below running plate level.



The Brighton board had already considered headcode discs as early as 1857, and by the time of photographic confirmation, around 1870, it is clear that a full system using three or four lampirons was in place, and, by 1881, the WTT showed over 80 different codes, with often four different permutations covering ordinary and special trains, and in daylight (boards) and night time (lamps), although one code might apply to several different routes, normally, but not always, non-conflicting. Details of codes for a number of dates can be found at https://sremg.org.uk/headcodes/sheadcodes.html



ENGINE HEAD BOARDS AND LIGHTS.

Commencing April 4th, 1881.

The following is a list showing the number and description of Engine Head Boards to be carried by Day, and Lamps to be carried by Night, and the position of each.

All the Boards are round, fifteen inches in diameter, and of the following patterns, viz. :—

Double Diamond Board carried by Special Trains.	White Board with Black Cross.	White Board with Black Centre.	White Board.	Green Board with White Rim.

The Lamps will show White or Green Lights.

Extract from the 1881 Working Timetable

Just to add to the confusion, the boards could display a different pattern, which was painted on the reverse of a white disc, and the lamps could show a white or green light, as decreed necessary.

By 1881 we know that the LBSCR had adopted four lampiron positions, centre of buffer beam, top of smokebox and on either side of the loco at a low level. On Stroudley-designed locomotives, there was a smokebox wingplate and the outside irons were attached to the wingplate, usually some height above the buffer beam. Earlier Craven locos often had large sandboxes by the smokebox and the irons could be fixed on top of these; if not, the iron would be fixed at the end of the buffer beam. At the rear of locos, on both bunkers and tenders, the lower irons were all at buffer beam level, so it made things slightly difficult for the signalman, as some locos might display three discs in a V-shape, others three in line. Newer Billinton locos did away with

smokebox wingplates and sand boxes above the running plate, so the irons were along the top of the buffer beam, or, in the case of the B2 4-4-0's, along the raised section of the running plate.

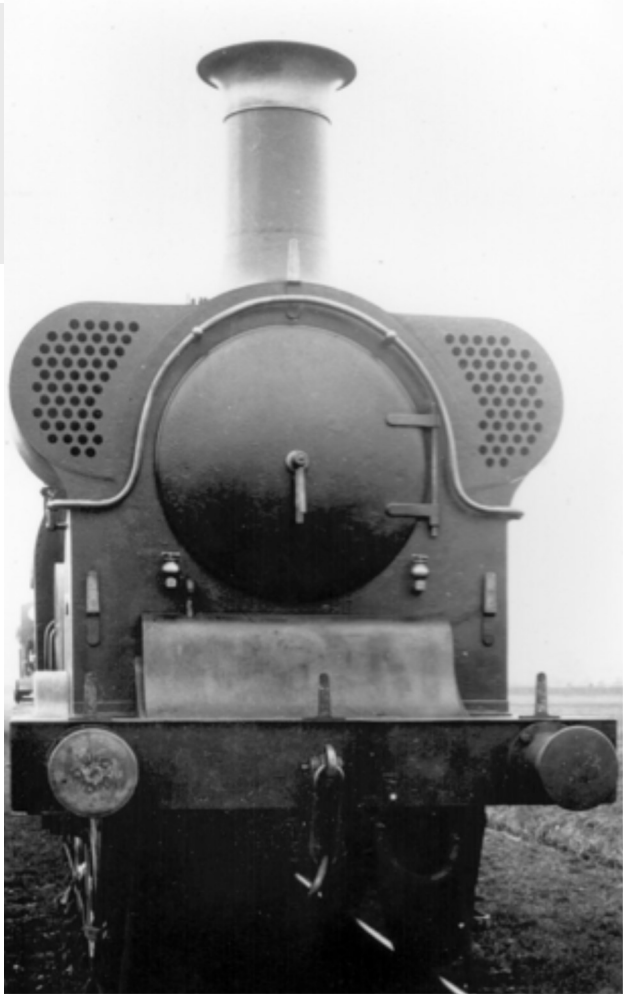
Until the turn of the century this possible confusion wasn't a problem, but in 1901 the Board decided that there should be two extra lampiron positions. On the Billinton B4 4-4-0 being built at the time, and on his other locos, apart from the B2's, this was resolved by installing double height lampirons at the extreme ends of the buffer beams. On the Stroudley locos, the solution was to fit single height irons at the buffer ends, leaving the higher irons in place.

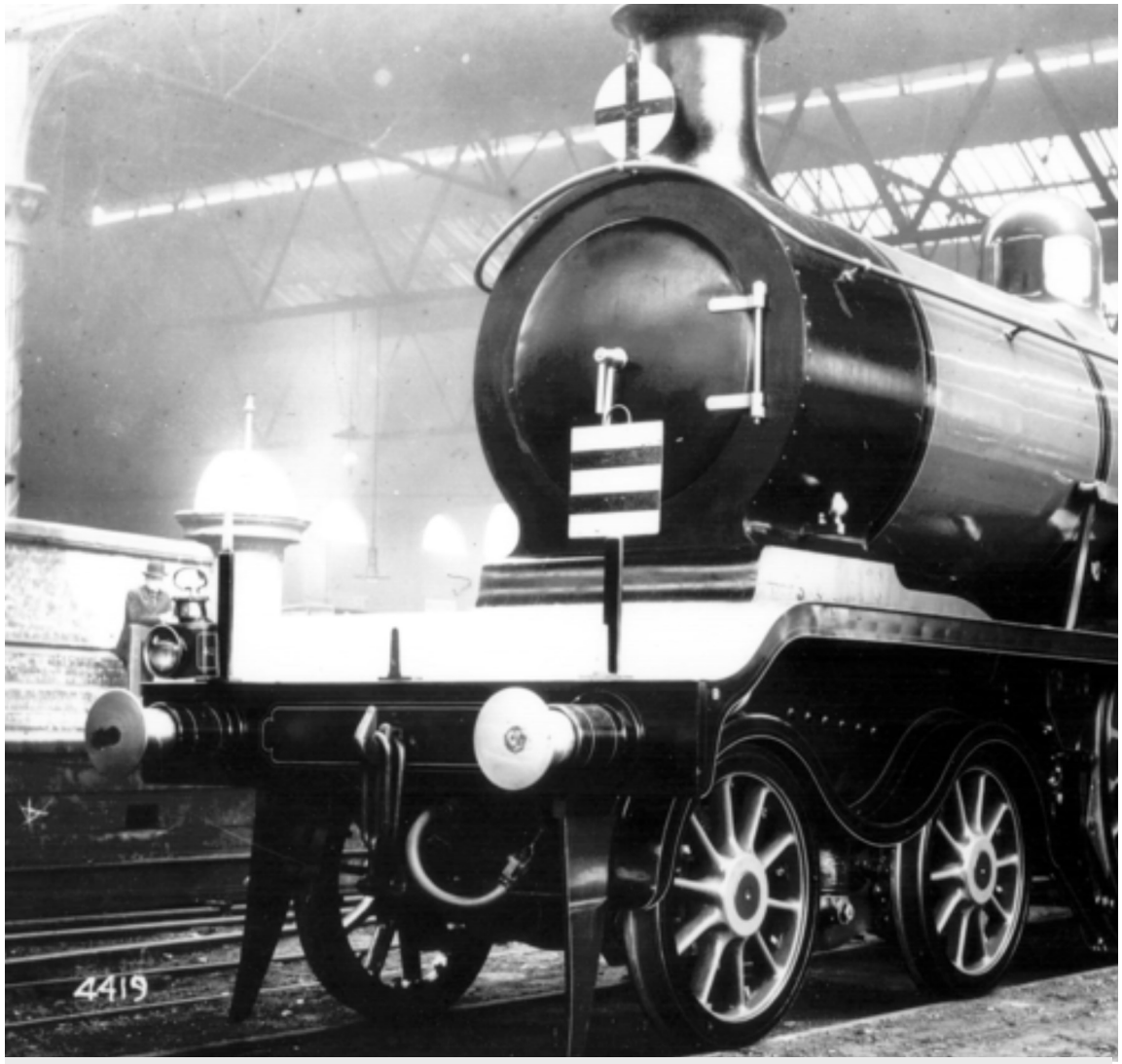
Left

A 'Gladstone', showing original siting of four irons on a Stroudley loco.

Right

Another 'Gladstone', showing later siting of six irons on Stroudley locos.





Billinton B4 4-4-0, showing the double height irons.

Billinton E4 0-6-2T, showing the double height irons.

On most locos this was sufficient until the Southern preferred to fix new irons on the outside of the smokebox, but on the G Class singles, such as '*Imberhorne*' the upper irons were not high enough, and eventually taller irons had to be fitted to clear the lower discs. For some reason, a few of Stroudley's Jumbo Goods, Class C1, such as Nos. 421 and 422, also had their sandbox irons raised, even though they had much larger sandboxes/wingplates than the singles.

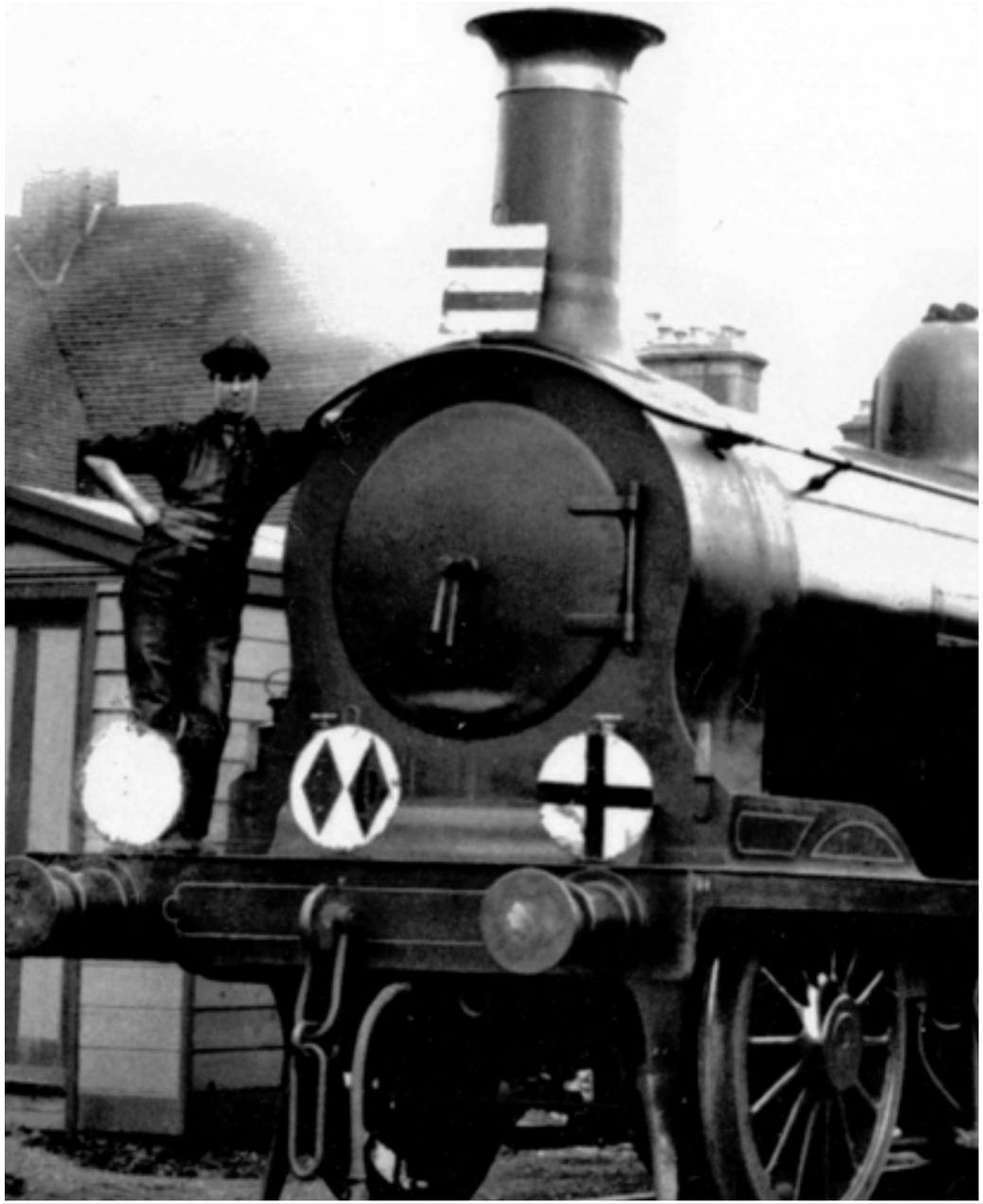
Stroudley G Singles

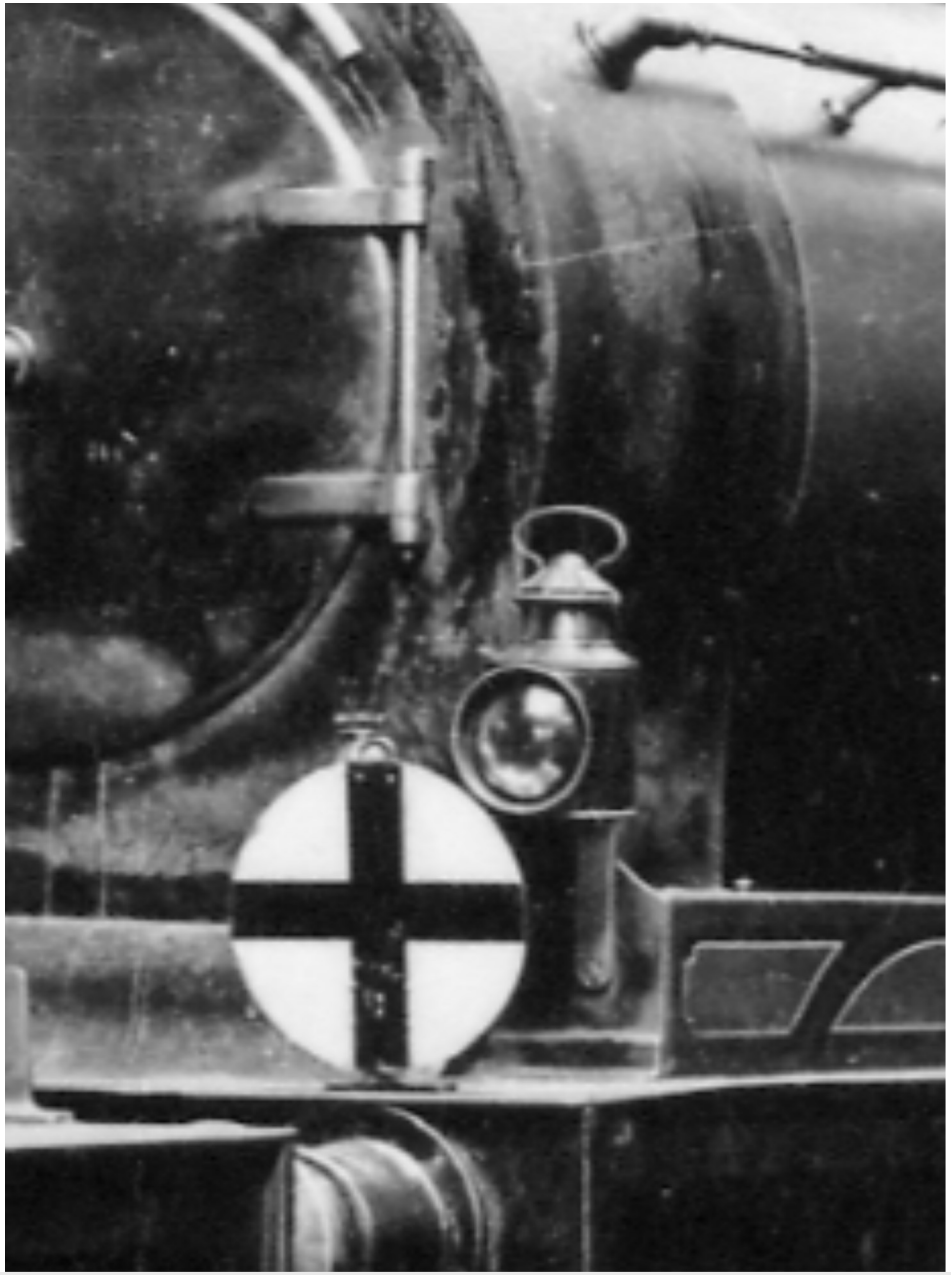
Left

Showing original arrangement.

Right

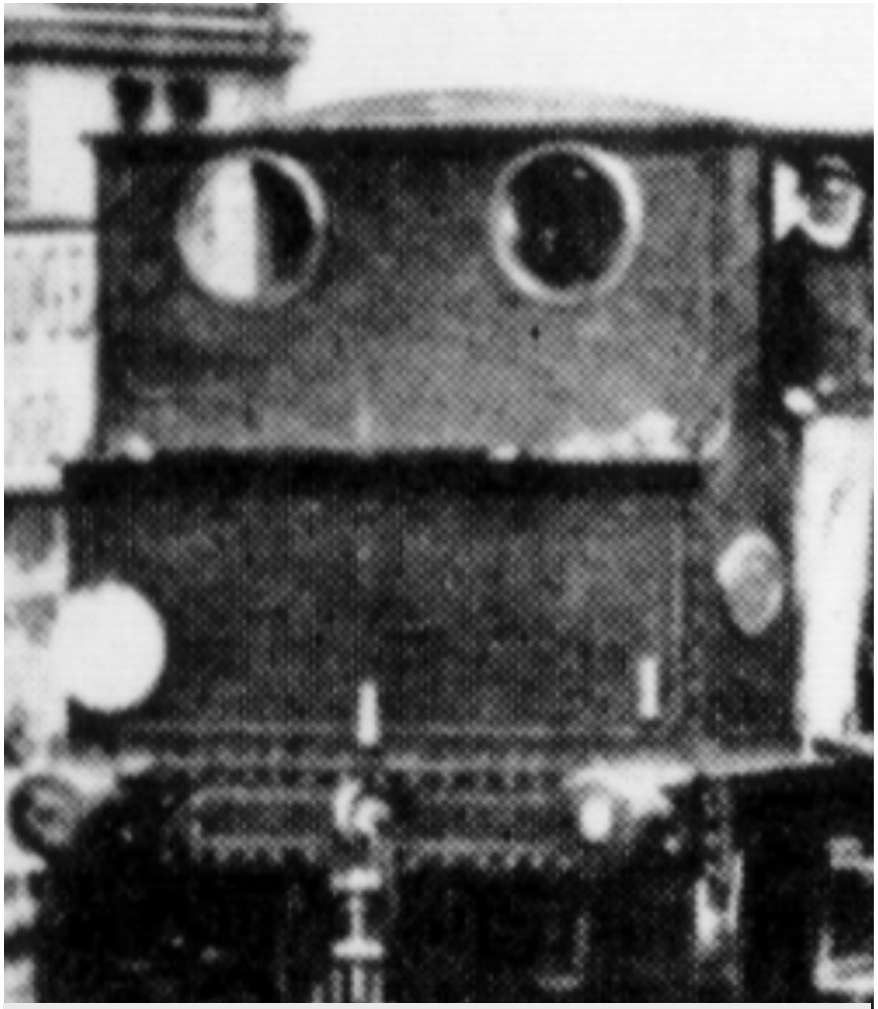
Showing taller irons, fixed to the wing-plate for visibility.





Stroudley G Singles, with new irons fixed on bufferbeam, showing how the higher position is hidden.

On the rear of locos usually an additional pair of irons was fixed at higher level, but some received the double height ones instead.



Rear of Hayling Island, showing bunker arrangement for pre-Stroudley locos. The central iron is at bufferbeam level and the upper iron is on top of the bunker rim.

Rear of Stroudley D1, showing all lower lampirons at bufferbeam level and the upper iron on top of the bunker rim.

Rear of Stroudley D1, showing additional irons above the tool box.

Rear of Stroudley tender, showing the use of double height irons.

There were two special cases.

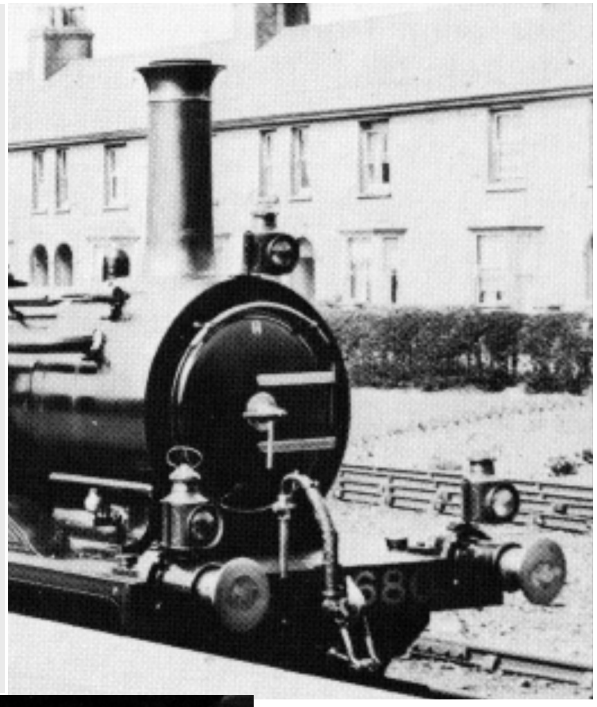
The Terriers seem, for a long time, to have been immune to the changes, at least until 1914 and conversion to A1X, when the double height irons might have been required, following the removal of the sandboxes and wingplates. However, not all were so treated when rebuilt and some un-rebuilt A1's acquired double height irons; presumably most of their duties did not involve codes using the middle height locations.

A1 Terriers - Left, as built with four irons and right, as running in 1918, still with four irons.

Left - A1 Terrier, as running c.1915, showing the use of double height irons.

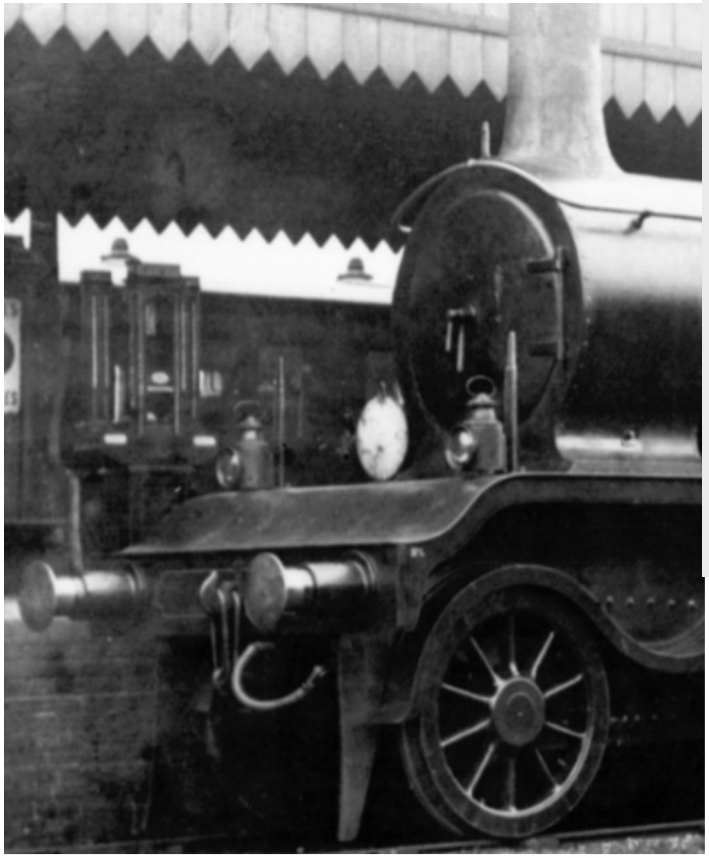
Right - A1X Terrier, as running 1913, showing the use of only four irons after rebuilding.

Below - A1X Terrier, as running 1913, showing the use of double height irons front and back



Another class, Robert Billinton's B2 4-4-0's, was a bit of a muddle. Originally the three lower irons were on the upper surface of the raised running plate, and the initial reaction to the changes was to put the two extra irons at the ends of the buffer beam, leaving the central iron at a higher level, inverting the "V". Then someone decided to provide a pair of double height irons each end of the buffer beam, with maybe a central iron at buffer level, with which would have solved the problem, except that occasionally they forgot to remove the existing ones, resulting in some locos running with seven or eight irons!

B2 4-4-0s. Left, as originally running with three irons on the upper level of the running plate. Centre, as finally running with two single and two double height irons at buffer beam level and a central one on the upper level of the running plate. Right, incorrectly running with all eight irons!

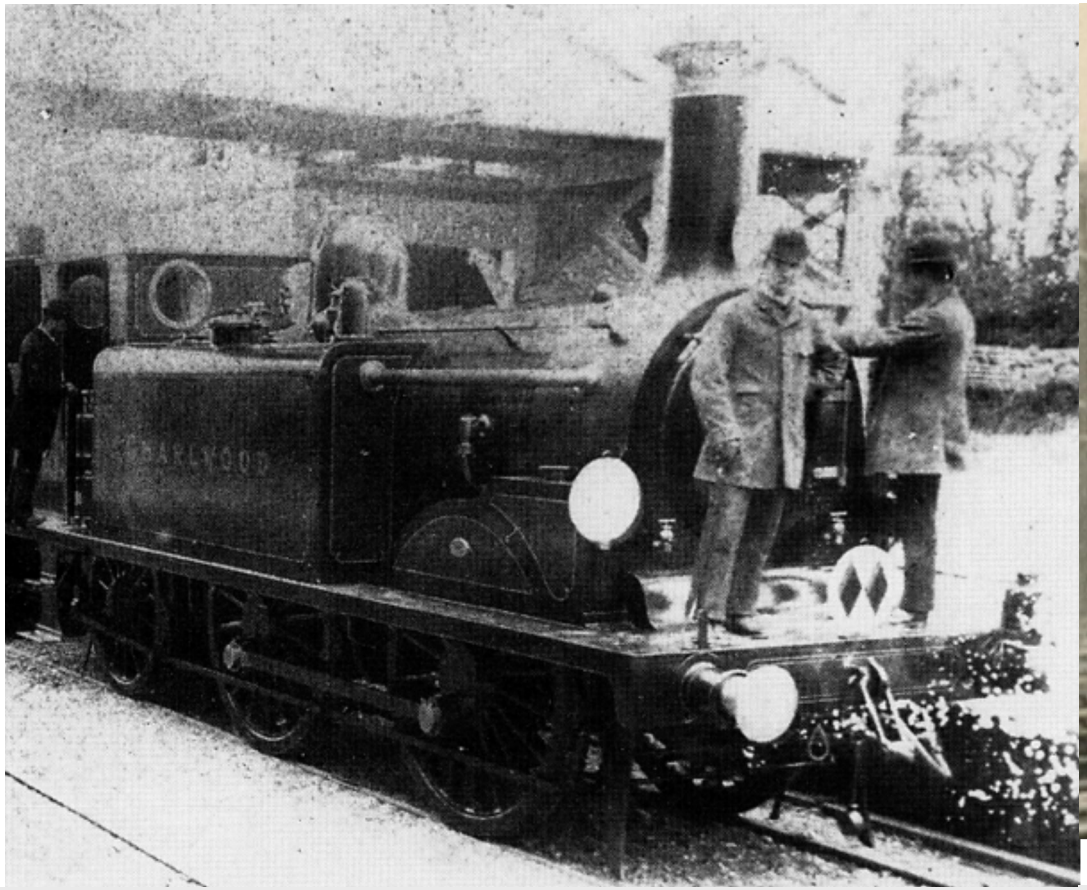


Left - B2, unusually running with five irons on the upper level of the running plate.

Right - B2x, as originally rebuilt, with the central iron at high level.

Below - B2x, final arrangement, with the central iron at low level.

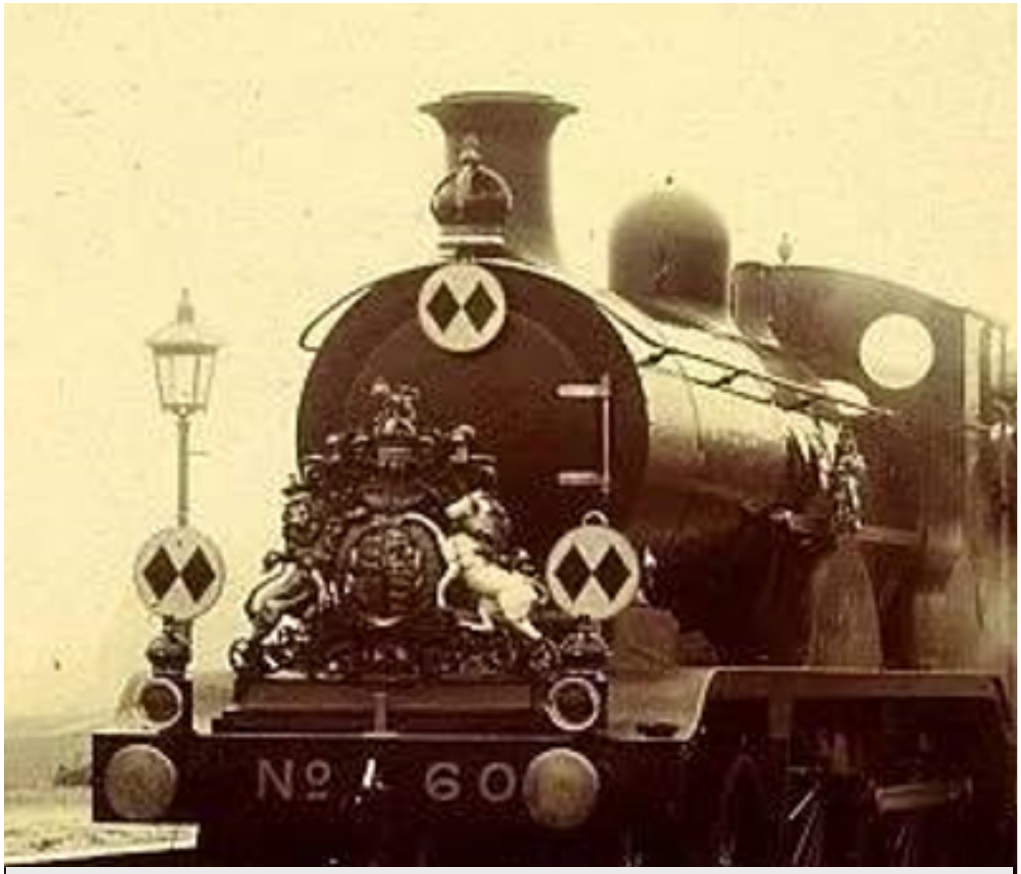
Although the major change took place in 1901, there had been isolated examples of locos with extra irons dating back to 1882 and, around 1900, a new board was added to the list, to indicate use of the newly opened ‘Quarry Line” which created a by-pass to congested Redhill station; a square board with two horizontal black stripes. Finally, around 1910 there was a national push to simplify headcodes, part of which involved the abolition of the various coloured discs and lights, with plain white discs and lights only to be used.



D1, at the opening of the Bluebell Line in 1882, showing a six iron arrangement.

H1 4-4-2, showing the Quarry Line special board.

Something that often puzzles people is seeing a photo showing a locomotive with an array of both headcode discs and lamps. Each code, apart from the Royal Train one, which required special lamps and boards at all six locations, only required one, two or three discs, but each loco had to carry, along with a set of discs, a set of headlamps. On the tank engines, provision was made for a set of irons along the tank top on the nearside, on which the lamps could be safely stored, but nothing similar was possible on tender locos. Rather than having the lamps stowed somewhere on the footplate or tender, the engine crew would often place them on the empty irons on the front of the loco, where they will be handily available when it got dark or foggy.



B4, displaying the Royal Train headcode and other fitments.

B4, displaying a one board code, but with four lamps (one reversed) ‘resting’.

For the modeller, unless accurately re-creating an actual location, it is possible to create their own particular codes, using up to three discs, providing there is no conflict with genuine routes, and perhaps adding a sprinkling of lamps to the front of tender locos, with some spares along the top of the tanks on tank locos.

E4, showing four lamps stowed on the tank top irons.

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Walmington on Sea

David Edsall

Many readers will know David Edsall, or have enjoyed seeing his layout, Walmington-on-Sea, at a number of exhibitions over the years. Sadly, David is no longer able to maintain the layout and it has now moved to a new home. However, thanks to Andy York at British Railway Modelling and Tony Wright who took the photographs, it is possible to show some of the lovely townscape modelling, capturing Sussex vernacular architecture, that is such a feature of the layout. Buildings are based on surviving structures around Sussex or at the Weald and Downland Museum at Singleton.

The layout also features a model of the Langstone Harbour swing bridge, evidently somewhat reinforced to allow locos larger than a Terrier!

Walmington Hight Street, with Jones the butcher’s shop on the right hand side.

Water Street, Walmington, with an evocative group of tile hung and weatherboarded buildings.

A horse drawn omnibus, heading towards the High Street.

Langston station, with the level crossing and weatherboard railway cottages.

The swing bridge and trestle viaduct at Langston.

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David’s other exhibition layout, Willingly, is also available for sale at time of writing.

The transaction is being handled by Brian Norris (07581 581 939) who can provide further information. Please contact him by phone in the first instance.

The preferred option is for the buyer to make an offer for both the layout and the stock, although offers for either in their entirety will be considered. Collection from Oundle, near Peterborough, will be required.

The layout is to OO standards, using DC power and set somewhere in the south of England, equipped mainly with LB&SCR stock. It measures 15 ft x 10 ft. Offers are sought around £600.

This is a former exhibition layout that, over the years, was seen at many exhibitions, including, we believe, Tolworth, Tonbridge and Chatham. It is an oval shaped, roundy-roundy layout, with a central well for two operators, one for the up line and one for the down line. The fiddle yard at the rear consists of a number of lines in each direction to allow for variations in running stock. There is provision at the front of the layout for shunting activities in the main station.

Rolling Stock

Locomotives consist of two E2 tanks in Brighton livery and a King Arthur, Sir Dinadan, in Southern green. There are also five unmade kits in original boxes without motors, wheels and gearboxes.

There are some five boxes containing 30 coaches and two boxes of 40 goods wagons.

Current Condition

The main charm of the layout lies in the extensive buildings, built from scratch by David, which give the layout its Sussex atmosphere. However, it has been stored in an unheated garage for a number of years and some of its fabric has deteriorated slightly as a result. Operational signals have been installed on the layout but some have been damaged and two sections of the fiddle yard are missing.

Panorama views of the town and station.

The contents of two of the boxes of rolling stock.

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The Portshaven Branch - 1880s

Harry Lewis

Background to Train Simulator

Some members may be familiar with virtual trains, but, for those that are not, I will give a brief explanation. There are a number of popular rail simulator franchises, the most well-known of which are Microsoft Train Simulator (MSTS), Trainz, Railworks (now known as Train Simulator Classic), and Train Sim World. Each has their merits and failings, however the focus of my work is Train Simulator Classic (hereafter just Train Simulator) because it has, in my view, the best balance between graphical detail, the ability to create your own content, and advanced driving simulation.

To make it clear: Train Simulator is not a replacement for railway modelling. Indeed, many of my friends and I have significant model train collections (albeit seldom space for layouts!). Instead, the simulator provides an additional dimension by recreating the role of a train driver on a real railway. Railway ‘routes’ are to-scale, usually in the range 5-50 miles but sometimes longer still. Despite most third-party freeware add-ons having some paid pre-requisites, the hobby is quite affordable and there is a wide variety of content available. It is difficult to achieve finescale levels of detail on large projects, but there are still high-fidelity routes available which focus on representing small details when recreating real lines. For example, my project for the last few years has been to recreate Exeter–Yeovil and branches in the Southern era: see the following page.

The way route-building works in Train Simulator is similar to actual railway modelling, although significantly cheaper because the materials used are infinitely reproduceable and easier because it requires less skill with hands and physical tools. To create the digital assets (think buildings, walls, tracks, trees, clutter, skies, weather) requires some skill with external computer programs, but has been mastered by many. Creating locomotives and rolling stock is more akin to creating meshes for 3D printing, requiring very finely detailed digital modelling and then digital texturing (painting) to look right. The advantage of this is you can paint one locomotive in many different

A view of Crewkerne station taken on my SR West of England Mainline route.

liveries. Cosmetic variations, authentic audio, and mechanical variety, such as different cab styles, can all be achieved with some work. Finally, the stock must be scripted to work like a real train, with steam chests, cylinder simulation, and many other challenges.
If you're interested in seeing more of the pre-nationalisation era in Train Simulator, there are a few free routes on my website https://golden-age-developments.co.uk/ (they do have some pre-requisites, though) and commercial locomotives/rolling stock at https://caledoniaworks.com/. There are also many other developers who have created a wealth of third-party content for other eras and regions. The base game 'Train Simulator Classic 2024' is required to utilise any of the add-ons.

The Portshaven Project

Glenn S. is a friend of mine, who has created a fictional LBSCR branch line called The Portshaven Branch, set on the south coast in circa 1880. The line connects the docks at Portshaven to the mainline at Arunfield Junction, with an intermediate station at Chailey Gate. Despite being formally based on the 1880s, the period is fluid enough to run trains basically up until grouping. Rule 1 applies here too! Here are some pictures of the route, which is almost ready to be released:

Portshaven station, next to the Harbour. The signal box is visible in the background.

Departing Portshaven. Signal box kit-bashed to look like a Saxby & Farmer type.

After departing Portshaven, the causeway crosses Bramber Sands.

Bramber Sands Halt

Chailey Gate station, the start of the recently double tracked section.

The timber trestle Aedern Valley viaduct

Arunfield Junction, the three-platform station where the branch meets the mainline.

To my knowledge, the Portshaven Branch is the first attempt at a pre-grouping era route set in Brighton territory. It is built to complement the growing number of pre-grouping LBSCR locomotives and rolling stock packs, which do not yet have a suitable place to be driven. Going forward, Glenn plans to extend the mainline beyond Arunfield Junction so that future locomotives can stretch their legs on a mainline run.

The future of LBSCR in Train Simulator

Caledonia Works is planning to produce more LBSCR locomotives, namely the B1, B4X, G, D3, I3, E1, C1, and C2X classes. This will complement the existing H2, D1, E4, K and L classes. MatrixTrains is currently working on a pack of LBSCR 54ft non-corridor coaching stock, and I am working on a pack of Stroudley 4-wheel coaches. I am not aware of any upcoming wagon packs or routes but please let me know if I've missed anything.

It is an ambition of mine to create a real LBSCR route in Train Simulator. It would, to my knowledge, be the first full-length, non-fictitious, pre-grouping project. Now I have wrapped up my West of England line route, I am in the research phase for a Sutton–Horsham route set in 1912. I will keep the Circle informed with my progress as and when things begin to materialise.

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Jones and Potts No 115 - again

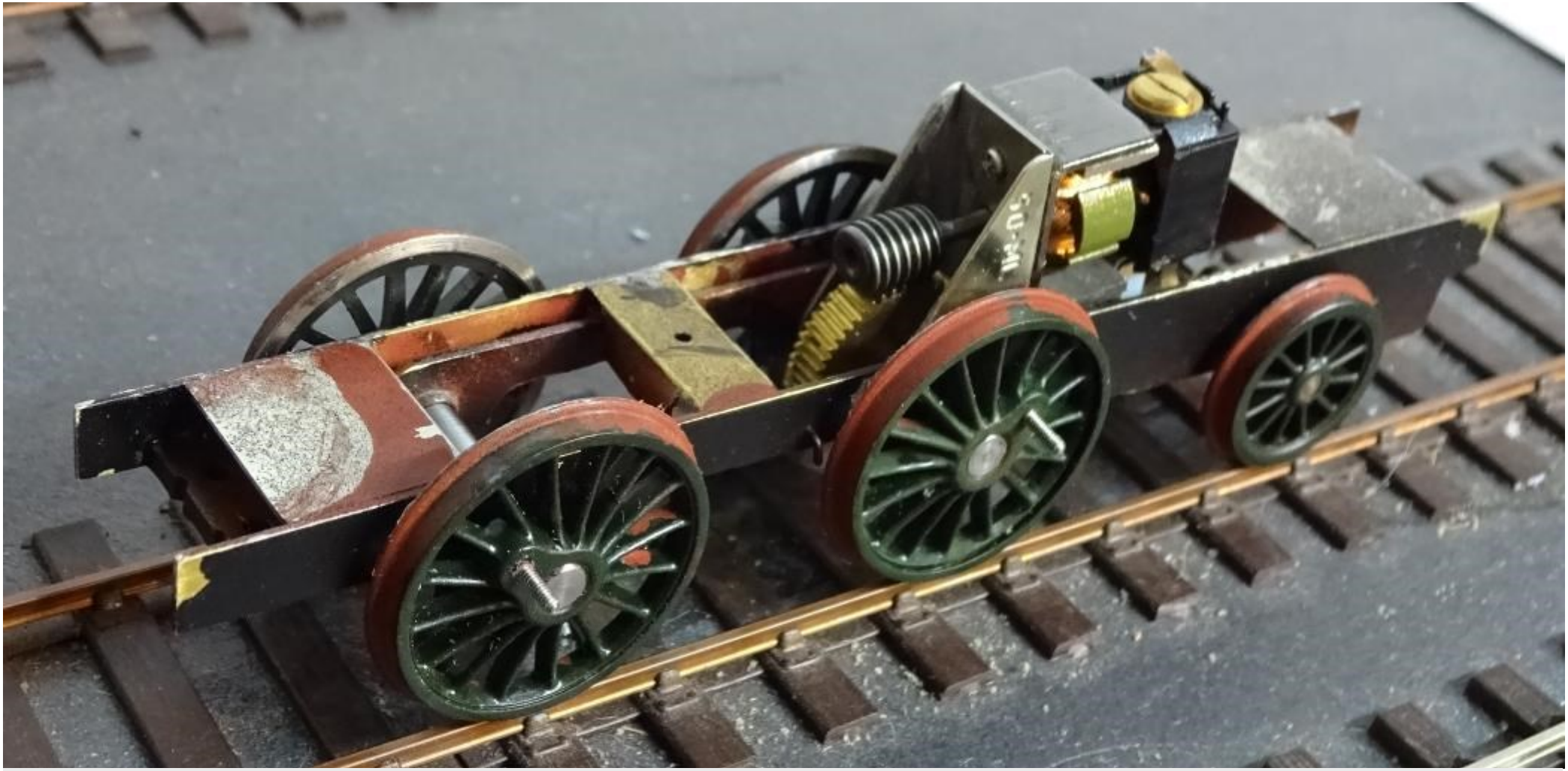
Eric Gates

Regular readers of the Digest will recall that Ian White contributed an article in the last issue, describing his scratch built model of this same loco. Amazing how nobody has built a model of the loco for 150 years and then two come along in quick succession. My model takes the easy way out and starts with a 3D print produced by Killian Keane, who has kindly done the research and produced a print that does all the difficult bits of the model (that firebox!). The print comes as a single piece body with separate chimney and with printed frames.

I have now built a couple of printed locos and am still in two minds about them. On the one hand, you get the basic design of a model that Hornby, Bachmann or Rapido are never going to build. It is therefore a very useful shortcut to an unusual early loco. On the other hand, I have reservations about the durability and stability of the material. A secondary consideration is that, as for all early locos, there is a degree of interpretation (see Ian's article on the differences between the drawing and the photo) and the designer of a printed loco will have made his or her own judgements, which you will then have to live with. I would not argue with the choices that Killian has made, but, for example, they do close off options about the location of a rear weatherboard.

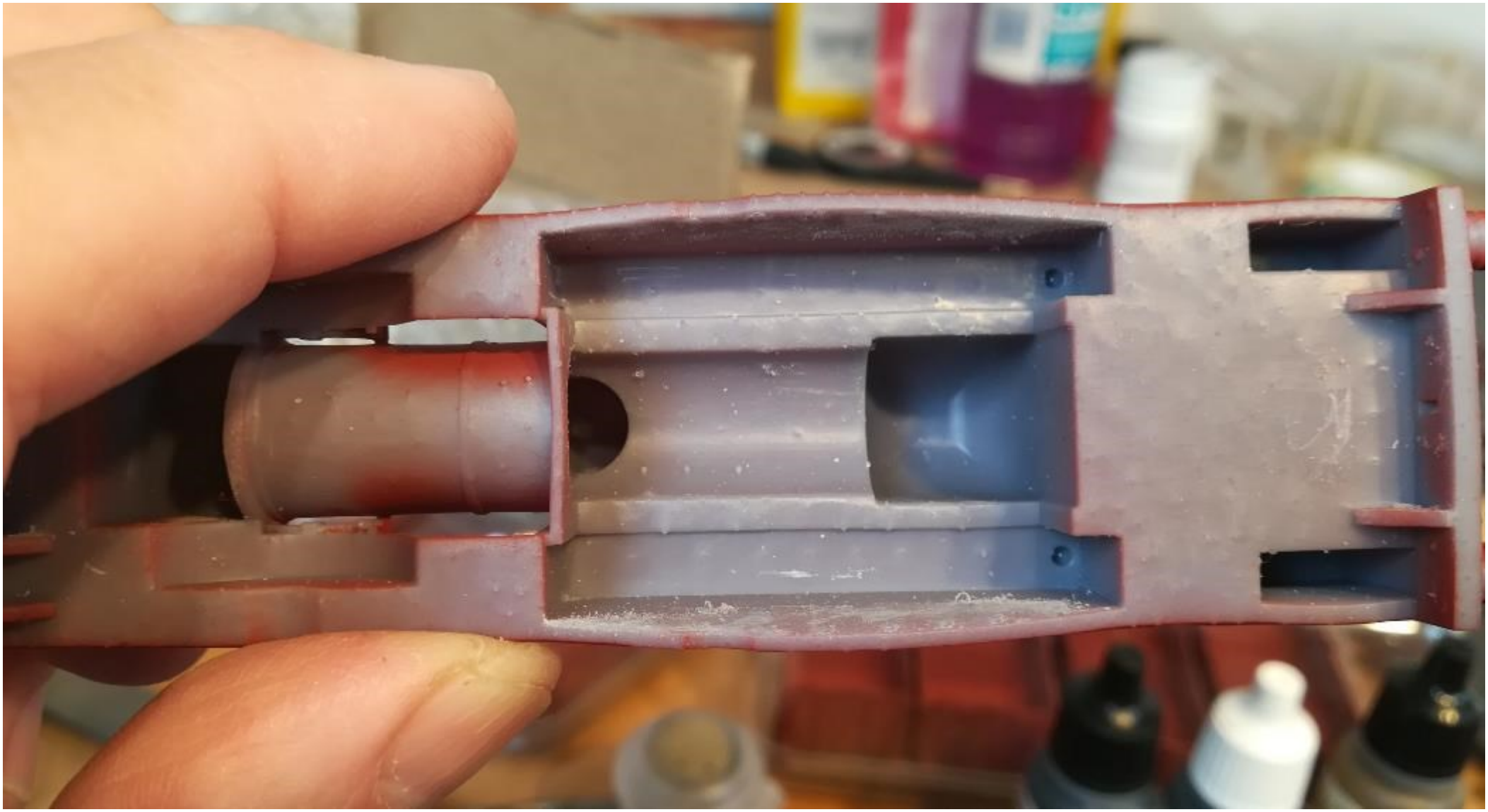
The printed frames and chimneys, after a coat of Holts red primer.

To my mind, the printed frames would be fine, if you only wanted a static model, however, instinctively I would prefer to use brass bearings (has anyone experimented to see how long printed resin lasts as a bearing material?). Since I model to EM gauge, I would also like compensation and so I am off down the slippery slope of building a brass chassis. This need not be terribly complex. By laminating together six layers of brass and then drilling through them all together, you should get a pair of coupling rods, a pair of compensating beams and a pair of frames, all with the axle holes and the pivot for the compensating beams in the same place. The coupling rods were then reamed out for the crank pins and the beams and frames were reamed out to take brass bearings. I have not widened out the holes in the frames by very much more, as the axles already rattle and only need a little vertical movement to allow for uneven track. The photo on the following page shows the frames, with the wheels and motor installed, to check for clearance inside the body.

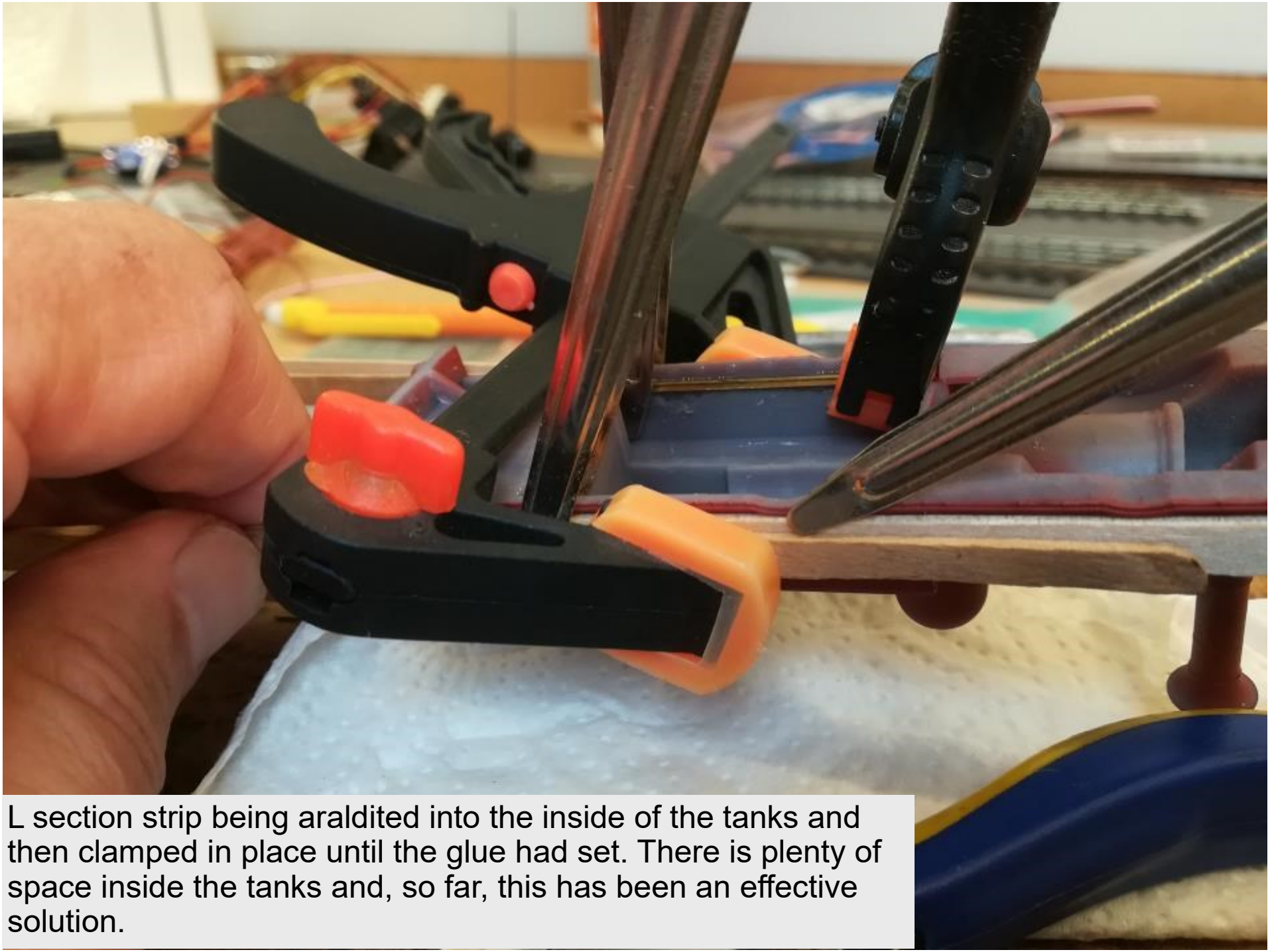


The basic chassis assembly. The rocking beams are visible inside the frames and the pivot pin can be seen, protruding through the frame, just forward of the middle wheel. The pin remains loose as long as there is any possible need to dismantle the chassis.

The red on the tyres is overspray from the primer coat; the tyres have been treated with gun blue, to take the shine off them, and then protected with masking fluid. The masking stays in place until after the last use of the airbrush.

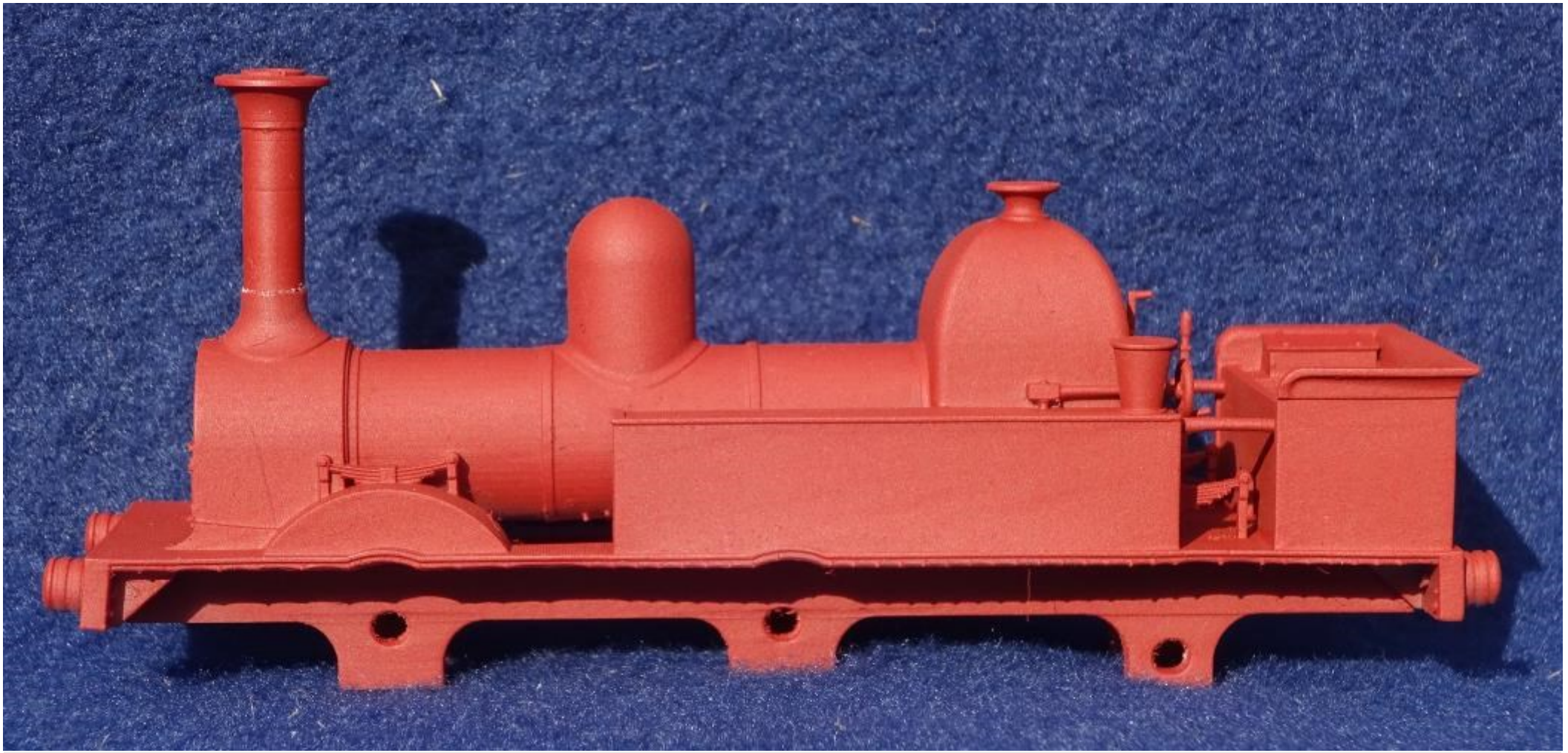


On receipt, the side tanks needed a little reinforcement to straighten out some bowing. L section strip was araldited into the inside of the tanks and clamped in place. (I should add that Killian offered to replace the body, but my relatively simple remedy, shown on the following page, solved the problem).



L section strip being araldited into the inside of the tanks and then clamped in place until the glue had set. There is plenty of space inside the tanks and, so far, this has been an effective solution.

With printed vehicles, it is always worth checking any flat surfaces that might benefit from light sanding. It is also worth adding plenty of lead to make up for the minimal weight of the print and, in this case, I was able to fit in plenty. My only apprehension is that, at some point in the future, this may cause distortion.



The 3-D printed model, including body, chassis and chimney, after a coat of red primer, to highlight any irregularities. The only bits that I missed, and that I now regret, are the pips from the printing supports along the bottom of the footplate.

The loco body, with the basic Brunswick green colour applied.

A particular point to note, is the weak section across the cab area of the loco. At this point, only the footplate connects the boiler and the bunker, leaving quite a thin section with little rigidity. Killian has deliberately left a printed bar across the cab entrance, which is there for a very good reason. Leave it there until the very last minute, as it provides some much needed bracing for the bunker section of the loco. In the course of fiddling with the chassis and body, after I had removed the bar, I noticed a crack appearing on one side of the cab area. In fact, the area remained flexible and I flooded it with superglue, which seems to have solved the problem. However, it was a reminder to treat the material with some respect!

Beyond the basic body shell, you need to sort out the Salter balances and handrails. Fitting the Salter balances, made up from Branchlines balances and scrap fret levers, is always fun, especially trying to work out how the one on the firebox was fitted. From the drawing, I have concluded that it was set diagonally, on the driver's side of the footplate (note – it appears that this loco was right hand drive, unlike the standard Brighton layout).

Ian suggested a handrail that is continuous from the smokebox, round the front of the tanks and back to the cab. I have chosen to make it in two sections, with a gap across the front of the tanks. My only rationale is that Craven locos seem to go for the simplest option wherever possible.
Ian also includes a photo that shows a rear weatherboard to the cab, which does not appear on the drawing! The printed body includes a pair of toolboxes on the bunker top, which makes the position that Ian has chosen, half way along the bunker, impossible without major surgery. I have gone for consistency with the drawing and left it out.
There is also some additional detailing on the chassis, to construct the brake gear. As Ian describes it in Digest 18, it is a somewhat idiosyncratic arrangement. A horizontal screw on the footplate pulled a vertical rod, that pushed apart the brakeshoes on the rear of the rear driving wheel and the front of the trailing wheel. These were connected by rods to the rear of the trailing wheel and the front of the rear driving wheel respectively, so that you have a sort of scissor action. From the location of the rodding, it seems to be impossible for this arrangement to be on both sides of the loco, so, fortunately, I only needed to make this up once.
Some cab footsteps needed to be fabricated and I followed the drawing, rather than the photo which suggests some sort of solid side and rear to the steps. I have therefore ended up building the loco as it was intended to leave Brighton works in 1863, rather than as it was actually in service very shortly afterwards.
Finally, a nut was glued with epoxy under the boiler to provide an anchor to secure the body and chassis together.

Photograph courtesy of Lens of Sutton Association

The only feature to note about the paintwork is the metallic finish on the dome and safety valve cover, which is from the AMMO range and very effective.

Dome and safety valve cover from another project, but illustrating the finish using AMMO paint.

And the crew in their “white” overalls.

Last of all, the designated crew are castings from Andrew Stadden, to give the maximum weight. There was a timely discussion on the Circle e-group, about early footplate crew clothing. The suggestion is that it was normal to wear overalls of white fustian, as the cheapest, most suitable material, before company supplied uniforms became common. I have interpreted “white” as it might have been after treatment with coal dust and oil, then soaked in a bucket of cold water with washing soda - so an uneven pale grey colour.

Like many short cuts, there is rather more work in this one than you might hope. You certainly get a complete loco body and printed chassis, which could form the basis for a perfectly good model, but you would still need to make up the coupling rods. There is also a fair bit of additional body detail to add. And whatever you do, do NOT remove that little bar across the cab entrance until the last possible moment!

...and for those who like their locos to look a little less “ex works”.

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Building and Weathering Diagram 47/222 Stroudley Full Brake No 1 in 7mm scale.

John Shaw

Introduction

I have long believed that carriage building is one of the highest skills in railway modelling. I have tried several times previously, and have always wondered whether there were better ways that I could have completed items on the vehicles I had made. This project was a triple opportunity to extend my skills, with a brass kit (Roxey Mouldings 7C64), neither wood, nor plastic, both of which I have tried before, and a new railway company, the 'Brighton', for which I had never built any rolling stock. New rules to learn too, about how they put their rolling stock together, embodying the ways of Stroudley carriage building. Furthermore, this venture is not meant to be of a vehicle in its prime, 'straight-out-of-the-works' state, but one after the wear and tear of years of work. It will be suitably weathered and look a bit more careworn than most of those official photographs where they have just come out of the paint shop, the varnishing just having been applied. We shall see what weathering does to emulate the subsequent decay.

Preparatory stages, but vital ones.

Study the photographs, imbibe the instructions, plus their illustrations, match them with the parts in the box, lay them out and try some trial fittings! There needs to be no rush here, at all.

The initial decision was not to use the beautifully rolled metal roof, as this was not prototypical – a wooden one would have to be made (see later).

As a Westinghouse braked vehicle, there is only the centrally located brake cylinder, with the rodding to actuate the eight clasp brake blocks.

The neatly drawn sketch for the vehicle did not show the small hand rail on the outer end of the ducket out fold; that came from photographic evidence although I am not yet fully convinced that these were universally fitted. (1).

The long handrail on the outer edge of the ducket nearest the guard's door had to be deduced from the Diag 34/Diag 45 sketch(2) – conveniently illustrated in the adjacent poster.

Check the fret, to ensure you use the correct length footboards in the appropriate locations.

Rolling the turnunder for the sides and forming the ducket side panels, and bending the non-right angle bends for the tops of the sides was going to take some patience too, especially the duckets.

Of the other tasks needed, the most critical was forming the right-angled bends wherever required, but especially for the W-irons, floor, sides and buffer beam ends. Get those incorrect and a square chassis, with its wheels in place, would not stand evenly on my test glass sheet.

Building begins – the Chassis

With all these aspects noted, the soldering iron, solder and flux made their first appearances on 25th April 2023, and, by 4th May, instructions C1-C8 had been completed. A free-standing, rolling chassis existed, which stood very nicely on the test glass, possessing four very free-running wheels. The brake rigging had been a fiddle but, there again, it always seems to be like that for me.

Ask not about the buffers! I eventually used the white metal stocks supplied, as the brass ones I ordered from Roxey Mouldings, which I thought would look better, were so resistant to drilling that even new bits were succumbing very quickly! Even the white metal ones were fairly resistant. I am not a fan of the buffer springing method advocated in C10, therefore, the buffer heads remain unsprung in their fitted form.

As these brake vans were generally oil lit, no extra underframe detailing was required, but there was a gap in the centre of the chassis/base of the body, which had to be filled in. As C12 required, short footboards were fitted, the screw couplings were made up and safety chains began to appear later; they were a fiddle!

Essentially, the running chassis was finished. It sat evenly upon the rails and rode smoothly. There wasn’t even too much stray solder - an achievement - whilst the joints I had created all looked fit for purpose.

Body

Body construction next. There could be several pitfalls for the unwary, particularly the duckets. Although the main body comprised a timber frame with timber panels with joints covered by mouldings, the sides of the duckets were, unusually, formed using zinc sheeting (galvanised iron). Furthermore, photographic evidence shows that a gentle ripple was liable to form on these side panels.

Although many companies built brake vans with duckets and/or end windows, not many had such a comprehensive view as those on the Brighton. The Highland Railway van of 1870, that survives at the Scottish Railway Preservation Society, not surprisingly, has many features in common with designs on the LBSCR.

On what other major railway company could the guard gain such a panoramic view of the rails and landscape he had just traversed (or the coal in the tender of the loco, in the case of the front guard)? Meanwhile, the view along the train, perhaps the more important, was restricted to the two narrow ducket slits or required the guard to perform the dangerous act of putting his head out of one of the lowered door windows; not a birdcage end in sight! This design gem even survived into the Billinton era, with at least one 1901 seven coach-bogie set coming into service, with this style in full operation; it also suited the bogie carriage design (3).

The reverse curves which form the lower part of the ducket were created very gently and carefully and, as work progressed, matched to the van end. I used a couple of different sized brass pipes to cajole the sides into the correct shapes, without creasing the metal. Getting the uppermost part to match both the end profile and the sides, folded in profile, was a longish task. Instruction B12 suggested you solder the end overlay in place before starting this shaping work, but I thought this too risky a move, should it prove troublesome. Once shaping had occurred, I completed all the folding up work, but did not start soldering until I thought it all looked correct.

Instruction B13 required the production of two L-shapes, using one side and end each, and then combining the two sections; even the ducket ends and the roof end matched up and all was soldered up. Grab handles, hinges and door handle fittings followed. Inspect the drawings carefully to see their locations, especially the ducket inner and roof handle at the windows' end. N. B. One handle is missing from the instruction diagrams; this is the small one on the outer, lower edge of the ducket side sheeting. It was only meant as a single handhold so the guard could get an initial step up from ground level in trying to reach the door handle to gain entry to his workplace. You will need to drill two very small holes into the ducket metal side sheeting to fit the ends of this horizontal brass object into place. Small, it might be, but visually it makes a deal of difference. Fitting the lamp irons and making, painting and lettering the LV (last vehicle) plate(4) also makes a difference at the window end. Fitting this gave a nice touch of in-service reality to the van, as did the fitting of the Westinghouse brake pipes, plus the fabrication and fitting of one pair of the safety chains, made from copper links.

Since you can see much of the van interior through the four large windows, you have to consider the interior details before the roof was fitted. The list of fittings includes the Westinghouse brake pressure gauge, a hand-brake stem and wheel, ducket seats for the guard, (surely, he had a work table somewhere?), a floor, suitably painted some murky, worn grey, and door window panes, opened/closed at various levels, along with their attendant leather straps of the appropriate lengths. One of the kit's drawings shows the hand brake wheel arrangements, with a design seemingly inherited from Craven's days(5). In terms of quick operation, this was a very good system because you spin the wheel for quick action.

Fitting the end windows was somewhat time consuming, as the upper edges had to conform to the brass outer end, which needed some very careful cutting and filing of the good quality, clear packing plastic I used for the panes. As necessary the interior details were then painted or varnished.

The right hand roof cornice end has now been re-profiled to the correct shape.

Roof

And so to the last major item, the roof. The rolled brass roof plate supplied was redundant as the prototype had a wooden roof covered with what the photographs appear to show as a single sheet of canvas, stretched, then nailed at the outer edge down folds, which were then covered by wooden battens; therefore, how to build one?

I searched my supply of marquetry sheets for one that had a long, straight, close grain pattern, with sufficient area to cover the roof and the overlaps with ease. I didn't expect it to roll into shape without treatment, as cracking would result, therefore, the sheet was soaked in hot water for an hour before being bound to the outside of an empty wine bottle, and then returned to the hot water for the night. Taken out next morning, it was allowed to dry naturally in its bindings, before being removed when thoroughly dry. Then I drew the tongued and grooved boarding pattern onto both sides of the wood and finessed the final shape before gluing it into position. The canvas sheeting was cut from photo-copier paper and glued down onto the roof, which then allowed the whole roof assembly to be attached to the body. The side edgings were fashioned from machine cut wood, whilst the curved cross pieces were derived by hand cutting the marquetry sheeting, which were brought into final curved shape by riffles, files and fine emery papers, and then glued into place and then slightly distressed/aged.

Once all this had been achieved, the roof was painted with acrylic white to replicate the canvas effect, which it does very well.

The very distinctive, roof-top mounted oil lamp, plus its adjacent filler plug, were next in line for fitting, along with its safety chain made from silver belcher chain.

Painting, lining out, varnishing & weathering

I purchased a set of three ‘Dapol’ Brighton coaches, not only to run them, but also to see how they had dealt with Brighton’s long-term mahogany livery. I also had two photographs of the Bluebell Railway’s beautifully restored 1st class coach No 661 (6), the main body colour of which bore little resemblance to the ‘Dapol’ product! I am not getting into any discussions about this difference; suffice to record that I followed the livery as given on p.43 of Southern Style 2 (1). A long train of these four-wheelers, fresh out of the paint shop, hauled by some locomotive in full Stroudley livery, could only prove exceedingly attractive to the eye.

By careful matching of the colour swatches in Southern Style 2 with various adjacent paint samples, Humbrol No-73 was selected. One of the photographs shows the basic matt paint, the other shows it fully lined out and age varnished; the difference is both illuminating and astonishing.

Lining out was produced using HMRS water-slide ‘Pressfix’ transfers, whilst the armorial device was hand painted onto a shaped paper and then varnished.

Dapol on the left.

Roxey Mouldings, built by John Shaw, on the right.

Now to the weathering process - a real step into the unknown. I purchased four shades of ‘AMMO MIG’ pigments, three of which were related colours for melanging and one of light rust, and started applying these to the lined side, the roof and the two ends. I started with the roof, using very finely ground coal dust, mixed with white spirit as the thinner/carrier, followed, when dry, with a light covering of ‘Syrian Ground’ and ‘Golan Ground’, to represent dried, soiled chalk dust mixed with the ‘solid’ parts of the dense smoke-laden atmospheric pollution of the metropolis ‘south of the river’. This it seems to do well.

Additionally, these processes also bring results of ongoing ageing with the crinkling of the roof canvas, the result being the undulations produced by the roof boarding beneath. Gentle rubbing downs of the initial pigment applications have begun, but not yet fully on the windows end. Early results seem promising and the end result will be at the 2024 Patcham meeting for discussion.

Soon the model will now be stored away for quite sometime to allow the paint/varnish/pigment weathering to go very hard before starting on the other side.

And a possible locomotive to pull this van and its train?

Imberhorne - see LB&SCR Modellers' Digest Issue 18

Would this one pass muster?

References:

1) Roxey Mouldings Kit Instructions p. 7 and Historical Model Railway Society Southern Style Part 2, P. J. Wisdom 2016 HMRS Ripley Derbys. ISBN 978-0-902835-32-0 p.43

2) Roxey Mouldings Kit Instructions p. 8.

3) Internet research, Highland Railway Carriages.

https://www.alamy.com/lbscr-suburban-train-howden-boys-book-of-locomotives-1907-image395675638.html

4) Railway Carriage Album G.M. Kichenside Ian Allan London 1966 pages 178 & 180.

5) Ibid Kichenside pages 178 and 180.

6) P.J. Wisdom op. cit. p. 45 (also used as the final page of this Digest).

7) Roxey Mouldings instructions p. 8 & The Journal of the Brighton Circle Summer 2023 Vol 49 No 2 pp. 54-55.

8) HMRS Southern Style Part 2 and the Bluebell Railway website.

Further information regarding LBSCR carriages can be found in the quartet of books by Ian White and others," LB&SCR Carriages", in particular Volume 2 (Kestrel Books ISBN 978-1-905505-36-4) which covers the brake vans, and includes details of the restoration of Stroudley coaches at the Bluebell.

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Might Have Been No 4 - the E6 Special

Mike Cruttenden

Eagle-eyed readers may have spotted that the last issue included a picture that showed an unpainted Billinton radial tank, in the background of the Stroudley/Billinton Atlantic. It would be a shame to make the story too simple! It was, of course, R J Billinton's 0-8-0T version of the E6 0-6-2T of 1904. This is the only locomotive in the series for which we have a general arrangement drawing but no separate weight diagram. Parts had already been completed (including the coupling rods) before the order was cancelled by the incoming Locomotive Superintendent, D E Marsh, acting on the advice of the Chief Engineer. Both proposed engines were completed as standard E6 class 0-6-2Ts, Nos. 417/8.

Coming shortly - R J Billinton's proposed H class inside cylinder Atlantic.

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Might Have Been No 4 - the E6 Special

Colin Paul

As Mike has mentioned above, the last two locomotives in the LB&SCR E6 0-6-2T range, numbers 417/8, were going to be constructed as 0-8-0T shunters, with specially milled, heavy, fluted coupling rods. They would have been utilised at Willow Walk and Brighton Lower Yard. Having a GA drawing of the design, which Mike has kindly provided, (Fig 1), the wheel arrangement would have been exactly the same as for a standard E6, with 4' 6" 14 spoke diameter driving wheels, with a wheelbase of 7' 9"+ 7' 6"+ 6' 3", but substituting the rear 4' radial truck wheels with 4' 6" 14 spoke drivers. Above the footplate, the locomotive appears to be unchanged. Although the coupling rods were made, the order was dropped. They were not scrapped though, because one set, at least, was fitted to No. 418, (not sure about the other set) though sadly neither was ever completed as a 0-8-0T.

This is the fourth locomotive in Mike Cruttenden's series of 7mm f/s 'O' Gauge 'might have beens', that I have constructed. This one was relatively simple, being constructed from an Albion Models LB&SCR E6 kit; the previous three (The Marsh K2 2-6-2T, and Billinton 4-4-2 and 4-6-0) were all scratch built.

To get my head around the rear driving wheel arrangement, a scaled drawing was prepared as shown in Fig 2 (1). I removed the existing rear wheel and drew in a larger 4' 6" one. Also added was a 3' 9" leaf spring, matching the others on the drawing. Lastly, I drew in a `compensation beam` (shown in red) which would compensate the four front drivers, leaving the third one 'fixed' i.e. from the motor driven axle, and the rear driver 'sprung'. This arrangement on my LB&SCR E1 Class 0-6-0T and E1X 0-6-0T works fine, so it was copied on this locomotive.

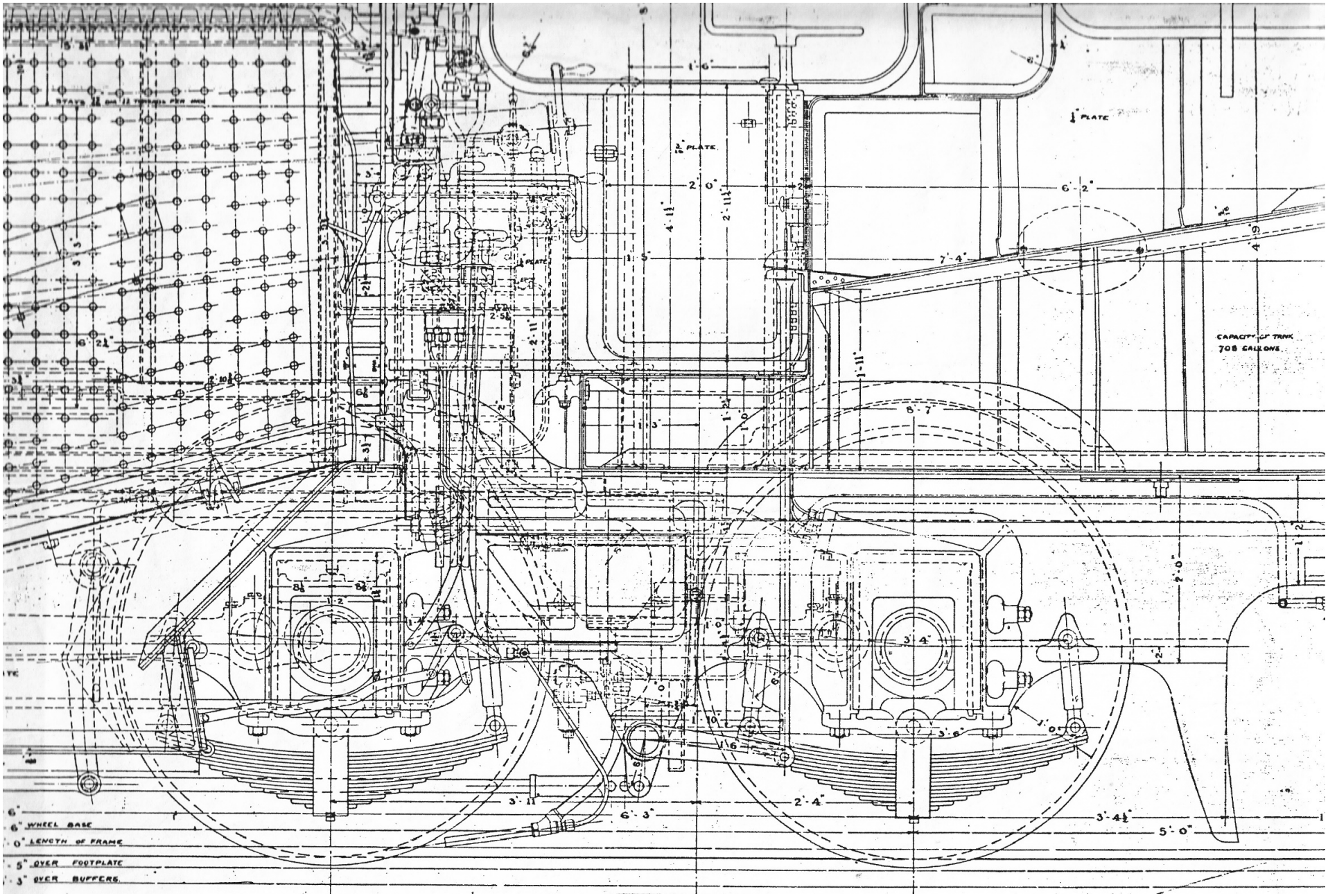


Fig 1, The General Arrangement

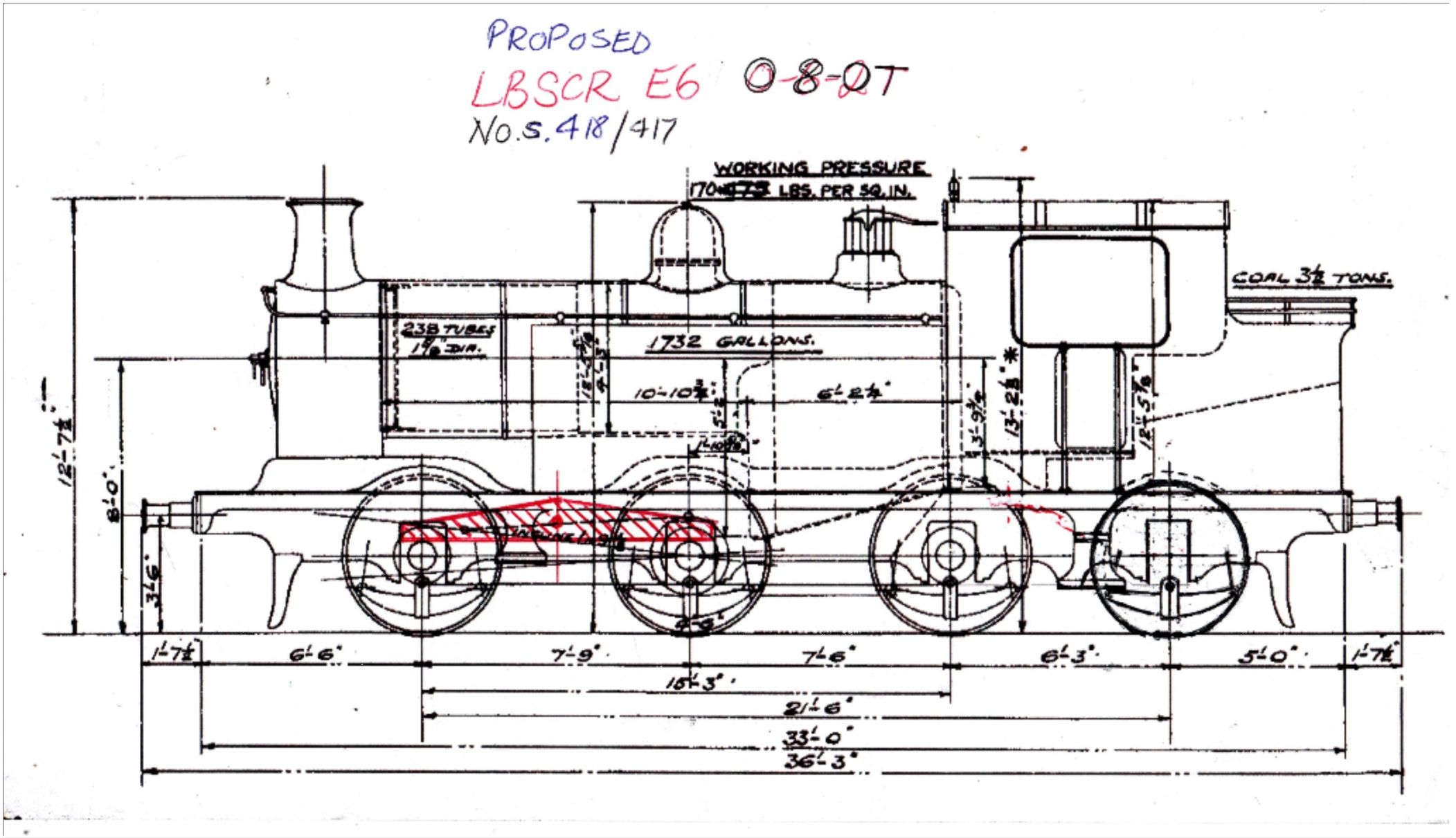


Fig 2

A Pictorial Record of Southern Locomotives by J.H.RUSSELL OPC ISBN 0-86093-443-8. Brighton Drawing No.B47 Page 108.

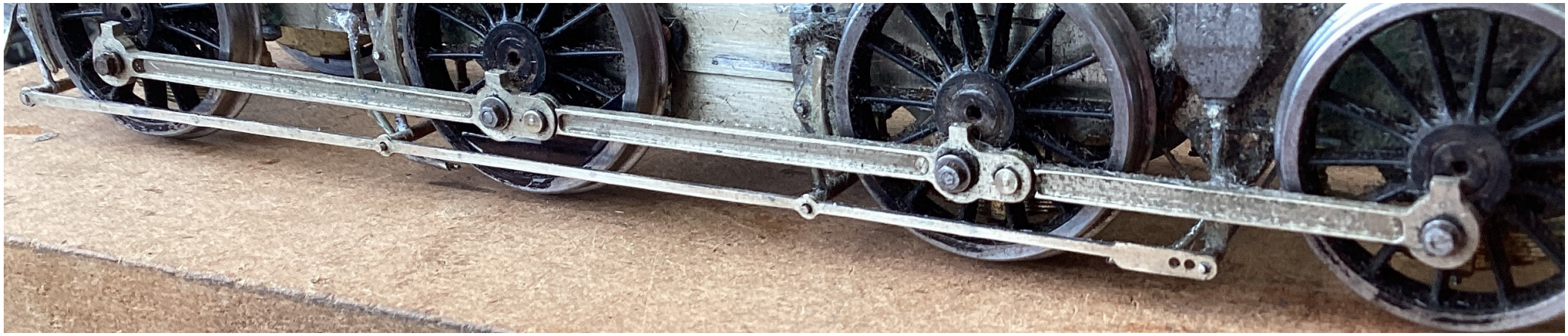
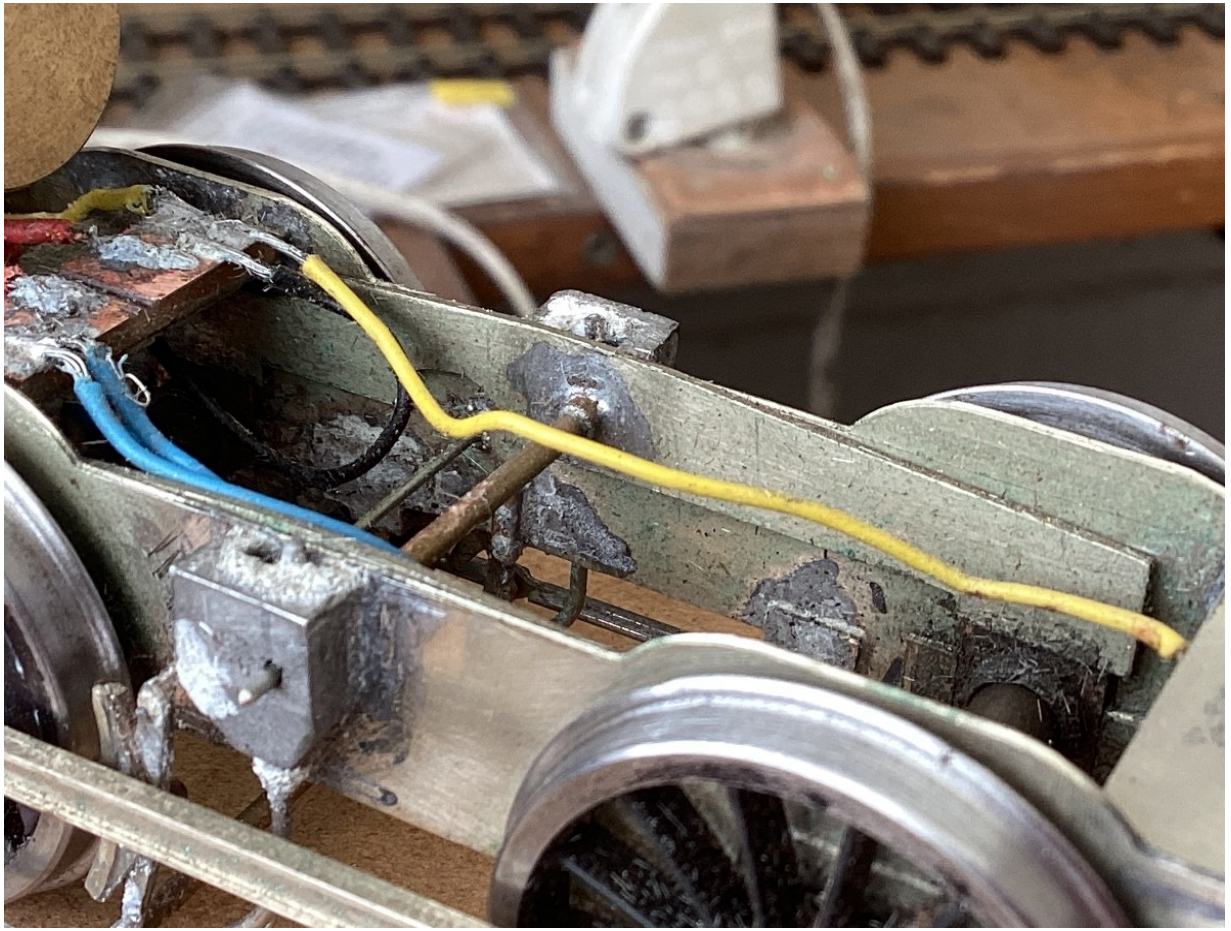


Photo 1

Mike included as part of the kit, a set of four pairs of driving wheels and axles, plus a second hand Mashima 1833 motor with a folded 40:1 gearbox mounted on to it.

The first items of concern were going to be the coupling rods. Firstly, there were no commercial ones available, and secondly, they would have to be `fluted`, and lastly `articulated`. Approaching (the late) Dave Brooks again of JPL Models in Manchester (who milled the rods for the K2) was once again approached. He agreed but had to make a bespoke pattern and mill them again using 1.6mm n/s (nickel silver) bar. At £50 the pair, it was money well spent. On inspection, they were beautifully made.

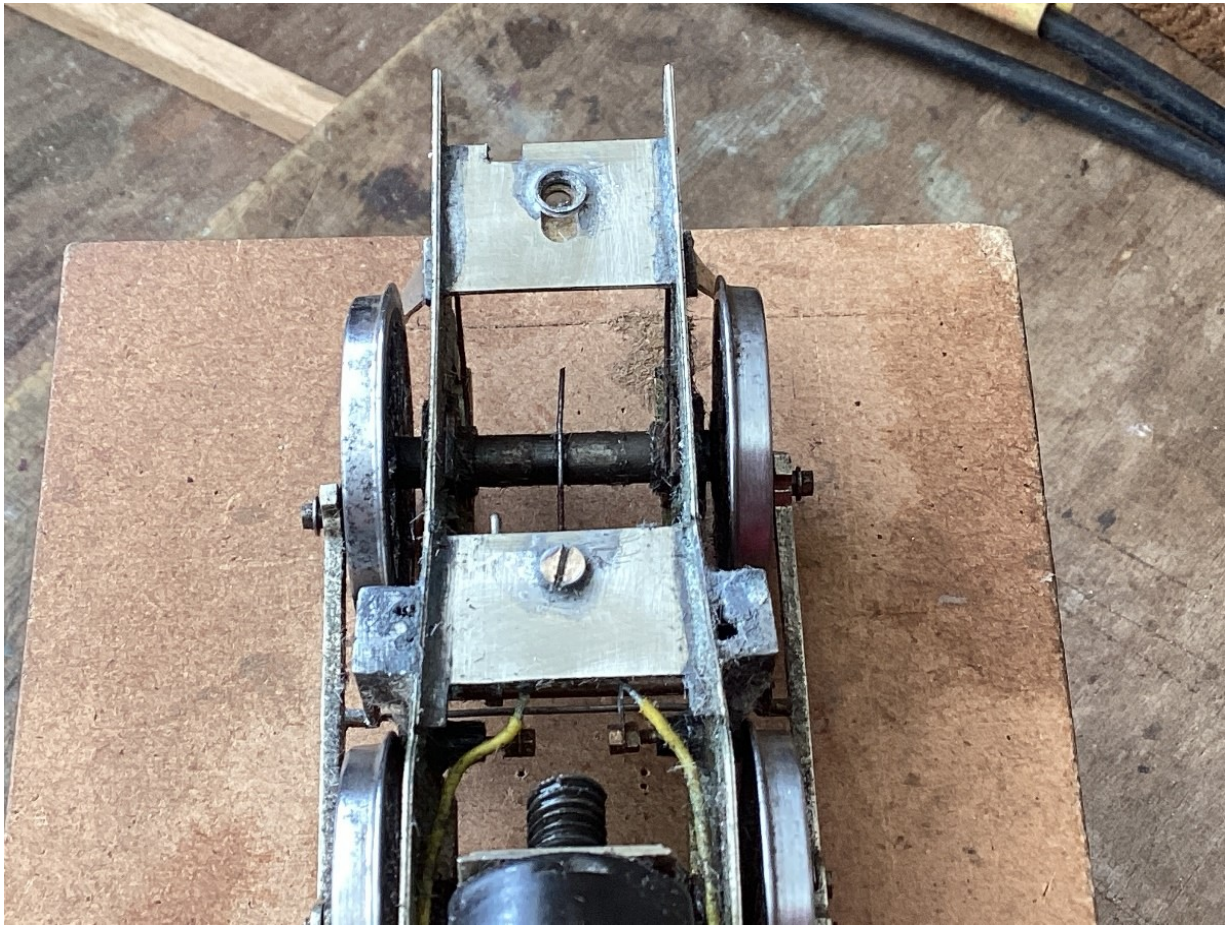
Photo 2



After the hornblock slots were cut out to accept the Slaters hornblocks, the frame was soldered together using the f/s (fine scale) frame spacers supplied. The compensation beams (as noted in red on the drawing Fig 2), were cut out in pairs from scrap n/s sheet, which rest on top of the four hornblocks. The horn guides are simple scraps of 2mm wide n/s soldered onto the inner face of the sides. With the third, fixed driving axle in place, the frame was levelled by filing off small amounts of the compensation beams.

The pivot beams are 1/16th brass tubing which are secured in place by a 0.8mm n/s pin. The pin can be seen sticking out of the sandbox.

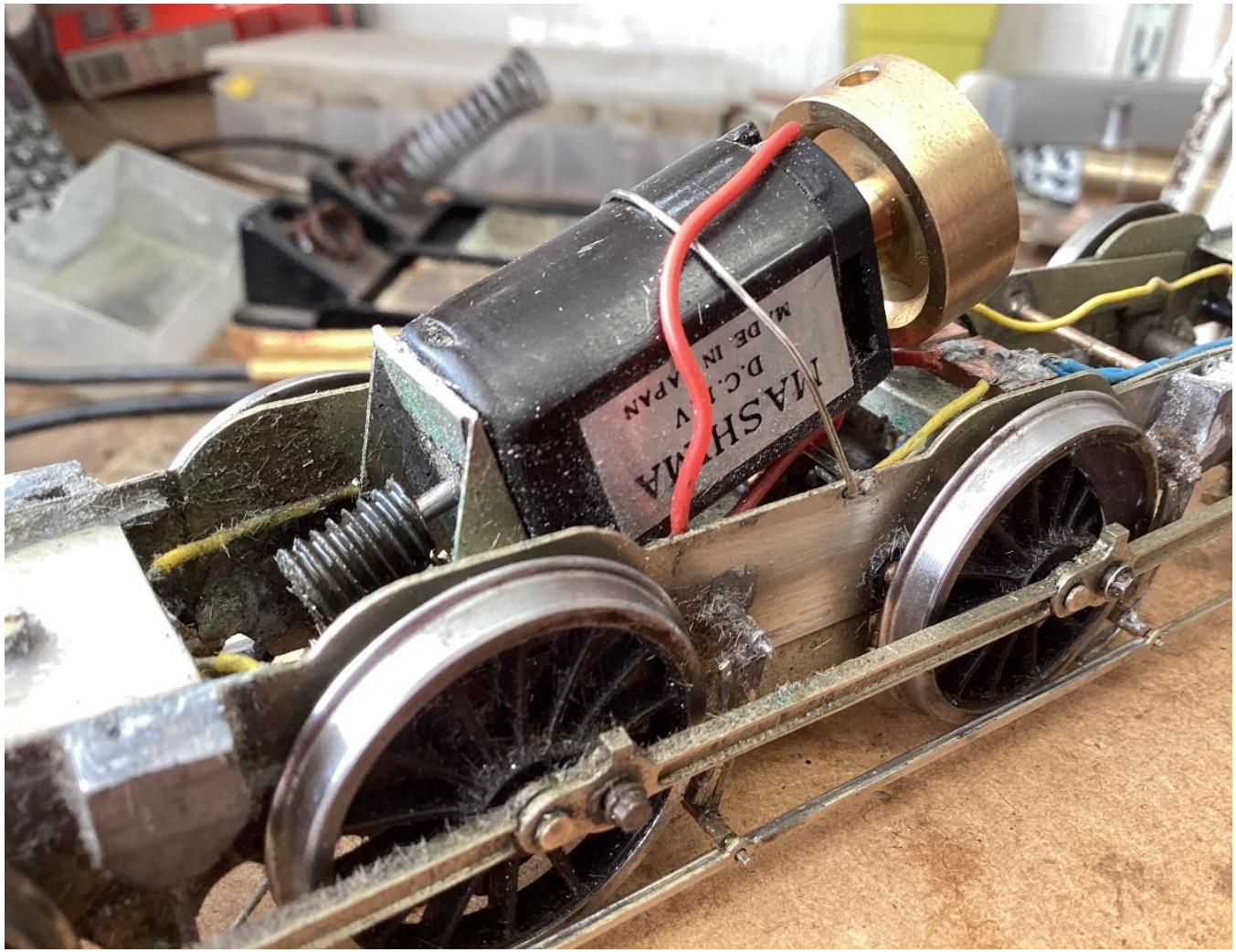
Photo 3



Before the motor and pick-ups (Slaters Plunger type) were fitted, the chassis was push tested on Mike's garden railway. We found out straight away that there wasn't enough side-play movement of the rear driving axle. To cure the problem, the two rear most frame spacers were removed and the frames were tapered inwards slightly as shown. When happy, the original frame spacers were filed down and re-soldered in place. The frame may appear wonky in the photo due to the axle being slightly to the left, but it is perfectly symmetrical.

Also note a 'springy wire' pressing down on the rear axle, which is more than adequate for keeping the wheels on the track.

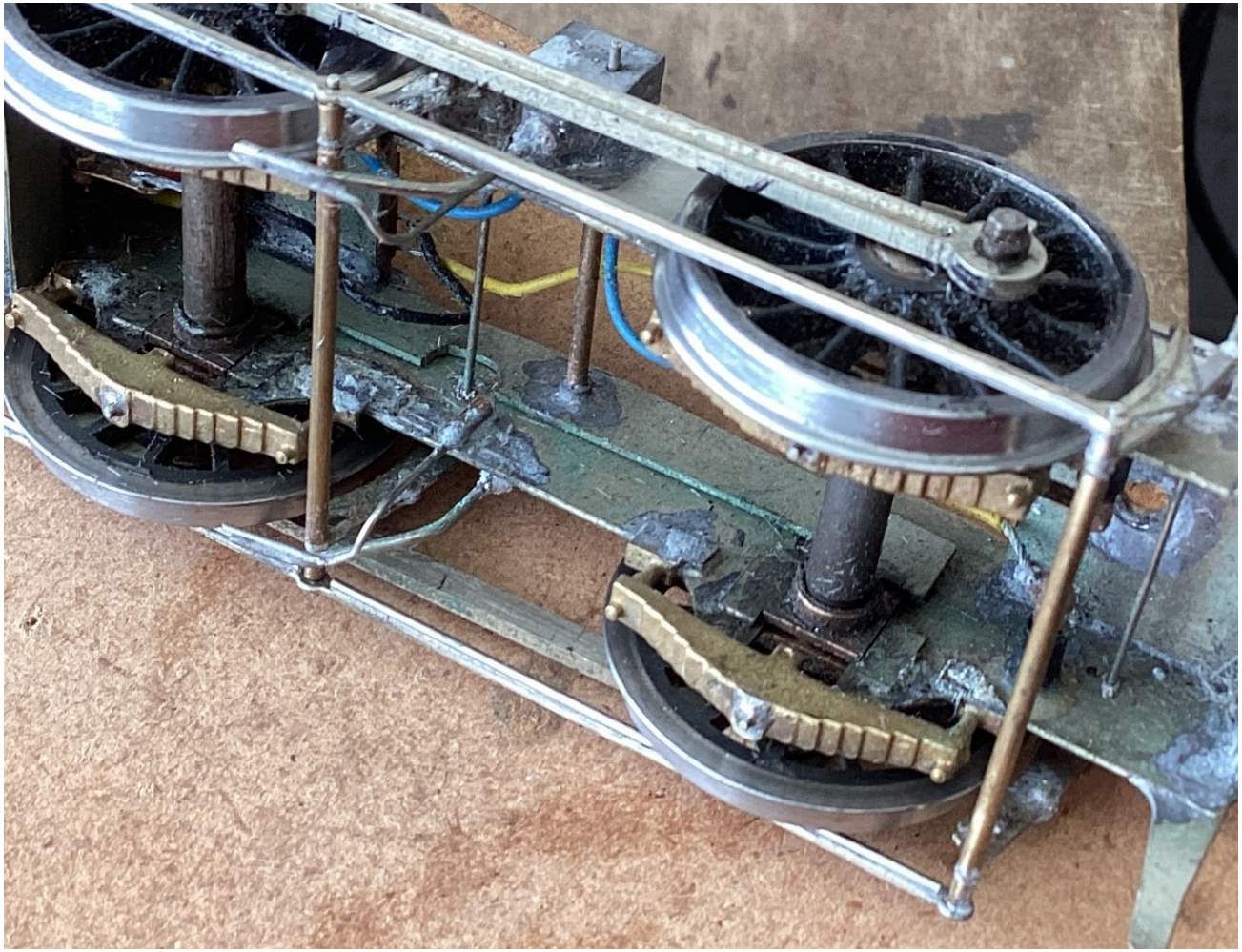
Photo 4



The Mashima 1833 motor with its 40:1 gearbox already fitted. I had to replace the original bearings in the gearbox because of slight slop. A thin 0.7mm n/s strap was then bent round it to keep the kick-back to a minimum.

An MSC Models chunky 22mm x 8mm flywheel was purchased. With the motor pointing forwards, it didn’t require turning into a conical shape because there was more than enough clearance within the boiler.

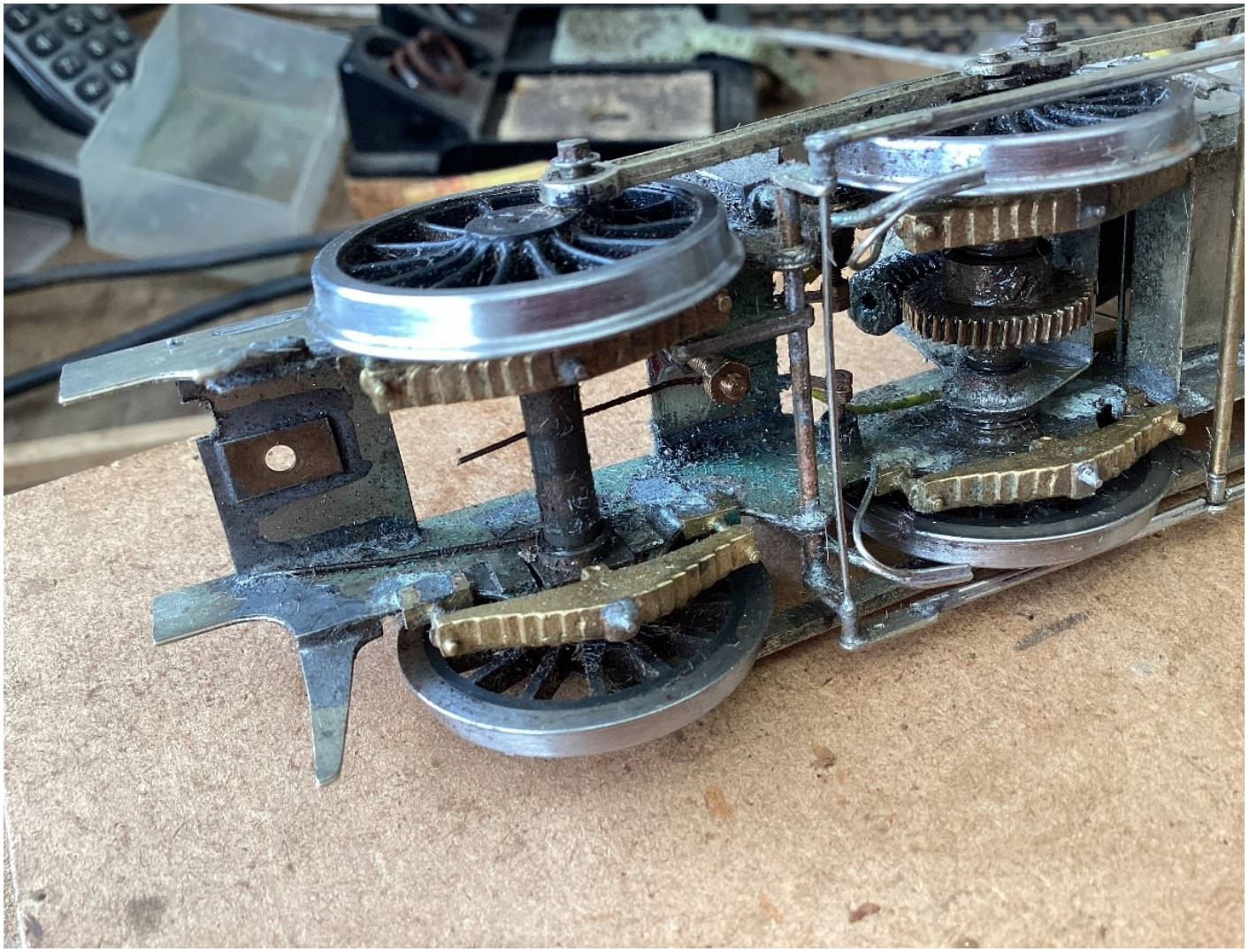
Photo 5



To keep the hornblocks from sliding out, Laurie Griffin L&SWR leafspring keeper plate castings (Ref:27-042) that match the radii of the LB&SCR ones were purchased and fitted instead of the supplied white metal (w/m) ones in the kit. If in future the hornblocks require renewal, they can be simply removed by unsoldering the castings.

This front-end view shows the left hand side compensation beam. Note the cut-out notch. This is to clear the 2nd driver brake hanger pivot rodding.

Photo 6



The other rear end showing the gearbox and narrow 40:1 gearwheel on the fixed driving axle. Although the keeper plate leafspring casting is permanently soldered in place, it can be removed if required. The rear driver has the removal keeper plates fitted. Note the springy wire shown in Photo 3. Also shown (just) are the sand pipes on the third driver, which took ages to bend and fit successfully.

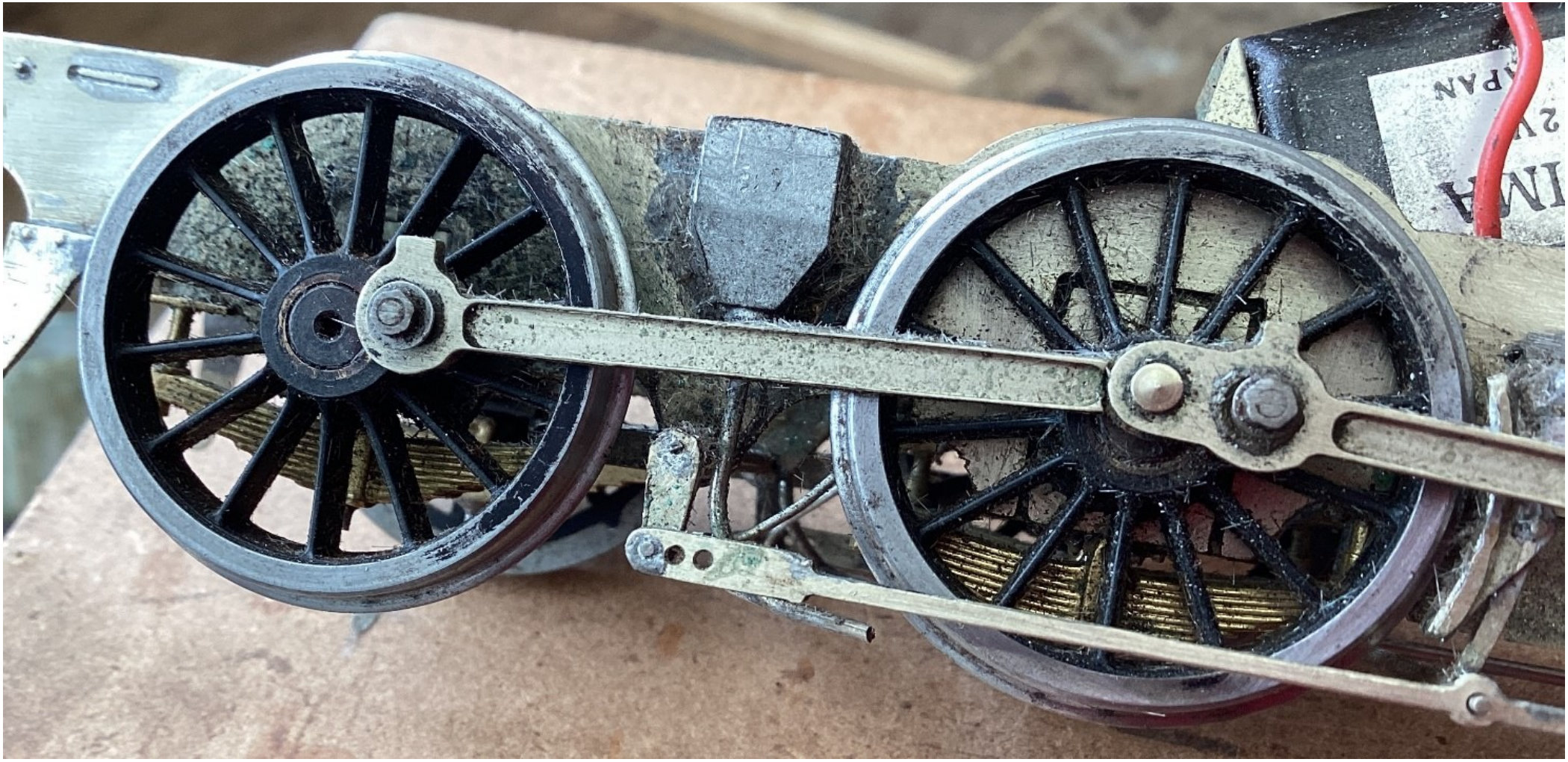


Photo 7

A cruel close-up, showing the lost wax keeper plate leafspring castings. Note the white metal cast sandbox, sanding gear and support bracket.

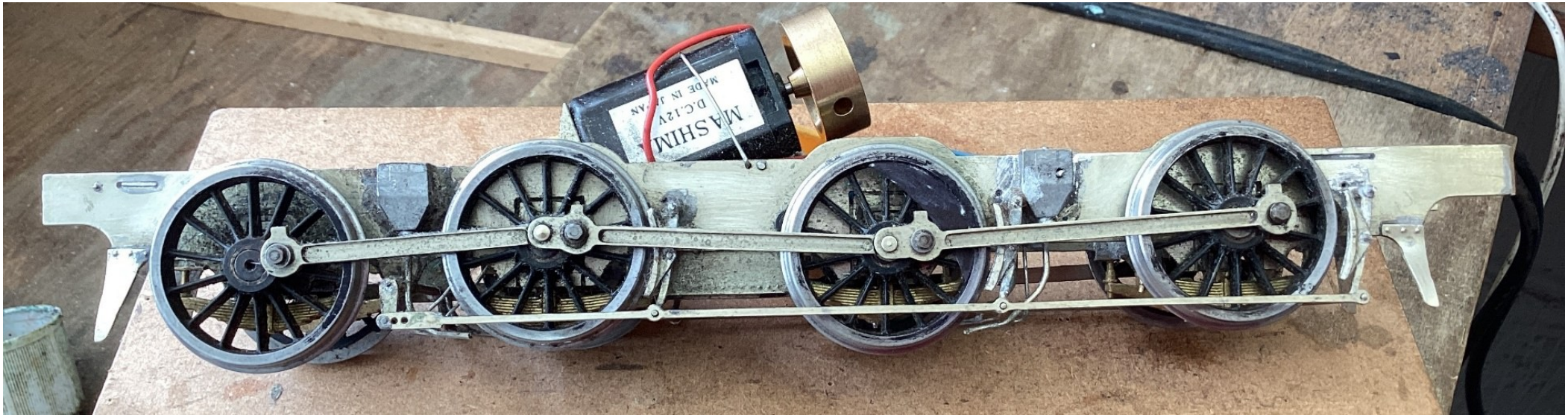


Photo 8

A view showing the articulated coupling rods in their maximum ‘up’ and ‘down’ travel of movement of 3mm (1.5mm up and 1.5mm down from the centre line). As mentioned in Photo 6, the 3rd, driven motor axle is fixed. For clearance purposes, the space between the tread of the wheels and brake shoes had to increase slightly by an extra 0.5mm which is hardly noticeable.

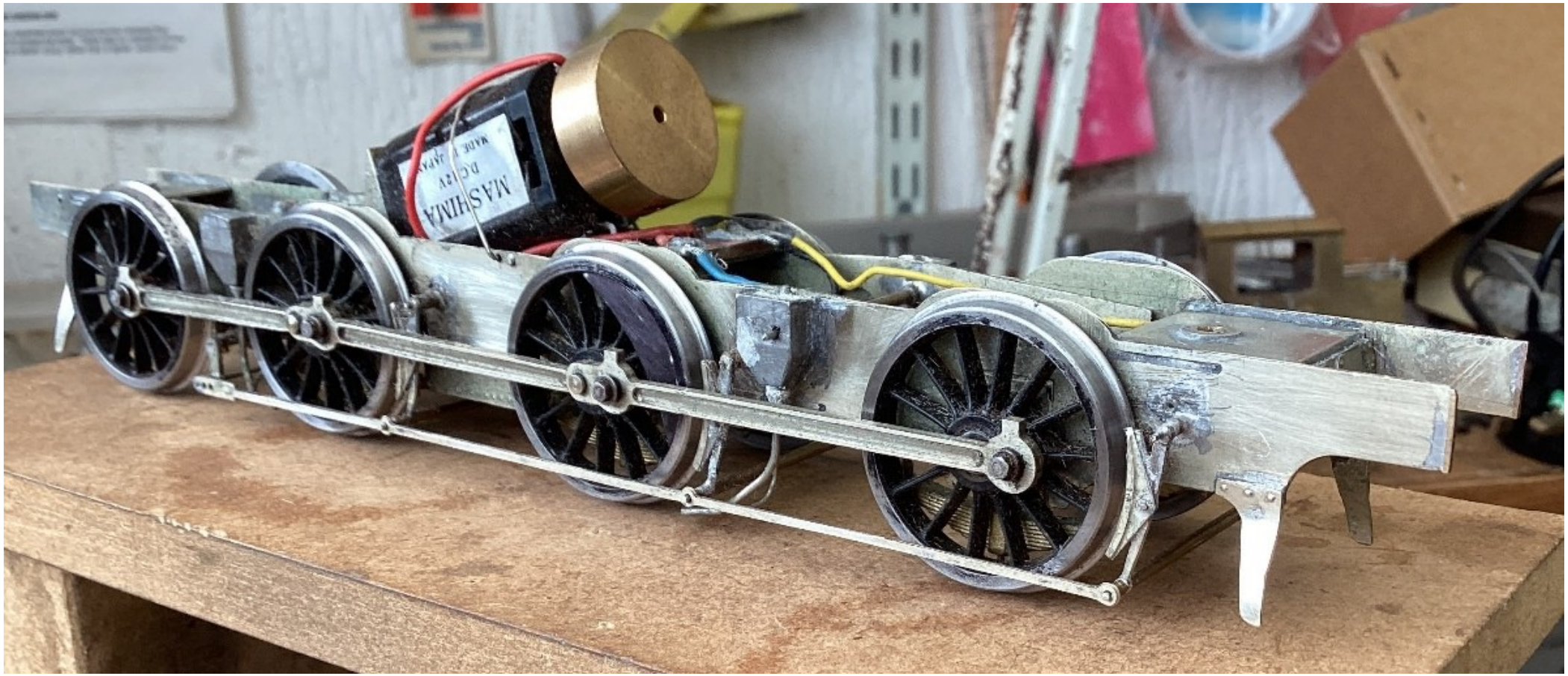
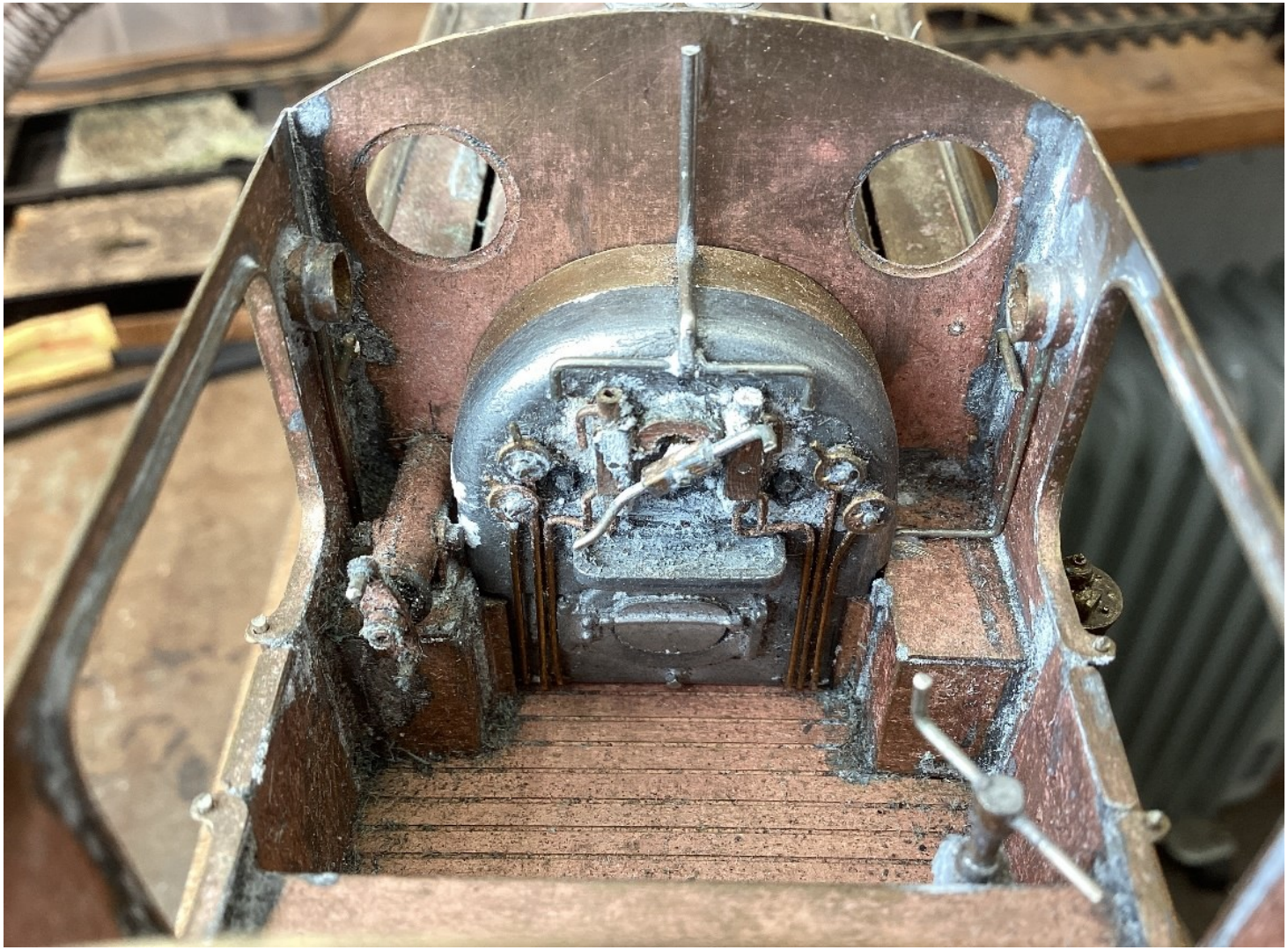


Photo 9

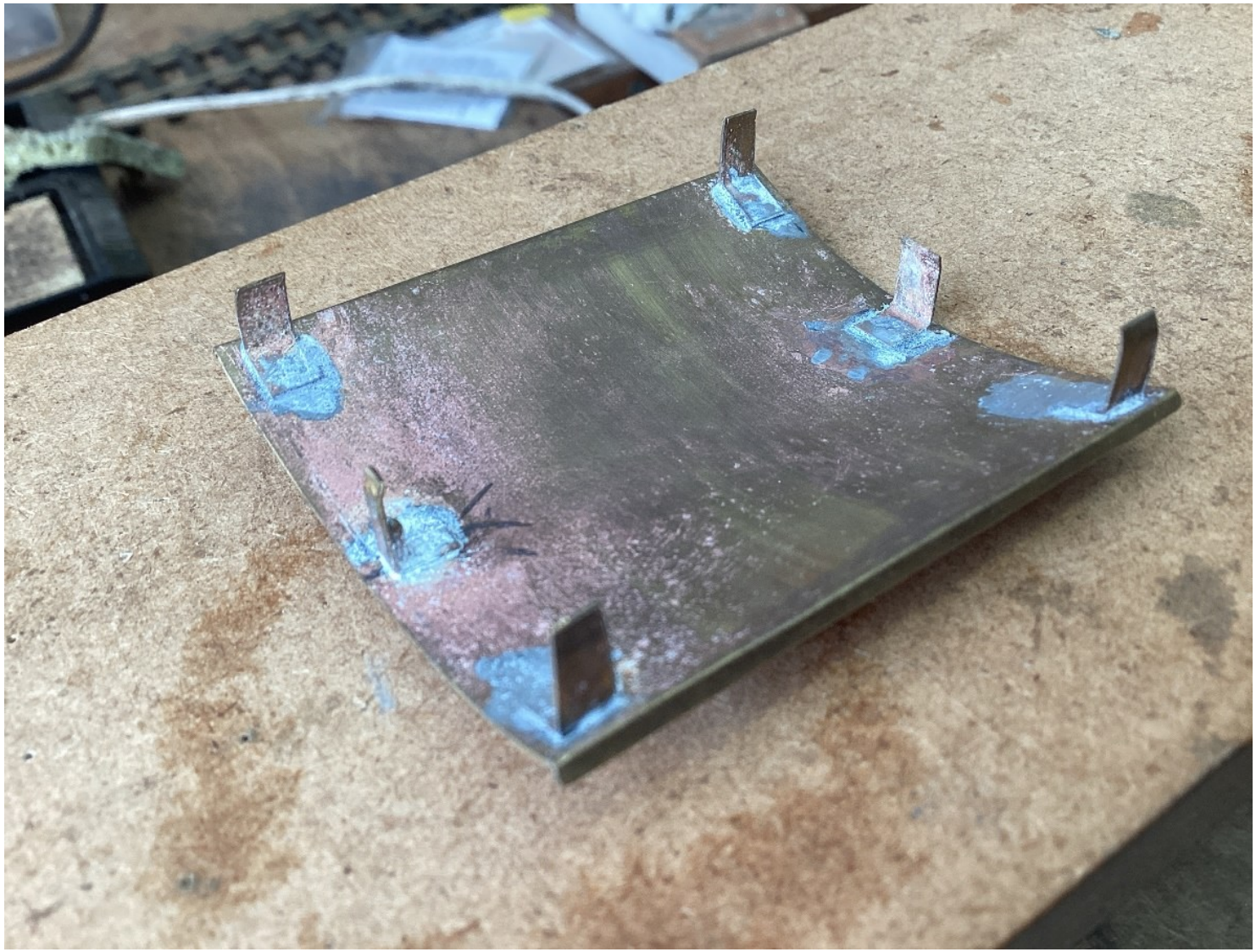
The completed chassis looking from the front. Having never constructed an 0-8-0 before, it ran very smoothly from the outset, with very minor tweaking of the front hornslots. I didn't even have to open out the crank pin holes. It's a great shame the Mashima motors are no longer available.

Photo 10



The interior of the cab was built up using the GA as a guide. Everything barring the cast white metal backhead is scratch built. The two rectangular splasher cover boxes were made first and fitted. The backhead was increased in depth slightly (as noted by the brass strip) due to the motor's gearbox slightly fouling the back of it. I designed it as a slot in unit for ease of painting. Not having a drawing of an E6 backhead, I have guesstimated everything on it, with knobs levers and pipework etc. The two pressure gauges (high up on the sides) were made from brass tubing with 0.6mm n/s rod pipework. The reverser, which is mounted on the left hand splasher top, is made from brass tubing. The handle can rotate as does the hand brake handle (right foreground) in front of the shelf.

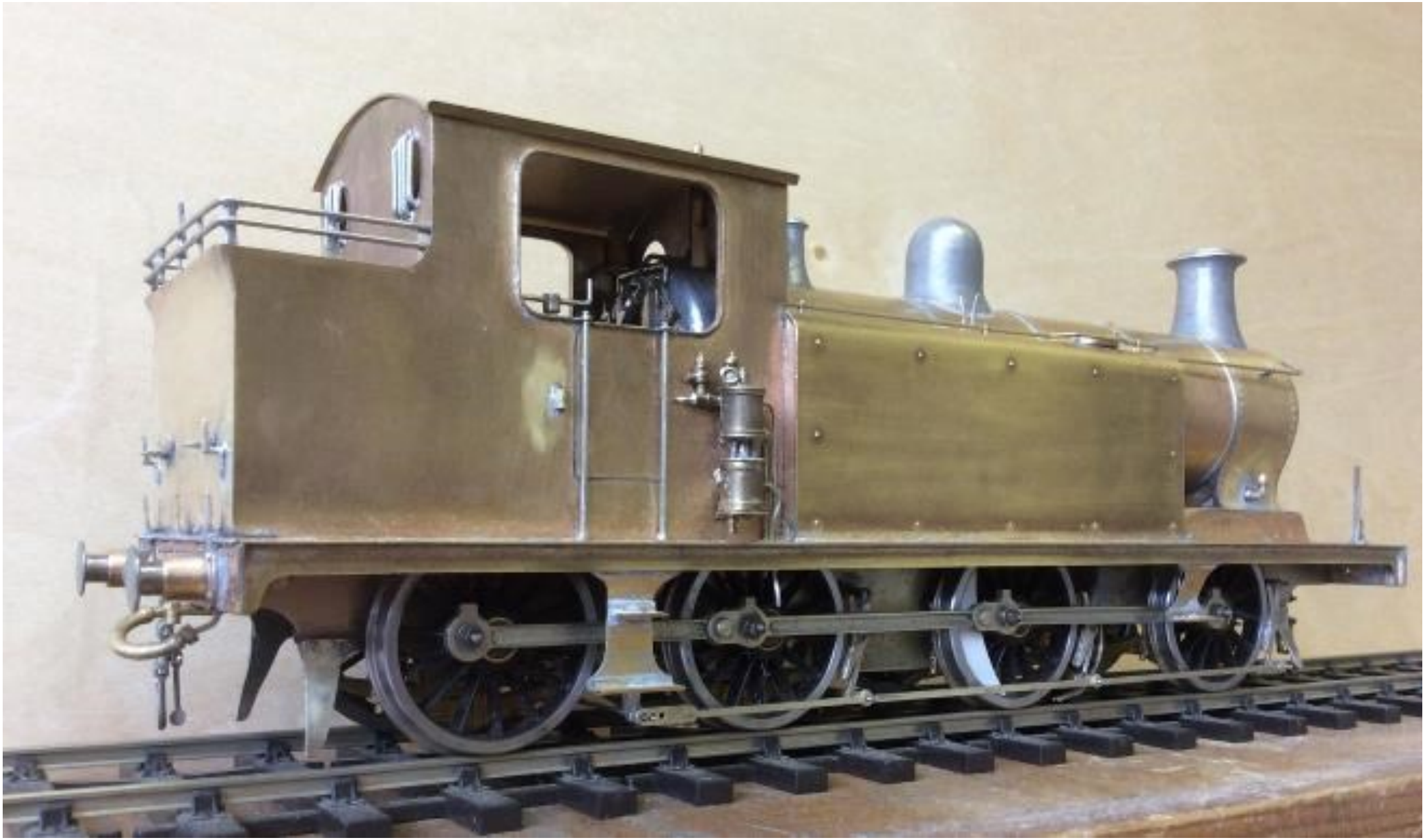
Photo 11



The roof was pre curved to match the spectacle plates. The sides were then bent vertically upwards. For ease of painting the interior of the cab, it is made removable by means of six ‘L’ brackets. These brackets cannot be seen at all if you look into the cab from the opening.

Photo 12

As mentioned, the body has been constructed straight from the kit with no alterations made to it, apart from one or two enhancing additions. There were a couple of discrepancies with the GA – for example, the boiler wrapper was too narrow and the side tanks too long, but nothing too serious in having to scratch build the items concerned. There may well have been subtle changes made from an original E6. Consulting Mike, he was happy for me to build it ‘as is’. To enhance it more, a set of Laurie Griffin LB&SCR lamp irons were purchased, along with a Westinghouse pump, screw couplings and brake pipes etc.



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Some Isle of Wight Conversions

Gerry Bixley

On the following page are two adaptions of Worsley Works parts.

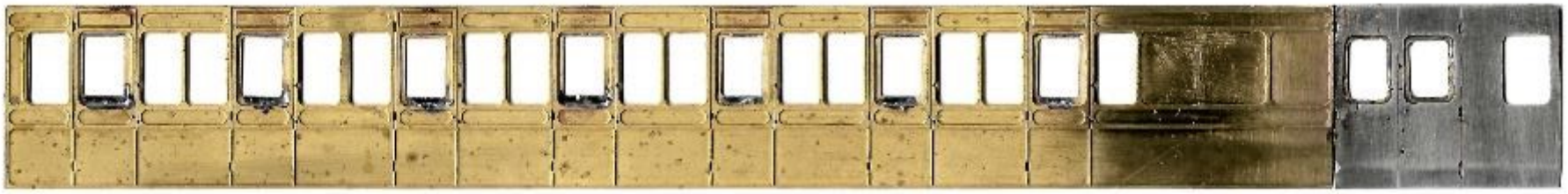
In each case, I have taken two of his LBSC sets and converted them to IOW variations.

This involved cutting off sections of existing vehicles and, in one case, substituting completely new steel clad van sections and, in the other, replacing its cut off end with the cut off section of the first one. This is exactly what the SR did in reality.

Both vehicles are based exactly on the works drawings for their conversion from mainland state for use on the IOW, which I found on one of my visits to Lancing drawing office exactly 60 years ago.

I have still to tackle the ends, which are next on the list.

Doing a ‘cut and shut’ on an etched brass fret, requires some tricky soldering and there is quite a bit of work to hide the joins.



Above is the brake third of IOW set 505, with still some way to go.
Below is IOW brake composite of set 503 6987, with just door handles and van panel mouldings to recreate.

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Signals for Modellers

Graham Bowring

Introduction

Most model railways could be classed as ‘prototype’ or ‘fictional’ although there is also an intermediate type where a fictional station is added on an actual line, or a station is modelled on a railway, which was planned but not built. For prototype layouts, the placing of signals just needs researching documents, photos and signal diagrams, many of which are available. For the others, however, some help is often sought, and I will try to give examples and descriptions with diagrams to cover the types of stations most frequently modelled. But Victoria, Brighton, East Croydon, New Cross and other very large stations will be excluded!

Much use has been made of a book of Saxby & Farmer signal diagrams held at the Bluebell Archive, shown below as Ref 1. The other main source of diagrams is the set of four books of diagrams drawn by John Wagstaff; Ref 2. It seems that these were redrawn by him from office copies held by the railway, some or all of which were printed in loose-leaf format as a large set of diagrams. A few of these sets are held by members of the Circle and the diagrams were often used in articles in the Circular especially around the 1980s. None are dated. The diagrams herein of Amberley and Littlehampton are from the loose-leaf set.

Many stations on the main lines were resignalled around the period 1890 – 1910, as a result of line widening (often quadrupling), rebuilding or enlarging the station and its facilities, or simply an upgrade of old signalling equipment. Prototype stations from this period can mostly be found in the Wagstaff books, and the signalling of fictional stations could be deduced from similar

prototypes. But on the minor lines and branches, much of the older equipment remained and the task of deciding on signal placings can be harder. Some emphasis has therefore been given to the development of signalling in the earlier period, especially around 1860 to 1880 when a shift was made from the Saxby junction boxes of the late 1850s, to the more familiar “distant, home and starter” arrangement. Some old features remained however, especially retaining old signals while their replacement was not justified.

The diagrams which have been drawn for this article mostly use simple conventions, such as that a signal shown facing a train is shaded in full, and one drawn with the rear face of the arm just has a black line. Many later diagrams show the “normal” position of points worked by the box, that is, the lie of the point when the lever is normal in the frame. The Saxby & Farmer diagrams do not show this and sometimes this has been done to maintain some early atmosphere of the diagram. FPL means Facing Point Lock.

Please note: the diagrams of Littlehampton and Eastbourne will need enlarging to read the numbers and text, with the zoom facility on the pdf.

To avoid possible confusion. The term “slot” will refer not to the design of the signal, but to a mechanical device whereby a signal is worked from two or more signal boxes, and all of them have to reverse their respective lever before the signal moves to “all-clear”. A slot is shown on a signal diagram as an arm at 45° to the actual arm which is horizontal. On a combined diagram showing both boxes working the signal, the levers worked by the secondary box, including the slot, will be shown e.g. thus: (8). If a signal has a slotted post in which the arm works, it will be stated thus.

LBSCR signals were always built with wooden posts until about 1916. From that date, a small number of concrete posts were used. Wood does of course rot over time, but that depends on many factors such as the quality of the wood, its protection especially near the ground, the weather, and so on. Signal posts sometimes needed to be replaced, but they could last anything between about 20 and 80 years. When replaced, the new signal would be of the design used at

that time, so it's quite possible that, at a given location, there would be a mix of signals of different designs dating from different periods. Or, for example, if a major resignalling exercise was carried out at a station in connection with an enlargement or major changes to the track layout, most of the signals would be replaced, but if one or two were unaffected and in good condition they would remain. So it is quite valid to have a mix of signal types, even at a small station.

This is intended to be a guidance note primarily for the placing of signals, but for completeness, a brief summary of the various signal designs is also given. Typical situations at through stations and termini are covered, but not intermediate locations between stations such as junctions and level crossings, as they are very rarely modelled.

The signalling works on the LBSCR would not have been carried out without the foresight, inventions and determination of signal engineers such as Wilfrid Cozens Acfield, James Edward Annett, John Saxby and William Robert Sykes. Their many contributions would take up considerable space but they deserve a brief mention here.

Signal Designs, and Dates for Use

The first signals in general use were double-arm signals used as a Station Signal (see next section), probably supplied by Stevens & Sons of Southwark; this was some time before John Saxby started his work with signals and interlocking. In the 1848 and 1857 Rules, an arm was shown for Time Interval working with three positions: horizontal – STOP, about 45° - GO SLOWLY and vertical inside the post – GO ON. The latter positions were later called CAUTION and ALL-CLEAR. It could be as a single or double-arm signal. They were certainly in use at Portsmouth by 1853, and probably at many other stations. Some of these signals lasted until the introduction of block working on the railway. Starting with the main line to Brighton and the suburban lines in 1860/2, block working had been installed throughout by about 1875. That system required a signal to show only two indications: horizontal – STOP and about 45° - ALL-CLEAR; however it is very likely that some of the original signals remained but altered to work in this way. On these signals, and for many years hence, the post had a ball and spike finial and a rotating lamp was

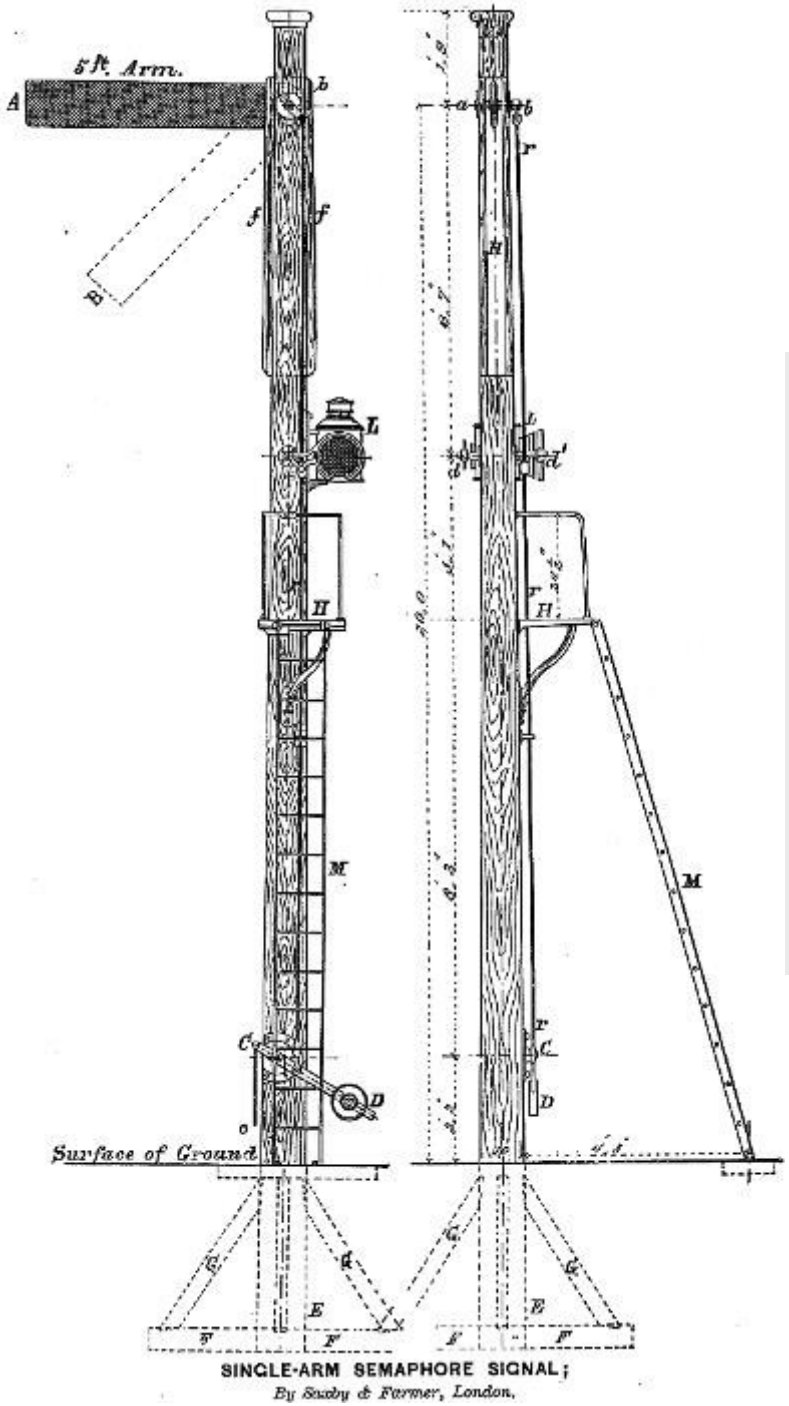


Figure A

A drawing from the Railroad Gazette of 1878 showing a 3-position first-generation signal by Saxby & Farmer. Sadly the finial and rotating lamp, as used on the LBSCR, are not present but otherwise, this captures quite well the first-generation signal type. Single-arm signals would sometimes be used as 2-position distant signals; the double-arm type would usually have the two arms on the same pivot but occasionally one would be lower down the post. The widened part of the post, where the arm would be in the vertical position, is clearly seen.

fitted to the post below the arm, worked by rods and cranks from the rod working the arm. Until signals were operated from signal boxes, the signal was worked by a lever at the base of the post.

In the meantime, the Board of Trade and others were getting concerned that, if any fault or breakage occurred in the wire or rod leading to the signal, it would be desirable for it to go to the Danger position. This principle was later recognised, and put in place for all types of equipment for signalling, referred to as “fail-safe”. For the signal arm, it was achieved by making the arm “balanced”; providing added weight on the right of the pivot and it could be seen as a large lug, often resulting in the arm being called the “hockey-stick” type. These arms were only fitted gradually from around 1878; in 1886, the Board noted that around 1,000 signals were still not balanced and resolved to have them all updated, but some remained for many years. However, with the balanced arm, the lamp was still fixed lower down the post. It seems that, where a double -arm signal is shown with one arm lower than the other, it may be for sighting purposes.

The final development came in 1898 when a new arm with integral spectacle started to be used and, if the post was replaced, it was fitted with a flat cap.

Distant signals were not provided at first but were brought into use gradually from about 1848, as a semaphore. They were only positioned where sighting requirements meant that the home or stop signal could not be seen clearly until the driver was too close to stop. If sighting was very bad, caused by sharp curves and/or overbridges, then two distants would be necessary. The double-disc was introduced around 1850 and, in this, the whole signal was rotated 90° about its post for the all-clear indication. In late 1858 John Saxby patented his double-disc signal, whereby the discs were turned through 90° on a horizontal axis for all-clear; this was known as the “turnover” type and was used from that time, although mostly for new installations, the old type remaining in use at various locations for some years. In September 1869 the Board resolved to use semaphore distants for new works and, in some places, to replace the disc type. The semaphore distant was the same as a stop signal until about 1872, when a fish-tail notch was cut

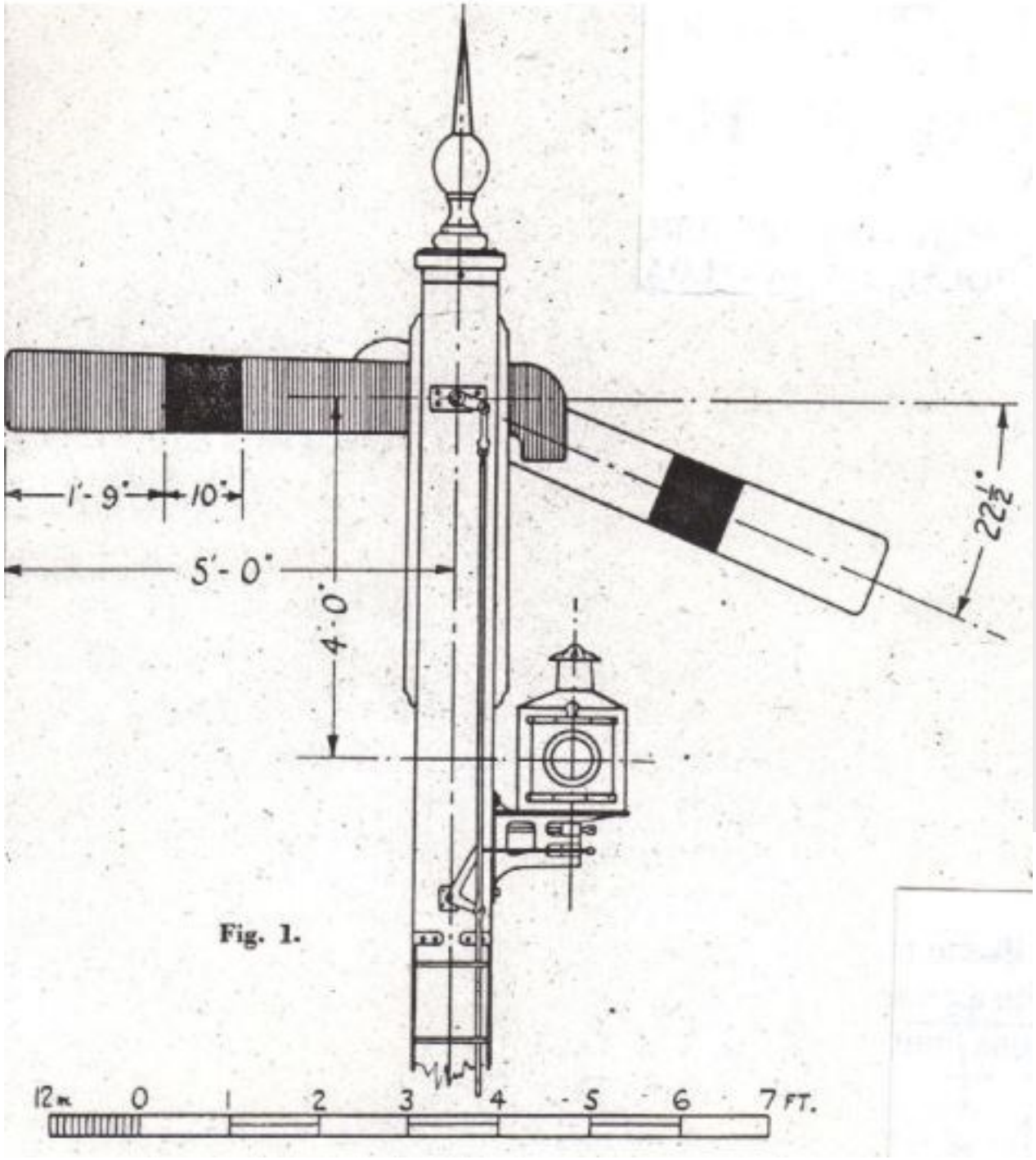


Fig. 1.

Figure B

A sketch by F.C. Hambleton in the Model Engineer, showing the upper part of a double-arm signal with, as he described, a tail balance. The lug on the right hand end of the nearer arm was provided with added weights, such that, if anything broke in the wires, rods and fittings leading to the arm from the signal box, the arm returned to Danger.

in the end of the arm. Over time, distant signals were gradually moved further out, as train speeds increased, to ensure that the driver was able to stop at the home signal. On a layout around the time of the Grouping, it would be unlikely to include distant signals, as they could be around ½ to ¾ mile from the station.

Wayside Stations on Double Lines

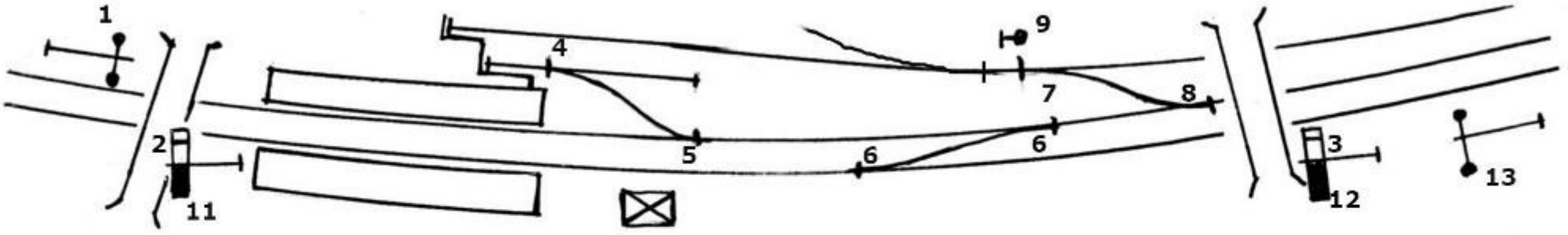
At first, there was only a “standard” or “station” signal, which was a double-arm semaphore as seen in the well-known photo of Bexhill. Its purpose is thought to be to advise an approaching train if the line was clear to run into the platform. At all but the smallest stations, shunting could have been in progress, not necessarily using a locomotive, as often at this time wagons were shunted by hand or by a horse, so a train was held away from the station in this case. Once the train arrived at the station, the signal would be put to Danger to protect it against a train which may be following. Distant signals were provided when the sighting required an extra signal, for example if there was a sharp curve or an overbridge at the approach to the station.

With the introduction of the block system around 1860, the distant, home and starting signal were provided, as standard. (The home signal was, at first, usually called the “rear” signal.) The functions of each of these were very similar to what we would expect today. But there was a marked difference in the types of signal used, in that, very often, a double-arm signal was placed at each end of the platform, one arm being the starter and the other the home signal for the other line. This type of signal was gradually phased out but some remained in the early 1900s.

If there was a siding connection beyond the starter, an advanced starter was very often provided, so that a train or engine shunting would be controlled within station limits by the signalman. A full sized signal for starting from a siding was rare, except at a bay platform.

Shunt signals were not provided at first. In ref 1, the earlier diagrams have point indicators at exits from sidings; they were signals at ground level worked by a rod from the adjacent point; no signals were provided for crossovers between running lines nor usually for a short or minor siding

Hackbridge, a typical installation of the late 1860s. The double-disc distants (second type) are provided and there is only one shunt signal, at the exit from the yard. All other shunt moves would be controlled by hand signals. The up distant worked by lever 1, on the left, is not visible from the box because the Saxby & Farmer diagram has a note “Repeated by electricity” meaning that an electrical repeater for the signal was placed in the signal box. The signalling on the other wayside stations on the Peckham – Sutton line of 1868 were similar. Saxby & Farmer actually labelled this diagram “Beddington” but no evidence has been found that the Railway used this name. The 1920 diagram has the following changes: there are semaphore distants, further out, the double-arm signals have been replaced; the up starter no 3 has a repeater on a very high post to aid sighting for the driver, the yard is enlarged and its connection is further out past the overbridge thus needing an up advanced starter, and there is a shunt signal for leaving the dock siding. All these are very typical of changes made over the period 1868 to 1920.



HACKBRIDGE

As at opening 1/10/1868

Figure C

near the signal box. Thus, all shunting had to be directed by someone on the ground using flags or hand signals. But by the time of the later diagrams in ref 1 around 1875 – 7, many sidings had a shunt signal worked by a lever in the signal box. This method was much better, advising the driver not only that the point had been changed, but also that the line was clear for him to proceed. By about 1895, resignalling works would ensure all shunt moves on running lines were controlled by shunt signals. As with many other developments, however, this did not preclude some stations keeping a small number of point indicators, with the need for shunting to be controlled by hand signals by the shunter or guard.

Sometimes, at larger stations, where more shunting was done, a shunt-ahead arm would be provided under the starter. The arm was quite short with a white ring.

If the home or starter was obscured from the driver by an overbridge, a second arm was provided on the same post, called a repeater. It could often be very high, and usually with no lamp. Many examples of this could be found around the system.

An example of a simple station out on the main line in the later period, Amberley, is shown in

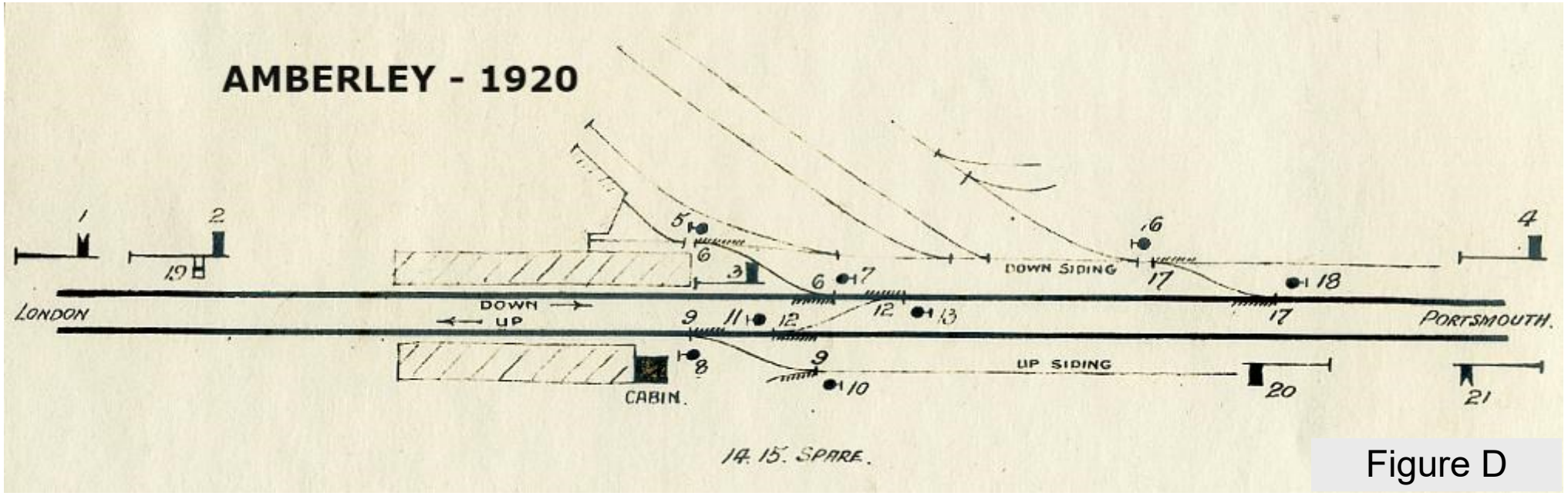


Figure D

Figure D. Ground signals are provided for every shunt movement, but a double-arm signal is still in use.

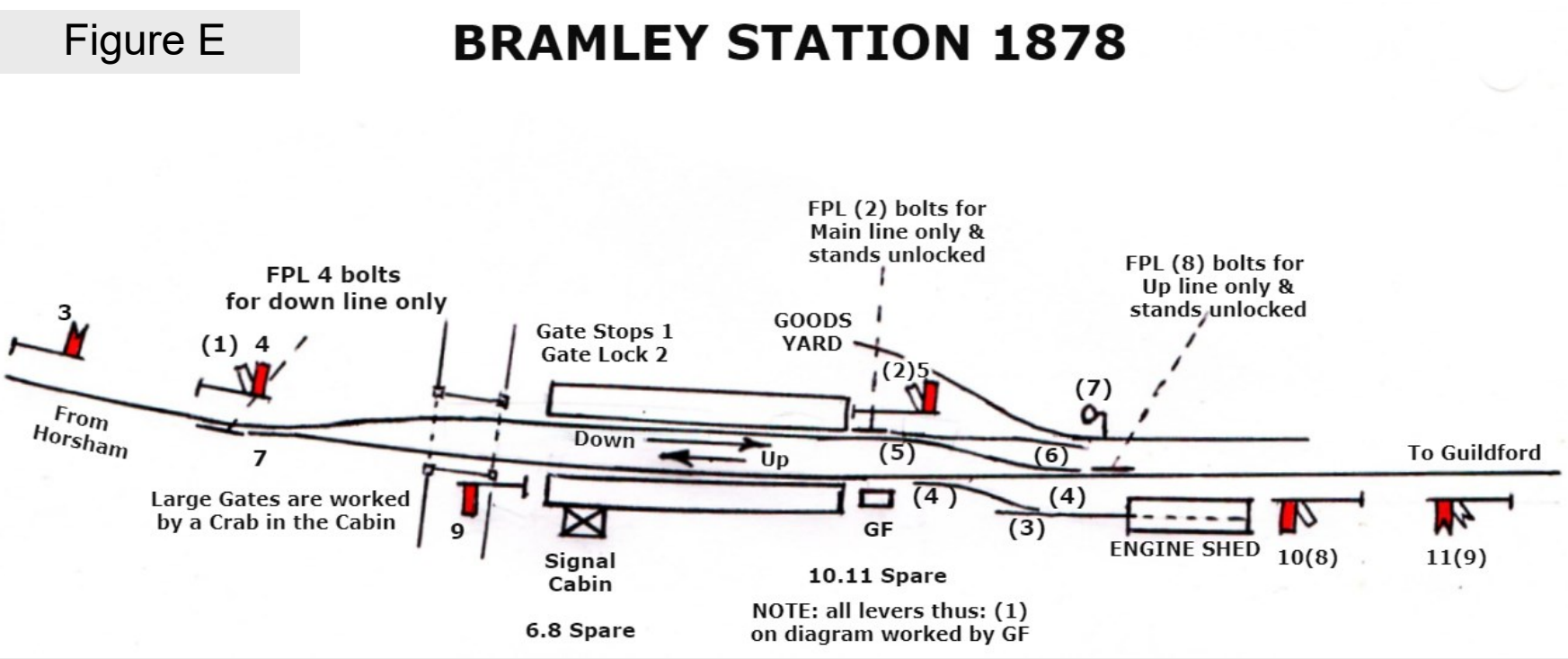
At some locations, especially in the suburban area, the signal box at the next station or junction could be fairly close. This would require, for example, the distant at one location to be on the same post as the starter or advanced starter for the other. The post would be fitted with a slot, to ensure that the distant does not show all-clear unless the stop signal is also at all-clear, to avoid giving the driver a confusing or erroneous indication. A slot could also be fitted at a station where some signals at one end were worked by a ground frame or subsidiary box. These mechanical devices would be difficult to model especially in the smaller scales, but it would be fairly simple to achieve the same result by electrical switches.

Wayside Stations on Single Lines

Single lines, especially the more minor or remote ones, had to wait longer for improvements; this applied to all aspects of the stations including the signalling. Consider, for example, the Horsham Guildford line. It seems likely that the signalling on opening in 1865 was little more than the first generation double-arm signals described above, installed in the 1840s and 1850s. A report into an accident at Bramley by the Board of Trade in September 1866 describes a “platform signal”, with distant signal and points worked by hand. This and many other branch lines were being upgraded with full signalling and interlocking in the mid-1870s.

All the same principles from the previous section applied, but in addition, if there was a passing loop, the signal box had to be sited, if at all possible, so that it worked both ends of the loop. This was done at Cranleigh, where a loop was put in in 1880, but at many stations, a ground frame worked one of the loop points, and it would work a slot on some of the signals worked by the signal box. This primarily affects the design of the track layout and position of the signal box but, consequently, the signals and how they were worked. The Railway was keen to have the loop as long as possible, but the Board of Trade had a limit on the distance from the signal box to a facing point; it was concerned that the rodding and connections should operate the point properly. The

Figure E



Bramley station diagram dates from 1878 when the loop was installed and the station resignalled. It is drawn with all signals worked by the signal box shaded red. The others, and all levers thus e.g. “(8)” are worked by the ground frame. There is a fairly typical arrangement of a signal box at one end of the station and a ground frame (“GF”) at the other, each working the points at their respective end, and the signal box controlling the trains and all the signals, with the GF working slots on many of the signals. Therefore, the signal box did not directly release any of the levers in the ground frame, but protection for trains was achieved by the slots on the signals. For example, the starter on the down platform only went to all-clear when the signal box had pulled lever 5 and the GF had pulled (2), and that lever also worked the FPL on point 3. The note describing the large gates at the level crossing being worked by a “Crab” has not yet been understood! Unlike Hackbridge, the 1920 diagram for Bramley only had a few minor changes: the ground frame now worked a slot on the down distant, there was now a calling-on arm under the up home worked by both (it is thought that this was to warn that the gates were closed to the railway), there was a point indicator on the engine shed siding, and (5) in the GF worked the exit from the yard.

distance was gradually increased from 120 yards in 1874 to 250 yards in 1908. An advanced starter was sometimes not provided, in which case a shunt beyond the starter would be defined as running into the next block section, which might require special local instructions.

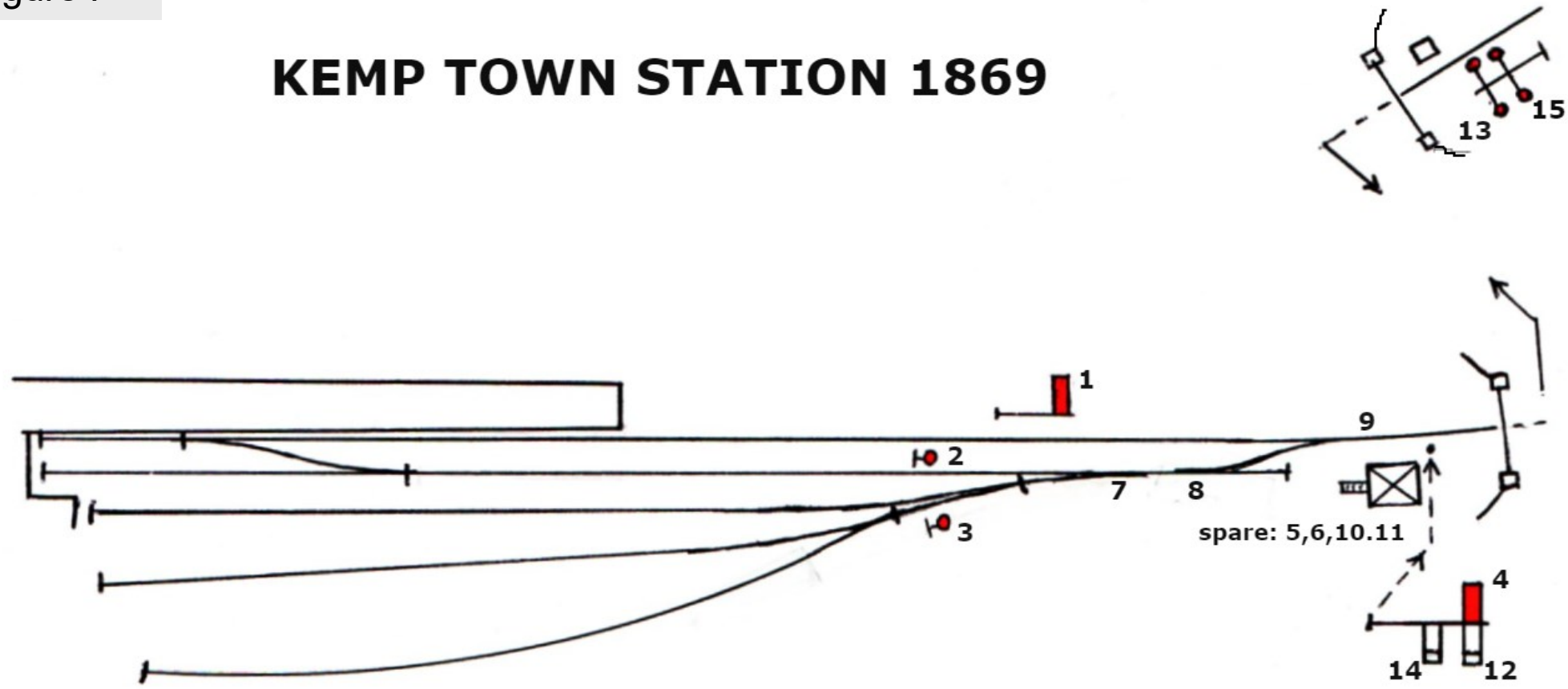
Small Termini

Compared to wayside stations, there were very few termini and the layout and signals varied considerably. Little has yet been established about, for example, Bognor, Littlehampton and Seaford opened in 1863 and 1864, all of which were later enlarged with updated signalling. Despite the general trend of improvement in the 1860s, there were a few exceptions. Epsom Downs in 1865 was the scene of a battle of correspondence with the Board of Trade regarding full signalling with interlocking. The Company won the battle and did not provide it, but the work was done in 1879. And at Central Croydon in 1868 there was a similar argument, the Company wanting to work the station from the nearby junction but a compromise was reached.

The only diagram of a small terminus in the Saxby series is Kemp Town. It shows the best features for a model of a small terminus of the late 1860s: fairly compact, single line and with a very short distance to a tunnel. It is therefore used as an example; see fig e which shows the signals on the track plan as per the OS map of 1876. Opened in 1869, it was fully signalled by Saxby & Farmer from the start, but it is still only a small step forward from the early Saxby junction box: note the post with signals near the box. With the simple track layout, only two distants, four stop signals and two shunt signals were provided. The distants, two double discs on the same post, were near the north portal of the tunnel and that OS map shows a small signal box nearby but it was probably just a hut. These distants and the home signals were for the passenger line and the goods yard; the upper one for the former. (A Saxby diagram at a terminus on another railway opened in 1864 is similar but there is no platform starter.) The home signals were at one corner of the signal box, very near the south portal of the tunnel with the advanced starter, no 4, on the same post. It is not yet known if the signal post was a corner post of the box extended upwards, or a separate post, probably the latter. The two ground signals would be to

exit the run-round loop or the goods yard. In 1869, FPL's had not yet been invented so the facing point on the passenger line, lever 9, had no mechanical device to hold it over while a train ran over the point.

Figure F



This diagram applied until the station yard was much enlarged, and points moved to just inside the tunnel, around 1890-1900. The signalling was then upgraded with a new starting signal and three shunt signals at the end of the platform, and other shunt signals to cover all shunt moves from sidings on to the main line. The home signal had to be moved back inside the tunnel so was

a special signal with lights only. Two distant arms were still provided, one for the platform and one for a goods to arrive into the run-round loop; they were further out well towards Lewes Road station.

Seaford was an example of a small station resignalled in the late nineteenth century with the works carried out in 1895. However the signalling was quite simple: a distant, two homes on a bracket, two platform starters and an advanced starter plus six shunt signals and a ringed arm on a post next to the homes. This remained mostly unchanged through to the BR period, except that the turntable was removed in 1923 and the signals were, at various times, replaced by newer designs.

Littlehampton was also a small station with two platforms but more complex. It is shown in Fig G basically as altered in 1901, when the down sidings were added and some crossovers and pointwork changed; much of the signalling however dates from 1886 when the new signal box (still there and in use in 2024) was built. Our plan, from the loose-leaf set, shows the signalling similar, but not identical, to the MT6 file for the 1901 changes, so may be about 1910. The very faint markings about a track circuit are alterations from much later.

Amongst all the details in the station approaches, the main and shunt signals are quite clear. However some of their functions are not yet certain, so please treat the descriptions in this paragraph with caution. The distant was probably kept at caution if the platform was not clear to the buffers, in the absence of distants under signals 3 & 5. Those inner homes may have been routing signals worked with 2 and 4. Alternatively, they may have been for the principle of “holding the road”, a method of ensuring that points along the route of a train were not changed too soon: the interlocking would prevent, for example, crossover 7 being changed back to normal until 5 was put back, which the signalman should not do until the train was in the platform.

Signal 9 was most likely for a shunt from the down line to the loco yard, using an indirect route via the up main (points 7,21 and 23). The two shunt signals worked by 43 were worked by a “selector”, a mechanical device which operated one of the signals depending on the position of 42

point. Others in the station were worked in a similar way. Communication with the two ground frames via disc indicators was quite common, and would be interesting to replicate on a model.

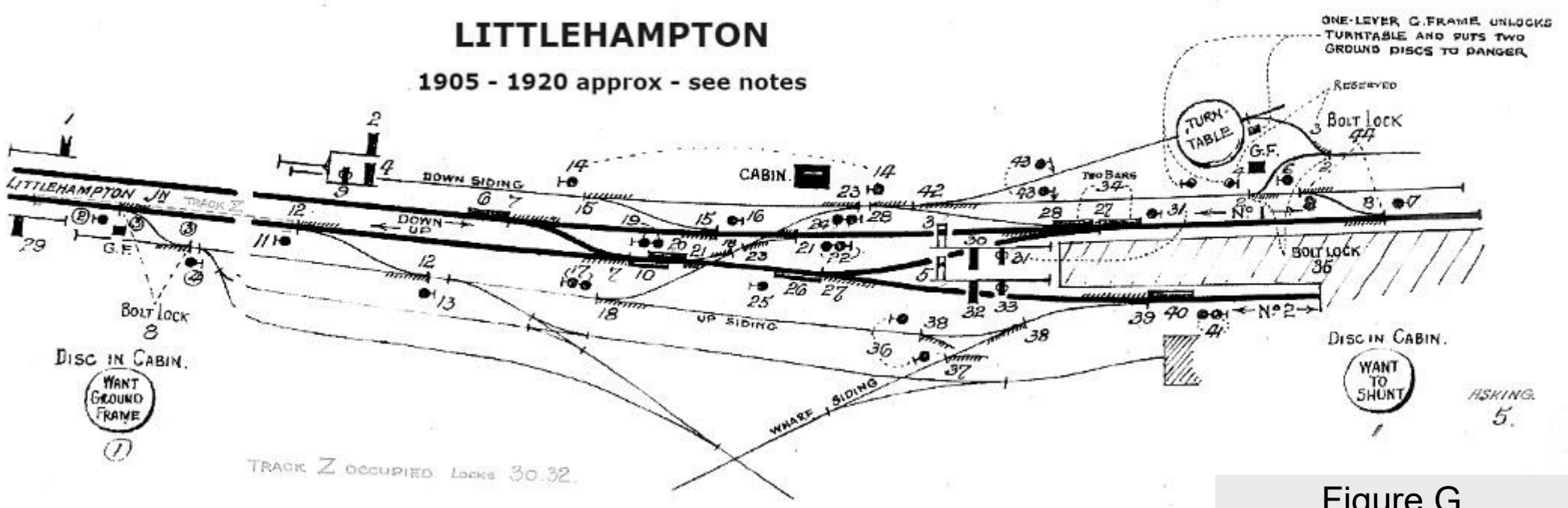
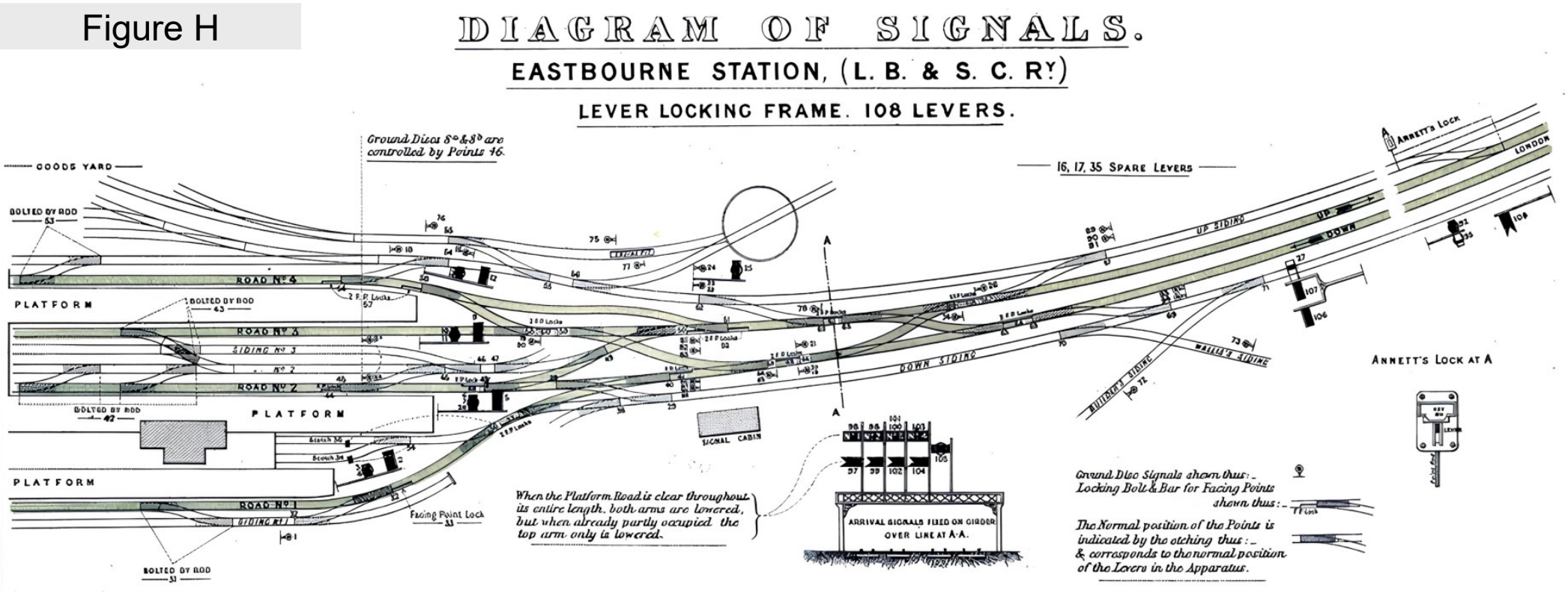


Figure G

Large Termini

Again, there was little or no repetition between different stations here; they were designed specially to suit the expected traffic and the land available. I have categorised large termini as those with three or more platforms. Other than Victoria and London Bridge, there were only four: Epsom Downs, Bognor, Brighton and Eastbourne, plus the joint stations at Portsmouth Harbour, East Southsea and Ryde Pier. As the scope for modelling a large station is limited, I have just used one prototype, Eastbourne, which was resignalled in 1882; see Fig H. The features of note are:

Figure H

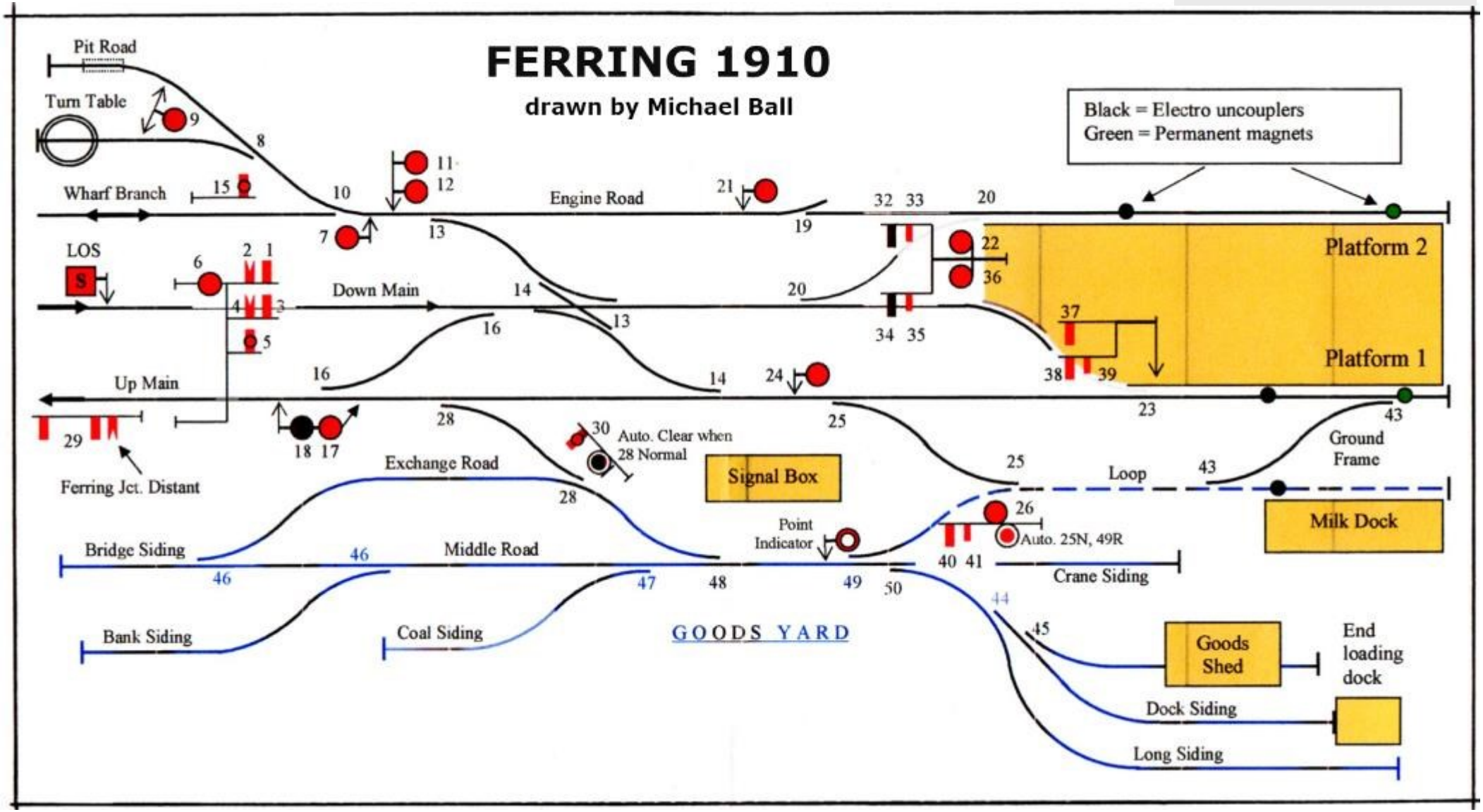


- exit from all sidings is controlled by shunt signals except the docks between plats 1 & 2
- many shunt signals controlled more than one route, the routes released by different levers
- each home signal had a distant which indicated if the platform was clear to the buffers
- the two routes into platforms 3 & 4 were controlled by outer homes 106 & 107
- each platform starter had a shunt signal under it for shunting to all routes

Finally, as an example of a fictitious station on the LBSCR in around 1910, we include a very good drawing of Michael Ball's model railway, Ferring. It is modelled in the period around 1910 and the placing of signals is accurate and covers many configurations of sidings and platforms at a terminus. All shunt moves from sidings onto running lines, plus other points on the lines, are

controlled by ground signals. The down homes have distants under them to advise if the line is clear to the buffers, as used at Eastbourne around the same time. “LOS” is “Limit of Shunt”, the point where trains shunting should stop and shunt back, to keep them close to the station and clear of a train which may be wrongly approaching Ferring.

Figure I



Acknowledgements

Many thanks to Howard Bolton, and to fellow member Luke Arnold, for comments on the signals at Littlehampton. Also, thanks to Dave Searle for making the Board of Trade MT6 files available, to John Minnis for scans from the loose-leaf book of diagrams, and to the Bluebell Archive for permission to photograph the diagrams in the Saxby & Farmer set.

References and Further Information

1 117 signal diagrams drawn by Saxby & Farmer contained in a book presented to J P Knight. The date of the book is not known, nor are any of the diagrams dated but some can be established from line openings or resignalling works. Most date from between 1864 and 1876. The book is held by the Bluebell Archive who kindly allowed me to photograph the diagrams for private research.

2. The four Wagstaff books of diagrams sold by the Signalling Record Society. These diagrams were nearly all dated around 1920 and are similar or identical to loose leaf sets of diagrams held by some members of the Circle.

3. Article by Geoff Smith “The development of the LBSCR Distant Signal 1848 – 1872” in Brighton Circular 47.1

4. Many articles by Derek Coe in the Circular. Photographs in the Circular, some provided by Mike Waldron, and in books such as “Southern Signals” by George Pryer (OPC 1977).

5. A very good source of photographs is the set of “Southern Infrastructure” books by Noodle Books, with photos of signals taken around the period 1920 to 1935 by Edward Wallis.

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Diagram 94/40 Family Saloon

Simon Bass

These vehicles have always seemed interesting to me. They certainly hark back to a very different era when, rather than having to suffer the travails of the hoi polloi, you could hire such a carriage to be attached to a normal service train and travel with your family and servants up to Scotland for a months shooting, or to Newhaven or Dover for a spell down on the Riviera, or to take the waters at Karlsbad. At a construction cost of £597/19/6, it would be interesting to know if they earned their keep and exactly how they were charged across the wider network. There was some interesting discussion on the chatroom on this traffic in late 2022, which could usefully be expanded at some point.

They didn't have a very long service life: although built in 1902, their use had probably started to tail off by the time of the Great War, as their intended customer base started to migrate to a Rolls Royce or similar for shorter journeys (although probably not for trips to Scotland, given the roads at the time). I would expect that the Great War ended their fare paying use straight away in August 1914.

Turning to the model, it was commenced in the late 1970's, after the Newbury book on Brighton carriage stock was published – and thus has had a rather longer lifespan than most of the originals probably did. However, whilst my modelling skills at that time with respect to the body have aged passably well, the same cannot be said of the underframe. Once extracted from the Paleolithic detritus of my early Brighton modelling, only a central wheelset remained and, as this had Romford 16.5mm disc wheels, it was definitely an archaic remnant and soon discarded in favour of S4 Mansell wheel sets.

The wheelbase of the saloon is quite long at 21’ 6” but, unlike SE&CR family saloons of the same period, there is no complication of lower footboards to try to resolve, so a Brassmasters Cleminson 6-wheel chassis seemed the easiest option.

Having built this, attention then turned to detailing the underframe. The drawings in Newbury’s book do not show any underframe detail, nor does Volume 3 of Brighton carriages, but there is a lovely picture of a drawing of a Billinton Diagram 71 brake composite in the latter, which I have assumed is similar. Looking at this and various photos, the gas cylinders were quite obvious, but the air reservoir and brake cylinder of the Westinghouse brakes are not. A closer examination of the colour drawing of the diagram 71 carriage shows that the air brake cylinder was hidden out of sight between the solebars, whilst the vacuum brake must have been situated between the gas cylinders - neither brake can be seen in drawings or photographs.

Although there is no specific mention in either of the two books quoted, it is assumed that they were only gas lit, as there is no reference to electric lighting, battery boxes or a dynamo.

The underframe was detailed with Billinton axleboxes and springs from Branchlines and ‘J’ hangers from Chris Cox - who has unfortunately put his casting sales on hold for the present time – but they are all absolutely lovely castings. The gas tanks were made from Plastruk 7.9mm plastic tubing with 60 thou plasticard ends and turned to shape on the lathe. Attaching them to the vehicle was challenging, as, whilst the Brassmaster chassis works, there is a lot of metalwork under the solebar, and, as the outer axles swing, I thought it best to make a cradle and attach this to the outer axle carrier. However, the distance between the gas cylinders – as far as I can make out – doesn’t allow the end axle carriers to swing enough, so in the end they are just attached to the carrier direct. Fortunately this has a concave end on each side – perfect for gas cylinders.

Turning to the body, this was bereft of handrails and end steps and other detail such as brake pipes and emergency brake ‘tell tales’. I was not keen to try and do any significant modelling on the body, given its age, so further detail was limited to handrails, steps and brake pipes. The end steps were filed up from spare etch, bent to shape and attached with superglue. I’m glad there were only three steps! The handrails were bent up on a jig that I made for the purpose. With such things I find consistency is more important than accuracy, so I also made a jig for drilling the holes in the body. I am not entirely happy with the handrails and need to spend more time thinking through a better jig. I also suffered two windows ‘falling inside’ when I drilled the handrail holes. I’ve not quite figured how to sort that yet (see below).

As far as I can remember, the body was entirely plasticard apart from the ends of the clerestory, which were plastic padding and filed to shape. Some aspects were clearly simplified – there are no bolection mouldings, for example, but I can live with that. ‘Umber’ was Humbrol brown – I still have a usable tin - and that was used to touch up the end, once the steps were added.

I cannot remember where the crest transfer came from, but this was added in about 2000 when I had a brief period of modelling between jobs. I seem to remember I picked it up at an exhibition but can remember no more than that. Certainly there is a photograph in the Newbury book which


575
575

shows the saloon sporting such a crest.

When I mentioned I was doing an article for the modelling circular, Mrs B asked me what the learning points I was going to make were. I hadn't considered that but the points I would make now are:

- Converting an old model is complex – it is much easier to 'build things in' from the start
- Never end up with a box that you can't take the roof or floor off. If something goes wrong inside – such as glazing falling off – it requires major surgery and on a 40 year old model the plastic may be quite brittle. Better as well to have a sandwich construction 'trapping' the glazing.
- Six-wheel carriages are not straightforward. The Brassmasters etch is a beautiful thing but it's not a panacea. You need to consider anything hanging off underneath – such as 'J' hangers and gas cylinders or brake gear, as these can restrict movement. I also found clearances very tight, so you do need to check things at every stage to make sure it all works.

I still need to sort out screw couplings but that's a small task. What to make of this vehicle with such a lengthy provenance? It is of its time when I had only a few tools and everything was brush painted with Humbrol paints. Whilst it is clearly not up to the standard of modelling which we often see nowadays (and which I aspire to), from a normal viewing distance its perfectly acceptable and an interesting prototype. If only I still had the eyesight, which back in the 1970's meant I didn't need my glasses for the mouldings!

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Starting from Scratch Part 5
Materials for Scratch Building

Terry Bendall

There is a wide range of materials that are useful to the scratch builder and often various odds and ends can be used to help construct some of the more obscure items that are sometimes needed. In the end what we need usually comes down to using timber, metal and plastics. In this article I will cover some of the more common materials but also include a few more unusual materials as well.

Wood, of course, is one of the main materials used for baseboard construction and has its uses for holding things when such jobs as soldering have to be done, but for the purposes of this article I will focus more on the types of timber products used to make our models, rather than larger constructional work.

Although in the smaller scales timber may not have many uses, it is certainly useful in the larger scales, particularly for wagon construction and buildings, where the prototype is made of timber. One of the reasons for limited use in the smaller scales is because the grain of the wood is too coarse, but for some applications it is a useful material to use. One advantage is that it can be coloured with wood stain, which allows the grain pattern to show through and this can give a more realistic appearance than paint. The grain pattern of different species of wood helps to identify the type, but one important point is that some have a very pronounced or “open” grain pattern which is certainly not to scale, if we can use that term in this connection, and such timbers may have limited use in the smaller gauges for models.

An important aspect of the classification of timbers are the terms hardwood and softwood. These

terms have nothing to do with how hard it is to cut or work, since balsa is classified as a hardwood! Although softwoods mainly come from coniferous trees and hardwoods from deciduous broad leafed trees, this is not always the case. The difference in the two types is actually defined by the cellular structure of the timber, which is normally needs a microscope to see. All of this is of course not especially relevant to our model making but sometimes it helps to explain the background.

A useful source of small sections of timber are those suppliers used by ship modellers and an investigation of the web sites of such suppliers shows a wide range of sizes and types, some of which are the wood of fruit trees. The common factor is that the timbers are close grained so can be used for small sizes of parts. The main uses are when small sections are needed for construction of a roof or for the loads of a wagon. Pictures 106 and 107 following show two examples of timbers used in these applications and in 4mm scale.

Picture 106
A small open fronted building in the cattle market on the model of Pulborough built by the mid-Sussex area group.
The model was built by David Keeler in about 1990. It was going to have a slate roof but, given the amount of detail David put in, it was decided to leave it as a building under construction or repair.

Picture 107

A pair of bolster wagons loaded with timber planks with two different species of timber.

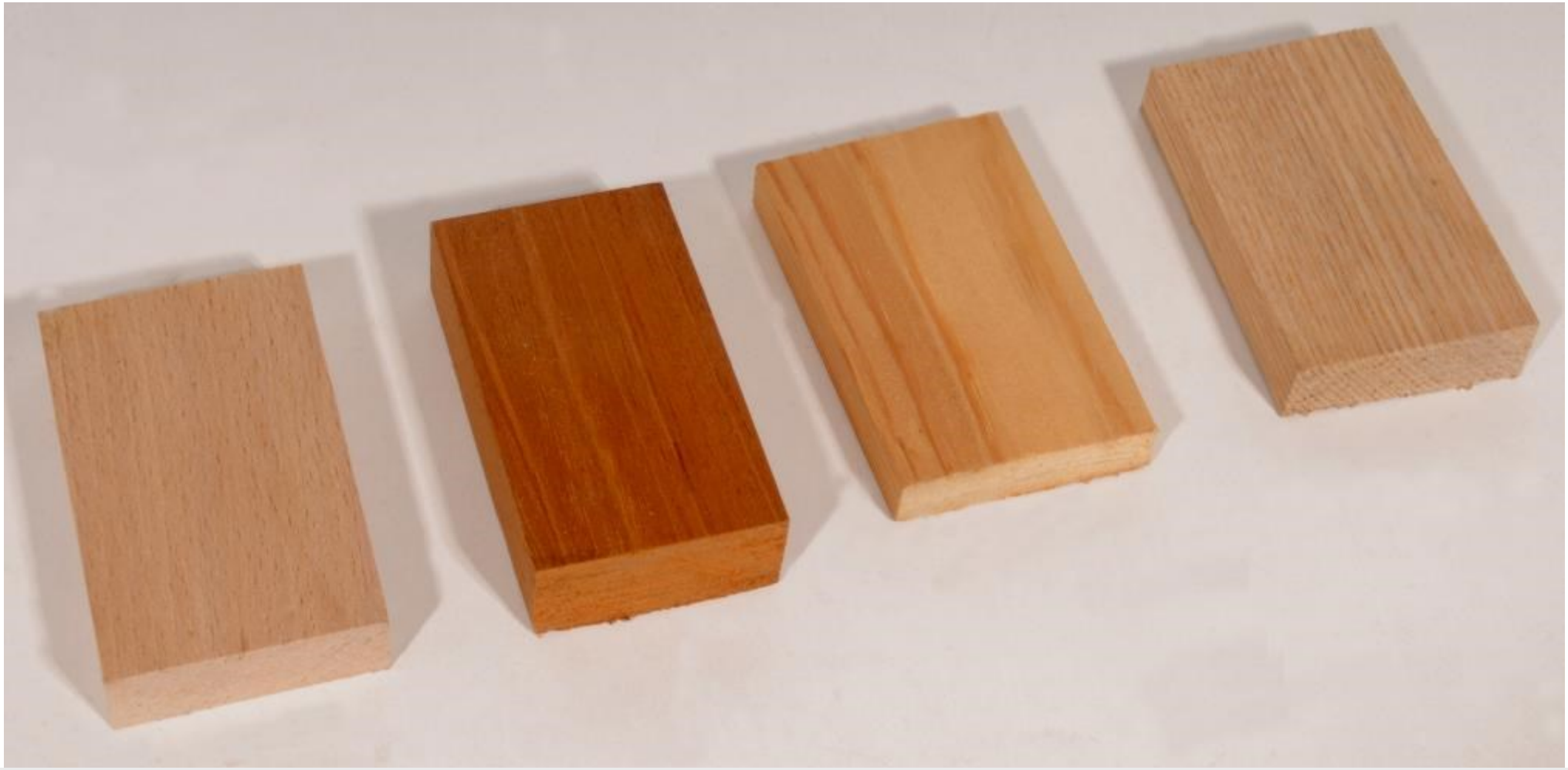
The model was built by Charles Trace and is now owned by Terry Bendall.

A useful alternative to timbers used in ship modelling are the range of timber mouldings sold in DIY and hardware stores which, for small pieces, can be cut to the required sizes. At one time these were often made from a timber called ramin, which is a hardwood, mainly found in SE Asia. However, due to excessive use, these days such mouldings are usually made from pine of some sort, which is a softwood with a more open grain. Mouldings made from ramin may still be found from some suppliers and, if available, this timber is useful to cut to smaller sizes.

A common timber available in small sizes suitable for model making is basswood, which is a light coloured hardwood, found in North America and is fairly soft and easy to use. This can be obtained from several of the suppliers that can be found at exhibitions and on-line. Another useful timber is beech, which is often used for furniture, wooden parts of hand tools and timber work-benches and which is close grained. I have a few off-cuts of beech at home and this is usually the timber that I use when I want to model such things as packing timber, as part of a wagon load. Picture 108, below, shows an example of beech used for this purpose.

Picture 108
A part view of a wagon that is far too modern for Brighton Circle members! The prototype is a BR wagon known as a Sturgeon, BR having named civil engineers' wagons after species of fish and in the guise shown dates from around the early 1980s. This close up shot shows how beech was used to make the packing under and between the rails. The model is from a Cambrian kit with additional detailing parts.

Picture 109 shows samples of some timbers.



Picture 109
A range of different types of solid timber. On the left is a piece of beech, which can be identified by the small darker brown flecks, something unique to this timber. Next is a piece of tropical hardwood which is very similar in appearance to mahogany. The next piece is pine which is the common type of softwood available in DIY shops. Lastly is a piece of oak which has a distinct open grain pattern.

So far I have mentioned the use of solid timber, as cut from the tree, but a useful material is plywood, which is made by joining together thin sheets of wood, called veneers, arranged so that the grain of the wood runs in opposite directions for each layer. (See picture 110) This gives the material its strength and prevents warping.

Picture 110
Types of plywood. Birch ply on the right with equal thicknesses of veneer. Far eastern plywood on the left with thin facing veneer and a smaller number of thicker layers.

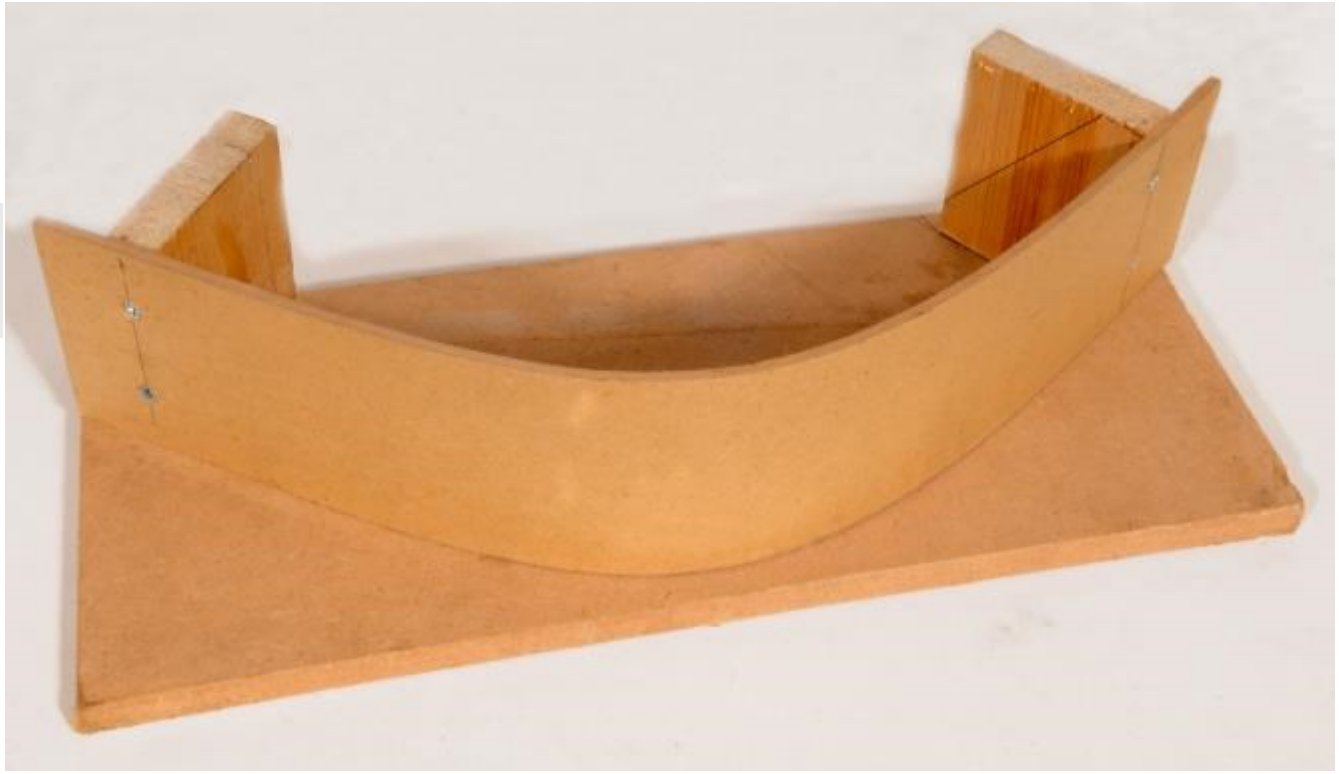
Whilst plywood is usually used to make baseboards, it does have uses in actual model making. One is to make a simple box for buildings, which can then be covered with styrene sheet, and I have used this method successfully on two layouts. The method is particularly useful where large buildings with few windows are needed, since the wooden sub structure gives rigidity and prevents the structure from warping. Picture 111 shows the shell of a small warehouse and, in this case, the shell was made from 6mm thick medium density fibreboard. This is another sheet material that has its uses for railway modelling although it is not recommended for baseboard construction.

Picture 111
Structure to form the shell of a building made from 6mm MDF.

Another use of plywood is to make curved shapes by a process called laminating. This involves using thin plywood or alternatively strips of veneer, which are glued together and clamped in a mould whilst the glue dries. When the glue is dry, the plywood will remain as a curved shape. The same process can also be used with styrene sheet. Picture 112 shows a former for laminating an elliptical arch. This was cut from a piece of 45mm square softwood, using a band saw, but it could also be cut by hand. The material to be laminated would be clamped between the two parts of the former. Making such a former is quite time consuming so it is only really worthwhile if several shapes all the same are needed.

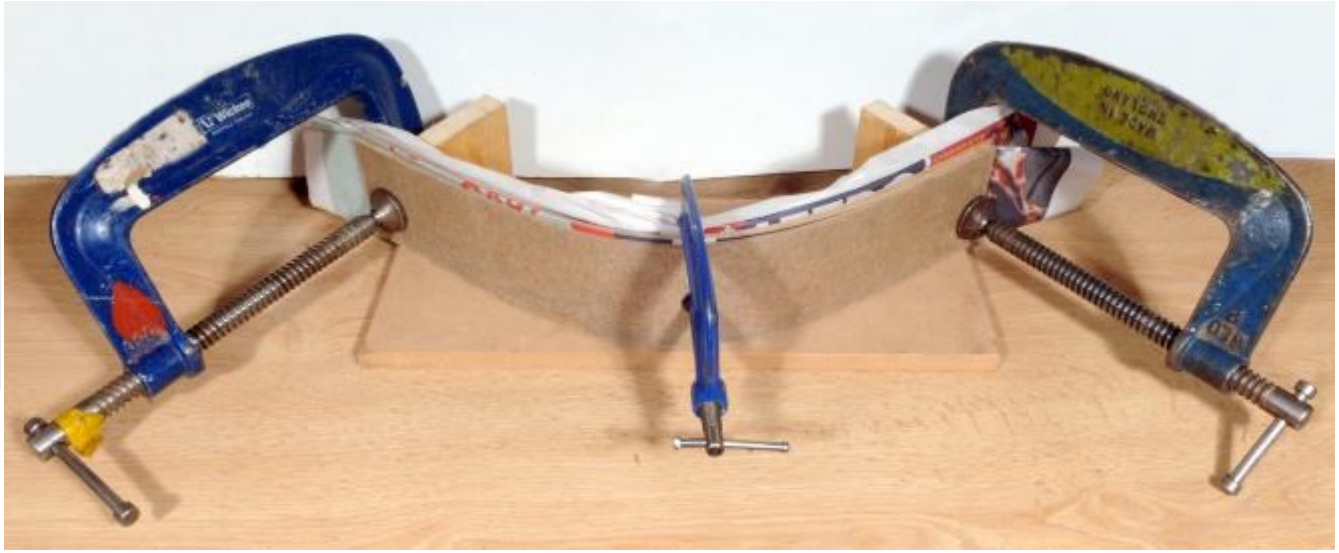
Picture 112
Former for laminating, cut from a solid block of timber.

Picture 113
Former for a larger laminating job.



Picture 113 shows an alternative design for a former, made from a 6mm strip of MDF screwed to blocks, which in turn are fixed to a base. Picture 114 shows the former with 1.5mm thick birch plywood being laminated. The newspaper stops any glue, that seeps out, from gluing everything up solid.

Picture 114
Plywood glued and clamped in the former.



Picture 115 shows the finished product ready to be cleaned up. In this instance, the laminated piece is 450mm long and 75 mm wide. Laminating is a good way of making the arched sections of bridges and viaducts, and comes into its own in the larger scales and for garden railways. A laminated section might be used for the arch itself, or to make a former for casting arches in concrete. The same technique can be used on a larger scale to make curved edges for a baseboard.

Something to remember when curving plywood is that it will curve much more easily if it is cut so the grain of the outside layers runs across the strips, rather than along the length. Another important point about plywood is that it is may be designed for internal or exterior use, with one additional type designated as marine ply. The glue used to join interior plywood is not water resistant and interior plywood will rapidly de-laminate if it gets wet. Exterior plywood will last quite well outside if painted well, and marine ply should last a long time outside. If doing your own laminating for outside use, use a water-proof adhesive to join the layers and those designed for boat building would be suitable.

Picture 115
Finished laminated shape. ready for cleaning up.

Turning to metals, these can be classified in two main ways. Ferrous metals contain iron whilst non ferrous metals, not surprisingly do not. The other classification is that metals can be pure metals (i.e. elements) 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. Traditionally the solder that is used for joining metals and for connecting wires is usually an alloy of tin and lead although other metals such as bismuth and cadmium may be added. Lead free solders are usually an alloy of tin, copper, silver, bismuth, indium, zinc, antimony, and traces of other metals so it can be seen that alloys can get quite complicated. The proportion of the materials that make up an alloy will affect its working properties and some quite small difference can have a very significant impact on the way in which the metal behaves, including such things as its melting point, which can be important when soldering.

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. Although the differences in the amount of carbon are quite small, it makes a great deal of difference to how the steel behaves. Silver steel, which many railway modellers will use for the axles of locomotives, is a high carbon steel. It does not contain any silver! It is called silver steel because it has a shiny finish.

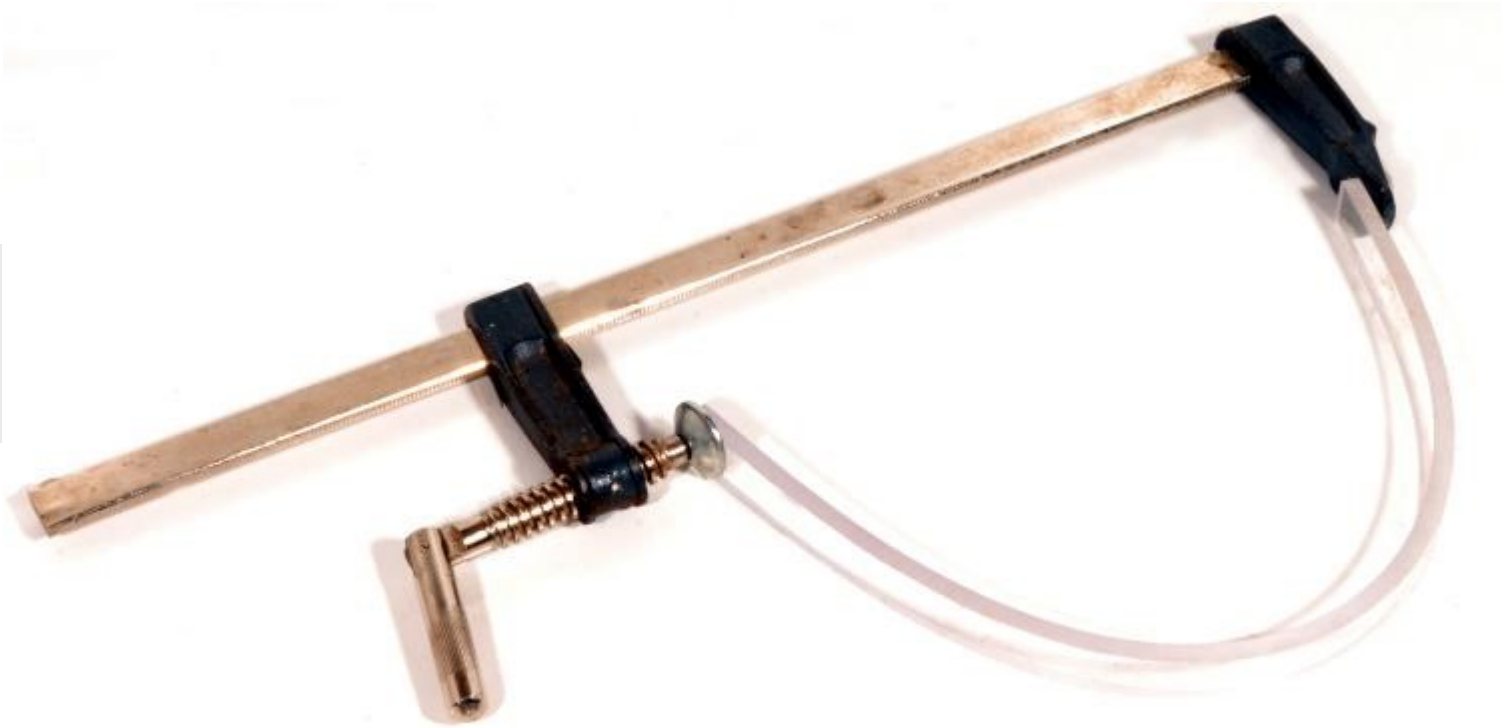
Many railway modellers will have used brass either as an etched kit or as a basic material. Brass is an alloy mainly consisting of copper and zinc, normally about 66% copper and 34% zinc but again the proportions can vary. Some types of brasses can be quite brittle and will break when bent so is something to be aware of, especially if the source of the metal is unknown. Nickel silver is another metal that is used in railway modelling and is an alloy of copper, nickel, and zinc but does not contain any silver. Its composition varies from 7 to 30 % nickel with the most common being 18 % nickel, 62 % copper and 20 % zinc. Generally nickel silver is easier to join by soldering than brass, since brass will more readily conduct the heat away from the joint.

White metal is also a common metal and this may contain antimony, tin, lead, bismuth and zinc. In recent years the health hazards associated with lead and some other metals have become better known, so there is a need to take care when using metals that contain such materials. One property of a metal, that can alter when the content is changed, is the melting point and this is important with solders. This can be useful since it allows solders of different melting points to be used, but it should be remembered that lead free solders have a higher melting point than those which contain lead, so a soldering iron working at a higher temperature may be needed.

The definitions of plastics can get quite complicated and can depend on the approach to classification. This may be by the chemical composition, the processes used in manufacture, their physical properties or qualities relevant to how they may be used. This can get very complicated, and far beyond what we need to know. However, one useful classification, which is relevant to railway modelling, is to use the terms thermo-plastics, which can be heated and shaped many times, and thermos-setting plastics, sometimes called thermosets, which can only be heated and shaped once.

The term “plastic”, or sometimes plasticity, refers to the property of a material that allows it to be moulded into a specific shape. The term “plastics” is generally used to refer to the group of materials. One problem is that often a trade name is used to describe a particular type of plastic material, which then gets used as a generic term. “Perspex” for example is a registered trademark name given to a particular type of plastic material originally developed by ICI, (Imperial Chemical Industries). Perspex is a rigid, hard and sometimes clear material that originally found use in aircraft canopies and is a type of plastic material known as polymethyl methacrylate, (PMMA) or acrylic, so strictly speaking the name Perspex should only be used to describe a particular make of acrylic.

Something else that can cause confusion is that different types of plastic material can look very similar but can have very different properties. Polycarbonate is a rigid, hard and sometimes clear material that looks very similar to acrylic. However one property of acrylic is that it is quite brittle whereas polycarbonate is very tough and will resist an impact. For this reason, one common use of polycarbonate is to make clear panels of the guards over moving parts of machines, such as a guard over the chuck of a lathe or drilling machine where acrylic would be useless. Picture 116 shows a strip of polycarbonate bent into a curve and held in a clamp which shows the flexibility of this material. Acrylic could be bent into a curve but only if heated to its plastic or flexible state. Acrylic and polycarbonate are both examples of thermoplastics. Acrylic is also available in translucent and opaque coloured forms and one common use is the covers over the lights of motor vehicles.



Picture 116
The flexibility of polycarbonate.

Polystyrene is a type of plastic material that is available in many forms. Expanded polystyrene is a type that is used for packaging and will be very familiar. Polystyrene foam is used as an insulation material and this type has found favour with some as a lightweight baseboard material.

Sheet or rigid polystyrene is the type of plastic material used to make such things as cases for CDs, “plastic” cutlery and some toys and is the material used for the styrene used for model making. The original Slater’s “Plastikard” is another example of where a trade name has become a common term used for rigid plastic sheet. Rigid polystyrene is a thermo-plastic and many modellers will have made use of the property of being able to shape the material by holding it round a glass jar with rubber bands and filling the jar with hot water.

Nylon is another thermoplastic material well known for its use in fabrics but, in its solid form, is used in engineering to make such things as gears and bearings, and can be machined in a similar way to steel, as can acrylic, although the brittleness of acrylic can lead to breakages. An example of the use of acrylic is shown in picture 117. This is part of Elcot Road, a fictitious layout built by my son and myself and set in the Croydon area c1988, with an assumed LBSC heritage. The platform lamps, which can just be seen under the canopy, were made from acrylic, turned to shape on the lathe, and the top then painted black to represent the shade.

The canopy itself was scratch build from brass, with etched valances of the style used at several stations in the south London area, including Wandsworth Common and Streatham Common, and is a good example of the use of metal for this sort of construction. The brackets were etched, with the posts being made of various brass sections. Some of the 458 pieces of copper wire used to represent the rolled joints in the roof can be seen.

Picture 117
Motor luggage van 9004 in Royal Mail livery sits at the buffer stops on Elcot Road. Two of the platform lamps can be seen under the canopy.

Picture 118 shows a ring made from acrylic turned in the lathe. A section will be cut from the ring to make a curved support for a rear axle of a locomotive, to allow it to move radially in the frames – an idea devised by Barry Luck.

Picture 118
Acrylic ring turned in the lathe.

The science of materials is a very wide ranging field and more recent developments have resulted in newer materials that are relevant to railway modelling. Hopefully this article will serve as a useful introduction to some.

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Modelling the Brighton 50 years ago

Eric Gates

The first publications of the Brighton Circle appeared in early 1974, so we are currently celebrating the 50th anniversary of the Society.

Looking back at the modelling scene in those days, I doubt that anyone would have suggested that it would be possible to build a convincing pre-grouping layout entirely out of Ready to Run rolling stock, as Rusper Road does. And yet, the origins of the Circle are inextricably linked to models of that period.

Eastbourne, built by Mrs Vivien Thompson and described in a series of articles in the Railway Modeller in the late 1960s/early 70s, was not only notable for showing that a model of the Brighton in the 1900s was possible, but also for the lessons in constructing models of prototype buildings in plasticard.

Selsey-on-Sea, by Peter Jessop, appeared at the Easter exhibition in Central Hall Westminster in 1973 and in Bristol and the nucleus of Circle members were recruited from those who stood too long chatting in front of the layout. It made a further appearance at EXPO EM at St Katherine's Dock in 1974, when it was operated in conjunction with Clive Cobley's model of Siddlesham. As far as I have been able to discover, it was only documented in a single article in Model Railway Constructor. Remember that, in those days, mobile phones only existed in works of science fiction. Cameras required you to buy a roll of film first and then wait a week after you had taken the picture for the film to be developed, when you discovered that the photo was out of focus. Given the cost of colour photography, most pictures came in 50 shades of grey!

Eastbourne

Vivien Thompson's Railway of the Month appeared in the Railway Modeller for January 1968. The model included all the main features of Eastbourne station, with the main platforms foreshortened by one carriage length, so that 7 coach trains could still be accommodated. Beyond the round-house, initially, the Cavendish road bridge was brought forward, cutting out the sidings, but curving round into a substantial fiddle yard. A subsequent extension allowed the sidings to be included. The occasional series of articles continued into the early 1970s, documenting the construction of the various buildings around the station site and the rolling stock.

Locomotives reflect the early kits that were available at the time, Terriers from K's and E5s from the Wills range. Proprietary chassis provided the motive power for many, including a butchered Tri-ang B12 chassis under a scratchbuilt I3 body. The range, variety and ingenuity are impressive, particularly given the very limited range of options that were then available.

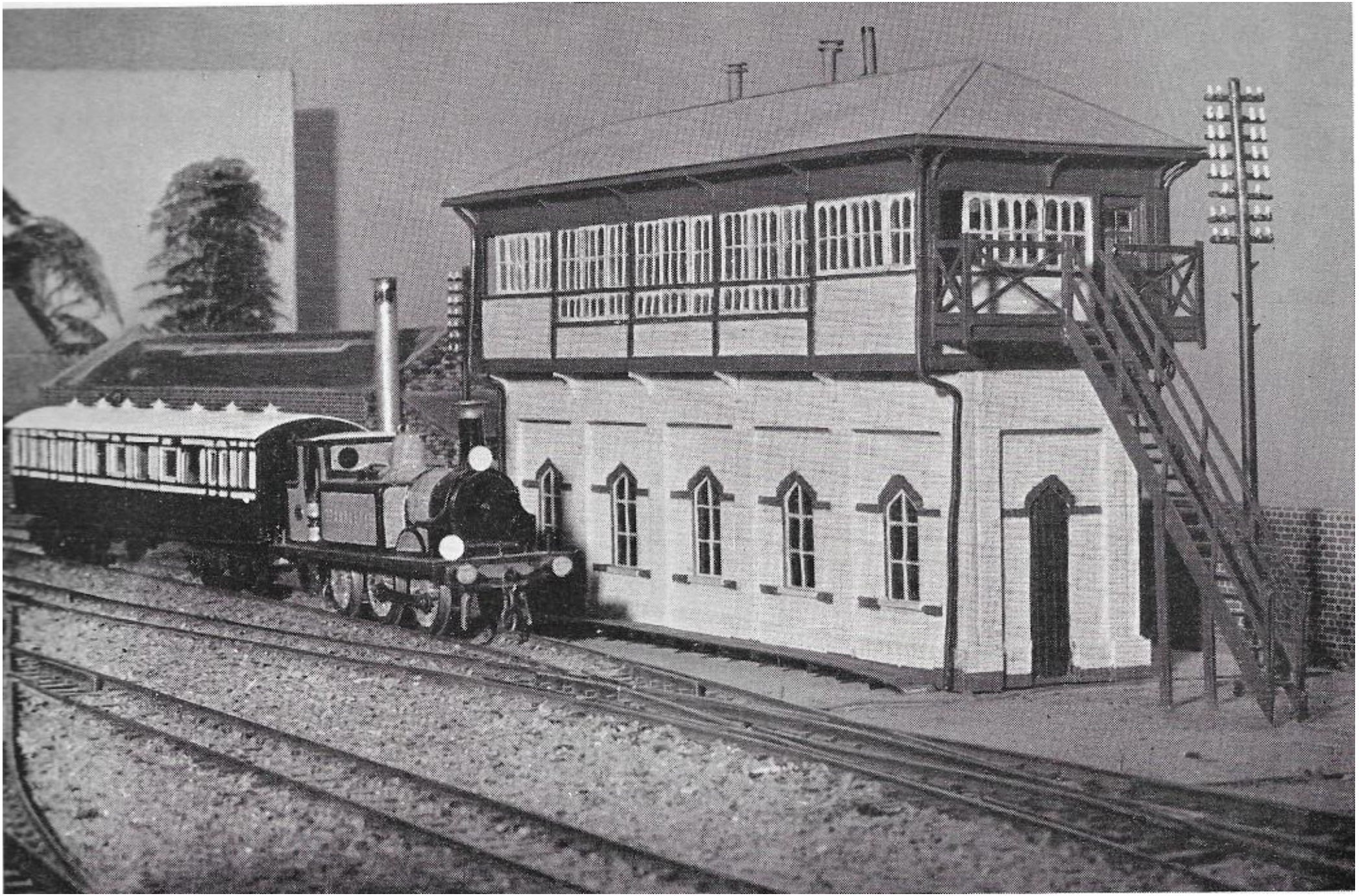
However, one of the most striking features of Vivien's work is the use of the new fangled polystyrene sheet (nowadays, common or garden plasticard). To start with the full complexity of the Eastbourne station building was a case of going in at the deep end. Her subsequent book, "Period Railway Modelling - Buildings", published by Peco in 1971, remains not only a valuable tutorial in the use of plasticard for building construction, but also a useful source for drawings of LBSCR prototype structures.

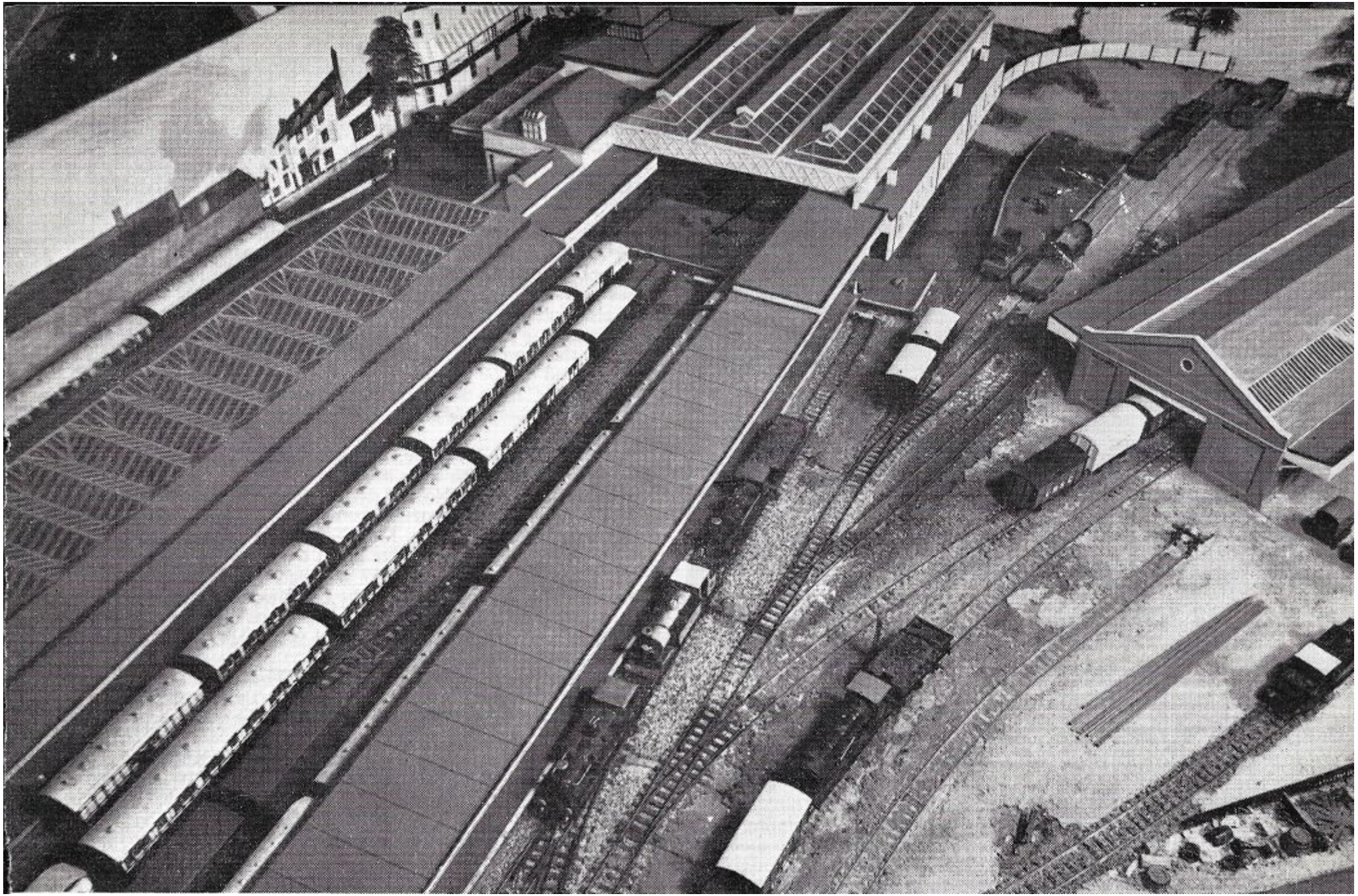
No less impressive is the effort to research and construct coaching stock appropriate to a major terminus. 14 carriage sets are recorded, of which one contains three K's 4 wheelers, a couple contain a sprinkling of Tri-ang clerestory conversions and a vast number of vehicles built completely from scratch, including a couple of Pullmans.

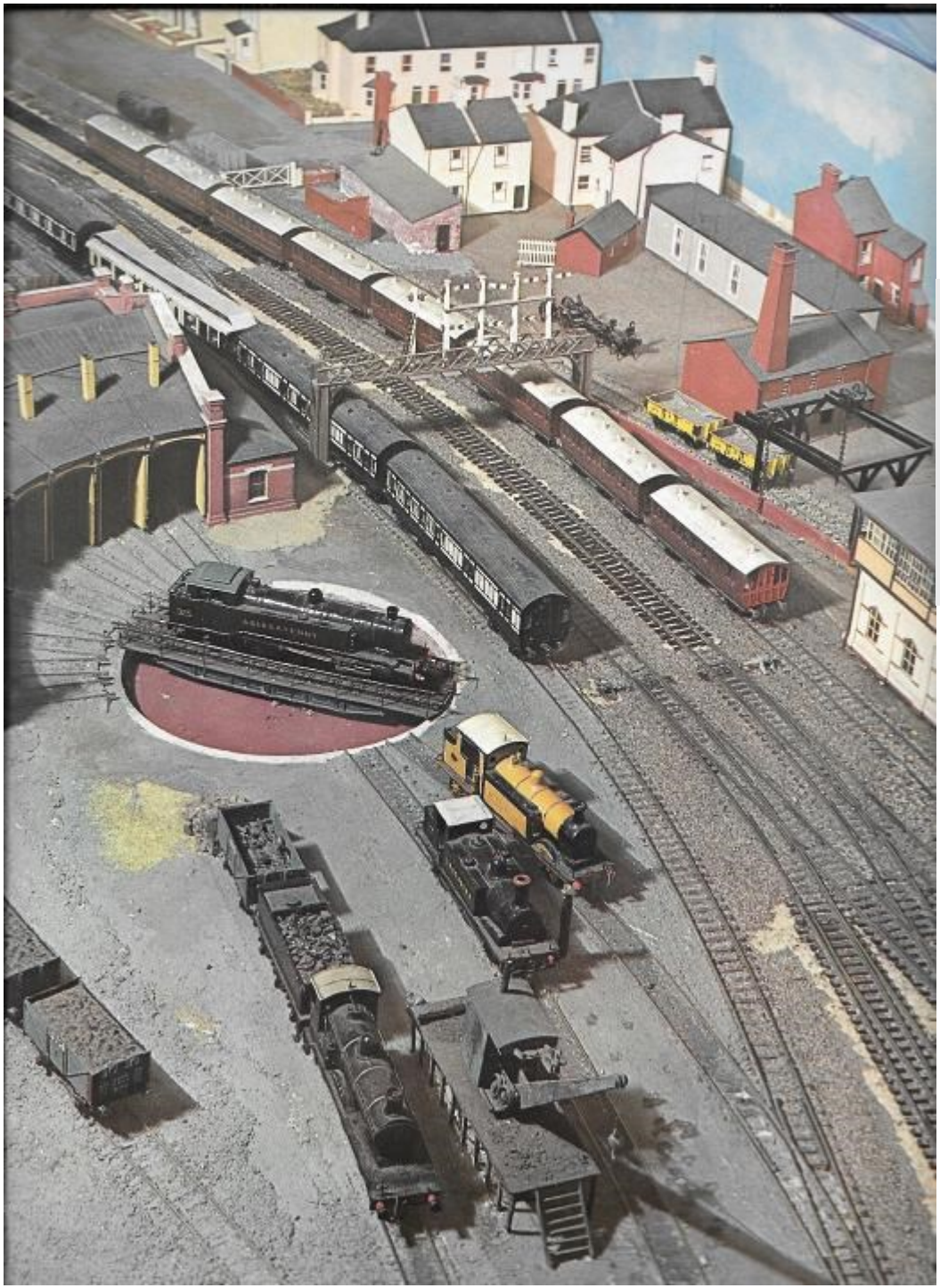
A colour feature of Eastbourne appeared in the part work, History of Model and Miniature Railways, part 28, photographed like the articles in Railway Modeller, by Brian Monaghan.

This, and the four following images are taken from the articles that appeared in Railway Modeller, photographed by Brian Monaghan.

My thanks to Railway Modeller, which retains the copyright.







This and the following image have been scanned from The History of Model and Miniature Railways, although it has not been possible to identify the current owner of this title.

The photographs are credited to Brian Monaghan.

Selsey-on-Sea

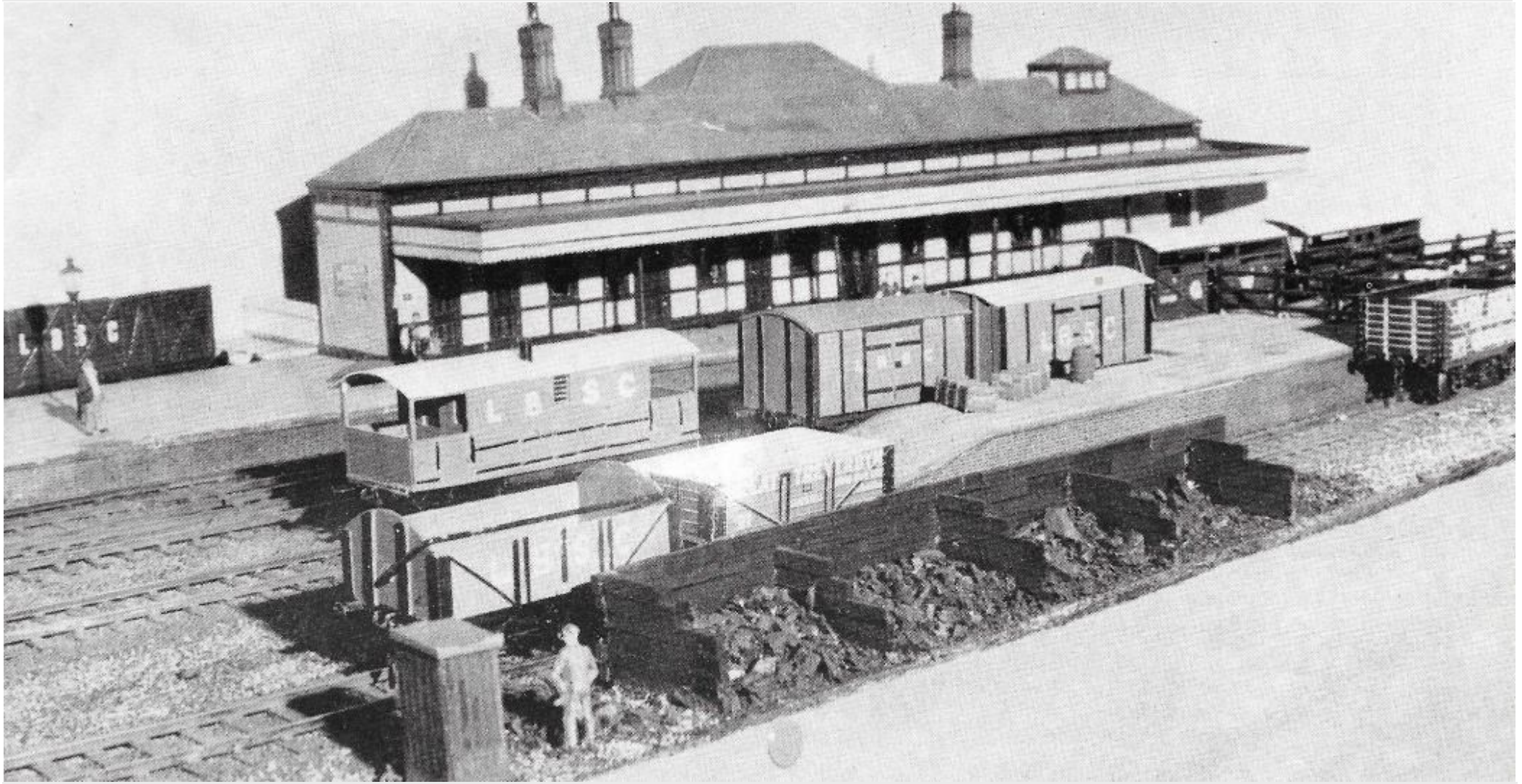
If Eastbourne caught the attention of those reading the magazines (or browsing in Smiths), Selsey was an exhibition layout that appeared at a number of shows. My introduction to it was at the Easter exhibition at the Central Hall, Westminster, in 1973, organised by the Model Railway Club. To see a pre-grouping layout live was a real rarity - this was the age of the GWR branchline - and the numerous conversations that took place in front of the layout at that show account for many of the early members of the Brighton Circle.

Peter Jessop was a member of the Erith Model Railway Club and modelled to EM gauge. Selsey subsequently appeared at the Erith club's own exhibition and at the EXPO EM, that was held in the exhibition space at the newly restored St Katherine's Dock, with its view out over the marina. On that occasion, the layout was extended by the addition of a second station, Siddlesham, built by Clive Cobley, which was designed to fit between Selsey and its fiddle yard.

As far as I have been able to establish, Selsey only appeared in a magazine once, when it featured in Model Railway Constructor in early 1974. The article acknowledges the trail blazed by Vivien Thompson in the use of plasticard and 'Selsey' station was based on the drawing of Petworth from Period Railway Modelling.

For exhibitions, the layout operated to a sequence, starting in the 1870s and illustrating locos and stock through to the 1920s. Like Eastbourne, the carriages included a set of K's 4 wheelers, with the remaining five sets of 6 wheeled and bogie stock scratchbuilt in plasticard. Locomotives were mainly scratchbuilt, apart from a K's Terrier and a Wills E2 and E5. I have no documentary or photographic evidence, but, from memory (never a reliable source), either Peter or Clive started building locos from the Craven period before they moved on to other interests. It would be fascinating to know what happened to their rolling stock collections.

Siddlesham station, based on Vivien Thompson’s drawing of Petworth.



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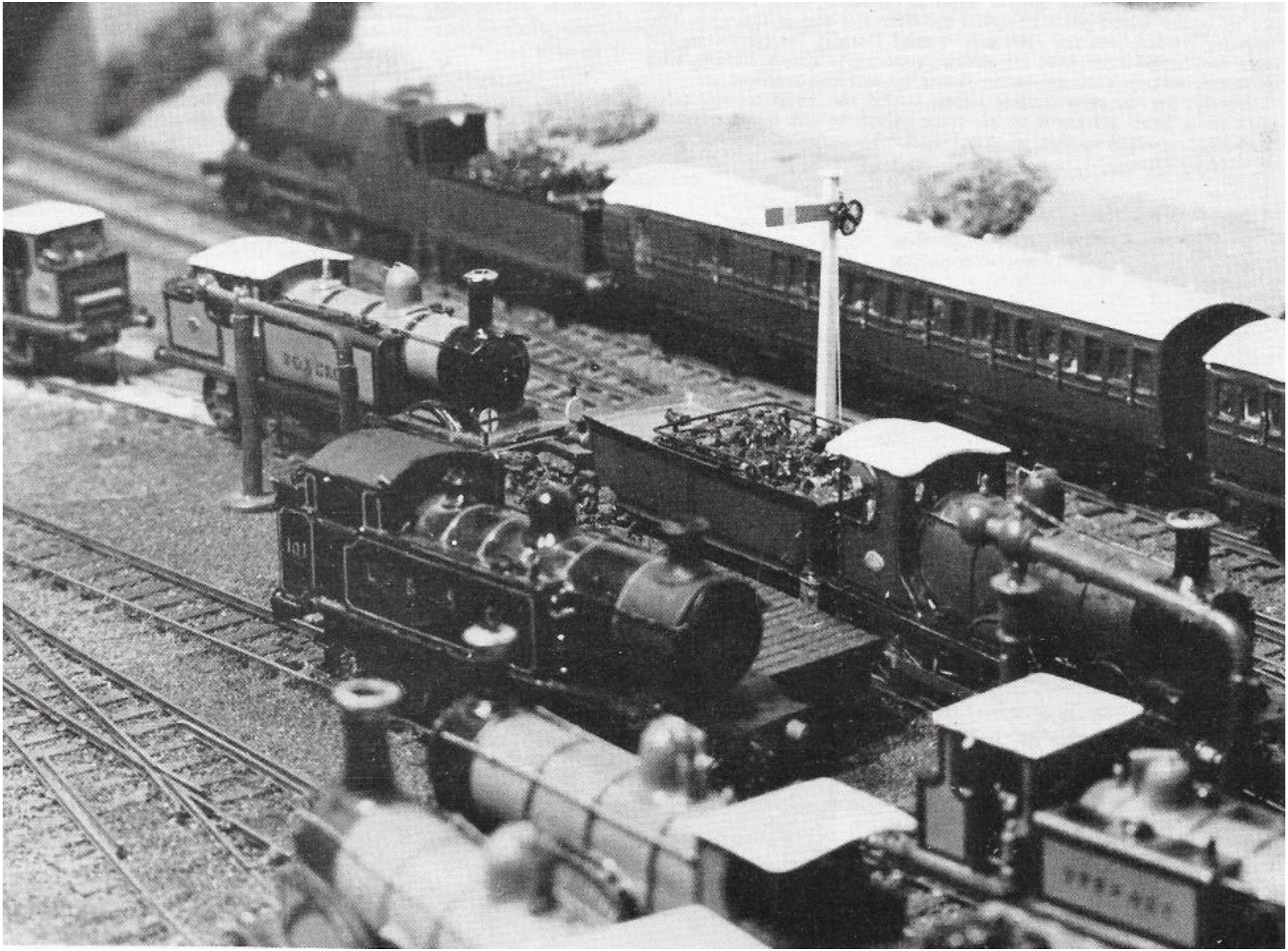
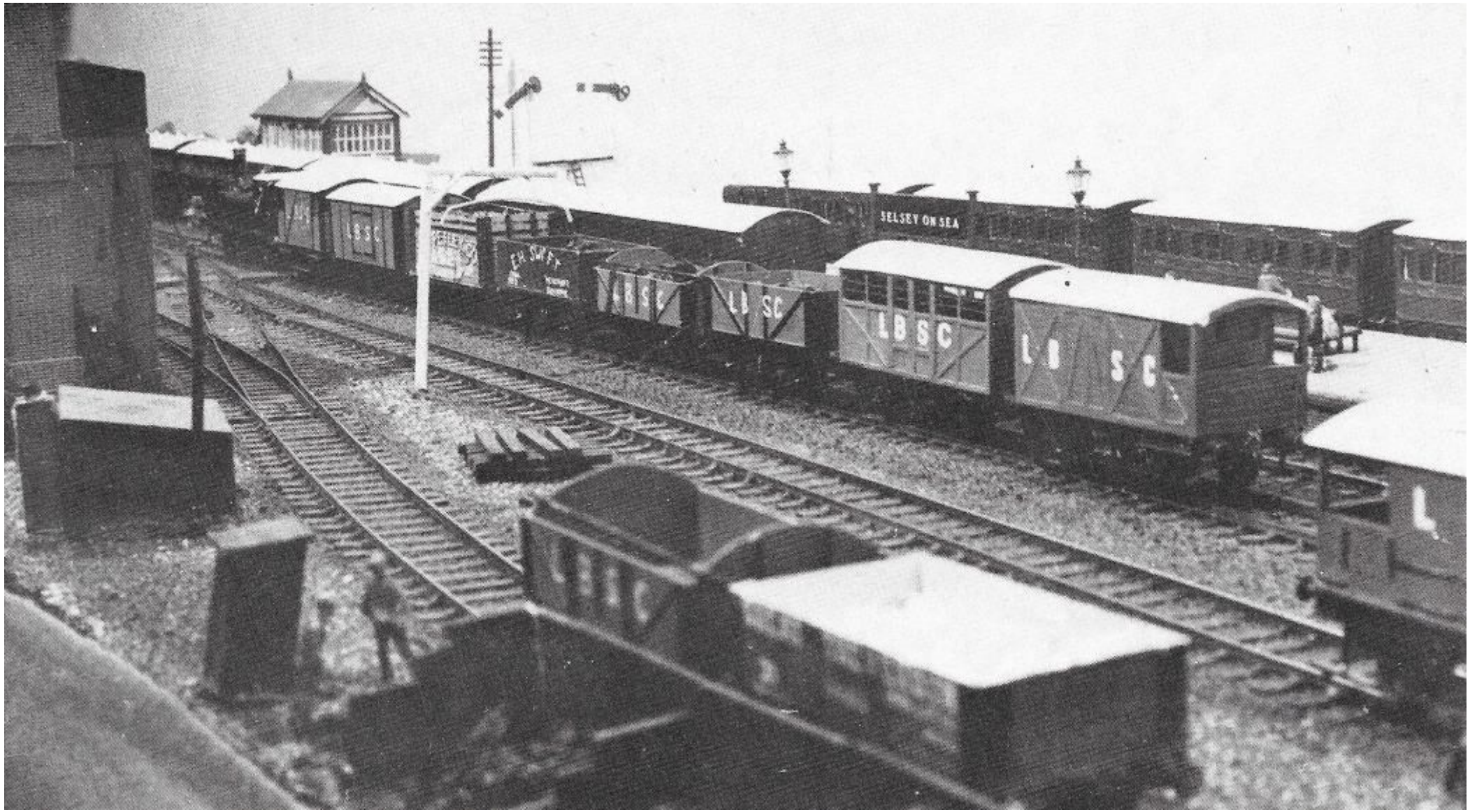
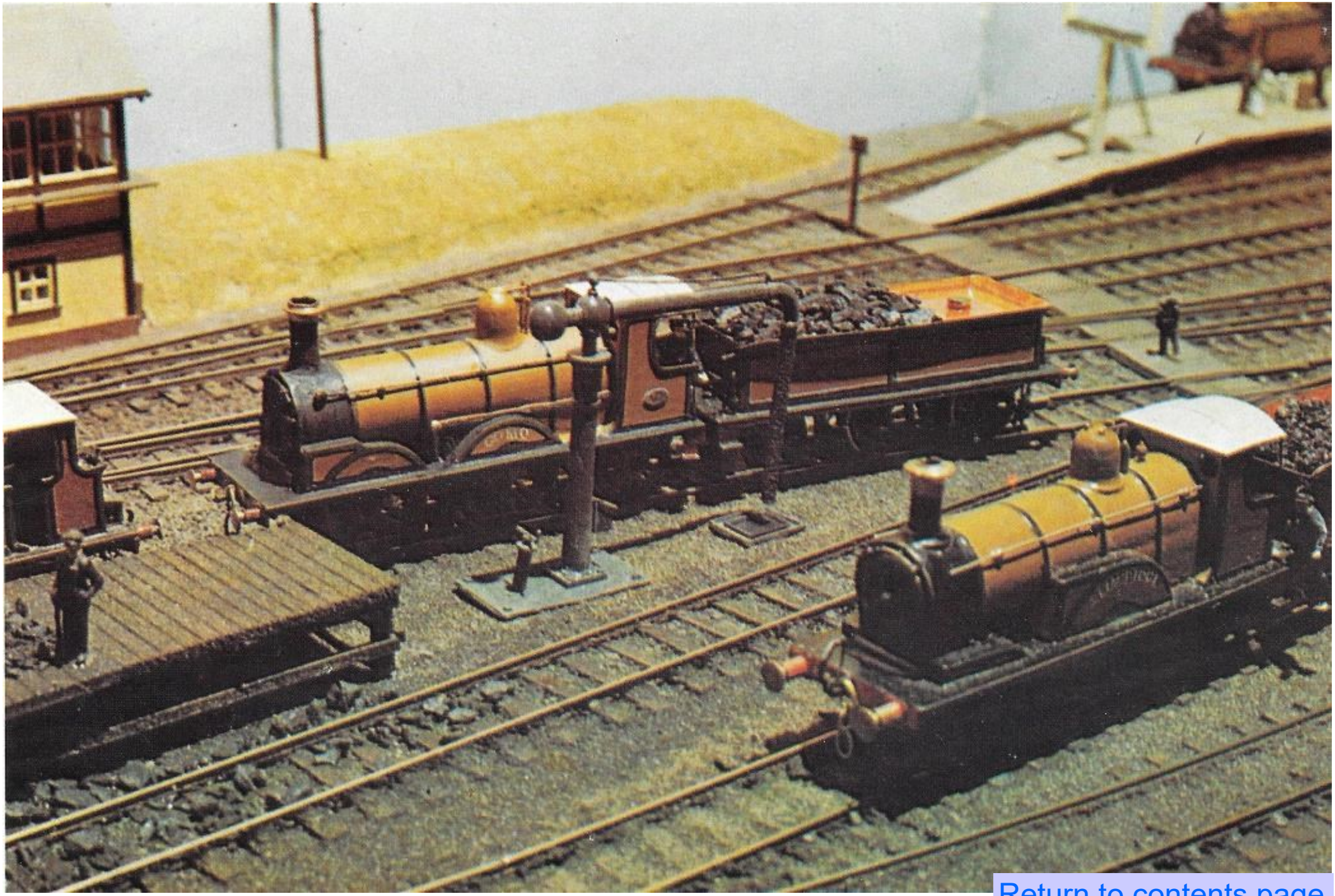



SELSEY ON SEA
LBSC
LBSC
LBSC



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The Spring Meeting at Patcham - 27 April

The Spring meeting of the Brighton Circle took place at Patcham Community Centre on Saturday 27th April. Over 40 members of the Circle were present - one of the highest attendances in recent times. The day included the presentation of the Jeoffry Spence Award to Arch Overbury, in recognition of his contribution to the development of the Circle. Slideshows were given by Chris Durrant, on Brighton line signalling, and David Lowe, with some of his favourite photos. Dave Hammersley of Roxey Mouldings and Ian MacCormac of EBM had a range of kits on sale and books were available from Reg Davies. As always, there was an exhibition of members' models.

Excellent catering was organised by Lesley Stockwell, Anne Gates and Peter Wisdom.

A selection of photographs of the event follows.

Arch Overbury receives the Jeoffry Spence Award from Dave Searle, Chairman of the Brighton Circle.

Some from Andrew Jones' collection.

A pair of EBM Slaughter goods locos, both still under construction.

Left - Phil Taylor's model of No 249, with Stroudley chimney and cab wings.

Below - Eric Gates' No 250, in original condition.

A trio of 7mm scale locos shown by Colin Hayward.

B2 Rastrick, shown by Barry Luck and built by his son Chris.

Mike Waldron’s signals and private owner wagons

Huw Evans brought along Lewes Road, which was last seen in [Issue 18 of the Digest.]

Richard Barton’s Hayling Island

Colin Paul’s goods lock-up and Stroudley brake van.

Imberhorne - see John Shaw's article in Digest 18

Peter Wisdom’s petrol railcar.

The Roxey sales stand!

Two items from the John Minnis collection.

The image below of Inspector formed the frontispiece of the June 1963 Railway Magazine.

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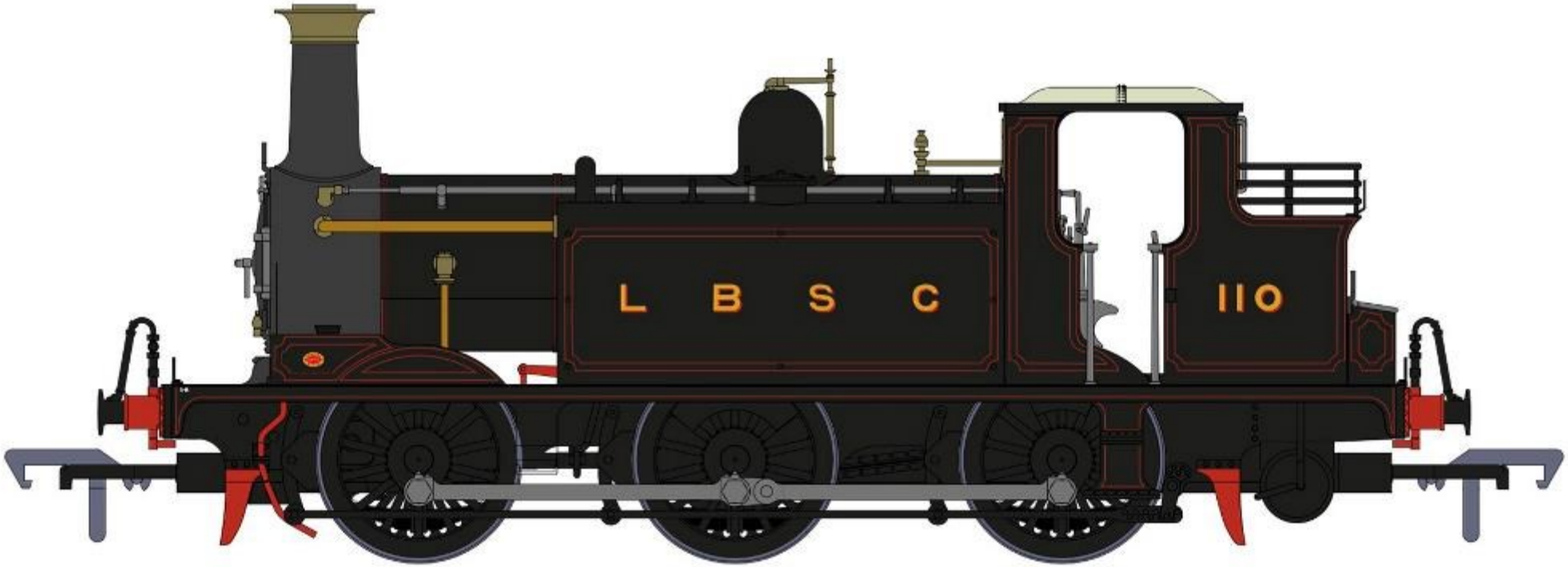
Rapido - E tank

LB&SCR E1 – Rapido Trains UK

Rapido has confirmed that the project to produce No 110 in Marsh black livery will go ahead. The loco features Stroudley boiler and chimney, later style smokebox door, condensing pipes and open coal rails.

In total, pre-orders comfortably exceeded the target of 100 and profits will be donated to the Brighton Circle, for donation to a Brighton preservation project of our choice.



Pre production artwork, subject to change.

Rapido - Wagons

Rapido has announced the availability of 7 plank, 12 ton RCH coal wagons lettered for the London, Brighton, and South Coast Railway. The company ordered 225 wagons in 1911, which were added to a previously ordered SECR batch and were constructed to the same SECR drawings.

[LBSCR / SR 1907 RCH Open – Rapido Trains UK]

Kernow Model Rail Centre

Moger Private Owner Wagon

Kernow Model Rail Centre announce an exclusive 00 Gauge 1907 RCH 12T seven plank open wagon in the livery of Moger & Co Ltd as running on the London, Brighton and South Coast Railway.

Joseph Moger and his sons were coal merchants and known to have operated by 1865 out of LB&SCR yards at Crystal Palace (including high level), Gipsy Hill, Norwood Junction and Penge stations. By the turn of the century Moger also had a presence at yards including Tulse Hill, Peckham, Sydenham, Epsom, Ewell, Merton Abbey and Raynes Park.

Wagon number 232 was one of twenty 12T seven plank wagons built by Charles Roberts in 1911 numbered 232 to 241 and lettered “Moger & Co Ltd” and although registered by the South Eastern and Chatham Railway they were lettered as L.B.& S.C.Rly.

The Kernow Model Rail Centre exclusive highly detailed model in 00 Gauge is being produced for KMRC by Rapido Trains UK Ltd. The model is based on their RCH 1907 specification seven plank open wagon and features angled brake hangers, double sided brakes, round bottomed grease axle boxes, smooth tapered buffers and split spoke wheels running in brass bearings.

The exclusive model 967233 Rapido RCH 1907 7 Plank Open Wagon number 232 - Moger is priced at £32.95 and is available now online and from both Kernow Model Rail Centre branches.

Stocks are already becoming limited so early orders would be prudent.


MOGER & Co LD
232.
6-13-1
L.B & S C RLY.
Load 12 Tons
K
M
R
C

Kernow Model Rail Centre

Open A

KMRC Wagon - LBSC 5 Plank Wagon (kernowmodelrailcentre.com)

The models have been produced and are currently being shipped. The RRP is £32.99 but an early bird order with payment in advance, is available at a price of £29.99 each.

The 10-ton, five plank, round ended, open wagon, on a wooden underframe became the most numerous LBSC wagon, with over 3,500 vehicles subsequently classified as SR Diagram 1369. The original designs dated from the 1870s with the distinctive curved ends allowed the fitting of a tarpaulin sheet rail. This version dates from around 1912, with ‘Freighter’ style brakes on each side with a single vee hanger. After approximately 1914, double vee hangers were fitted and these could either be mounted in front and immediately behind the solebar, or the rear pair hung from the middle longitudinal timbers with a short connecting rod between the two.

Those built from 1924-6 had square ends and no sheet rail and were given diagram 1364. Many of those built with round ends had them cut down to square, with the sheet rail removed, and most, but not all, were re-diagrammed in the registers to D1364.

Post grouping, 450 were transferred to the Isle of Wight and a range of appropriate post grouping livery options are available.

The tooling suite for the models allows for the D1369 with rounded ends, with the outside, structural ‘knees’ adopted from 1912 and with fully posable sheet rail in any position between vertical or side positions. The D1364 square ended version, as converted from D1369 or built new between 1924-6, is also available. All feature a wooden chassis, with either 8 open spoke or LBSC 4-hole disc wheels and either LB&SCR, SR lettered or plain axle box covers. Brake options allow for single inside or outside and double and middle Vee hangers along with plain tapered or ribbed taper shank buffers. The brake gear is spaced to facilitate the use of EM/P4 wheels. The specification of the model includes a highly detailed body and chassis, prototypical brake gear and safety loops fitted, fully posable sheet rail (D1369) sprung metal buffers, etched brake handles that can even be posed in the 'on' position complete with locking peg chains, coupling hooks and metal three link couplings.

Bluebell Railway Carriage Shop and Goods Division G Newington of Lewes 1907 specification PO wagon

The third wagon project of Brighton interest from Rapido is a very nice model of a 1907 RCH specification 5 plank open wagon in the livery of G Newington of Lewes. The model is to the usual high standards set by Rapido, and is a version of the 1907 RCH private owner wagons that has recently been released. This follows the Moger 7 plank wagon, announced by Kernow MRC. The model has been commissioned by the Bluebell Railway Carriage Shop and the Bluebell Railway Goods Division, as a joint venture. There were 100 wagons for sale, but only available at the moment by direct purchase in person at the Bluebell Carriage Shop at Horsted Keynes Station. This restriction may make it difficult to get hold of this very attractive wagon. They are not currently being offered by mail order or online but, nonetheless, very few remain.

The profits will be fed back into the wagon restoration work of the Bluebell Railway Goods Division Group, and the wagons are priced at £33.95 each.


BLUEBELL RAILWAY
CARRIAGE SHOP
HORSTED KEYNES
BLUEBELL RAILWAY
LBSC
GOODS DIVISION
G.NEWINGTON & Co
COAL MERCHANTS
AND
LIME BURNERS
LEWES

Rails of Sheffield - Stroudley 4 wheeled coaches

Rails of Sheffield have an offer currently for three of the Dapol 7mm scale Stroudley 4 wheeled carriages at £225. The set consists of

1x Brake Third Coach No.801
1x Composite Coach No.212
1x Brake Third Coach No.810

All fitted with interior light bars

Individual vehicles are available at a discount of 15% from RRP.

ACE Products - Billinton B2 in 4mm scale

Following a number of requests, ACE Products are arranging production of a set of etches in 4mm scale, to follow the existing 7mm scale model of a Billinton B2. This will be a limited production run and if anyone is interested, they should contact ACE Products.

[Southern Railway steam engines | Ace Products, Model Railways, Reigate, Surrey]

Telephone 01737 248540

The former Etched Pixels Range in 2mm scale

The 2mm Association: Etched Pixels LBSCR range in 2mm/N

Following the retirement of the owner of Etched Pixels, Alan Cox, The 2mm Association has obtained a few remaining etches and the rights to reprint etched sheets from the range. These will be available to Association members. They are not held as stock items and you will need to request a full sheet to be etched.

The sheets are the result of the organic growth of the range and some sheets have sets of coach parts for the same group of coaches (e.g. 1st , 2nd , Brake 3rd), whereas others have a selection of different prototypes sometimes from different railways. These are etches only, so you will need to source wheels, chassis, bogies and any castings yourself.

Members of the Brighton Circle have been putting together a list of the prototype LBSCR coaches against the etched sheet numbers. If you are interested in this list, please contact 2mm@lbscr.org.

Note, you will need to be a member of The 2mm Association to request any etches.

The Brighton Circle Facebook Group

There is a Facebook page (search for @LBSCRBrightonCircle) and a lively and growing associated group, which currently numbers over 1900 members.

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

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

Please do visit the page if you are on Facebook.

The Brighton Circle

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

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

Membership of the Brighton Circle for 2024 is

£23.00 for full membership

Applications should be sent to

secretary@lbscr.org

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

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