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

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

Issue 9

Summer 2019

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# Editorial

How did we get to Issue 9 of the LB&SCR Modellers Digest and still have such a fantastic stream of articles arriving? If nothing else, it demonstrates that the challenges of modelling the pre-grouping period stimulate both traditional skills as well as newer technologies. I hope that those who follow any of the pre-grouping companies - and, indeed, modellers of more modern periods - will find techniques and technology that are relevant.

We have also seen the release of the latest in the stream of ready-to-run locos from the trade. The new version of the Hornby Terrier has been released as Stepney, with the promise of Leadenhall to follow. Still to come are the Locomotion Terrier and the Rapido E tank. There still seems to be no prospect of coaching stock in 4mm scale, but Dapol are promising a range of Stroudley 4 wheelers in 7mm scale to match their big Terrier.

My thanks to all those who have provided articles (no, you do not have to be a member of the Brighton Circle to contribute, but why would you not be?).

Eric Gates

Modelling Steward, The Brighton Circle

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# Modellers Day at Blatchington

## Some highlights

Photos by Phil Taylor, Nicholas Pryor and Ian MacCormac


...featuring models in 2mm, 4mm and 7mm scales.


Starting in 2mm scale, Dave Searle brought along some of the work that is going into the Epsom and Ewell MRC's layout of Lewes in 1886.

No 175 owned by Nicholas Pryor and built by David Amias from etches produced by Ian White.

Nicholas Pryor's model of Craven 0-4-2ST number 167, built from Ian White's etches by David Amias.

Mike Waldron’s Brighton super-power: Sussex and on the following page, Belgravia from EBM kits.


Mike Waldron’s E tank from an Albion kit.



In 7mm scale, Colin Paul's B2, Wolfe Barry.

Further details follow.


Nicholas Pryor’s D2 Paris in 4mm, built by David Amias from an EBM kit and painted by Warren Heywood.


Peter Wisdom’s 7mm scale machinery wagon with pantechnicon load.


The following trio of brake vans are in 7mm scale and were built by Colin Paul.


L B & S C R
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GUARD


L B & S C R
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GUARD
7-10-0

Peter Wisdom’s balloon trailer.

As a postscript to Blatchington, the editor asked me for some more information about this model. I bought B2 No. 209 “Wolfe Barry” from Richard Barton last year, as it was too modern for his modelling period. Mike Waldron kindly brought it down to the Blatchington meeting. Richard had bought it through the O Gauge Guild Trustees sale after the death of Roger Cornwell, who was a Brighton Circle and MSC Models member. Knowing Roger for many years, I know that he did not build it. Neither Richard nor I know who the builder or painter was and if anyone has any more information, I should be interested to hear. I am led to believe it was built from a Sans Pareil etched kit (now no longer available), MSC Models Crailcrest motor, with Slaters/Walsall wheels.

As for the model, I have done some extensive modifications (including fitting extra pick-ups, modifying the front bogie arrangement, adding dummy inside motion, and fitting new tender axlebox covers) to get it running superbly and I have redone the paintwork. It may appear as an article in a future Digest as other readers may be interested in my modifications. It now takes pride of place over the mantelpiece.

Colin Paul



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# Building a Worsley works LBSC Directors saloon

## By Matt Wickham

For a while I have been trying to build up a nice selection of vintage coaches, including the LBSC 12 wheeled Directors saloon. This project starts with the Worsley Works etched brass kit in 4mm scale. It is essentially a scratch building aid as it includes only

- Chassis floor
- 2x sides, 2x ends
- Window etches

It costs £45, with extra parts to complete which probably cost about the same.
It is, therefore, a starting point to work from, both as a kit and as it represents the original vehicle which is still in its BR condition, so that some items are not original features. My aim is to model the coach as it was built in 1913, which, according to volunteers, is how they would like to restore it - but at a potential cost of £150-200K, possibly more.

**Research**

Fortunately, I know a few people on the Bluebell Line, including some in the Carriage and Wagon department, as well as a very kind photographer, Mike Anton, who took what was basically a photo survey for me. It cleared up the information that I need, and also helped with another source of information from another volunteer at the railway, who was putting together a case to restore the coach, as a future project.

I was put in to contact with Kuristo Demans, who had a wealth of information on the coach, as well as some useful drawings especially in regards to the roof. These helped resolve what was original and what had been added later by Southern or British Railways. Thanks to volunteer Richard Salmon who also sent me a better drawing from one of the books and Stan Chandler, also a member of the High Wycombe Model Railway Society, who allowed me to borrow his book Bogie Carriages of the LBSC by David Gould, which had a good description of the coach. I am in debt to everyone who helped with the research!


The research helped me to identify what parts to look for, although some compromises are needed as some parts are just not available!

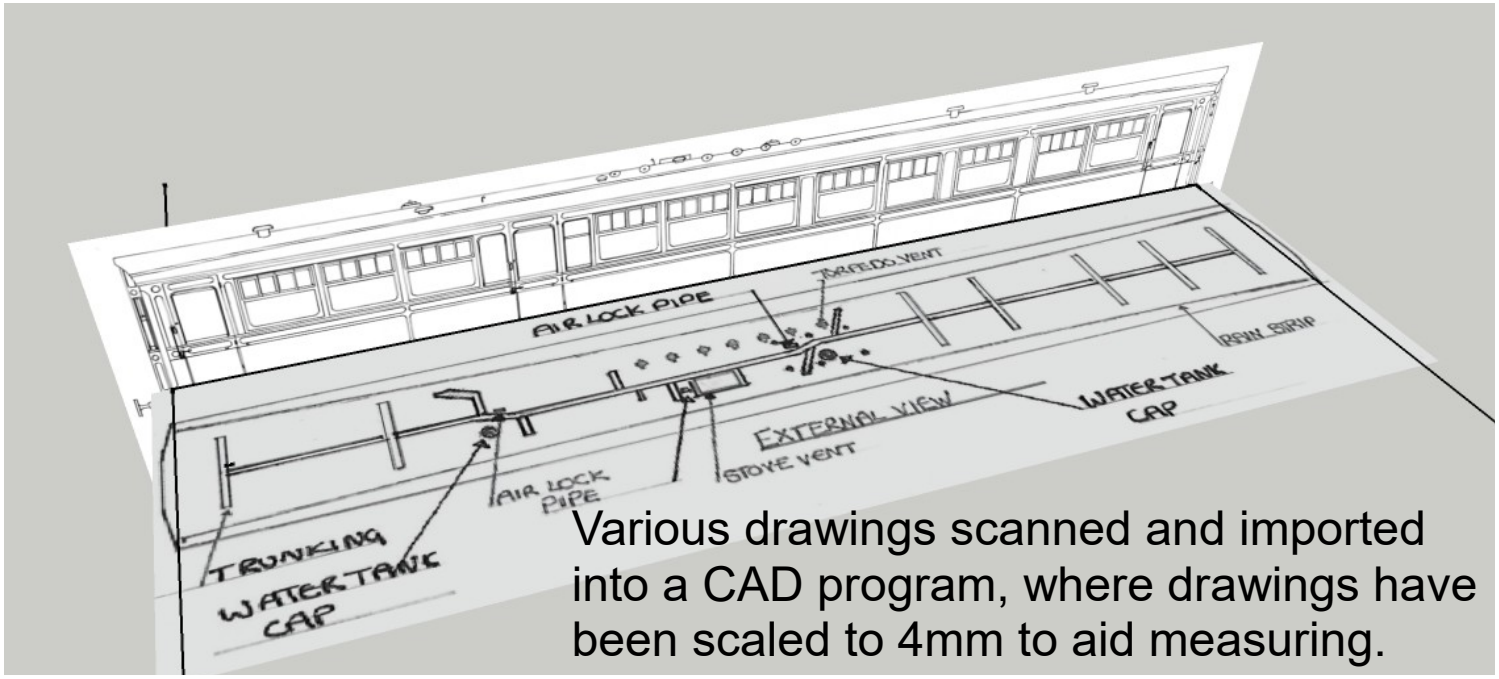
<u>Shopping list</u>

*Bogies (LNWR 11'6" 6 wheel bogie, 247 Developments #C612)*
*Roof (Elliptical roof profile, Wizard models C10 / SRG / Roxey)*
*Truss rods (Brass wire 0.5mm/Rod 0.8mm)*

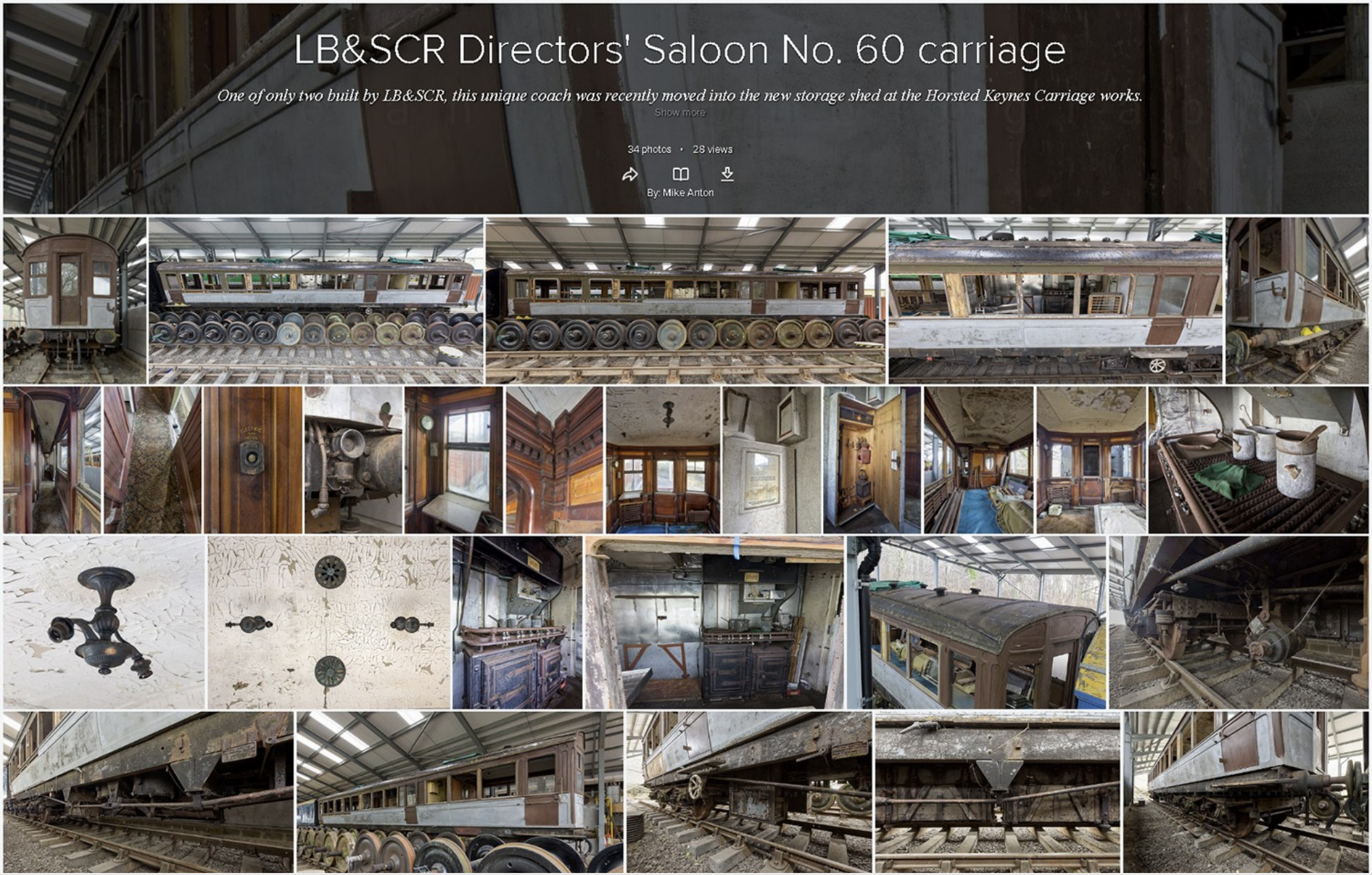
*Battery boxes (Southern Railway Group (RS5)*
*Buffers (Markits M4BufCoachSECR)*
*Vacuum cylinders (Markits M4VacCyLRSET)*
*Door handles (Markits M4CDHb)*
*Roof vents (Torpedo type, Wizard)*
*I beam (K&S, 3.18x1.59mm #815013)*
*Evergreen strip (EV123 0.5mm x 1.5mm, EV120 0.5 X 0.5mm)*

I feel it is important to track down, and order most of the parts before I start construction. Then I can work out any changes I need to make or work out where parts go, so it will all fit together reasonably well in case the kit is not designed with certain parts in mind. With all the bits in hand, I can keep an open mind and work with the kit as I go.

As most of the drawings do not have all the measurements, but the photos give good reference points, I still needed to find sizes or measurements for some items. By scanning in a drawing and using a scale calculator I knew the length of the sides of the coach in 4mm, so I could resize the image on a piece of CAD software, I could then measure the drawing and get a reasonable dimension.




Various drawings scanned and imported into a CAD program, where drawings have been scaled to 4mm to aid measuring.




(Reproduced with permission of Mike Anton, showing the excellent section of images on his FlickR https://flic.kr/s/aHsktS4yxW)

## Construction

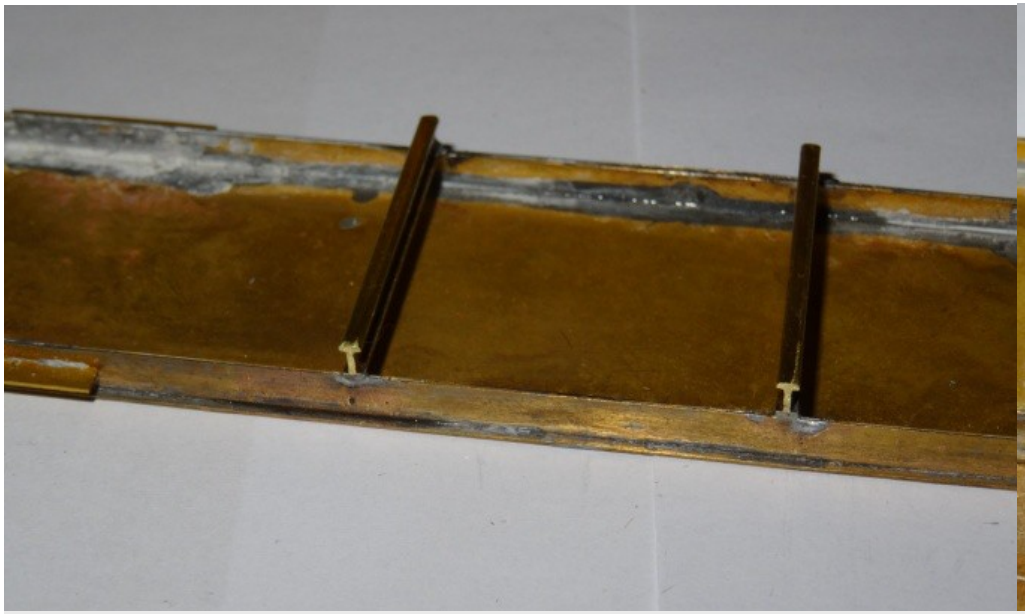

Equipment: 25 Watt Soldering Iron, Solder, Fiberglass pen, knife, file, and flux.

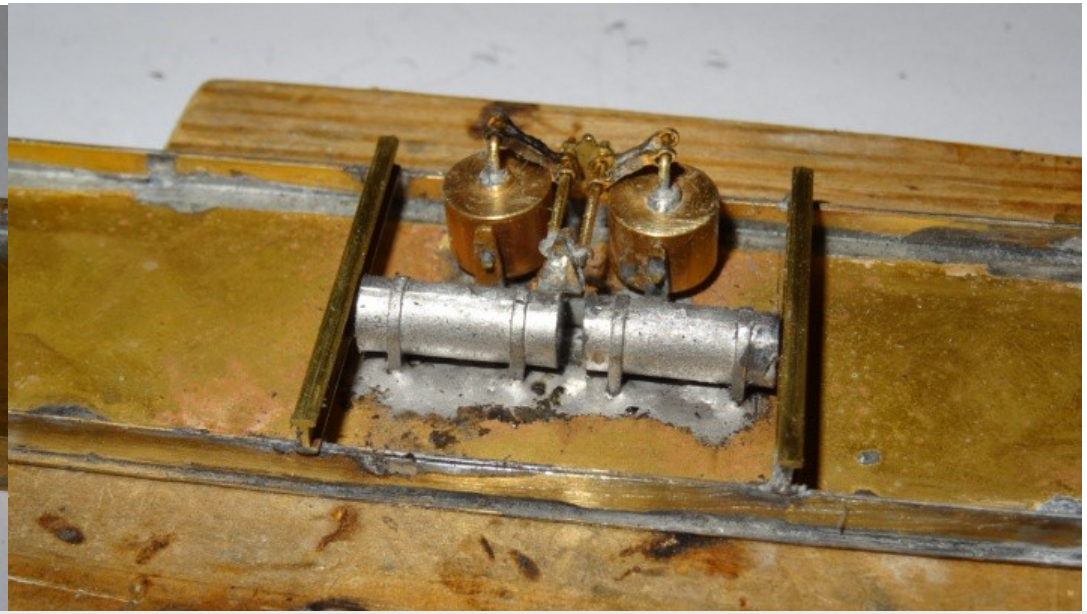
I could then start on the basic kit. Firstly I assembled the floor pan, which is very straightforward. I only use a 25 Watt soldering iron, which is sufficient for most kits in 4mm scale; anything larger and you are likely to need a hotter iron or a higher wattage. I use 188 degree for strong joints, and 145 degree for smaller detail items, plus flux to help the solder flow. Also important before soldering is to clean the area. I normally use a fibreglass pen, which is available from Eileen's Emporium.

The floor is made up of 7 pieces - the main floor, 4 side pieces (2 for each side to laminate) and a buffer beam for each end. The kit does give one detailing part which is the stepboards that go into slots on the sole bars of the floor or chassis.


Fibreglass pen cleaning the area prior to soldering to ensure a good join.

Thanks to superb photos from Mike and information from Richard from the Bluebell, I ordered all the detail parts for the chassis. The first item to add was the I beam sections. There are 2 of these and, thanks to the CAD program and the drawing, I could easily mark their position. Metal sections are easily available from a good model shop, in brass or plastic. The I beam from K&S metals was challenging to find, but I finally located a supply from a model boat builders website. These were cut to size and soldered in position with 188 degree solder, this then gave me a better idea of the space I had to work with, as a lot of underframe equipment goes between or around these two transverse beams.





**Left:** K&S I beam soldered across the chassis.

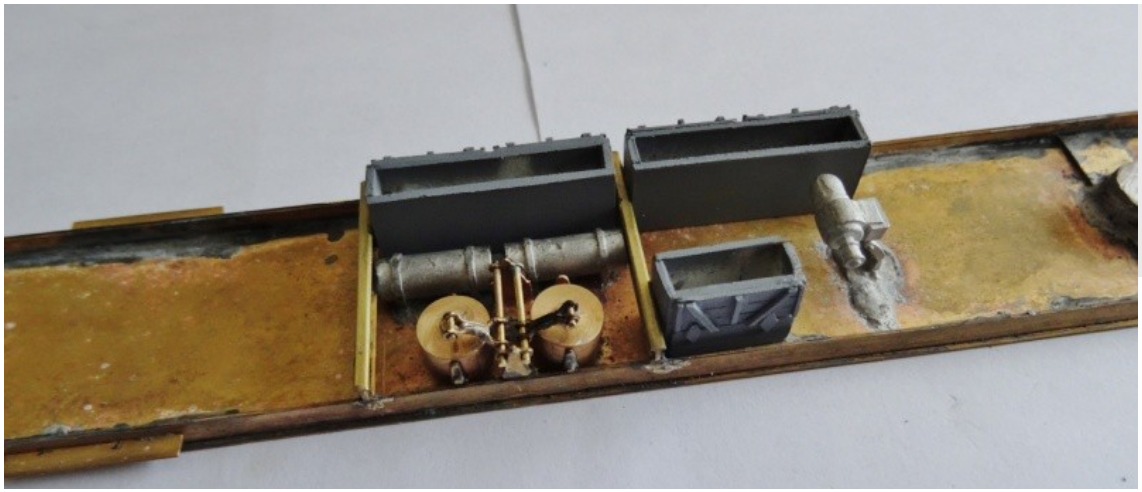
**Right:** Markits Vacuum cylinders with scratch built assembly and 2x white metal Dart / MJT castings.

The next item on the job list was the bogies from 247 Developments. These are a bit of a compromise as the right design is not available, so I had to go with the next best thing, which were 11’ 6" white metal 6 wheeled bogies. I also had to order the bogie boss on which the bogie mounts and rotates.
The white metal can be soldered together using a 15 Watt or a temperature controlled iron. You will need some low melt  (70 degree) solder and also some flux. First job is to fit the brass bearings which are available from various sources; I glue or solder these in. The bogies are fitted with 14mm disc wheels with 2 holes in the disc.

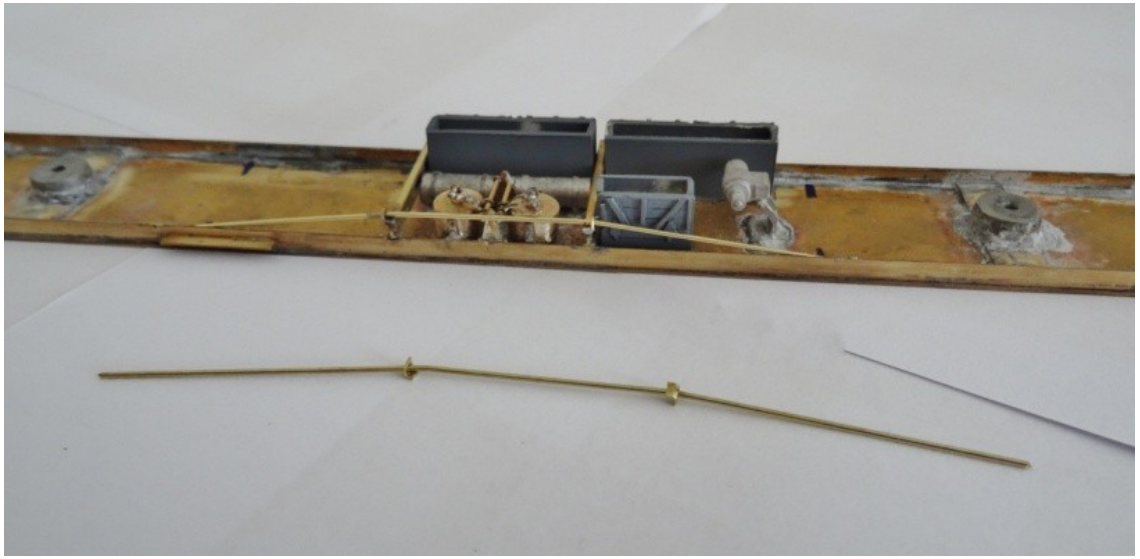

**Left**: LNWR 11'6" 6 wheel bogie, 247 Developments #C612 being assembled with Romford bearings, fitted with Bachmann 14mm wheels.

**Right**: Bogie boss installed with an M2 brass nut soldered on the underside.

I then started to plan out where all the parts go. I had purchased some white metal battery boxes from the Southern Railway Group, however I found on arrival that they were too long, so I had to scratch build them out of plasticard, and styrene sheet. In all there are 3 boxes, 2x doubles and also 1x single on the other side.
With the battery boxes constructed, these can be glued in position with araldite adhesive.

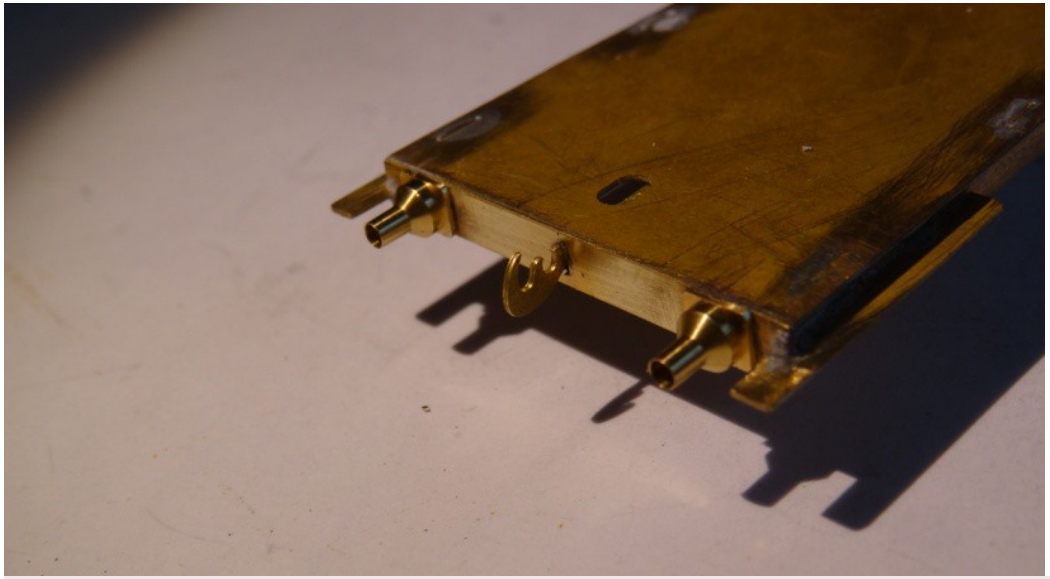


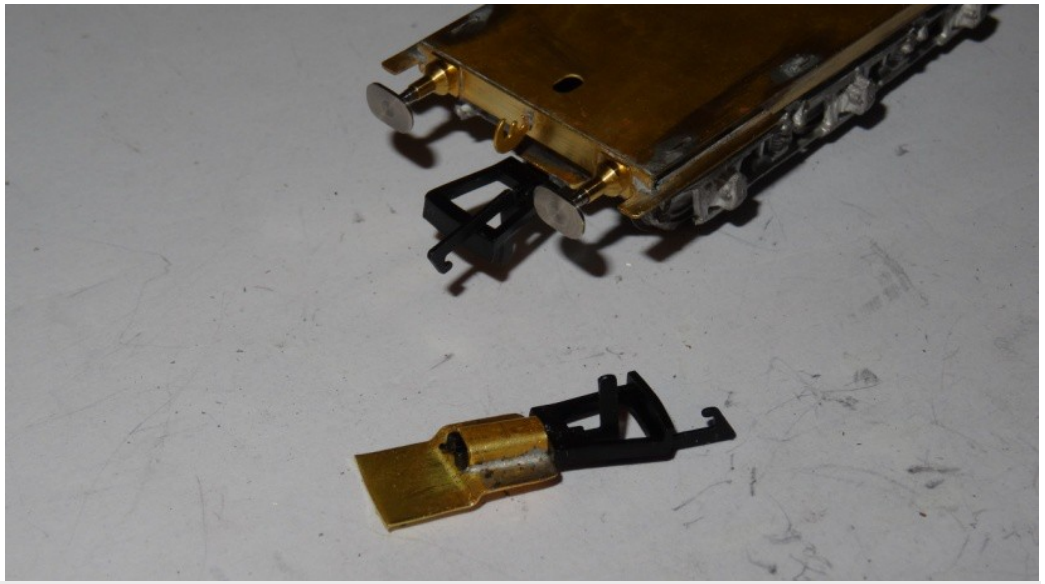
Battery boxes constructed out of plastic card and Styrene sheet, detail and raised sections made from different thicknesses of plasticard.



With the main parts now attached to the underside of the chassis, there were only two more small parts to add and these were the truss rods which are basically for re-enforcement of the chassis to hold the weight of the body. I use the 0.8mm brass rod purchased from my local model shop, and using the scaled drawings showing in the first part of the article, I measured and shaped the rod to the drawing. Small brackets needed to be made from brass sheet which are soldered on to the I beam.

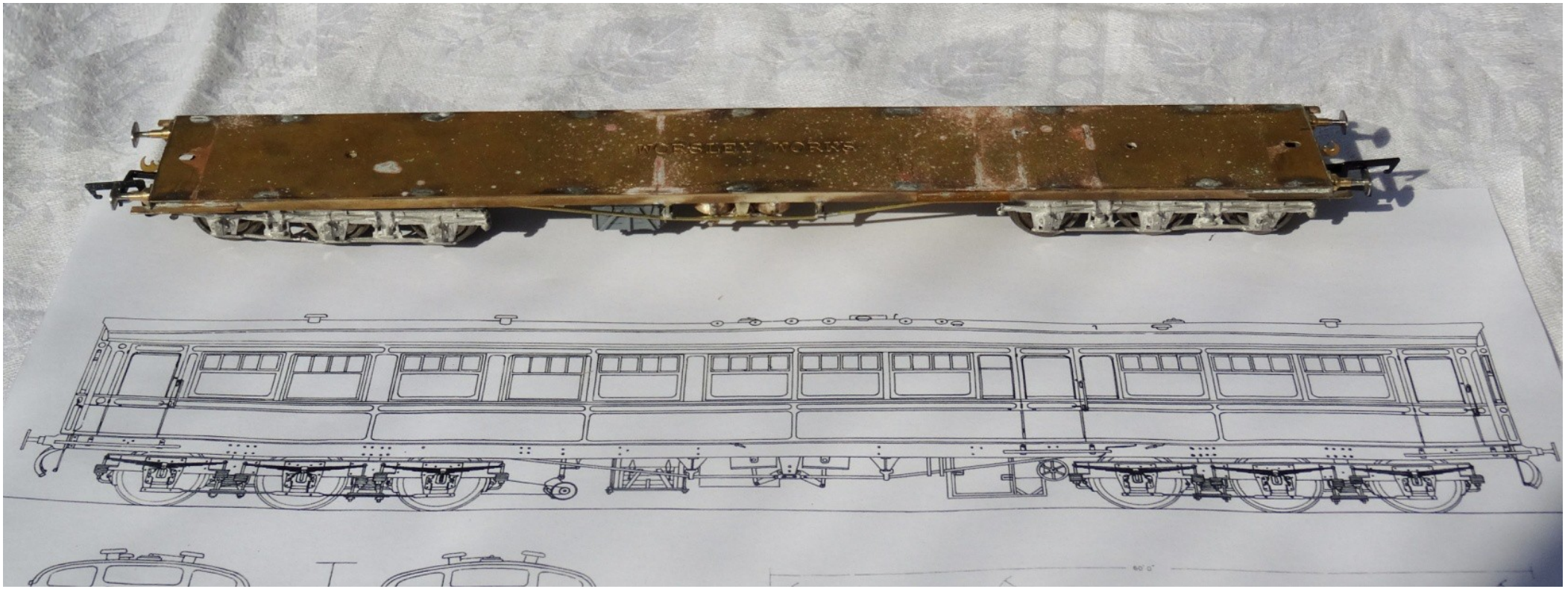
Once the main bulk of the detail work was done, the detailing and finishing off work was next. The buffers from Markits were the closest available to what is on the coach currently, the hole in the buffer beams were enlarged to 2mm diameter and soldered in to place. Also added was an etched coupling hook from a detailing etch by Mainly Trains which is now sold by Wizard Models. The next part was to finish the bogies off, as it would need couplings of some description, to be coupled to other coaches, I use the standard NEM Hornby / Bachmann couplings or on some occasions Kadee couplings, so I would like to replicate that NEM pocket. Using some sheet brass, and using the measurements from the Double O Association I folded the brass into a U shape channel added to a flat section and soldered with low melt solder to the bogie.





***Left:*** *Markits buffers fitted with etched coupling hook.*

***Right:*** *Coupling mounting made from brass sheet, and soldered on to the bogie*



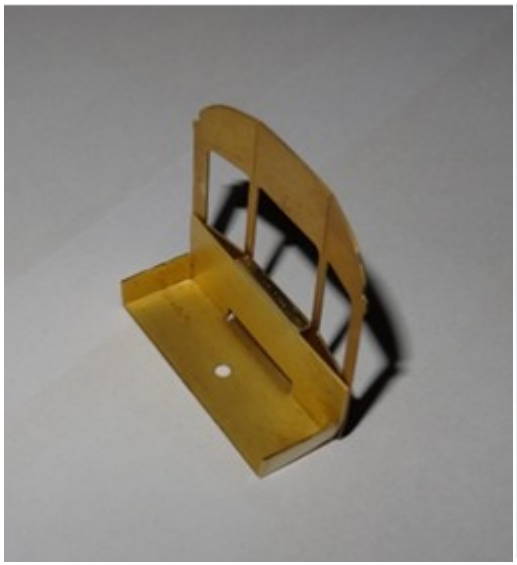

The coach body in the kit only gives you 4x parts with 2x formers for the bowed ends which also act as mounting points for the body to the chassis. I removed the sides from the brass frets, but to form the tumblehomes I had to build a former. With a massive budget of £10, I went down to my DIY store and purchased an off cut of some curved skirting board, which has the top facing edge nicely curved. I also purchased some M6 hex bolts, M6 washers and M6 wing nuts which will be used later on. I found a piece of hardwood in the garage which would be used as a clamp to hold the coach side against the curved skirting board.  Drilling 6mm holes in the hard wood, and elongating the ones in the pine allows some movement up and down in case some sides are higher.

Tumblehome jig made from off cuts of skirting board, and hardwood, with M6 nuts and bolts.

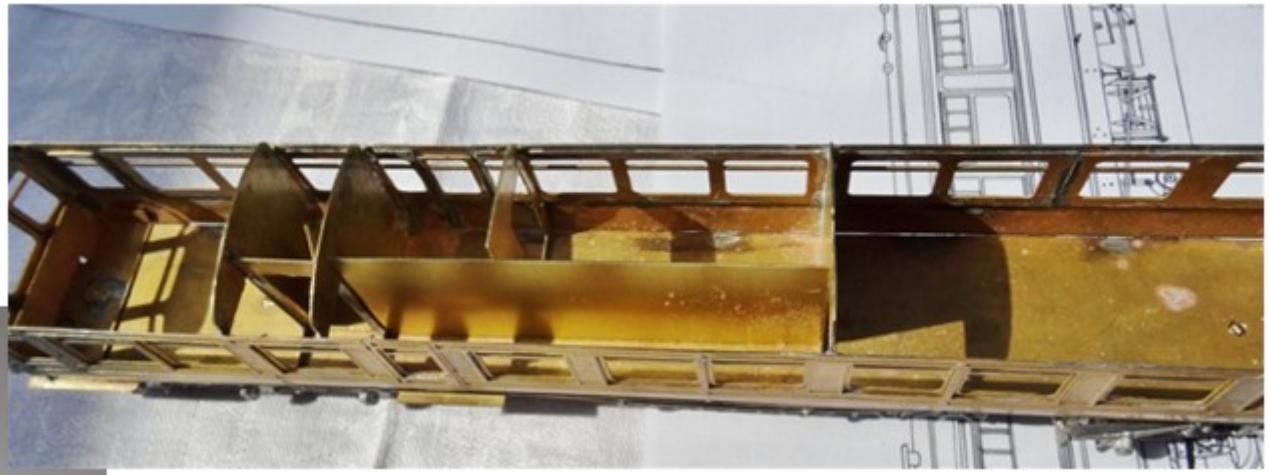
Once the 2 coach sides have received their tumblehomes, the two ends of the coach are formed. The ends have a brass former to hold the bow end shape, which also has a hole in the base for attaching the body to the chassis. An M2 brass nut is soldered to the base plate, and then the ends soldered to the sides.

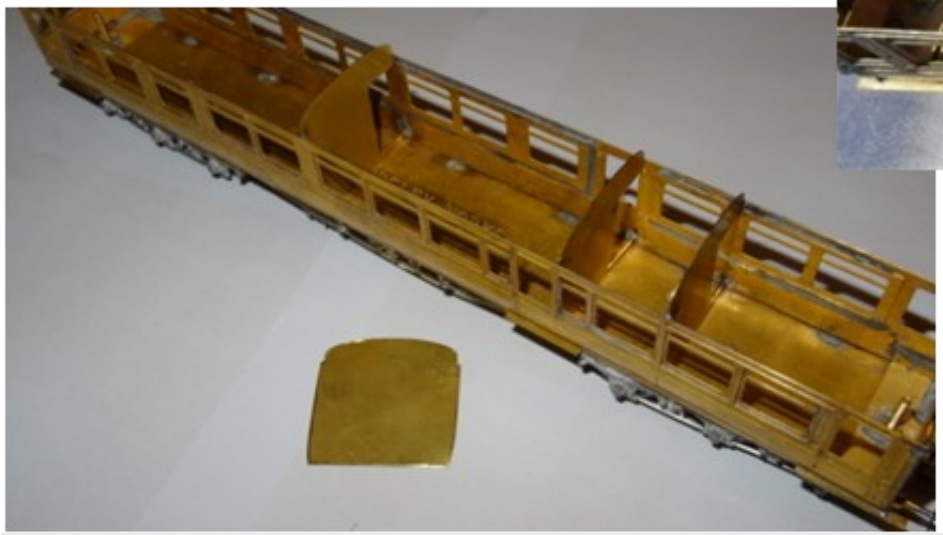
**Left:** Bowed end with its former soldered in place.

**Right:** The end soldered to its sides and test fitted to the chassis.



With just 2 sides and 2 ends, the kit is extremely flexible, so I needed to stiffen it up a little. There will be a roof to go on at some stage in the future, but I needed it to be strong in the middle so that it did not flex when being attached to the roof. With drawings and the excellent photographs from Mike I had to scratch build the partitions, corridor and some of the interior to stiffen the model up to prepare it for the roof. Partitions were marked out on a sheet of 0.3mm sheet brass, cut out with tin snips and including some doorways, in case I decided to fit some sort of interior later on, depending which windows are opaque or clear.

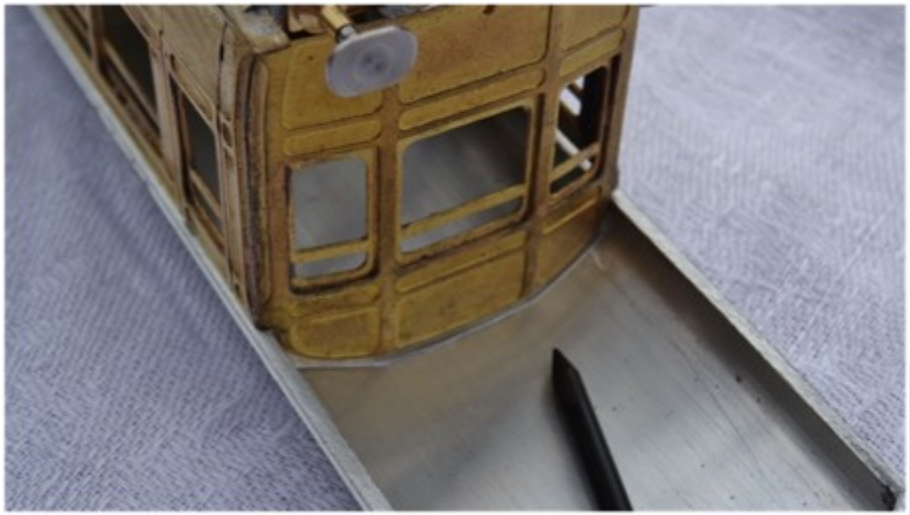




**Left:** Partitions made from brass sheet, and cut out with tin snips, **Right:** Partitions all in place just final soldering remains to be done

Next I turned my attention to the roof, as the body was now a bit more sturdy. I originally purchased an elliptical roof profile from Wizard, as recommended by Worsley Works, and as described in the LBSC rolling stock book I had borrowed from a friend of mine. When it arrived, it certainly was not quite what I had expected, being overly curved. As I have a good number of pre-grouping coaches, I checked the end against a number of coaches and checked the profile against the end. It turns out that I needed a shallow elliptical profile, which also appeared on LSWR and SECR coaches. Thanks to Southern expert Graham Muspratt, I was put in touch with the Southern Railway Group, which hold a number of detail parts for Southern and pre-grouping coaches. They hold what is left of Phoenix coach kits, which were formally PC models. These kits used extruded aluminium roof profiles, including the shallow elliptical profile, so I ordered 2, just in case I made an error with the first. I also ordered a vacuum formed roof from Roxey Mouldings to give me an extra option.

Upon arrival, I went with the aluminium option, as this was light, strong and, what the kit needed most of all, rigid. With the coach body made, I could check that it fitted. There were some small areas where there were small gaps, but these could be fixed with small patch repairs and filled to make them flush.



The roof is longer than required, which is helpful, but you need to cut it down. With the body assembled, I could use the ends to mark out the shape of the bow on the underside of the roof and this was cut to shape with a junior hacksaw in a vice and refined with a file.

The end is marked out on the aluminium roof ready for cutting and shaping.

The roof test fitted to the body to check.

I had to repair some of the corners of the body, as I noticed when cutting the ends and sides from the etch that the mouldings on the corners did not match up; one side was higher than the other. I filled this with solder and filed it flush with the brass. Then with a small pointed Dremel I reshaped the filled in area to match the end. All four corners were sorted quite quickly and, once primed and painted, you would not

**Left:** The corner moulding not lining up, the side corner being wrong, **Middle:** Filled and reshaped with a Dremel, **Right:** Complete with primer.

Before starting work on the roof, I still had some small details to make for the body while access was still good before adding the roof. The coach sides were lacking some door hinges, I purchased various detailing etches but sadly none had the hinges I would like, so I had to make my own by purchasing some phosphor bronze strip usually used for making pickups for loco's coaches etc. The strip was the right size, so I bent it into a U shape with a small space between so that the strip would hold its position when placed in the hole and then soldered.

Next priority was to make some of the exterior parts. The holes on the body are for grab handles, which are brass, so I wanted to replicate these with 0.5mm diameter brass rod. I made a small jig to repeat the shape and process over and over again to achieve the same result every time. I made 10, with a few for spare keeping as well as future LBSC coach projects. These will be soldered in place after priming and painting.

The roof had a lot of raised conduits or cable runs. Having measured the thickness and width using the scaled down drawings in CAD, I found Evergreen scale models, strip styrene 0.5 x 1.5mm (Item 123) was the best match. The strip was cut in to 20mm lengths to go across the roof, marking the centre, as a centre line has been drawn along the roof.


**Left:** Position of cable runs, and roof vents, marked in pencil from drawings.

**Right:** Cable runs made using 0.5mmx1.5mm plastic strip.

The other roof furniture, roof vents, rain strips etc. were all added, any metal parts being glued in place using Araldite. Once dry and cleaned, the roof was primed with Halford's white primer which will, I hope, be the finished surface; any touch ups can be done with a small amount of white paint. While drying, small details can be made ready for final fitting once the paint and livery has been decided.

The grab rails on the doors are polished brass on the actual coach, so the grab rails that are described above will remain unpainted brass. I also ordered turned brass handles for the doors, as the coach is rather a special vehicle and I decided to add a few extra pieces to make it stand out. Painting and lining will be described in Digest 10



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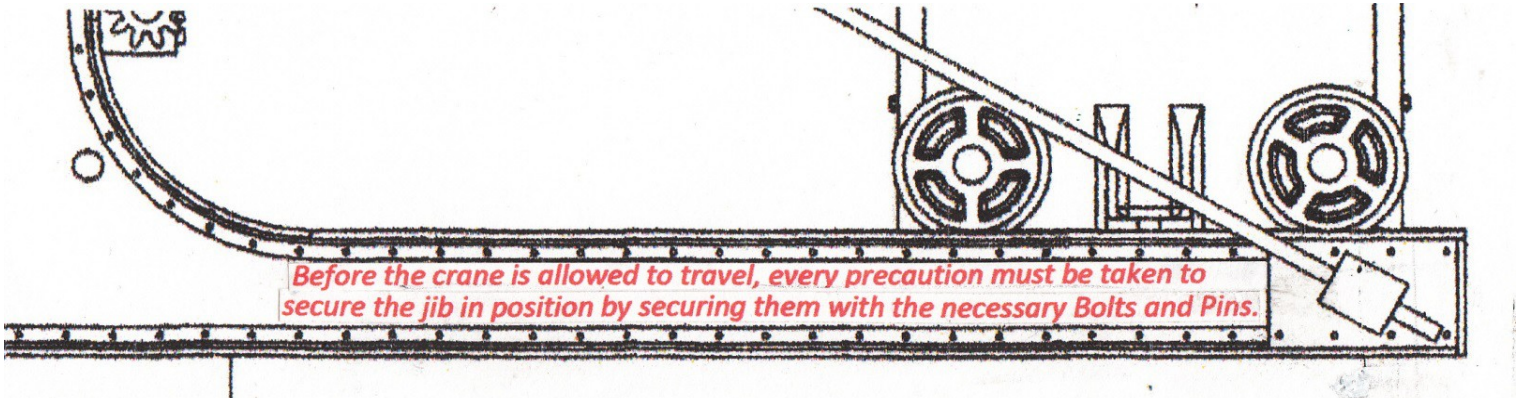
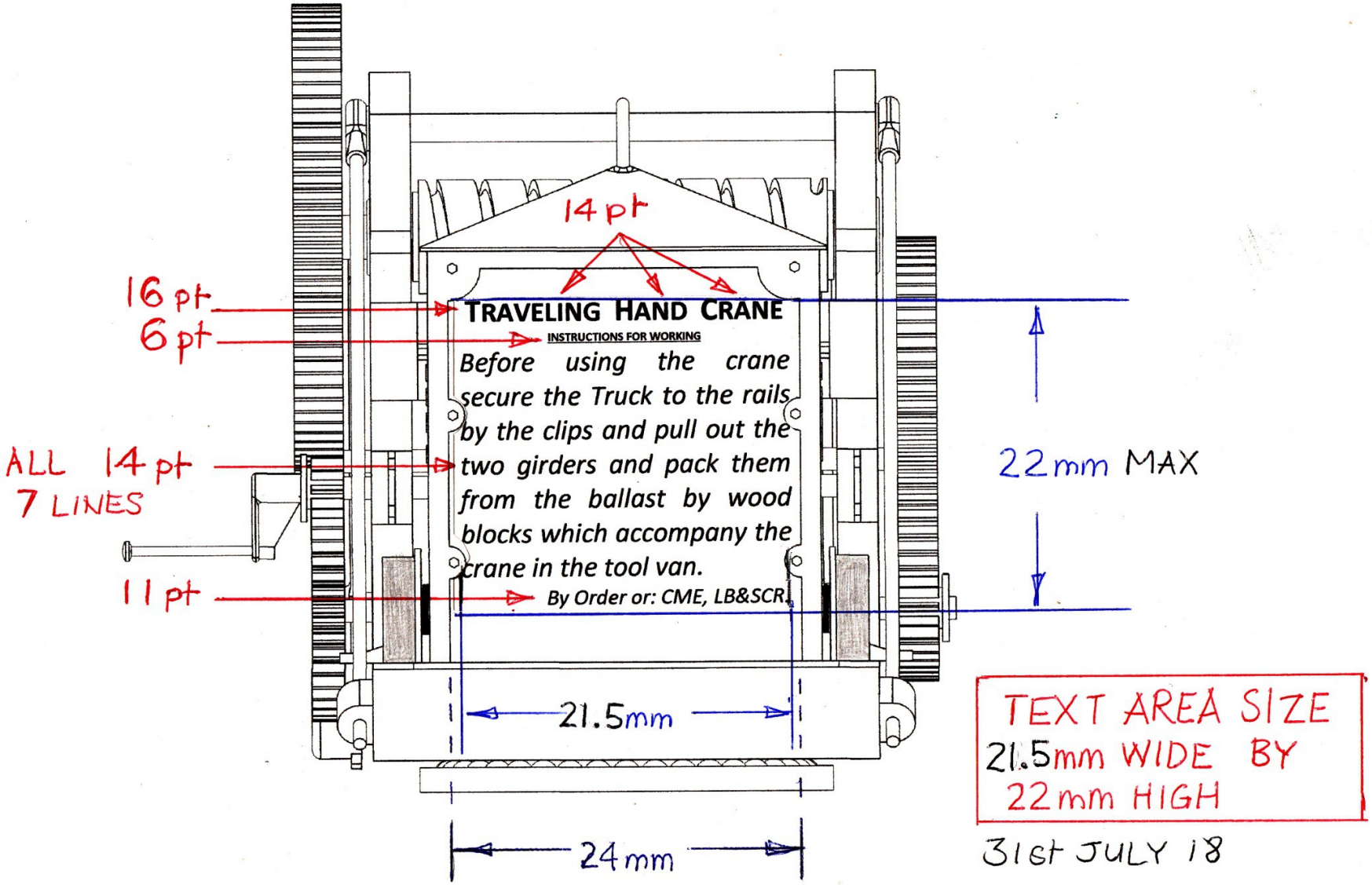
# Travelling Hand Crane No.19 - Part 7

## The Lettering

### By Colin Paul

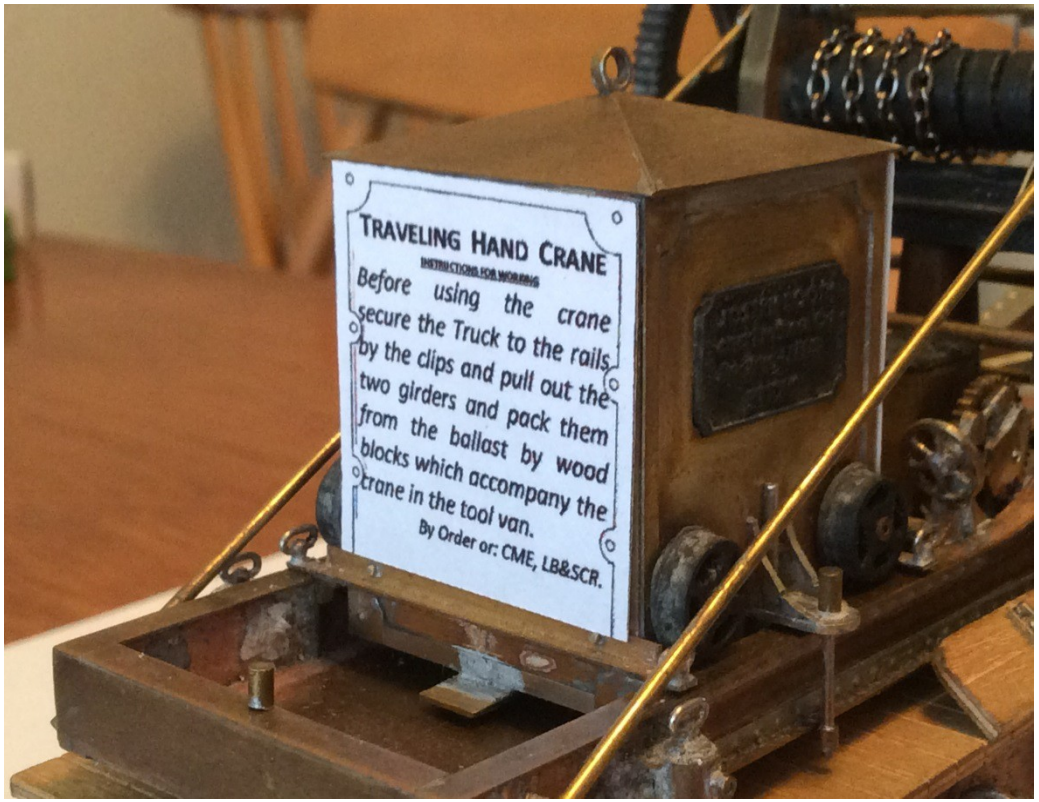
I mentioned in Modellers Digest, that I had approached Ian MacCormac of EBModels about the possibility of producing for me a set of bespoke transfers for the moving crane body and weightbox lettering, which he did. It would have been virtually impossible to hand paint the individual letters in situ, all at the same height, and, more importantly, be made legible. I did not want to spoil the model with ugly smudges and blobs of white paint having spent many years and hundreds of hours of hard work. After sending him the required rough artwork (see rough proof drawings below), he sent back the actual artwork. After double and treble checking they would fit their respective locations, I gave him the go ahead. After a month or two, they duly arrived. Being white on the very pale blue backing card, they were hard to see with the naked eye. In fact they were so pale that they could just about be seen under a lens. Although the individual letters were very small, they were perfectly legible in every way even down to the lower cased italic letters, some of which are barely 1mm high.

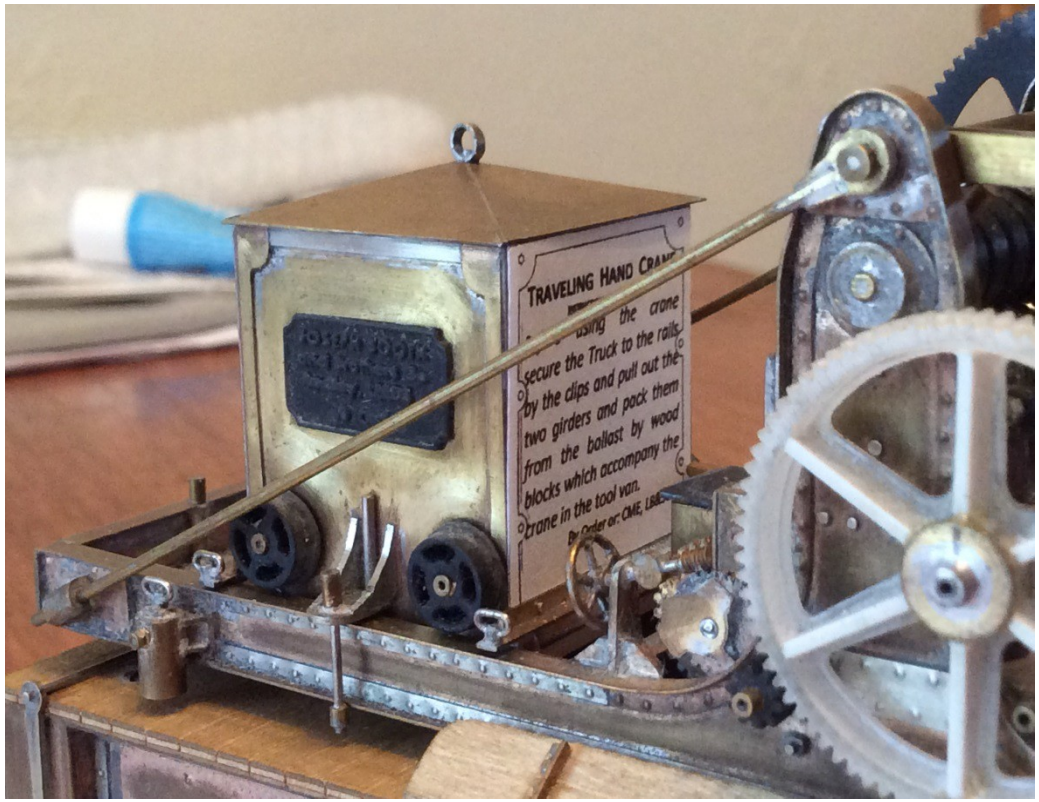





NB. Note my spelling mistake of `***or***` which should be `***of*** in: ***By Order of: CME, LB&SCR.*** which was corrected before they were produced.

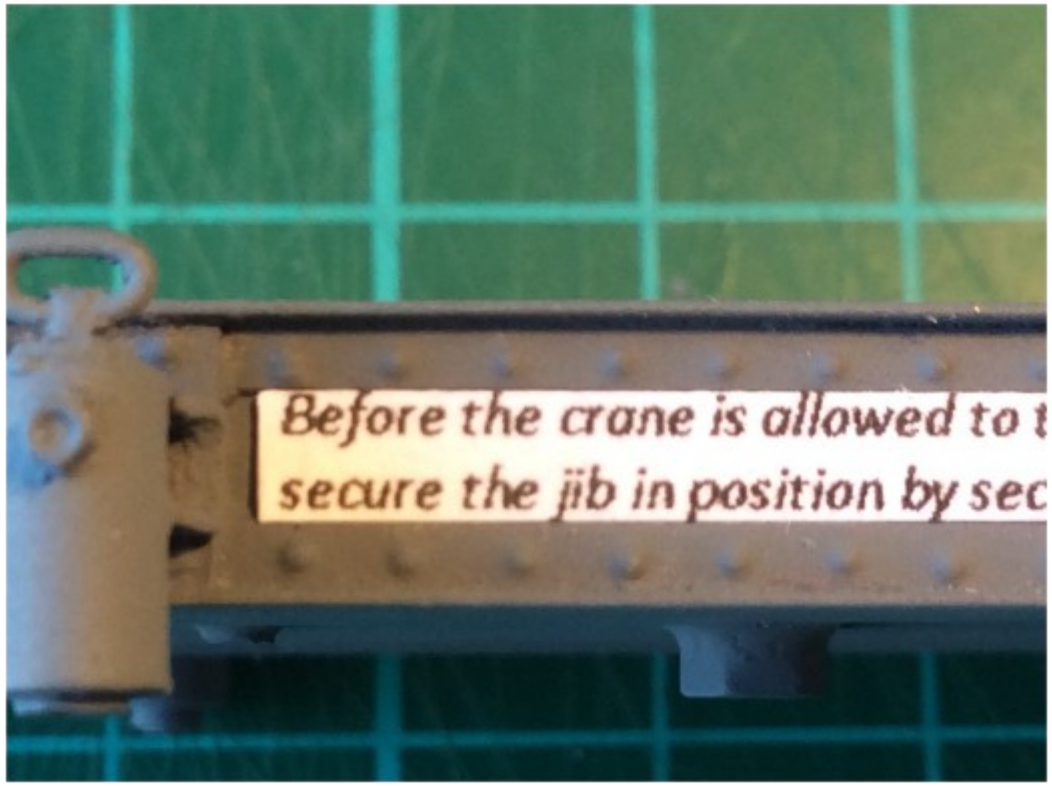
The weightbox lettering was tackled first. I thought at first of just cutting out the transfer all around just proud of the letters, and applying them `as one whole transfer`, and leaving them as that. In the back of my mind though I thought this would leave a very faint, but visible edge of the thin transfer sheet showing when viewed close up. There was also the possibility that some of the edges might start to lift up. In the end, as there was a sufficient waste area around the letters, I very carefully cut one out to fit within the whole recess panel proper. This way no unsightly lines would be visible. When cutting them out, it was imperative the sentences were perfectly horizontal across the panels. Any slight error here the eye would be drawn straight away to sloping sentences. When happy with trial fittings, they were placed in water for a few seconds (as per the instructions), then positioned on the box and the backing card slid off etc. Both front and back transfers were then left to dry. Straight away it totally transformed the box from seeing plain ends for months to being lettered. Wow was my first thought (Thank you once again Ian for your invaluable help). Happy with the results, the lettering on the sides of the moving crane bodyside were applied in exactly the same way.

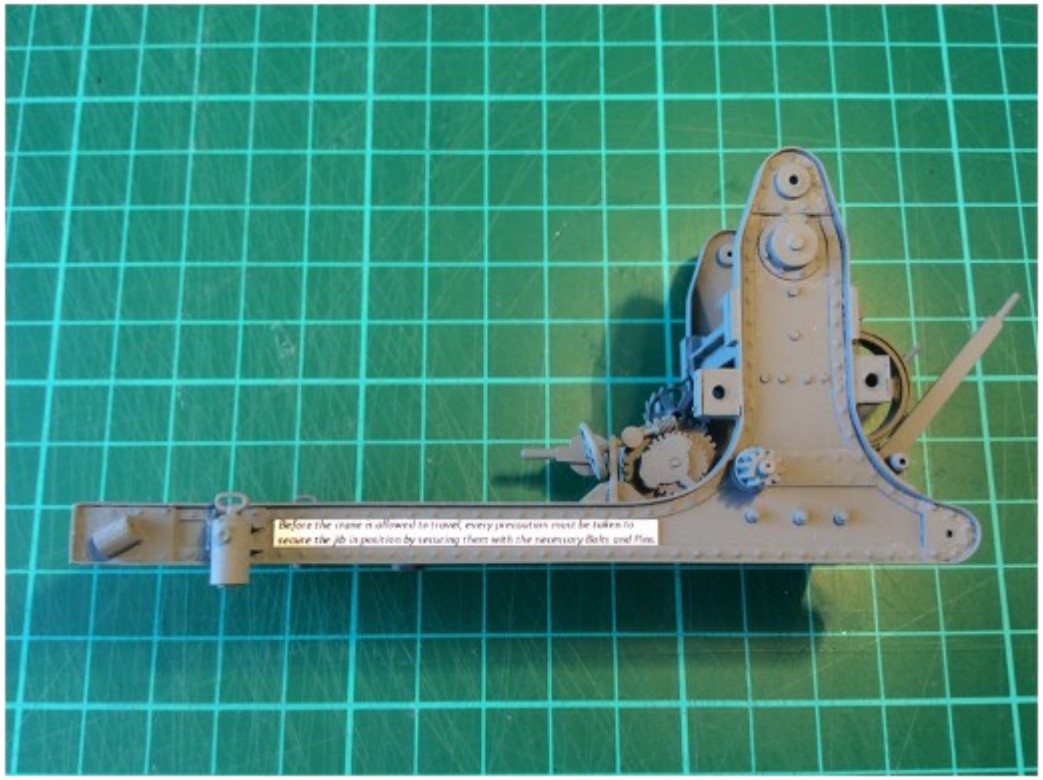



Photos 1 and 2 (previously published in Digest Issue 7)

Even at this unpainted stage, I was experimenting with different styles of type and individual heights of the lettering. After many trials “Arial” was chosen and the differing heights determined. Once scaled to 7mm and printed off, the whole piece was temporarily doublesided onto both ends of the box. It gave me an idea as to what the eventual letters would look like. From these successful trials, I knew the transfers could be produced. You may notice the wheels of the weightbox do not quite touch the runner as shown in Photo 2. This is because the box is not secured down properly via the threaded bolt and only temporarily positioned in place for the photographs. NB: Photos 1 and 2 shown above have been published before in Digests 7.



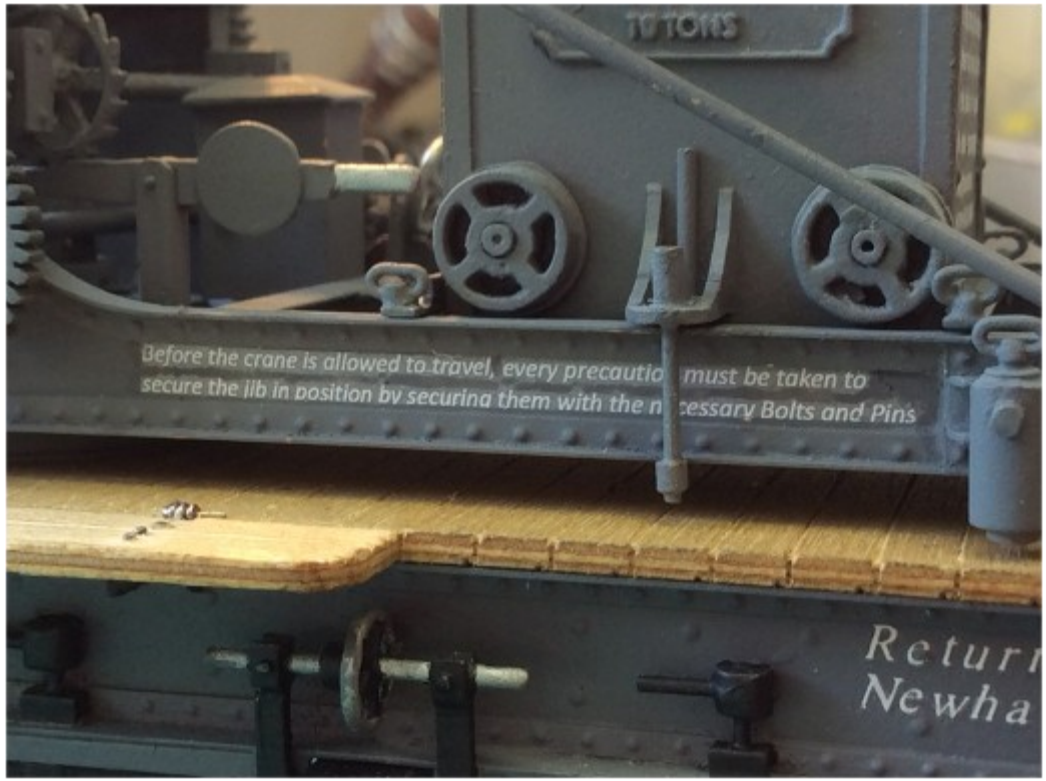



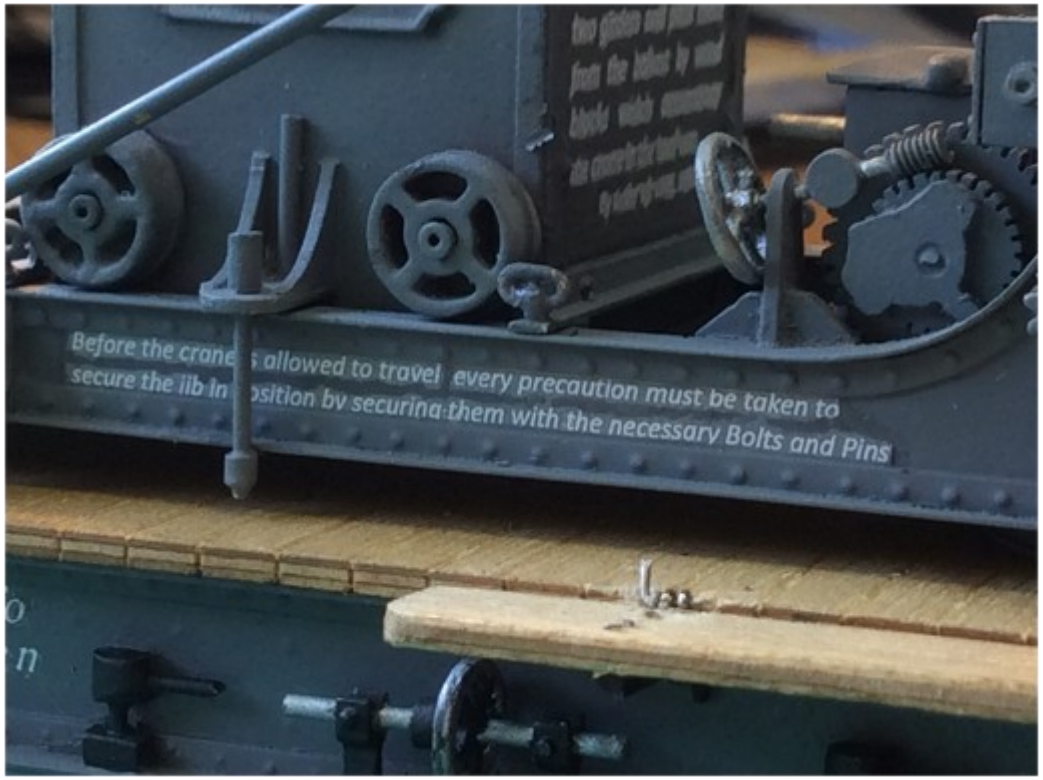
Photos 3 and 4

A right-handed moving crane body view. By this time, the body had been primed ready for a top coat. The length of the sentence (camera side on the official photo) could not be made out due to the raised footboard getting in the way. Sadly too the wording was not legible either and just a blur, so I interpreted the wording as shown. Experimenting again with differing heights of the letters and sentence lengths etc, they were printed off. All were cut to fit in between the upper and lower rivet strips. The majority passed the start of the curvature upright area by some distance which did not look right to me. Cutting one in half and replacing it to the start of the curve it looked more prototypical. So the wording was slightly amended, reprinted again, and placed in position as shown.


Photos
5 and 6


Views showing the weightbox lettered. The transfer sheet was cut out as one whole transfer to fit within the recess panels. It was very tricky cutting around each of the six curved segments for a seamless fit. The bottom cut of the transfer sits just below the horizontal `L` section strip hiding any transfer cut line. The opaqueness of the transfer sheet had also been over painted with Humbrol No.27 Sea Grey by the time the photos were taken. I noticed when the box was originally painted that some of the vertical edges of the corner plates show some slight gaps where the solder hadn`t filled in properly. This was an oversight that I should have picked up before spraying. These have subsequently been filled in and made good with a good fillet of paint thus hiding them.



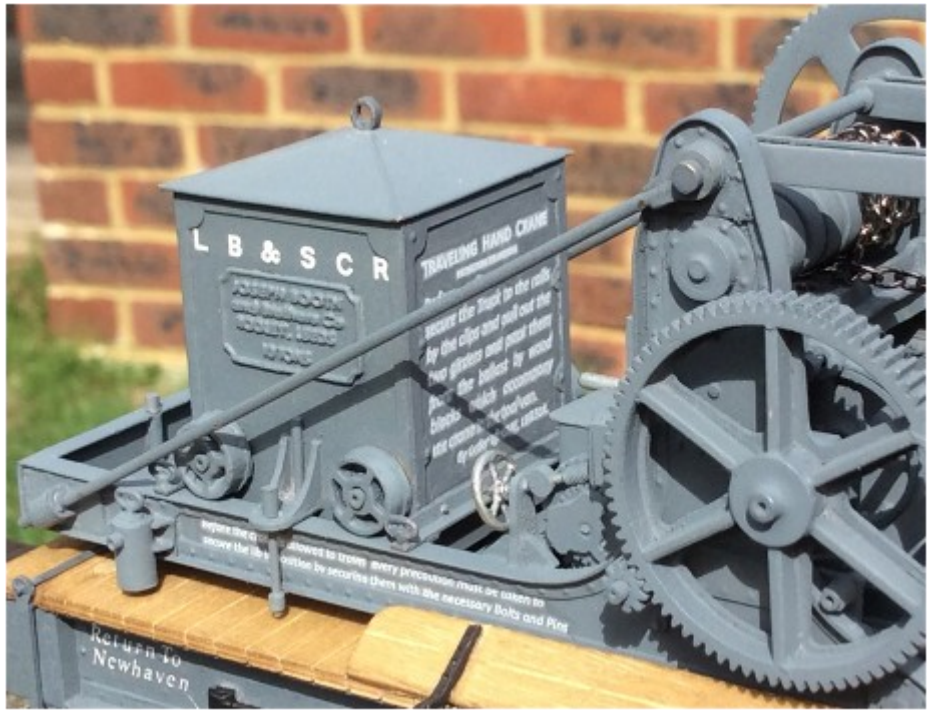

Photos 7 and 8

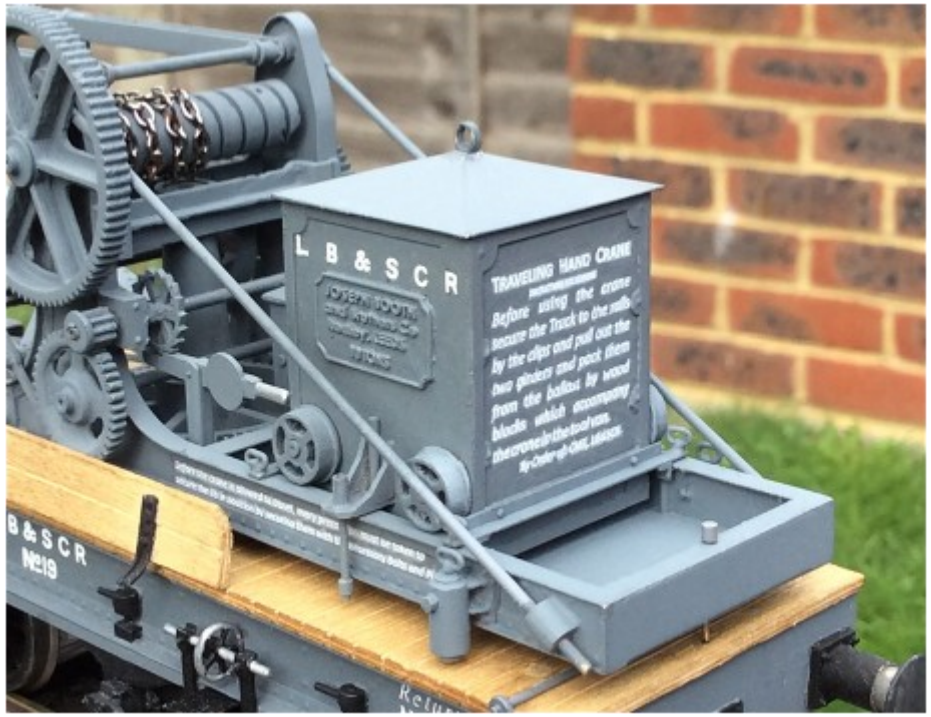
Left and right handed views showing the crane bodyside transfers applied. By the time the photos were taken, I had already over painted the opaqueness of the varnish around the letters with body colour (again No.27). I also notice when the transfers were cut out, the bottom letter `***g***` in `***securing***` and `***y***` in `***necessary***` had been slightly cut off. This error was my own fault when I cut out the transfer. As stated in the main text, the letters were virtually invisible on the transfer sheet and hard to see. To correct the problem, minute dabs of white paint on each of the offending letters cured the problem (not photographed at this stage). On my original artwork, the spacing in between the two sentences was much closer together making the fit even tighter. All came good in the end. Note now the wheels are touching the runner. Talking about the wheels, I might paint the treads a silver colour.

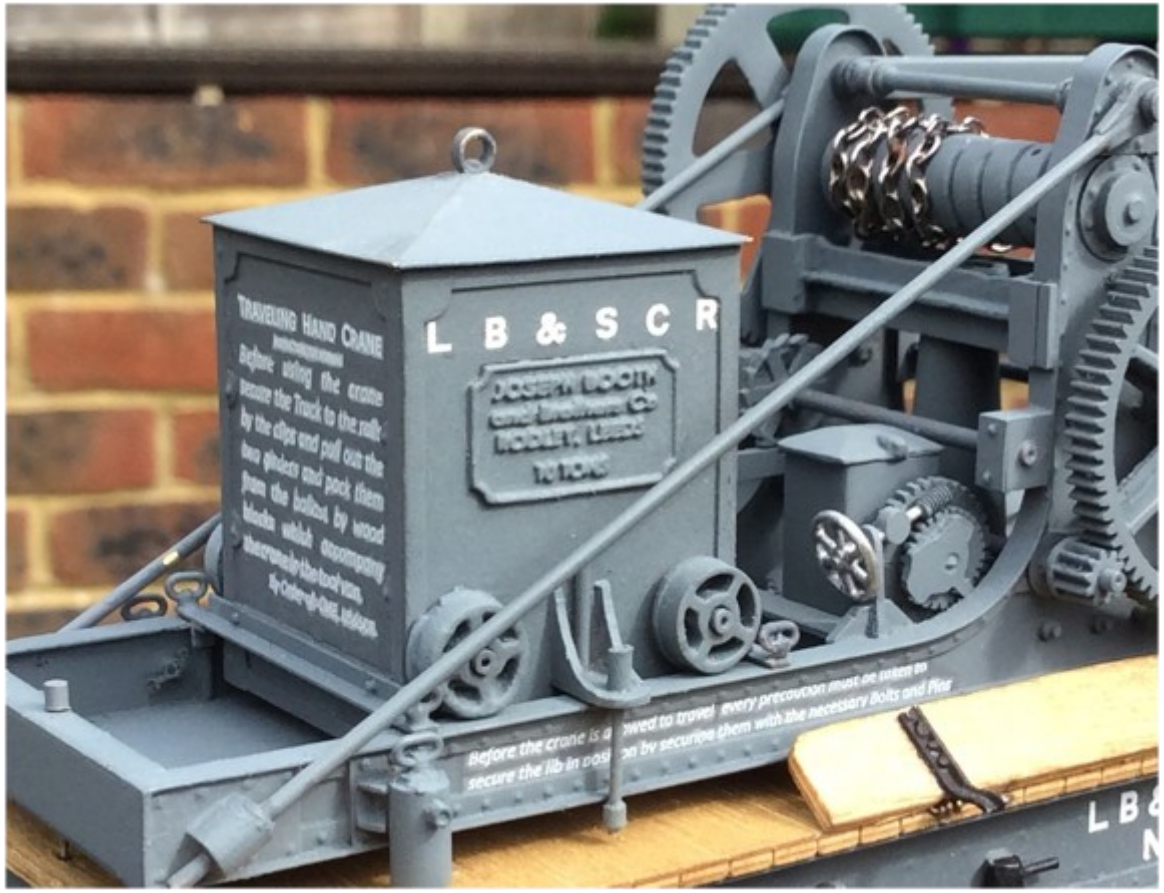

Photo 9

The following group of photos (No.9-16) show the crane fully re assembled and lettered which were taken during trial runs on my garden railway.

Photos 10, 11 and 12



Photos 13 and 14


Photos 15 and 16


To protect the transfers, I sprayed them using Humbrol matt varnish. I noticed straight away the transfers turned opaque which was not what I`d expected. Speaking to Ian about it, both he and I could not make it out. Perhaps I used the wrong varnish? Varnishing over the years has not been my strongest subject. The solution would have been to remove them and start again but I did not have a spare set of each at that time. Not wanting to wait for more transfers to arrive, I very carefully `hand painted` around each individual letter (under a lens of course) with the same body colour (Humbrol No.27 Sea Grey) thinned down covering up the opaqueness. This was achieved with the tiniest of brushes and lots of patience painting right up to and as close as I dare to each individual letter. After sometime, it was done. From normal viewing distances and angles they look perfect, but looking under a lens there are some slight imperfections with paint not quite touching the letters. When weathered (which is something I will do later) it will hide any slight imperfections.

So this then finally completes the crane after some five years on and off work. I hope you have enjoyed reading my articles along with the photographs of its progress as much as I have.

Its first official public unveiling was at the Brighton Circle's Spring Meeting in Blatchington on Saturday 16th March 2019, where it received much appreciation from members who saw it. It stood happily alongside its allotted Stroudley Tool Van which will be the subject of Part 8. Up until now it has only been seen on test runs, but hopefully later this year, it will be put through its paces properly.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# Two Bridges for Newick and Chailey

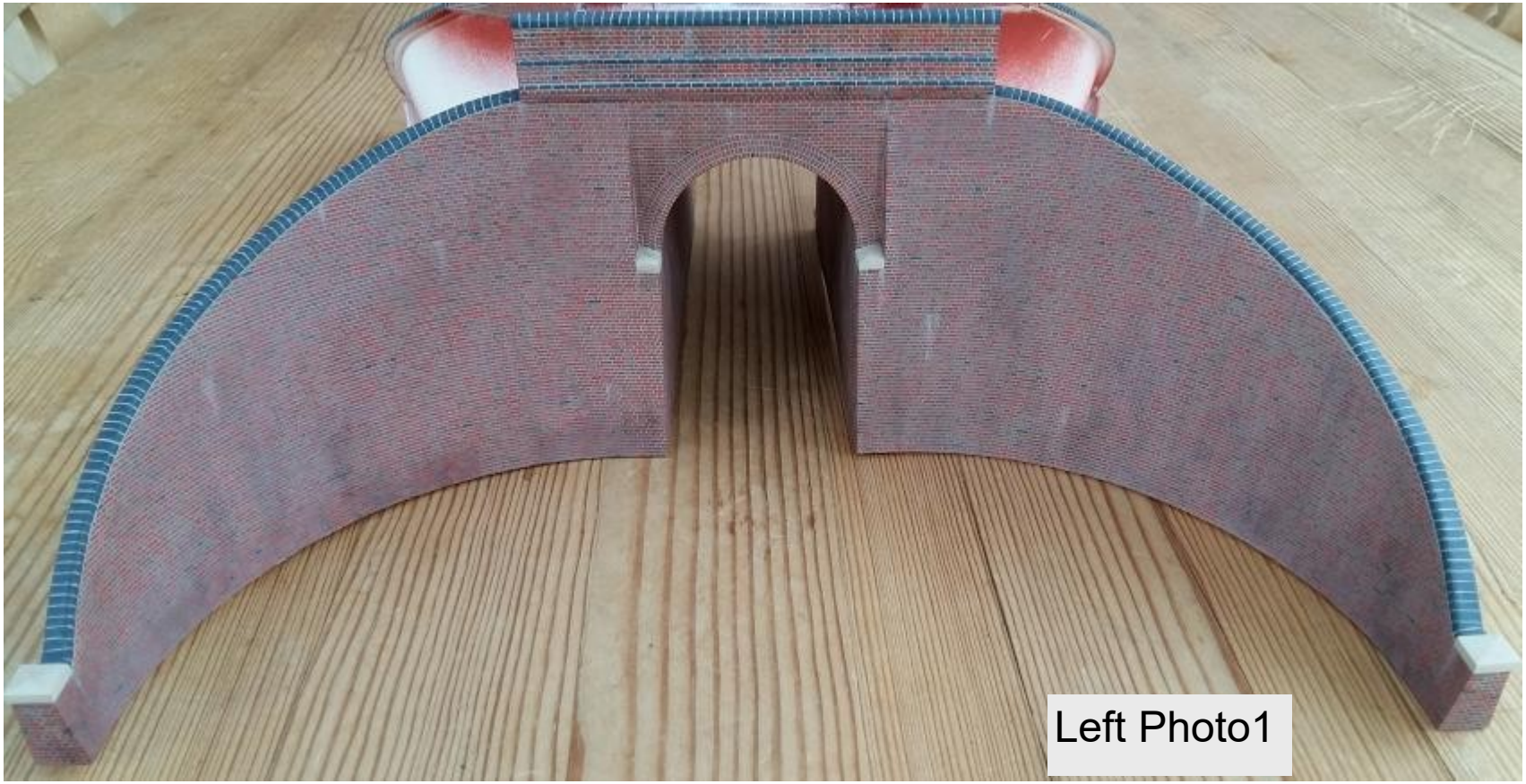
## By Phil Taylor

Modelling the architecture of the Brighton does not seem to get the attention in the Digest that it maybe deserves, so I will attempt to redress this with a description of the final two structures just completed for my model of this station. The first, still in existence, is an under-line farm access bridge just to the south of the station, while the second was a three arch mini-viaduct carrying the A272 over the line just to the north. No trace can now be found of this structure, however there is a rumour that it still exists beneath the modern road, stripped of the parapet walls and filled in, along with the cutting, up to the surrounding ground level. Some years ago I met some members of the last family to live in the station house. One lady, who would have been a small girl at the time, told me the terrifying story that she used to walk across the bridge along the top of the parapet wall, no doubt without the knowledge of her parents!

Both models are built from plasticard and embossed brick sheet (I use the SE Finecast version as I find this is nice and square and produces a good effect as long as the rounded faces of the bricks are flattened by running over with a large flat file before use, being careful not to obliterate the mortar courses completely!), with judicious use of bespoke laser cut brickwork (artwork drawn by me in Coreldraw and manufactured by York Modelmaking) for specific areas as I will detail below. The textures of the laser cut areas and the embossed areas do not quite match, but the difference is not too noticeable. I won't give a blow-by-blow account as most of the methods are fairly standard and well known, but I will concentrate on some details.

## Farm Access Bridge

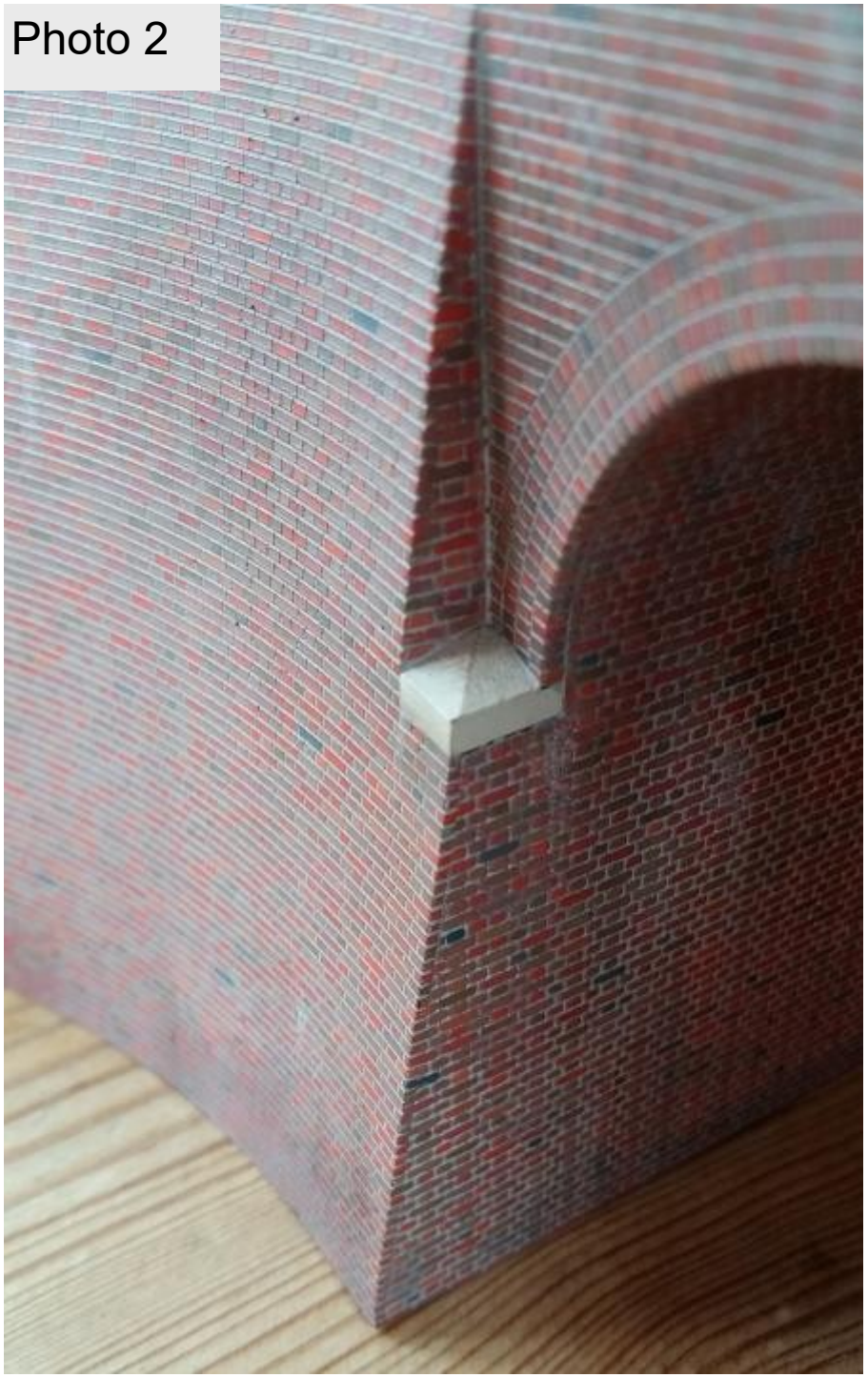
For a long time I had not known for sure that this bridge actually existed! A suggestion of an under-line bridge is shown on the old 25” OS maps. However there is no known (historic) picture of it, and the Google Earth aerial view gives no great assistance, as the whole line is now heavily wooded, obscuring any evidence from above. One day some years ago I determined to prove to myself that it was there, so I gingerly set off, leaving the public footpath to find the junction of field boundaries where the map indicated its presence. Eureka! There it was, slumbering peacefully in its secluded and undisturbed location, fully intact and exactly as built some 120 years before. I measured and photographed it in detail to allow the construction of an accurate model.



Left Photo1

The main challenge with this model (Photo 1) was the fact that the wing walls are curved through 90 degrees, with a batter (i.e. backwards lean) of about 10 degrees (Photo 2).

Photo 2



Unfortunately this makes it impossible to use normal embossed plasticard, because the brick courses then assume an arc rather than being horizontal! I soon realised however that if the brick courses are etched on the flat sheet in an equivalent but upside-down arc, when the sheet is then curved and fixed at the required slope, the courses become horizontal (Photo 3). I did try to work out the correct arc radius by calculation, but this proved to be quite tricky (I am sure a geometry teacher would advise an obvious way but I couldn't find it!!) so I arrived at the correct figure by trial and error using paper prints before committing to the cost of the laser etching.

York Modelmaking were concerned about my proposal to curve the walls (0.75mm thickness) through 90 degrees as the material is somewhat brittle, however they helpfully sent me an advanced sample to try and it did not turn out to be a problem.  Taping the material to the outside of a parallel-sided stainless steel kitchen pan and filling it with boiling water formed a permanent curve.  Substantial reinforcing pieces are fitted behind to ensure the shape is retained.  The complex shape of the curved upper edge of the wall was again arrived at by trial and error on normal card, comparing with the known dimensions, prototype photos and the model embankment that the bridge fits into.

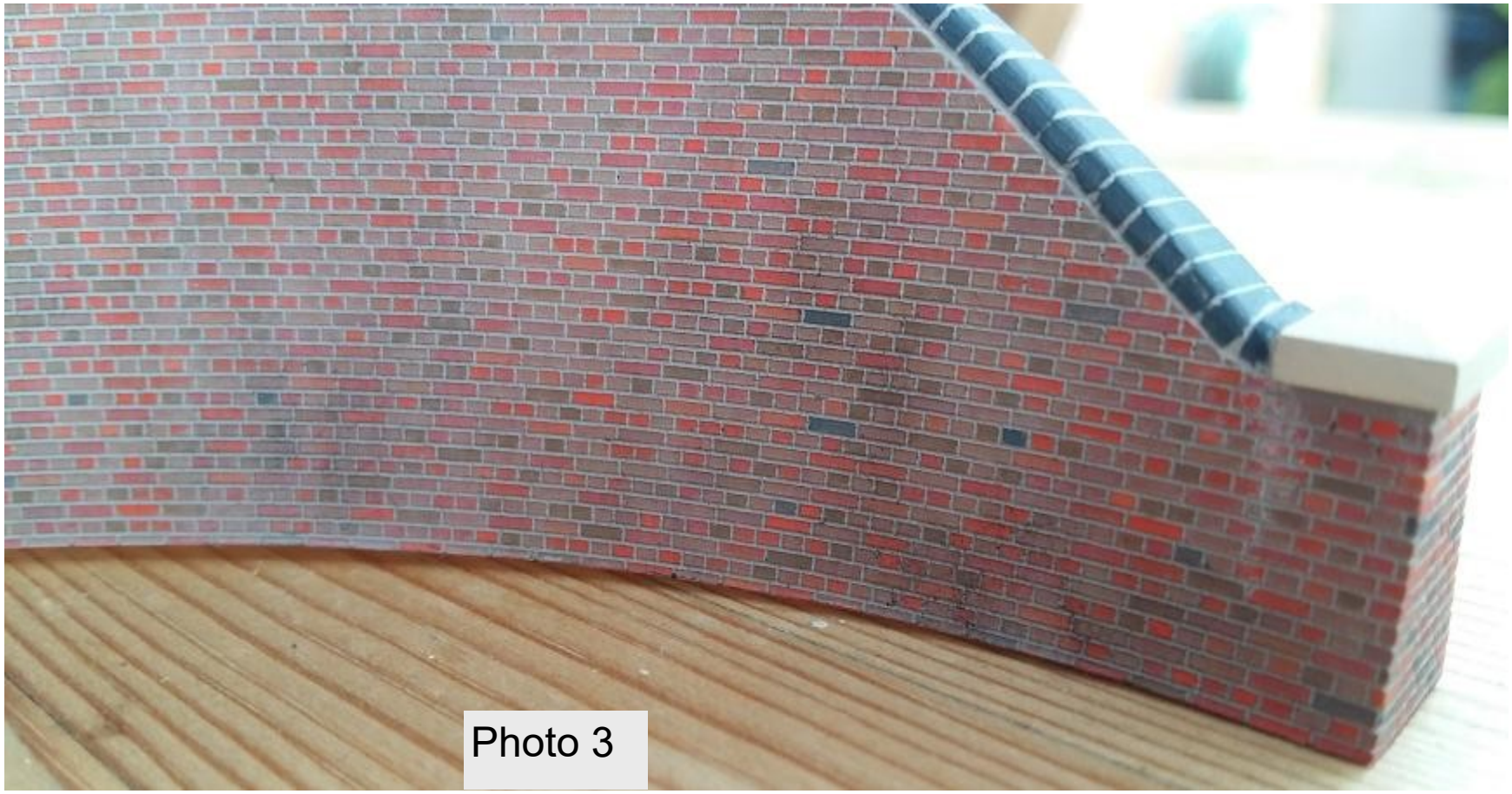


Photo 3

The bridge has four similar wing walls, two of which are mirror images of the other two at the opposite corners. It was therefore necessary to have two versions etched, with the arc in opposite directions. The card template was drawn around onto the brick sheet, simply using the template the other side up for the opposite hand. While I was at it, I had the brick arch rings and small central area of flat brickwork etched in thicker material (1.5mm) which produces a much neater and more accurate result than hand scribing (Photo 4). The model bridge itself is in two parts: the front walls plus the arch; and the rear walls. These will be joined together once installed into the model. embankment.

Photo 4

## Station Road (A272) Bridge

This is quite a large structure (Photo 5) and the prototype is no longer available for photography or measurement.

Photo 5

However it does appear in many old photos, plus there are two near-identical bridges still extant nearby, one at Mill Lane just north of Newick and the Three Arch Bridge on the Bluebell Railway. I measured and photographed the Mill Lane bridge; there are many photos of the latter on the

internet. The parapet walls of the Newick bridge appear to have been replaced at some time, as the later (e.g. 1950s) photos show it with a smooth brick finish, while the earlier photos show the attractive panelled version common to other bridges on the Lewes to East Grinstead line. This is the version modelled.

In this case I decided to have the brick arches and flat main walls laser etched in one piece (Photo 6).

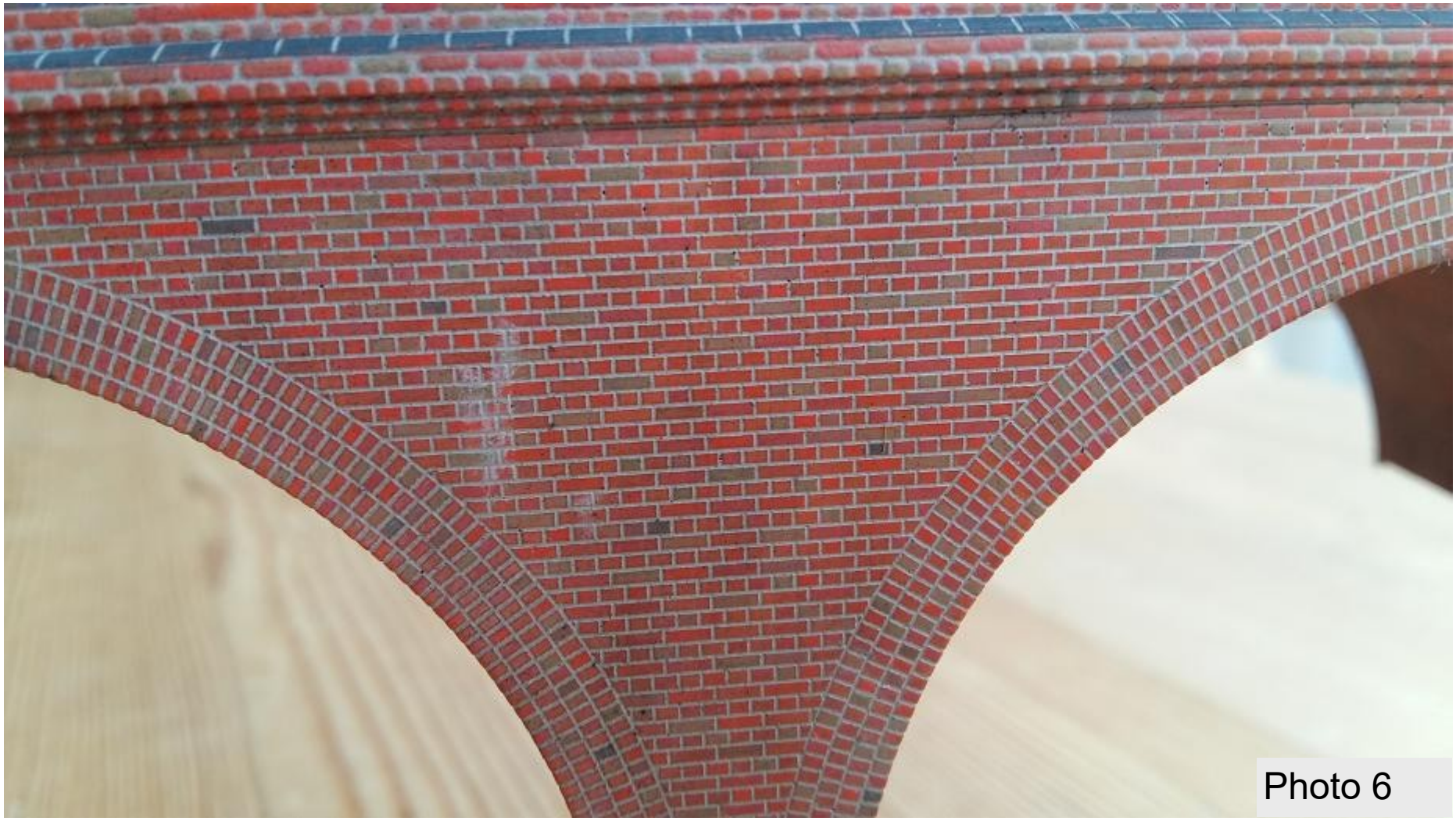


Photo 6

Other than that, it was a case of building up the panels and other features from various thicknesses of styrene and using both English and Flemish bond embossed plasticard, trying to follow the prototype as closely as possible.  For example, the main walls and abutment walls are English bond, but the inset panels (Photo 7) are Flemish bond!

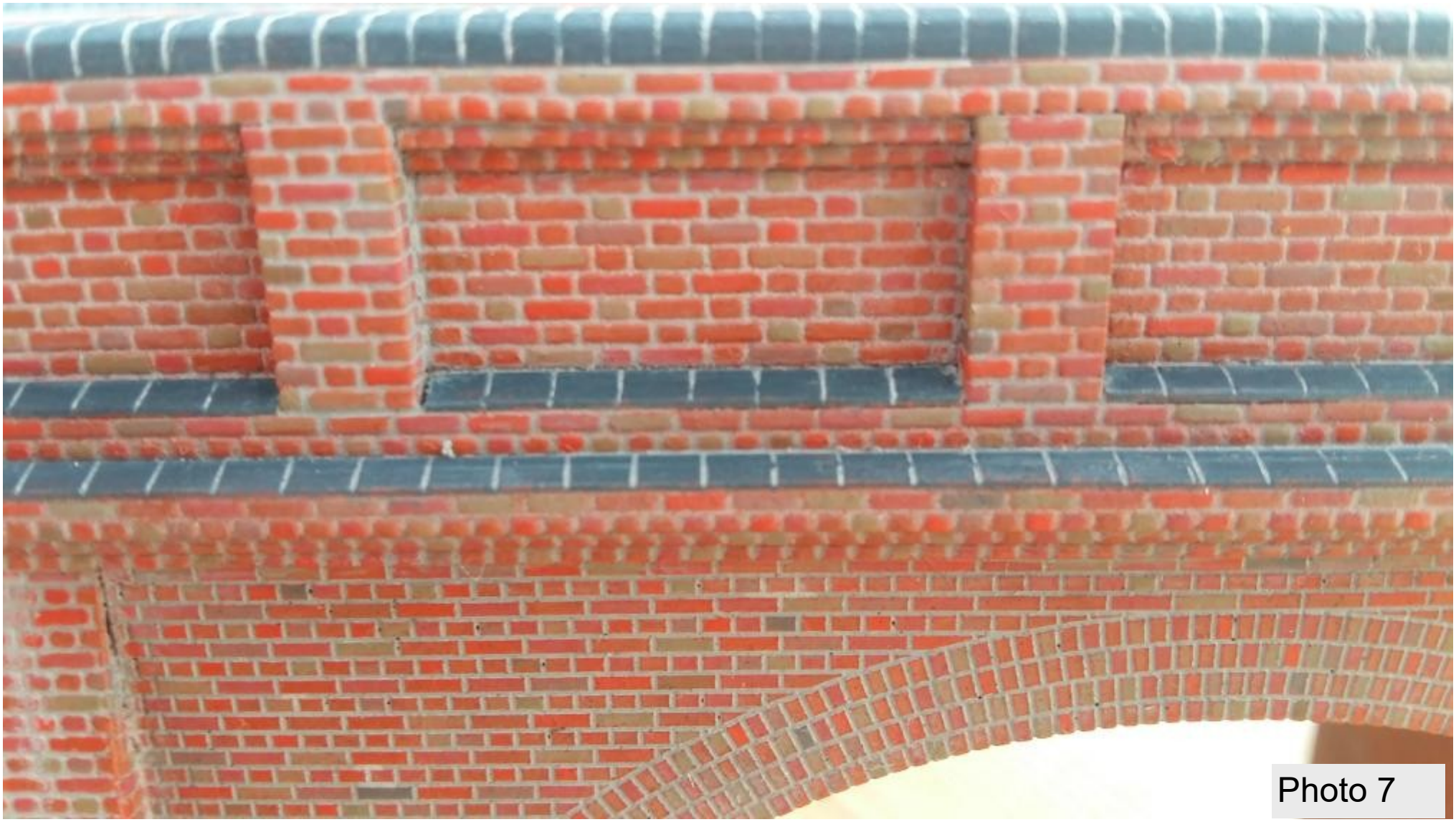


Photo 7

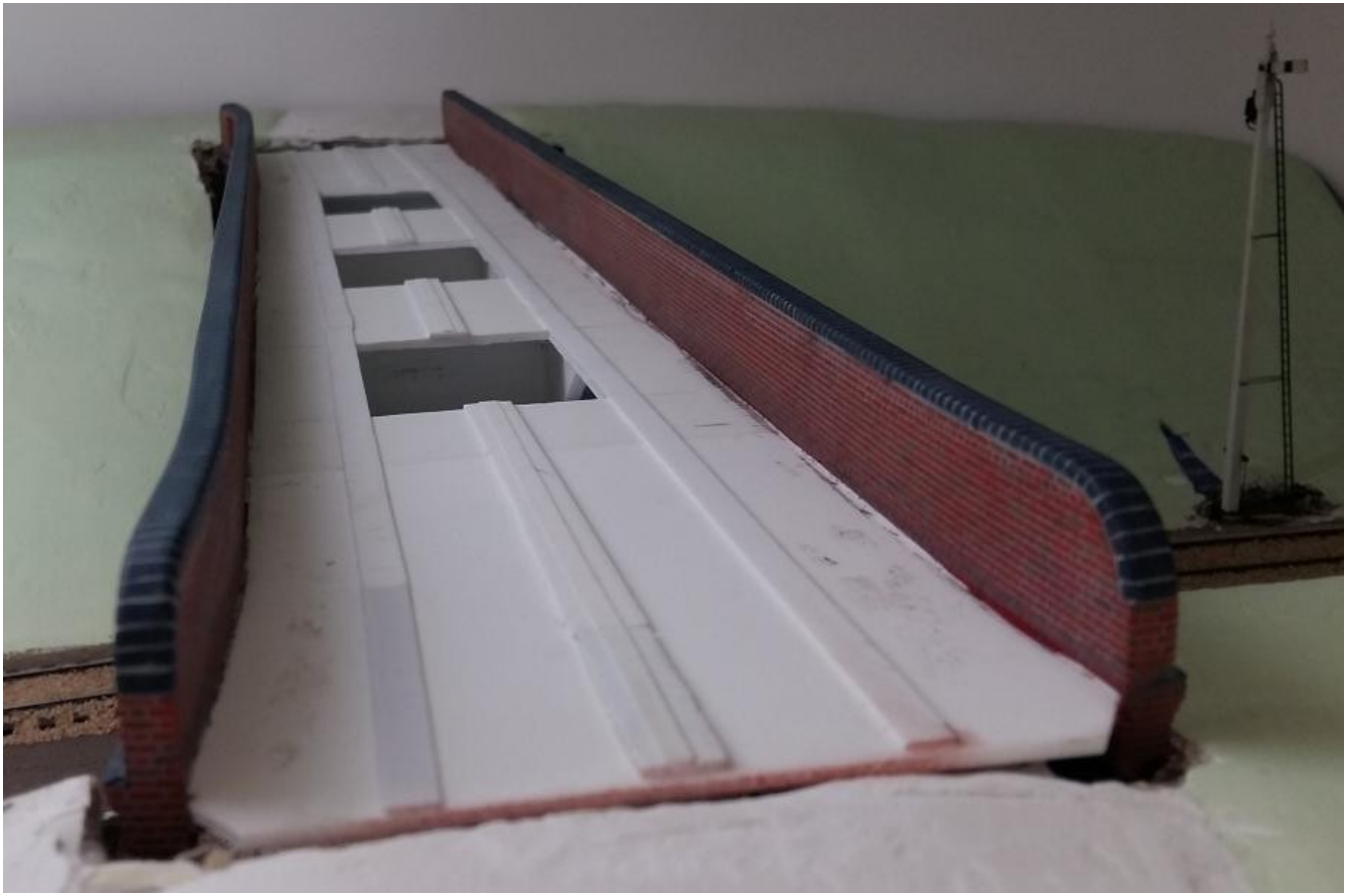
Photo 8

Also the inner faces of the parapets are Flemish, apart from the top two courses, which consist of a row of stretchers above a row of headers for some reason (Photo 8).

The parapets have curved ends, which required that the engineering blue capping bricks had to be applied individually in these areas, rather than a long scribed strip as for the remainder (Photo 9).

Photo 9

One thing I have not previously tried is a bit of forced perspective, so that the parapets are about 5mm closer together at the rear than at the front. I arrived at this dimension by trial and error using a mock-up in position on the layout, only time will tell if it turns out to be successful! (Photo 10). I have left off the actual road surface for now, so this can be inserted as a single piece including the approach roads once the structure is bedded down.



## Painting

I employ what I call a ‘streamlined Pendon’ method for painting brickwork. As is well known, Pendon paint every brick individually onto card, having first embossed each brick by hand and then applying the mortar colour. Using plasticard, it is possible to employ a somewhat less time consuming method which works well. Firstly the entire model is primed using a red undercoat spray can. The brickwork is then painted with enamels, starting with an overall coat of the predominant brick colour. I then follow this by picking out large numbers of individual bricks in about eight related colours of enamel. This is still quite a lengthy process, but saves a lot of time as many of the main colour bricks don’t need to be re-visited. Also, as the mortar is applied later, neatness is not quite so critical! It is best to look at the real brick wall or a good photo to get an understanding of the colours you will need, but there is usually a wide range of shades, including various reds and oranges, as well as dark and light grey, browns and beiges in varying proportions. For the ‘north’ wall of the A272 bridge I did not bother with the individual bricks as it will be almost invisible when in position on the layout, and similarly I did not give the full treatment to the inner faces of the arches, other than in the more obvious areas.

Once complete, it is necessary to leave the model for at least a week for the paint to dry fully, before applying the mortar, which must be water-based to avoid disturbing the bricks. I used to use the ModelMates range of dyes for this, but these are sadly no longer available, so I now use Wilder Aqualine water-based paint, mixing a suitable colour from pale cream (AL02 ‘Common Dust’), brown (AL08 ‘Dark Track Rust’) and black (AL10 ‘Black Smoke’). The colour can be varied at will to create weathered effects such as rising damp near ground level and so on. This is applied across the whole wall and stippled well in to fill the mortar gaps – for the laser cut brickwork I found it necessary to really work the paint in using a small piece of closed cell foam, otherwise it does not fill the courses fully and you end up with pin holes. (You can see from the

close-up photos that I have not been 100% successful in eliminating these!) Leave to dry for an hour or so, then wipe off the surface. This can be done with some cloth (old T-shirt material is ideal), which needs to be just damp – too wet will remove the paint from the courses, too dry will not work. Wrap it round a finger and draw across the surface, using a clean area of cloth for each pass. Don't worry about disturbing the brick colours underneath, they will re-emerge quite happily, provided you were able to wait a week…. You will soon get the hang of it, and you should find a good effect results. Areas can be re-visited as required, or the mortar completely removed with more water if necessary. It also tones down the main brick colours nicely. Once satisfied and thoroughly dry, a spray of Testor's Dullcote lacquer matts down and seals the surface, ready for the application of weathering effects such as dry brushing to taste.

It is very satisfying to create replicas of real structures from scratch, especially where there are some interesting challenges to overcome. It is rather time-consuming but hopefully my efforts may encourage others to have a go!



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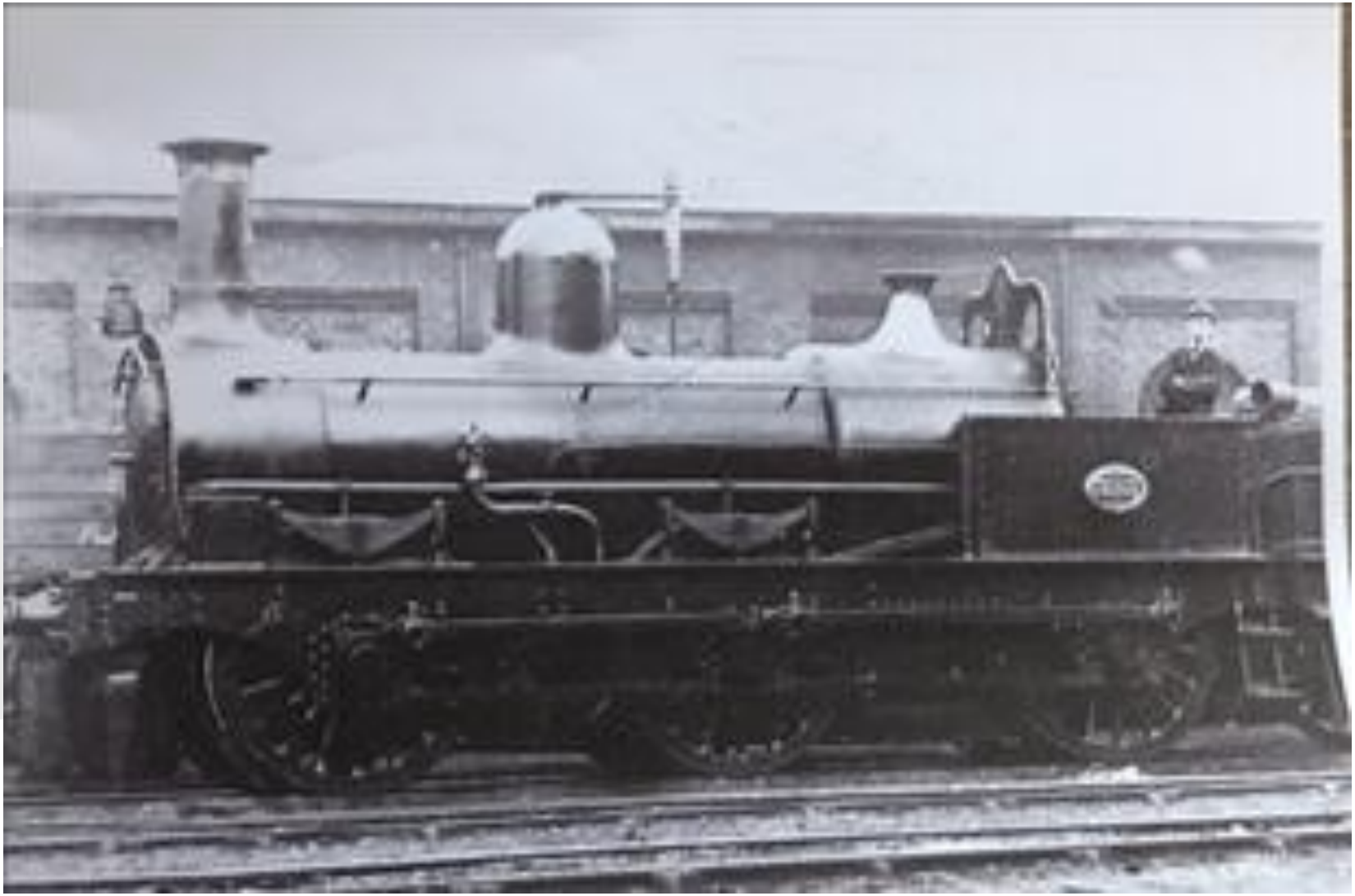
# The Saga of 393 - a sort of scratch build

## By Mike Waldron

Built as as 227 in 1864, and renumbered to 393 in 1884. Scrapped in 1896 as the number was allocated to the new Billinton D3 0-4-4T, Woodside then entering service.



A short while ago I discovered that the goods services in the Littlehampton area would still have been served by a group of Brighton-shedded Craven standard goods locos up until 1895-8 when they were withdrawn.

This occurred while I was marking modelling time earlier in the year, owing to a major six week kitchen rebuild, and also awaiting time to complete my Sussex and Goodwood – both of which I brought to show at Blatchington, in their uncompleted state.

Never one to let odd moments of time go to waste, I found a Burtt drawing. I imported it into Turbocad and proceeded to draw parts over the top of it on other layers, effectively doing what I used to do when preparing EBM kits in the past.

Having got the low down from Barry Luck's website on his method of preparing and using paper templates, I also rummaged through the scrap etchings box and found as much suitable material as I could, to save on cutting out parts.

Coupled with this, I had the remains of the test builds from the 4mm Dieppe/Drayton kit, as well as some faulty Large Craven tender frets, which I hoped would provide me with a readymade tender kit. However, they proved not to be quite correct, as the outer frames on the Goods were much more curvaceous, the body taller and the wheelbase shorter. Neither were the curved flares on top of the side panels identical. This meant I could only use the platform, sub platform and possibly the sub-frame for the tender body … with some adjustments.

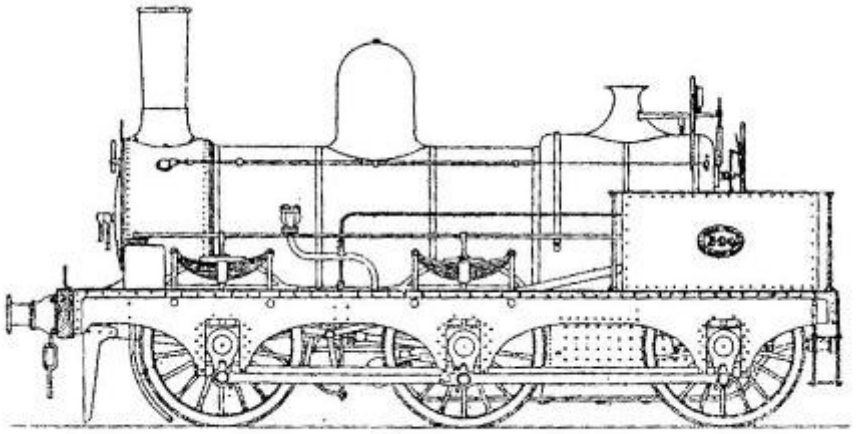


Fig. 90.

The Dieppe kit's multi-layered firebox front and back plates proved useful, but it needed a longer firebox wrapper, and also meant I could use a length of brass tube for the boiler, as there did not need to be a motor cut-out for large single drivers as with Dieppe. This could all be filled with lead if needed. Some flashing recently removed from the old kitchen roof will furnish me with enough for a lifetime!

The smokebox gave me several options – either to use the same early fabricated arrangement that is in Dieppe, or the simpler use of several layers to build it up from the tube upwards. As I had two fabricated groups of parts I could use, I decided to continue along that line and use the better of the two.

I spent a therapeutic afternoon breaking the drawing down into its component parts – see **Photo 1** on the following page, which gave me patterns for almost every flat sheet part, as well as dimensions for the others.

Contrary to accepted wisdom, I cut out as much as possible with an excellent pair of very sharp Expo jewellers shears. Having been given Simon Bolton's book on Loco Scratch Building this birthday, I tried his score/bend/break method of 'cutting' sheets of nickel silver. It does work, but you need to score fairly generously with a 'skrawker' – a tungsten carbide-tipped one I found somewhere once – and then bend with plenty of very strong support in each direction, with folding bars as the third hand, and then it will give way after a couple of near $90^0$ bends. My vintage folding bars are not as large as his; they were made in my first teaching job workshop in the 70s, and are joined with dowels and not Allen screws as Simon's are. This process does leave a rough edge, so it needed good quality (straight!) 6" files to clean the datum edge ready for initial marking out.

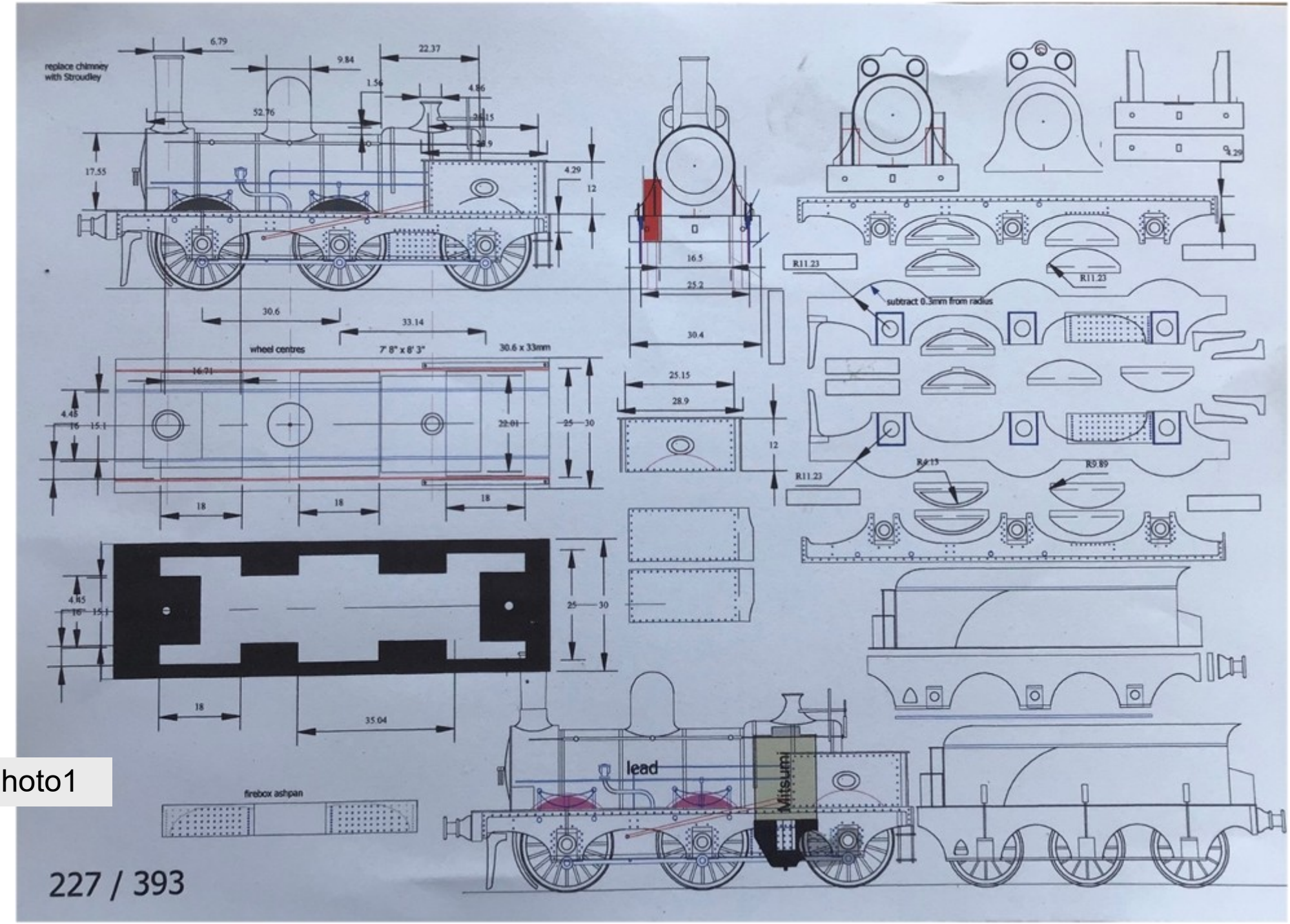



Photo1

227 / 393

The platform was cut thus, from 0.45mm nickel silver, which is a tad thicker than needed (EBM kits use 0.3mm brass) but less prone to bending, so I shall probably slightly chamfer the sides to give a better appearance in due course. The spaces for the wheels, chassis and two body/chassis fixing bolt positions were then fretted and drilled respectively.

I have cheapo needle files (Draper, I think) for roughing and removing large amounts of metal in small areas, as well as some very precious and excellent Vallorbe real Swiss files – of which I use cut 2 for penultimate cleaning up, then cut 4 for the final clean up. They really are excellent, but at a price commensurate with such quality - £10 - £14 each! The cut 4 effectively polishes the filed area.

I also have a lovely little smooth cut Nicholson 4” Hand file (not ‘Flat’ – I don’t like the way those taper along the length), which does the bulk of my filing to size, wherever width permits.

Tip: Always use as wide a file as you can for long flat edges. Using a narrow one will guarantee an uneven result.

Also I have 6” bastard, second and smooth cut files, along with one Vallorbe 8” smooth file, and a very rare dead smooth one given me by a colleague many years ago. These are all rigorously coded with a ring of yellow or red paint - denoting dedicated use for either non ferrous metals or steel – one ring for good quality and two for finer, most expensive. They only get downgraded to steel use when unable to deal well with non-ferrous metals.

The cutout area in the platform (footplate) was fretted out with a piercing saw on a bench peg for support – always use the correct blade – one that will present at least 2 to 3 teeth to cover the thickness of the metal – single thickness in this case, so a very fine blade. One hole mini-drilled at each internal corner provided turning relief, and avoided a broken blade. Tilting the saw forwards on long straight cuts helps in two ways: i) it increases the number of teeth in contact with the work, avoiding jumping, and ii) it helps you line up the blade better with the scribed line you are

cutting along.

Careful cleaning up with files followed – lengthways and flat on the edges, either filing the edge in the vice, or, if you prefer, holding the part and rubbing it the length of the file as it lies on the bench. Clearly this only applies to outside edges! This is to ensure a straight and level surface – partly to look good, but also a datum from which to mark out the wheel spaces and other cutouts as accurately as possible.

Don't forget to wipe the file side-on (draw filing) along the edge to remove burrs.

Planning for the body attachment screws at this stage is also important. I use two, with captive nuts where possible - in the smokebox and bunker area for tanks, and, ideally, with tender locos, but in this case the rear one would pierce the footplate – unacceptable with such a visible arrangement.

In this case, I will probably solder a 2mm brass cheesehead screw with a thinned head underneath the footplate – ensuring the spacer is positioned below allowing for the head thickness.

The drive will probably be, as shown on the drawing, a small Mitsumi motor and High Level Road Runner + Compact 50:1 gearbox, or Mashima 1224, but its rear bearing looks a little too long. The alternative would be a 1220 or more powerful 1020, but the prices are inevitably rising to near double what they were, now that Mashima have folded.

Always use a very narrowly slotted bench peg to support the metal as much as possible, with a hole at the end. You can make one very simply from a small rectangular scrap of 9mm ply, either screwed to a strip of timber at rightangles to hold in your vice, or G-clamped to the bench. I prefer to plane an upward sweep underneath to render the end as thin as is practicable. Inevitably it

gets used for more than simply piercing saw work.

Tilting the saw to c.45º greatly assists following a line, and makes cutting smoother, and, with practice, you can eventually simply saw along the waste side of the line, and allowing the edge of the blade to touch the line, and save a lot of filing.

Below in **Photo 2** is the formerly available EBM chassis jig, being used to prepare the coupling rods – a set of Gibson Universal rods. The figures on the lower edge indicate the wheelbase. The left and right false axles are adjustable in distance from the fixed centre one, and have tapered tops to accommodate varying hole diameters in the rods. The rods will be used later on in the process to set the front two sets of horn blocks at the correct distances from the rear (driven) axle.

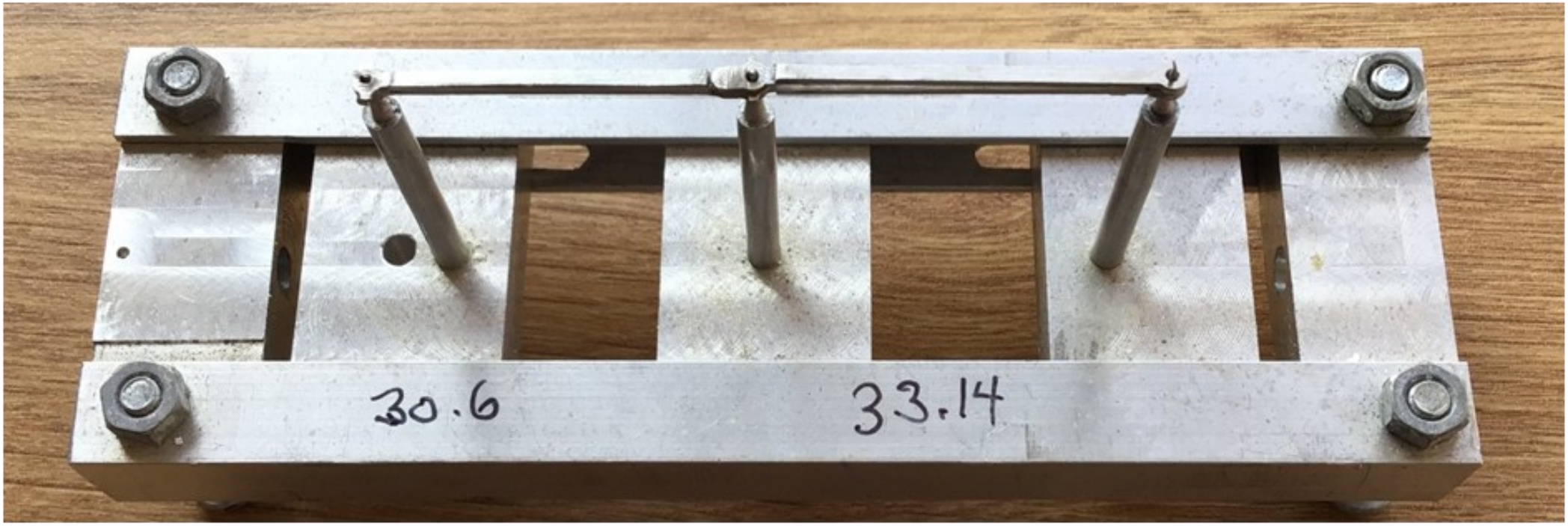



Photo 2

**Photo 3**

The almost completed rods; photos suggest they probably needing filing slightly narrower. They appear not to be ‘fish-bellied’ as with Stroudley’s later designs, but parallel.

The next two photos show the groups of parts:

**Photo 4:-**

Platform at top

Chassis frames 0.45mm n/s with spacers fitted and rear axle top hats for fixed driven axle, as this is the only one a motor and gearbox can be fitted on

Outside frames 0.3mm brass – already riveted using Mainly Trains rivet strip from Wizard Models, and d-i-y ones made with my new rivet embosser (see later for description).

**Photo 5**

Four upper items:

EBM parts from large Craven tender

- Platform top left
- Rear panel – too small! – new piece to be cut.
- Sub platform with original outside frames removed
- Body subframe

Bottom left: Hand cut tender sides, still to be rivetted on the embossing machine.

Bottom right: Outside frames hand cut – rivet strips applied, but still to be machine riveted.

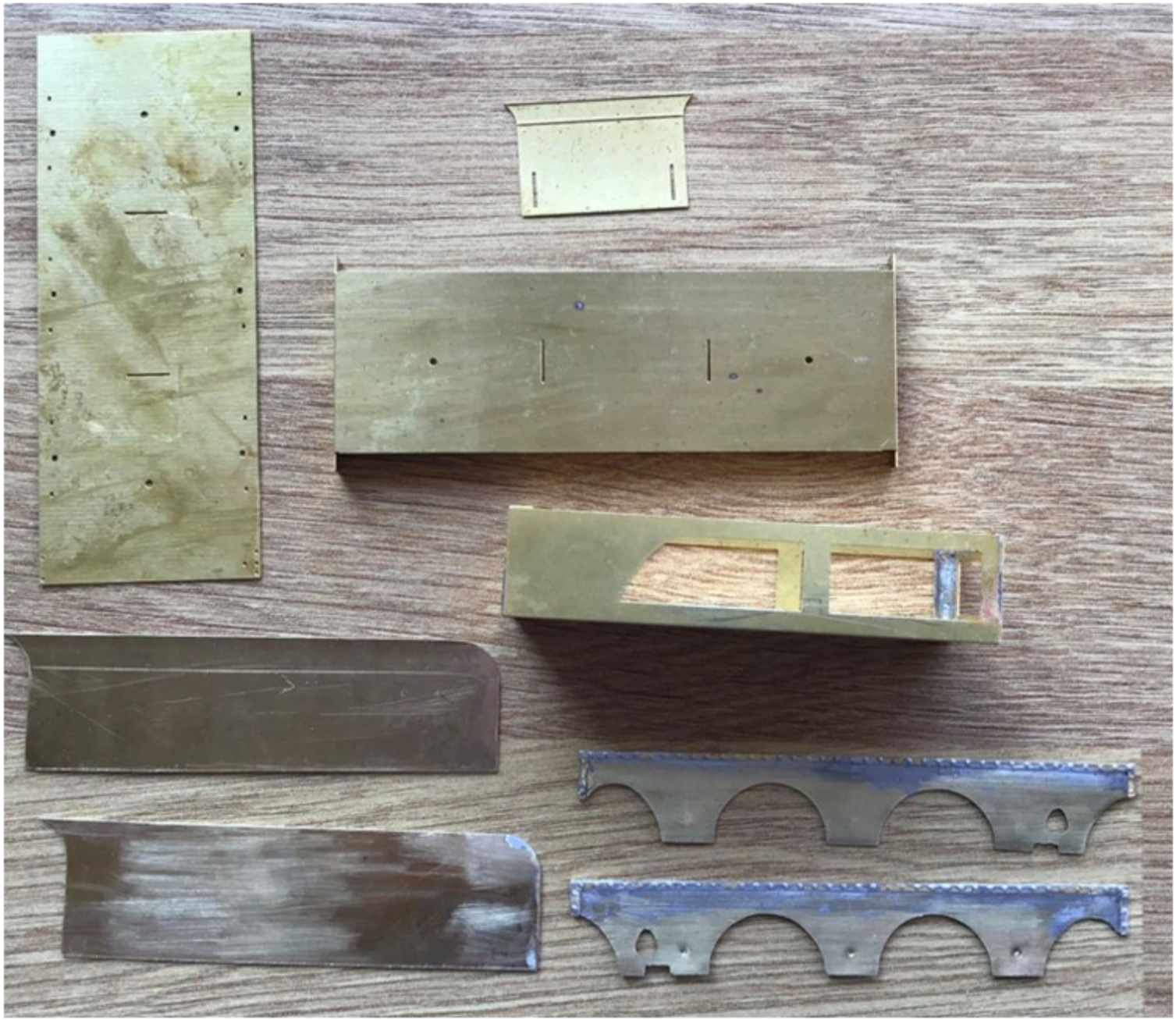
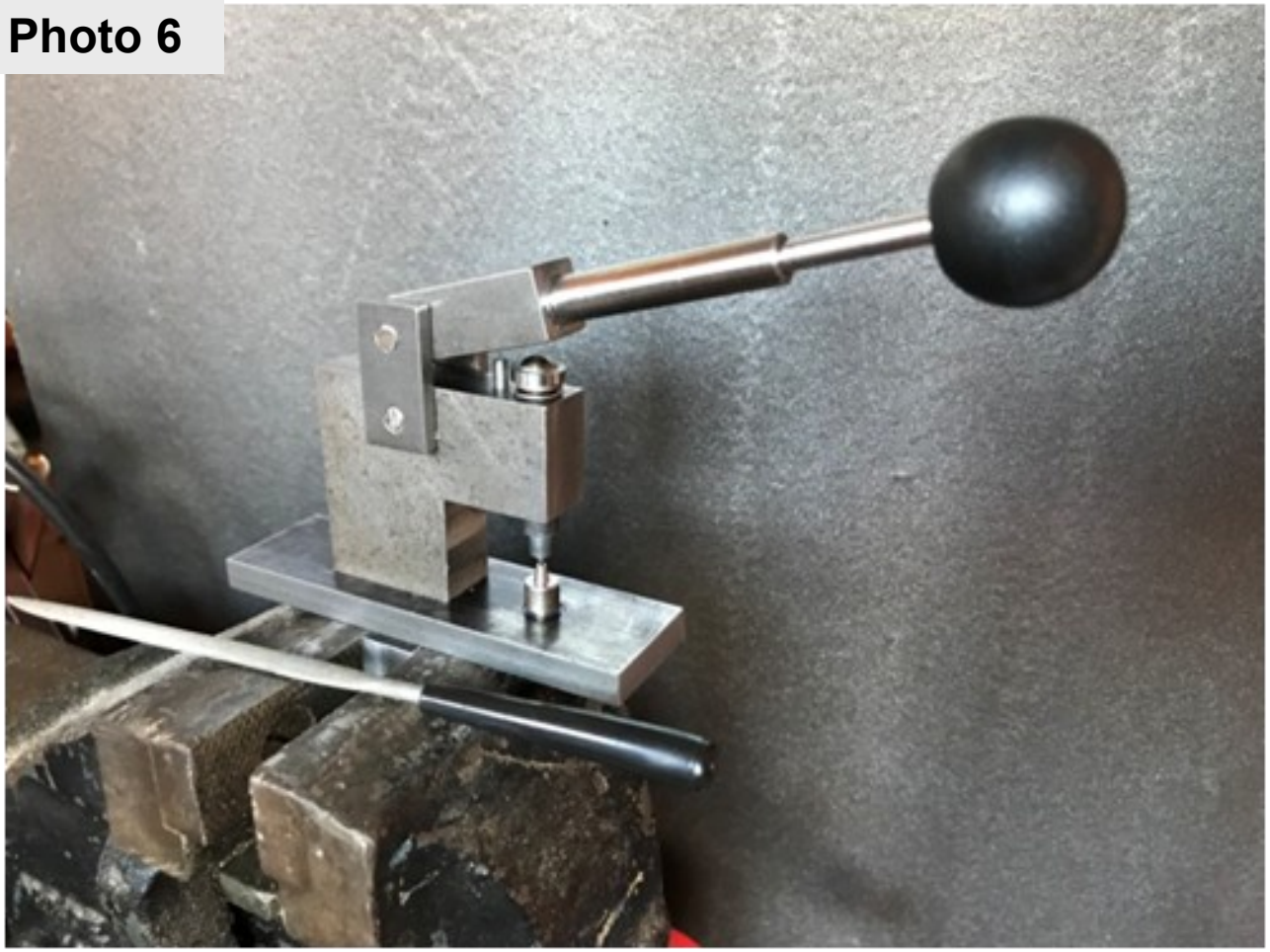


**Photo 6**



The rivets are very slightly over scale, due to the difficulty in making an anvil with a small enough hole. Drilling with a 0.5mm drill in an 3½ ” lathe at very much too slow a speed is precarious to say the least! They should rotate in the thousands of rpm rather than the 800rpm my 1921 lathe can manage!!

This is the home-made rivet embossing machine, which added a couple of days to the build. I am fortunate in having a milling machine to cut out the right angled space for the punch and also to trim the edges. The handle you may recognise as the top of a coffee cafetière plunger!

The punch is hardened ¼” silver steel, and, apart from the two stainless steel dowels in the pivots, the rest is bright mild steel.

The pivoting parts are held together with Loctite. A small spring under a collar on the top of the punch brings it back up and away from the work after each stroke. A grub screw sits behind the punch to regulate the depth of mark made. So far I haven’t needed to use it, but it might slightly improve the results. I have done everything by feel so far.

**Photo 7**

Photo 7 shows a few usable parts from Dieppe:

Smokebox, with hand cut front wing plate. This had to be reduced in diameter, as the boiler is slightly smaller in diameter than Dieppe's. This was quite a tricky bit of work, as the frame was already bent up and soldered, and also entailed removing the soldered on wrapper.

The small hole in the centre of each circular portion made striking the long arc to which to cut much easier. The hard bit was holding a relatively weak structure that was getting more fragile by the minute!

Note that the lower edge is not straight to sit on the platform, but has a dropped section, as there is a rectangular hole that gave access to the front cylinder covers as well as the valve cover (as with single Drayton) – both of which are heavily riveted, and will need to be made as two discs and a rectangle in between. The depth of the extension will need trimming when the smokebox is fitted to the boiler and firebox, and this resulting unit to the platform.

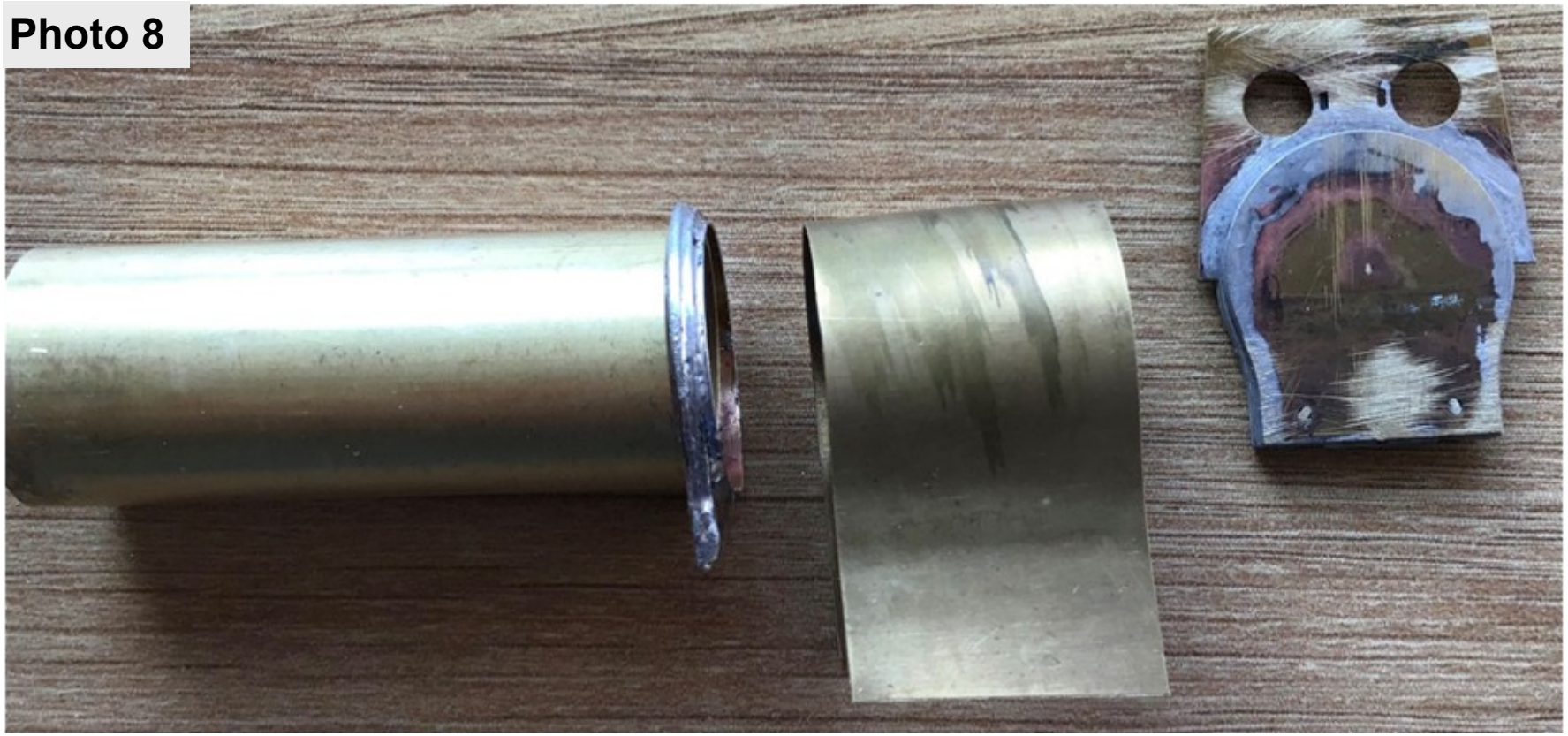
Plain 16.6mm diameter tube as boiler, with front ring cluster of layers to make the firebox front plate. It needed a  shim inserted between tube and ring to take up difference in diameter.

The firebox for 393 is longer than that of Dieppe, so a wider wrapper had to be cut, and soldered between the firebox front and back plates. Some Standard goods had the same shape of bent-over spectacle plate as Dieppe, and others have a flat one that is shorter, and has a raised centre portion that housed the pressure gauge in a round-topped extension.

A spare "wooden" buffer beam has been used for the loco, and also replicated for the tender.

Rather annoyingly, I cut the platform the same length as the frames, forgetting that it need to protrude over the thick wooden buffer beam, so I will have to arrange a very slim extension, as I have no intention of remaking the platform! Careful cutting, soldering and cleaning up will render it invisible.

**Photo 8**

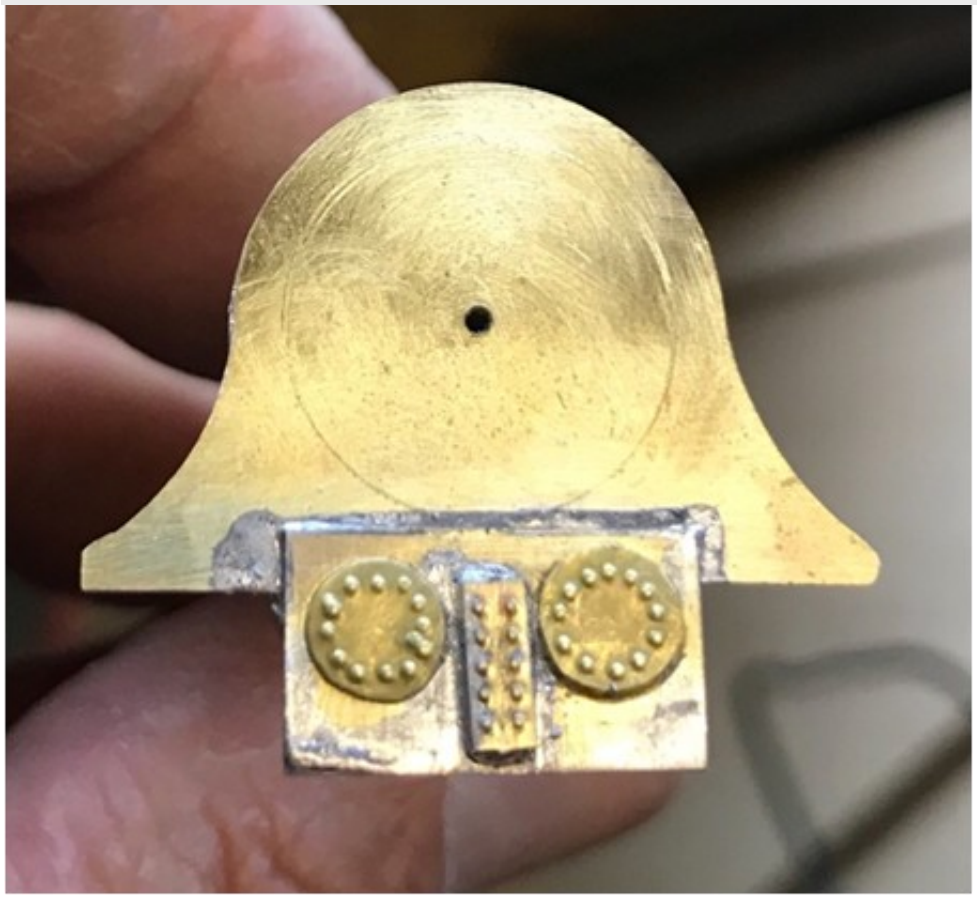


Here the new firebox wrapper is being formed, with the boiler tube in place, though the intervening shim has yet to be trimmed back.

The Dieppe firebox rear plate with integral cab spectacle plate is on the right. This needed to be adapted to the flat pattern with the raised centre portion that bears the pressure gauge – which will itself have to be modelled.

It was then I discovered a major error. The drawing I had used to trace in Turbocad was slightly out of focus by the time it was zoomed in enough to draw the smokebox door, and I hadn't noticed that I couldn't see a line representing the lower edge of the boiler, which, it now appeared was a lot lower-slung than I had first imagined.

**Photo 9. The first attempt at the front end.**



When comparing the height if the Craven goods with that of Dieppe, there was something in the region of 5” difference, necessitating a lot of chopping from the bottom edge of the firebox and smokebox. The first time I used a piercing saw, which took ages, and no, I didn’t break a blade!

I sat it on her platform and it still sat too high, so I took more drastic measures and used a small butane torch to heat up the wingplate and remove it.

**Photo 10. Altogether better pitch**

Still some more cleaning up to do, but it's now pretty much in the right place. The solder blob masks the incorrect original centre hole as at left. There might be a case for redoing the two cylinder covers, as the rivets, awkward as they were, are a bit rough. Neither are the circles quite true.

**Photo 11.Side view of the three items brought together for the first time.**

The smokebox needed to sit a trifle lower, and the line of the firebox needs trueing up. The intention is that the motor will be mounted vertically in the firebox, with the gearbox fitting between the rear axle bearings and the middle of the firebox.

The boiler centre was rechecked and moved downwards a further 1.5mm, making the resulting item looks very squat, but then there was a straight edge at the bottom of the smokebox door anyway, so that's why that was there!

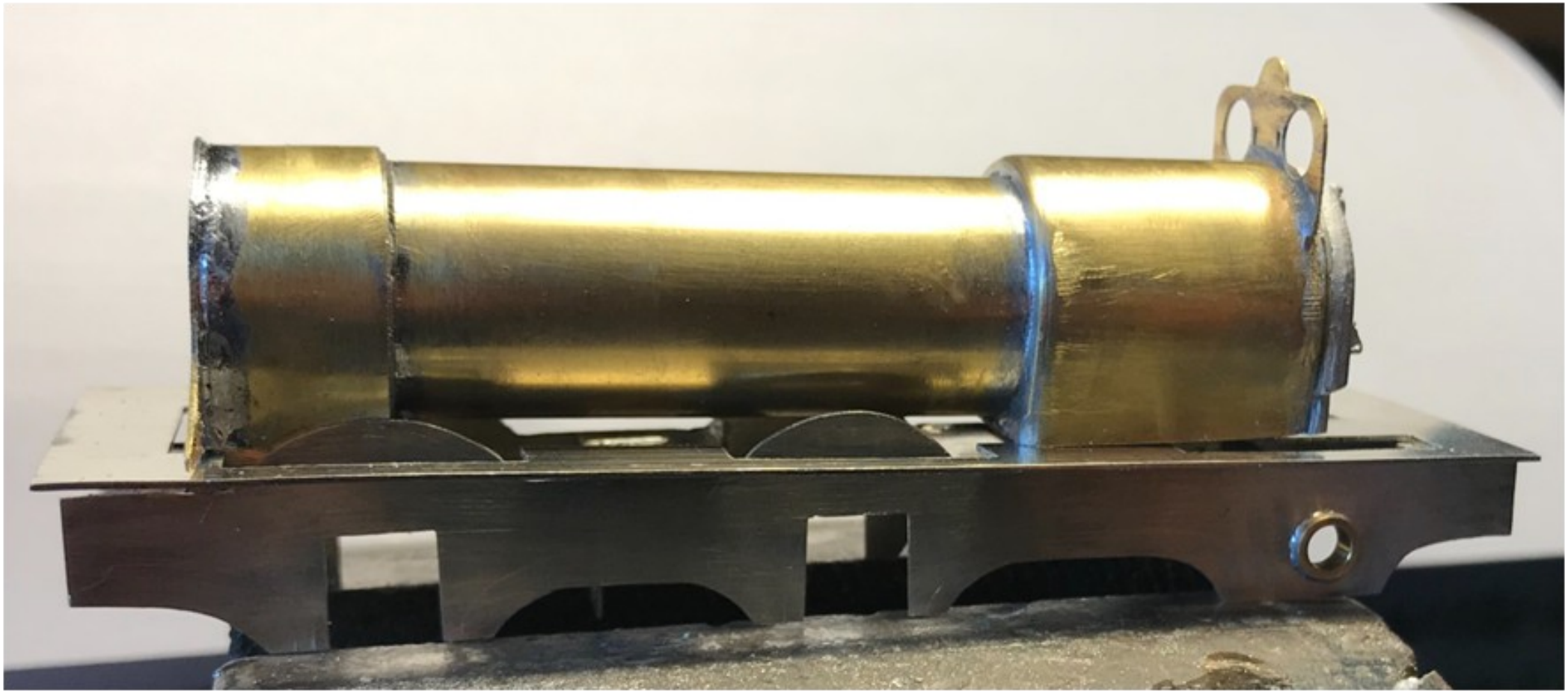
I re-soldered the modified wingplate to the now shorter smokebox, and the whole unit looked much better. What I didn't mention was the premature addition of a pair of rivet-embossed cylinder covers and valve chest cover between them – the former of which were superglued in place! Thankfully they didn't detach in the course of application of heat. They had been rather tedious and tiny to put the rivet patterns on – the former being circular and tight to the edge, and the latter a very narrow item indeed.

Careful re-scribing of the line to represent the smokebox door with spring bow dividers and the new line of the smokebox top meant I could trim the surplus back, and then solder back in place.

Looking much better sited.

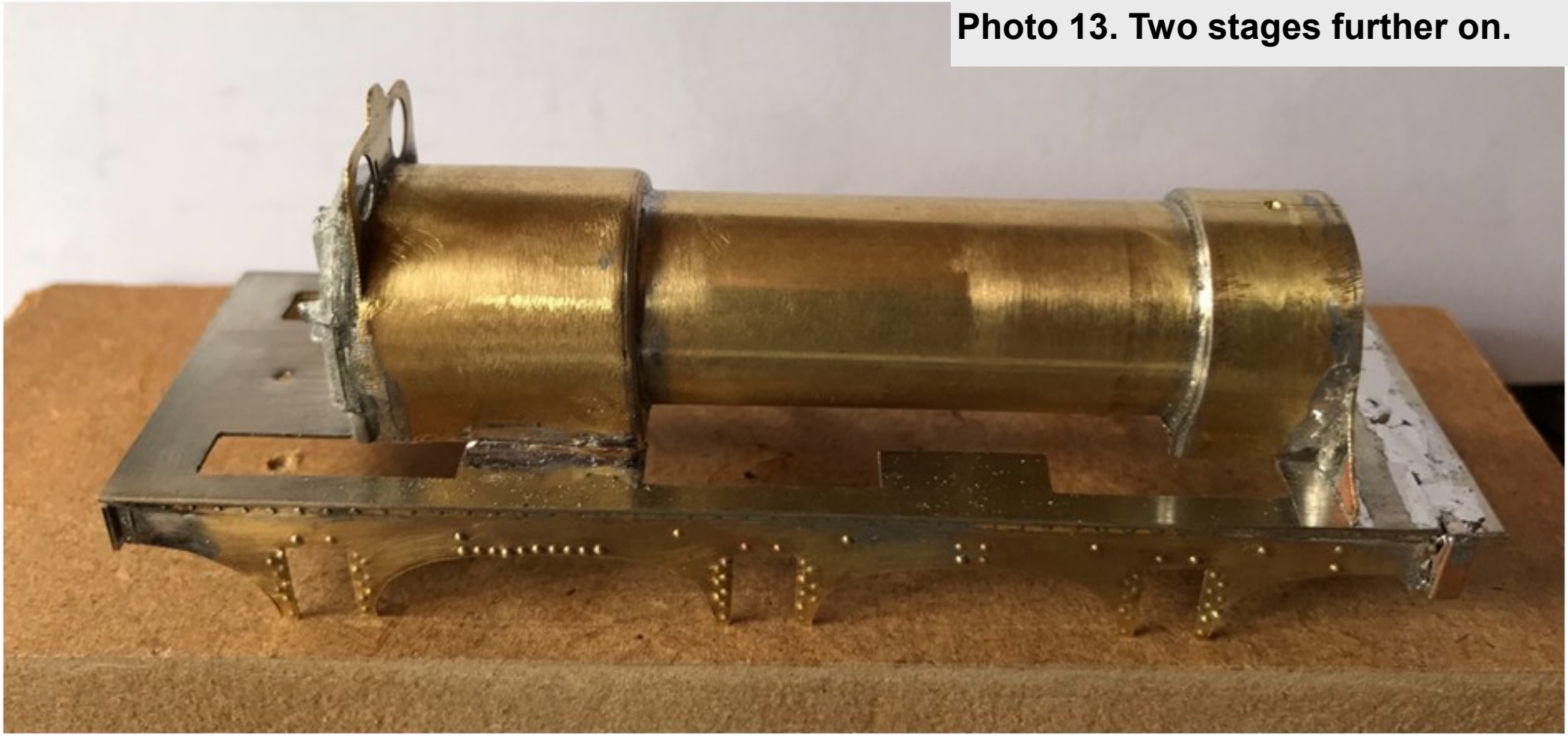
A small amount of filing was necessary to clean up the edges of this lower protrusion, to ensure it fitted between the chassis frames , and then the application of two tiny right angled triangles with curved hypotenuses to represent the small pieces of frame that often appear on early loco smokeboxes – Sussex and Dieppe to name two others. (Anyone modelling Drayton from the same class as Dieppe needs to provide for this rectangular hole in the platform immediately below the smokebox door.

**Photo 12. Trial fit of boiler to platform and chassis.**



The smokebox lower edge still needed slight trimming back after relocating the wingplate.

**Photo 13. Two stages further on.**



The boiler is now soldered on to the platform, and the outer frames are now also soldered in place. The extension platform has been added to the top of the ‘timber’ buffer beam, as added support. The chassis raised ‘arcs’ have been reduced and flat topped, to allow the smokebox to sit down, unhindered by surplus framing.

The centrelines for the Chimney, dome and GWR-type safety valve bonnet have been marked and small .5mm holes drilled, in case later cleaning up removes the marking out, before they are fitted. The holes can easily be increased in size if needed.

A cast white metal backhead has been glued on to the original Dieppe one, having filed off the superfluous detail, which would not match for height.

As you can see, there is a large amount of space under the boiler, which, although the splashers will take up a good deal of it, will, nonetheless need some representation of the valve gear and connecting rods.

The chassis was added to, by putting an ex-Dieppe motion balance weight in place on the also ex-Dieppe motion plate between the front and centre axle locations, indicated by the four rivets on the outside frames.

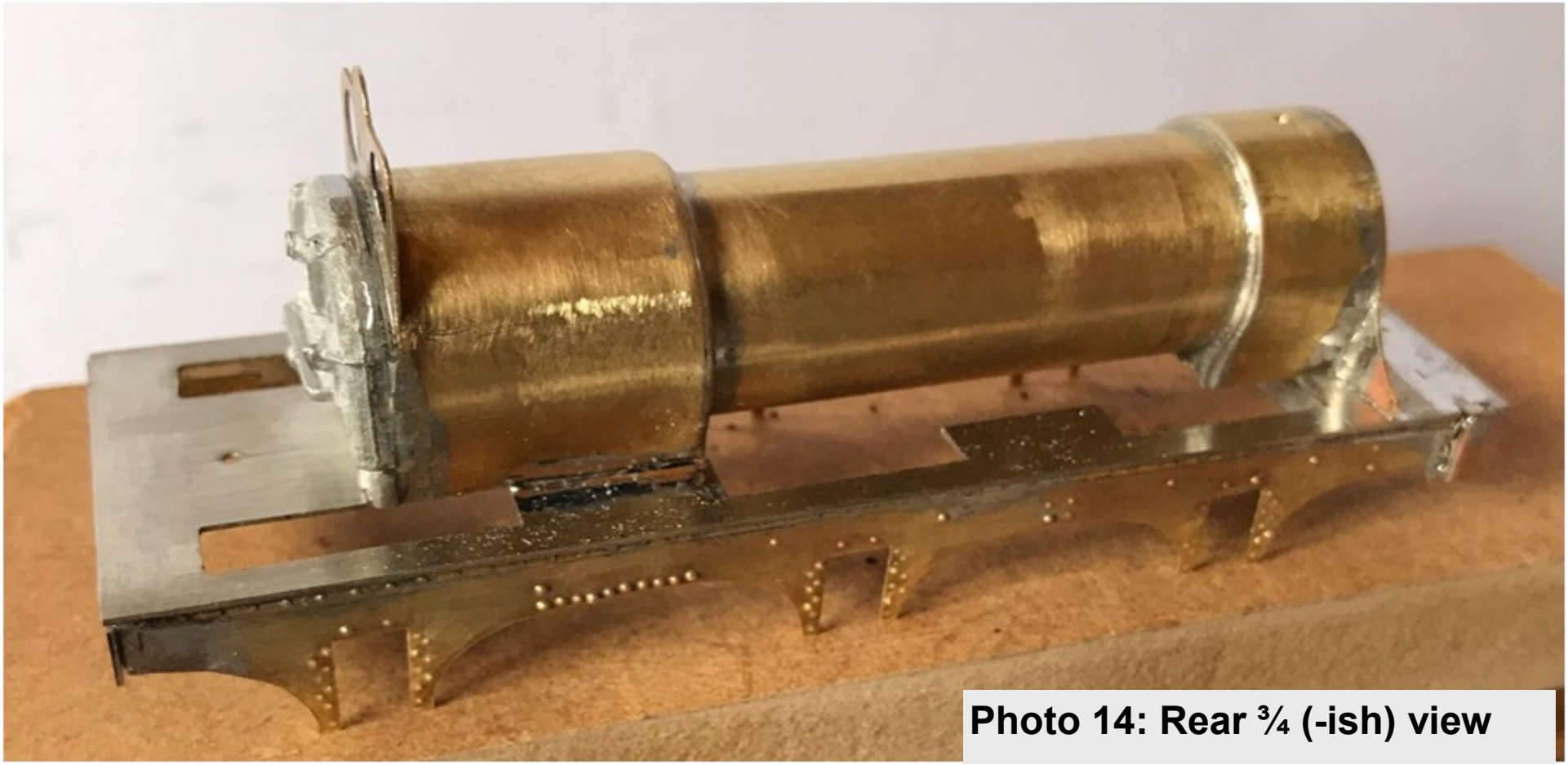


**Photo 14: Rear ¾ (-ish) view**

The part reversing lever and crank were also added to the end of the surprisingly long weighshaft. My thanks to Ian Mac for verification that the reversing lever passed between the ‘cab side’ and the rear splasher – a most unusual and constructionally awkward scenario.

Having soldered up, and into place, the rear splashers, I then looked back at the drawing and consulted Ian, who verified the fact for 393!

…. and the moral of that story is - Check first, not afterwards!

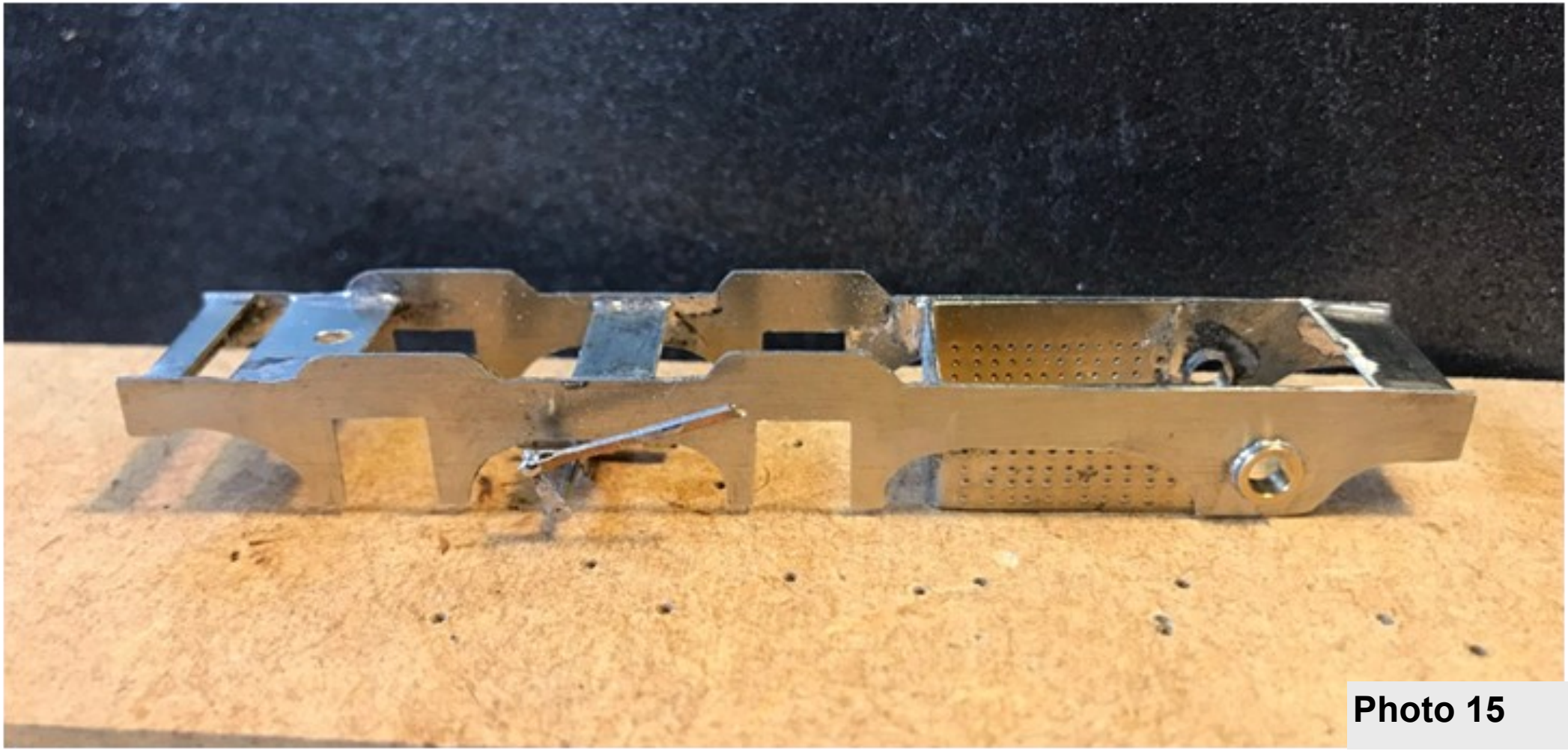


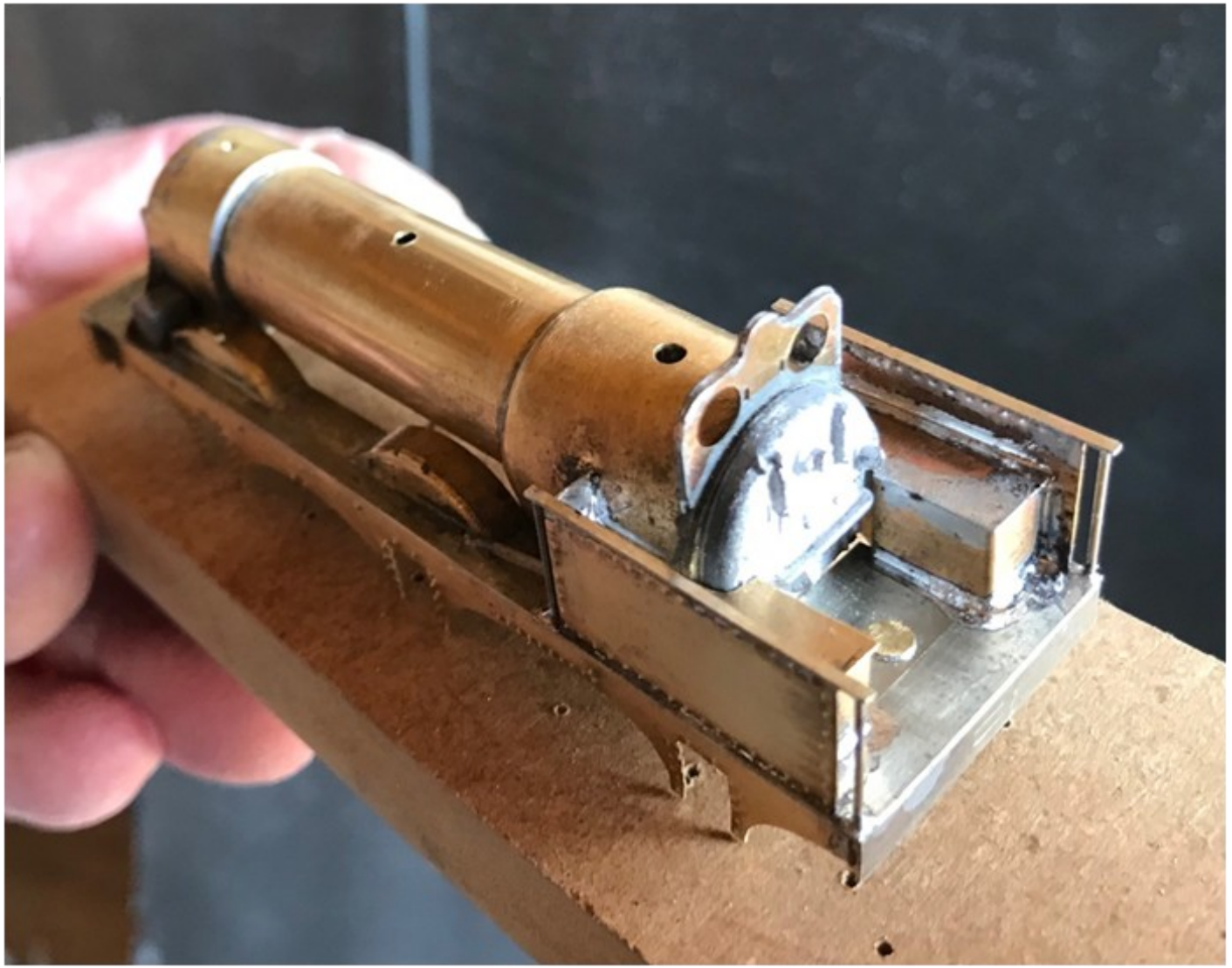
**Photo 15**

The rear ‘cab’ splashers soldered in place, prior to discovering the need to accommodate the reversing lever *between* the cab side and the splasher – so they needed to be modified.

The boiler backhead is a standard 5 & 9 Models casting, as was formerly provided in all my EBM kits.

Details still to be worked out regarding the backhead items to be included.

**Photo 16**



Chassis with reverser weighshaft balance weight and weighshaft fitted, as well as some of the rather sturdy frames having been reduced in depth, as they are not really visible from the side behind the outside frames in any of the photos I have.

Photo 17



At this point, further drop links have yet to be added on the bare end of the balance weight lever on the left, but rather more in ignorance than knowledge. The idea being to add some cosmetic appearance of parts, rather than known detail. The part reverser lever link was made up from two spare n/s items off a C class kit fret, to form a split end over the crank. A U-shaped support bracket was also soldered from the chassis side under the shaft – which is relatively unsupported, and could not have realistically been thus.

The ashpan is heavily rivet-embossed, and is bent round as a one-piece fitting, and soldered in place as above. Any spare space other than is occupied by the gearbox can hopefully contain lead weight.

This will also provide good cover for the gearbox and general drive arrangements that power the rear fixed axle.

My intention with future builds is to use split chassis and axles with CSBs, but with this build, and Sussex and Goodwood, I thought these double framed locos would be better built with more standard compensation, for ease of construction.

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# Lewes Second Station - Leighside Access

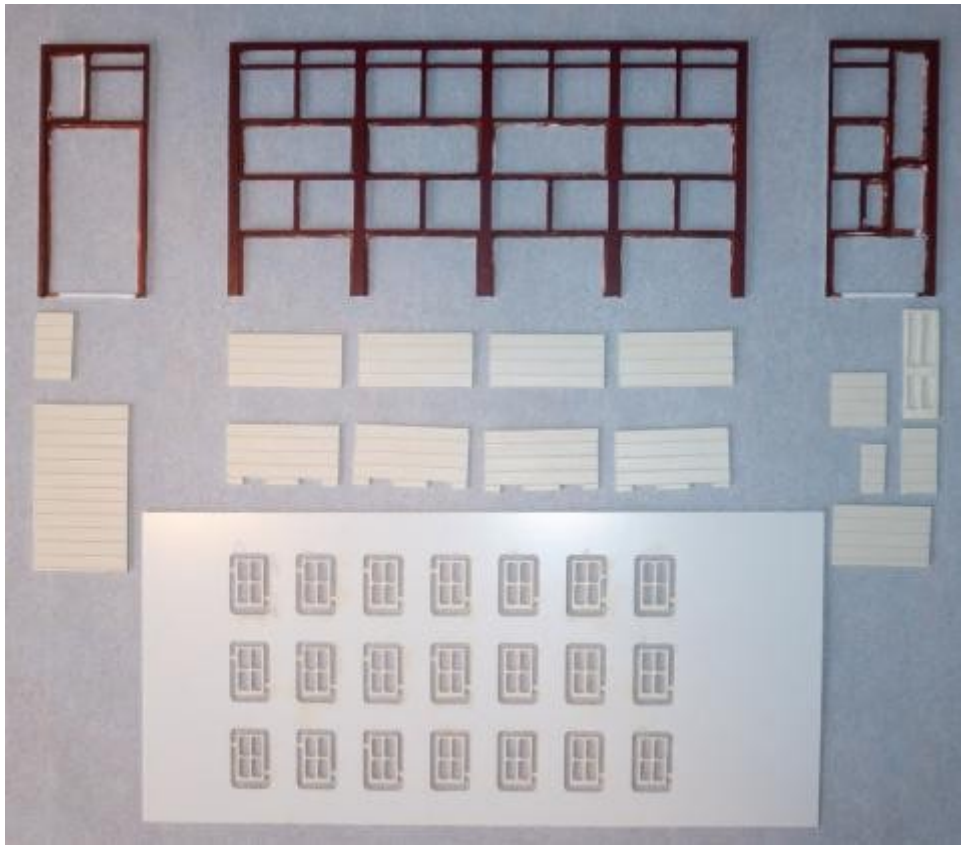
## By David Rigler

In the last article I left the model with some structural elements still to complete. I will finish this series concentrating on the signal box as this used additional methods of construction.

For the main frames of the signal box I used my CNC router to cut profiles in 1.5mm Plasticard. These were rebated to take hand cut panels, scribed to represent planks, and doors. Where sharp internal corners were required these were nipped out with a sharp chisel form blade. The window frames were also CNC cut in 0.5mm Plasticard.

An advantage gained was being able more easily to paint the separate parts before assembly.

For the windows, glazing sheet was fixed to the rear of the frames. Secondary pieces of glazing sheet was then secured within each opening, half the opening width, and then the separate window frames were secured in position. This gave the visual overlapping appearance required.



The front and side frames were assembled together with internal floor elements added to give rigidity.  The whole assembly was then incorporated into the rest of the model, enabling roofs and steps to be added.

This view shows the approach road. This was produced by downloading a suitable straight gravel road image from Textures.com. This was imported into Photoshop and a suitable section cropped out.

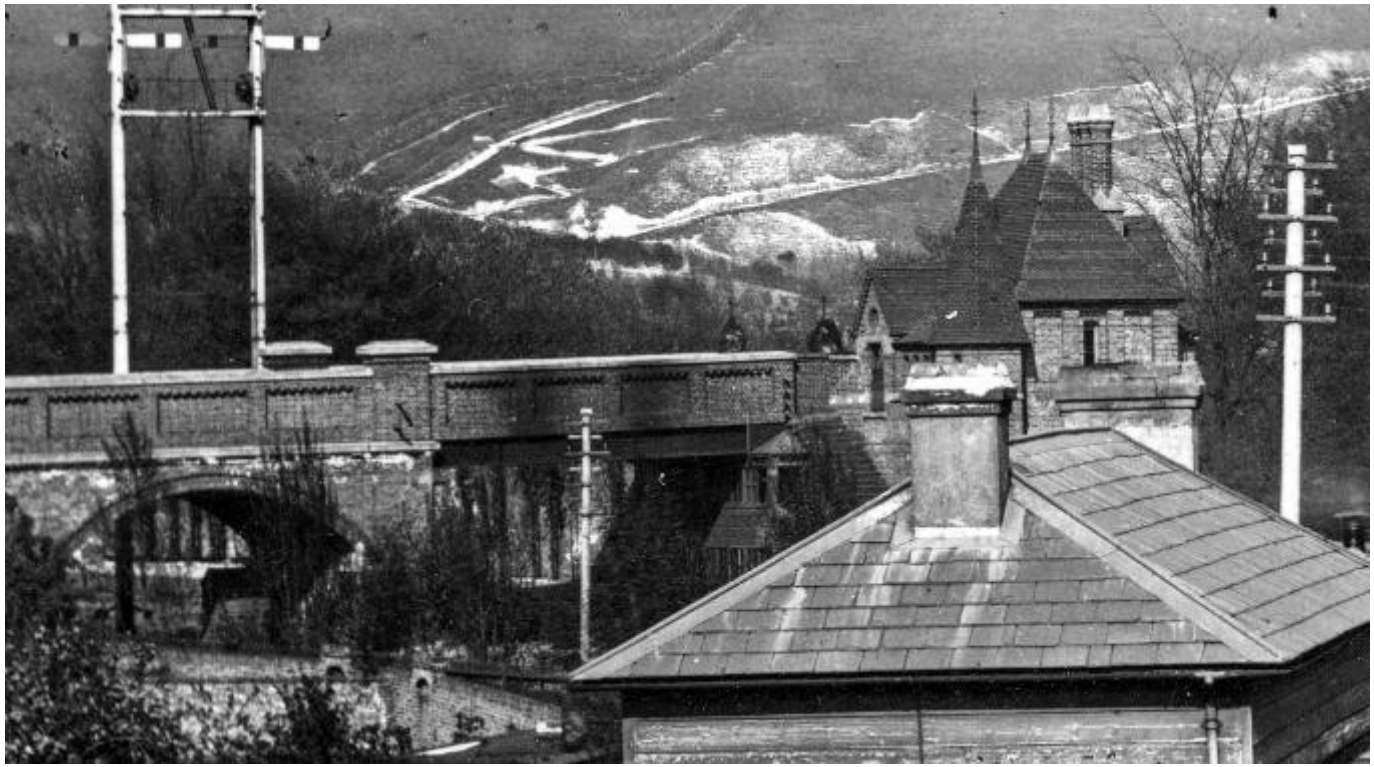
A profile of the complete roadway required was also imported into Photoshop from the CAD model to act as a template.

The bend in the road was achieved by duplicating a section and warping it to suit. More sections were duplicated, added and blended together to produce one continuous roadway, shaped to the template.

This was then printed out, cut to final shape and glued in place.

Views of the complete model and the real thing. There is still some finishing detail and weathering to be completed but this will be on hold until I decide how and where to use the model.

Overall it has been an interesting modelling exercise. Using photorealistic coverings to this extent is new to me but I am pleased with the finished effect. However, my “wall papering” skills definitely need improving!!





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# LB&SCR Brake Van No. 29

## By Peter Warren

### Inspiration

Every modelling project needs a good supply of motivation, and in this case the transfers came first! Way back in 2012, by a strange quirk of fate, I acquired via *The Brighton Circle* email group a beautiful set of bespoke 7mm scale transfers for the complete 1895 3-car Pullman Limited set in original livery. These had been produced to special order by Ian White for the late Peter Korrison. I have a soft spot for Pullmans and as Peter had some responsibility for my continuing interest in the LB&SCR, I felt I might one day try to take up the baton and build these carriages in his memory.

### Prototype

In reality, the Pullman cars (*Princess of Wales, Duchess of*

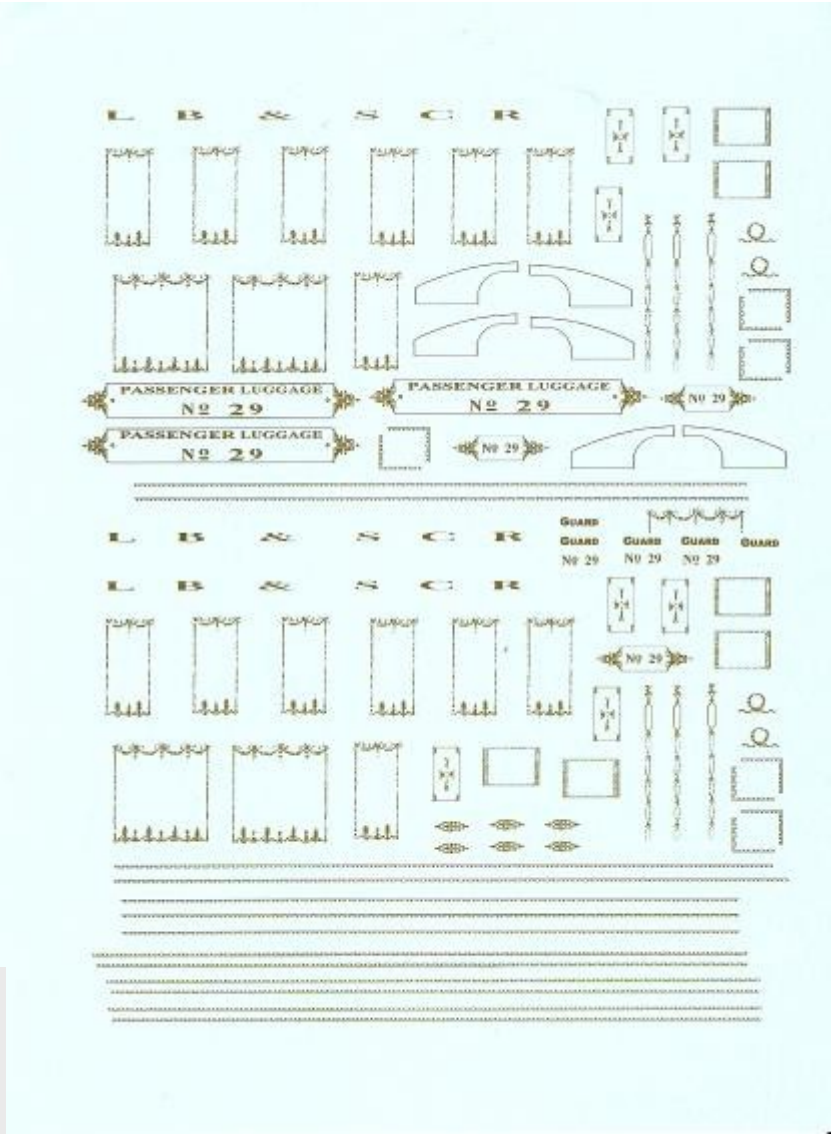


Photo 1: One of the sheets of custom waterslide transfers produced on an ALPS printer by Ian White

*York and Her Majesty*) were supplied in kit form from the Pullman company workshops in Chicago and assembled at Brighton. The LB&SCR constructed no. 29, a special luggage brake van to run with the Pullman set, to match the profile and style of the American cars. It was a six-wheeled vehicle, designed and owned by the LB&SCR, which carried a large Stroudley-Houghton dynamo and sets of batteries for the electric lighting of the whole train. This van, and the earlier van no. 81, became popularly known as 'Pullman Pups'.

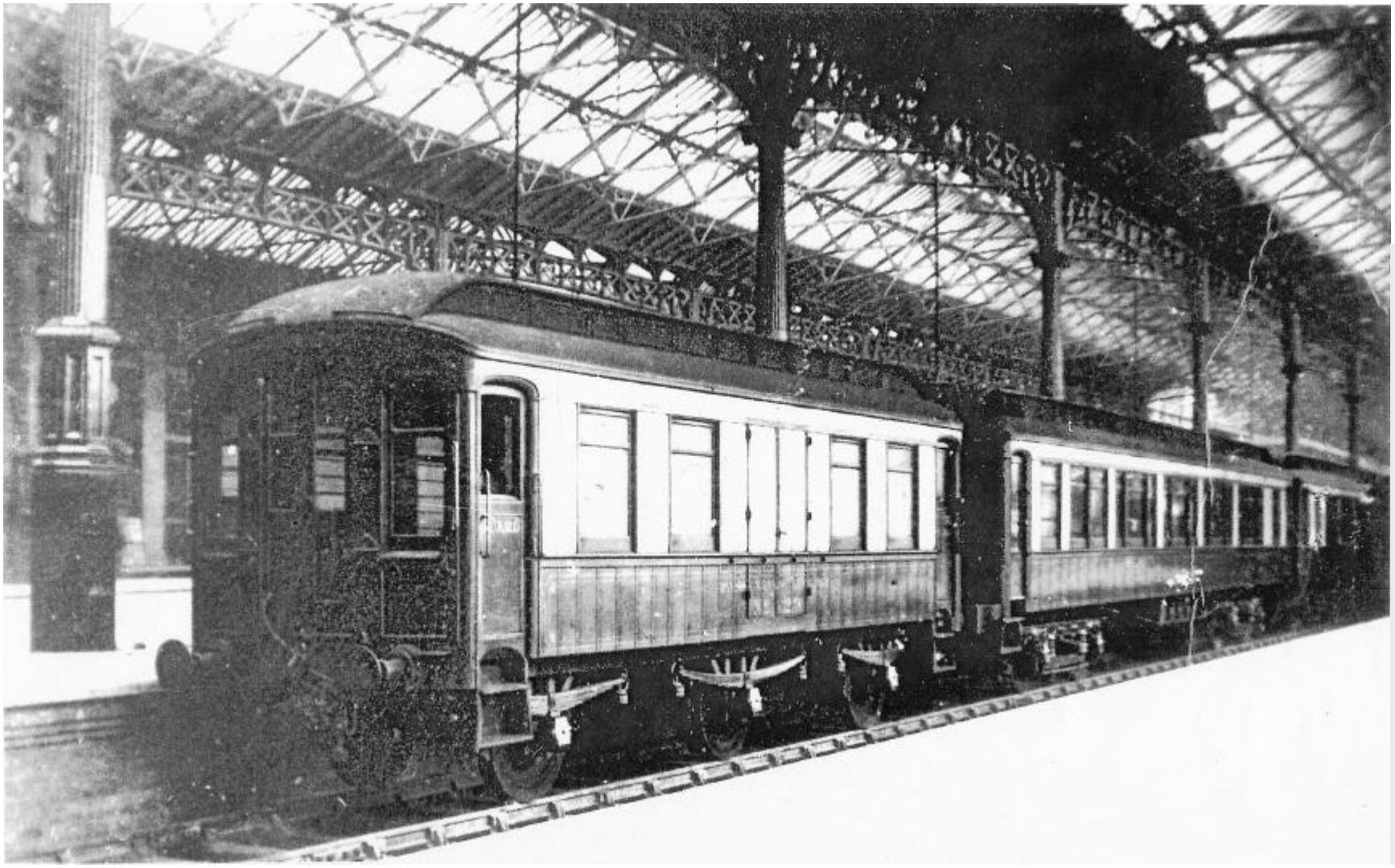

Photo 2: The 1895 Pullman Ltd at Victoria with van no. 29, all in post-1906 livery (The source of this image from the late Peter Korrison is not known to me)

## Research

The first problem was obtaining accurate information. Drawings published in the model press[1] and in P. J Newbury's book[2] both appear to have been based on the official LB&SCR drawing of no. 29 in the HMRS collection[3]. I rapidly discovered that this drawing differed in several respects from the completed van seen in photos; alarmingly the drawing showed narrow vestibules in the elevations and a full width body in plan! Fortunately, Ian White had already researched this and introduced me to the drawings in the original LB&SCR diagram book in the National Archives at Kew[4] which included Van no. 29 as well as the three Pullman cars.

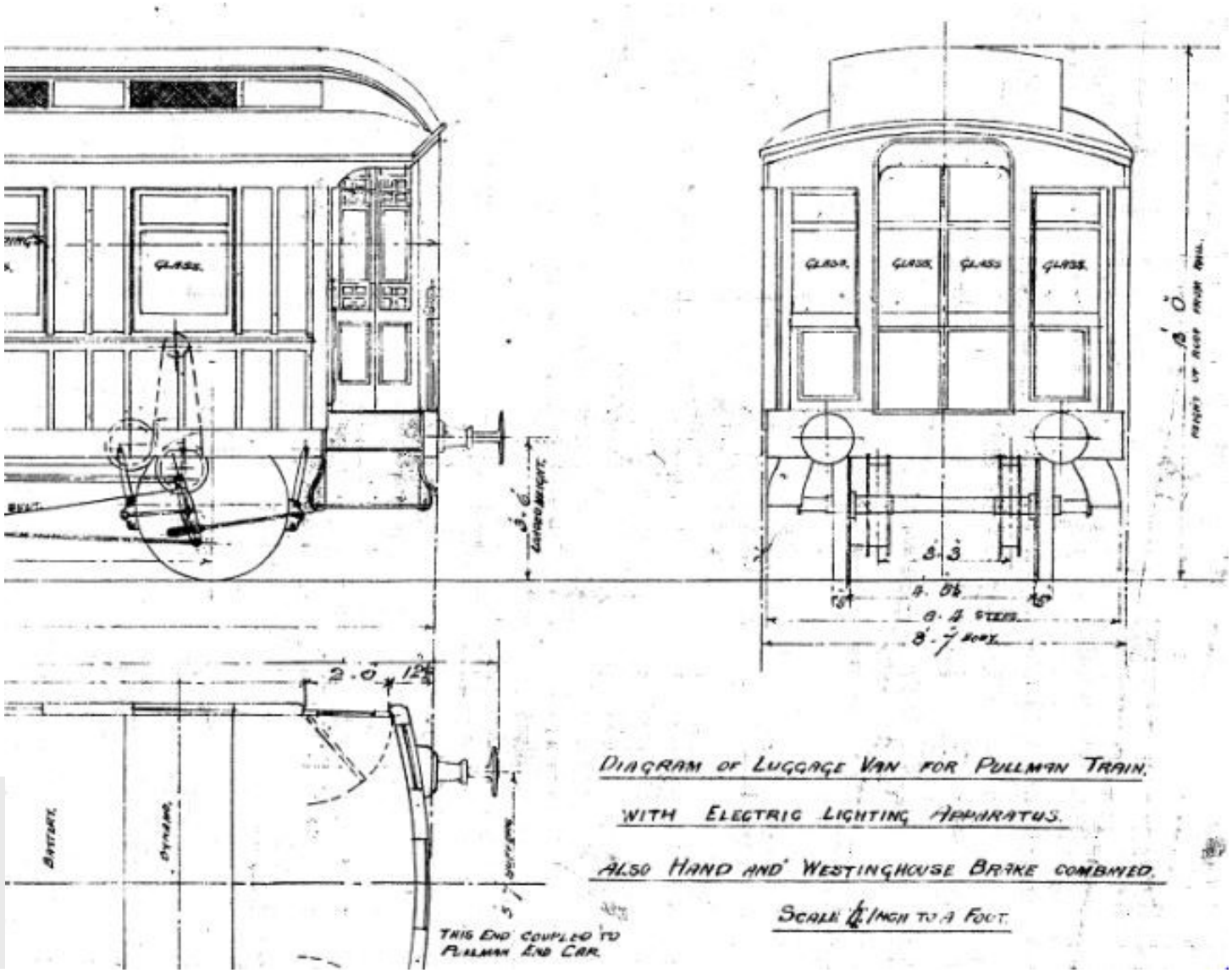


Photo 3: Extract from LBSCR drawing 4021A (HMRS 17366)

## Drawings

I decided to produce my own scale drawings based on photos of the original drawings and of the LB&SCR diagram book. Opening each photo in Sketchup (a free computer drawing programme) and knowing the overall dimensions of the vehicle, it was possible to stretch the image to the correct overall proportions and to almost eliminate any distortion caused by perspective effects in the photo.

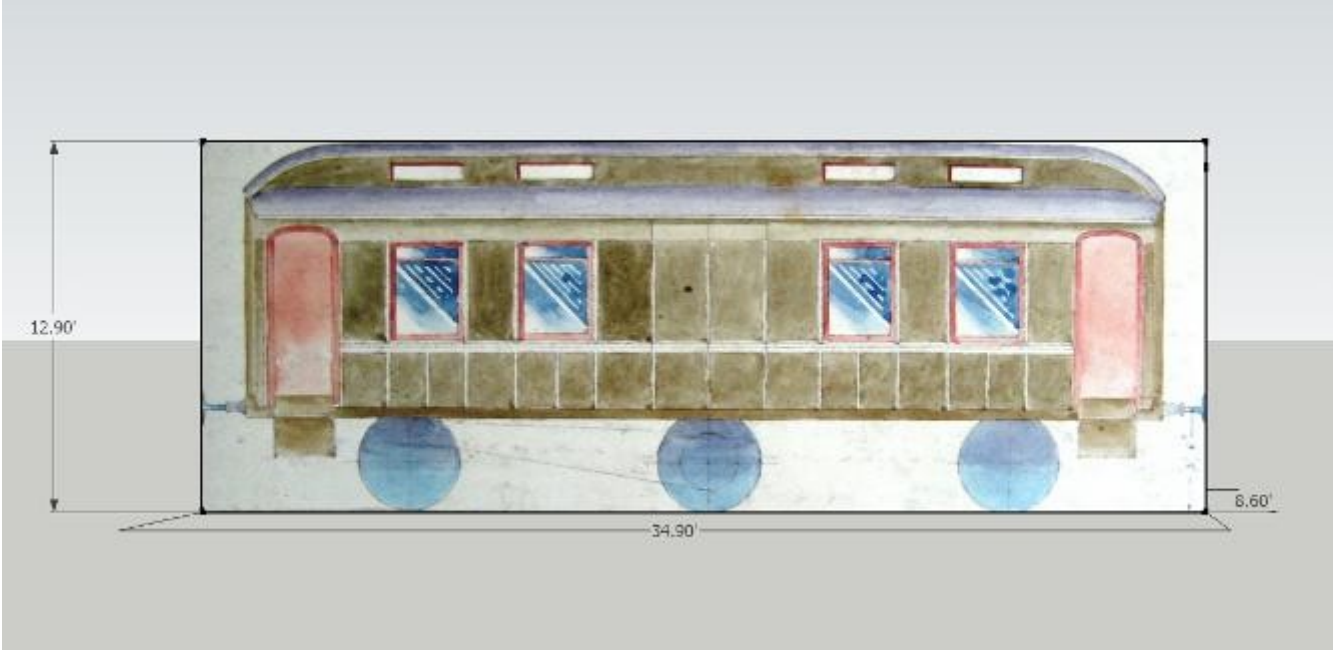


Photo 4: Rectified side elevation (Peter Warren, from RAIL 414-745)

The rectified image can then be imported into your choice of CAD programme, re-sized to suit your chosen scale and traced over to produce a 2D CAD drawing. I checked the plan view, together with corresponding side and end elevations, against the known overall dimensions and with other published details of typical LB&SCR six-wheeled carriage stock of the period[5]. It is important not to invent detail; where there was no evidence beyond the basic diagram, I did not add it to the drawing unless it appeared in a photo. Predictably the photos also showed some differences from the diagram book, notably in the arrangement of panelling, door steps and headstocks! The Westinghouse brake gear and

arrangement of belt drives for the dynamo were taken from LB&SCR drawing 4021A.

As a final check I scanned the sheets of transfers and imported them into the drawings to see if they would fit the panelling arrangements I had ended up with; luckily they did. I drew the three Pullman cars at the same time to ensure consistency across the whole train but found there was only limited standardisation as each car had different internal layout and window arrangements. Preparing the drawings was an interesting puzzle, and Ian provided further impetus to complete the

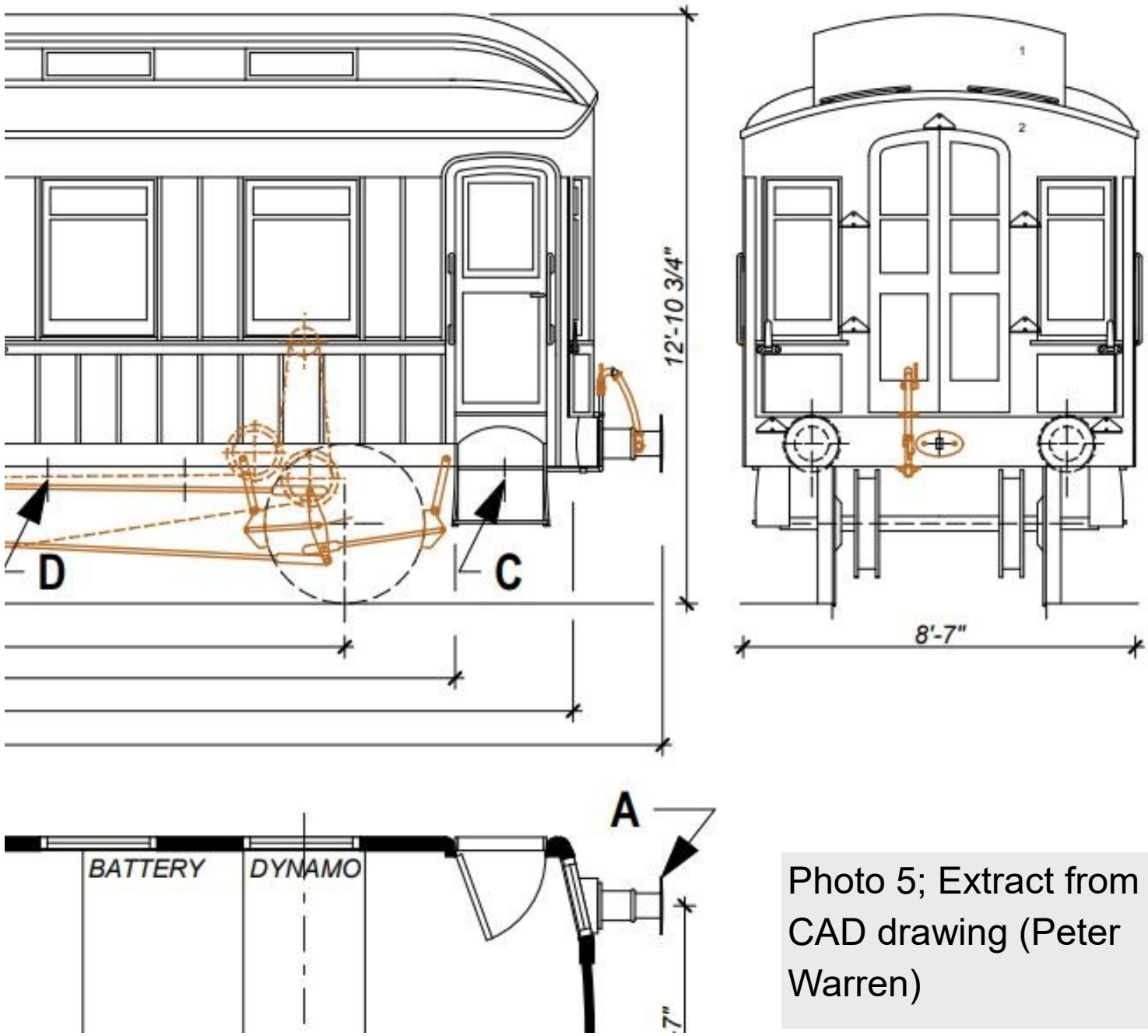


Photo 5; Extract from CAD drawing (Peter Warren)

work by requesting a copy of the van drawing for publication in volume 2 of his authoritative publication *LB&SCR Carriages*[6].

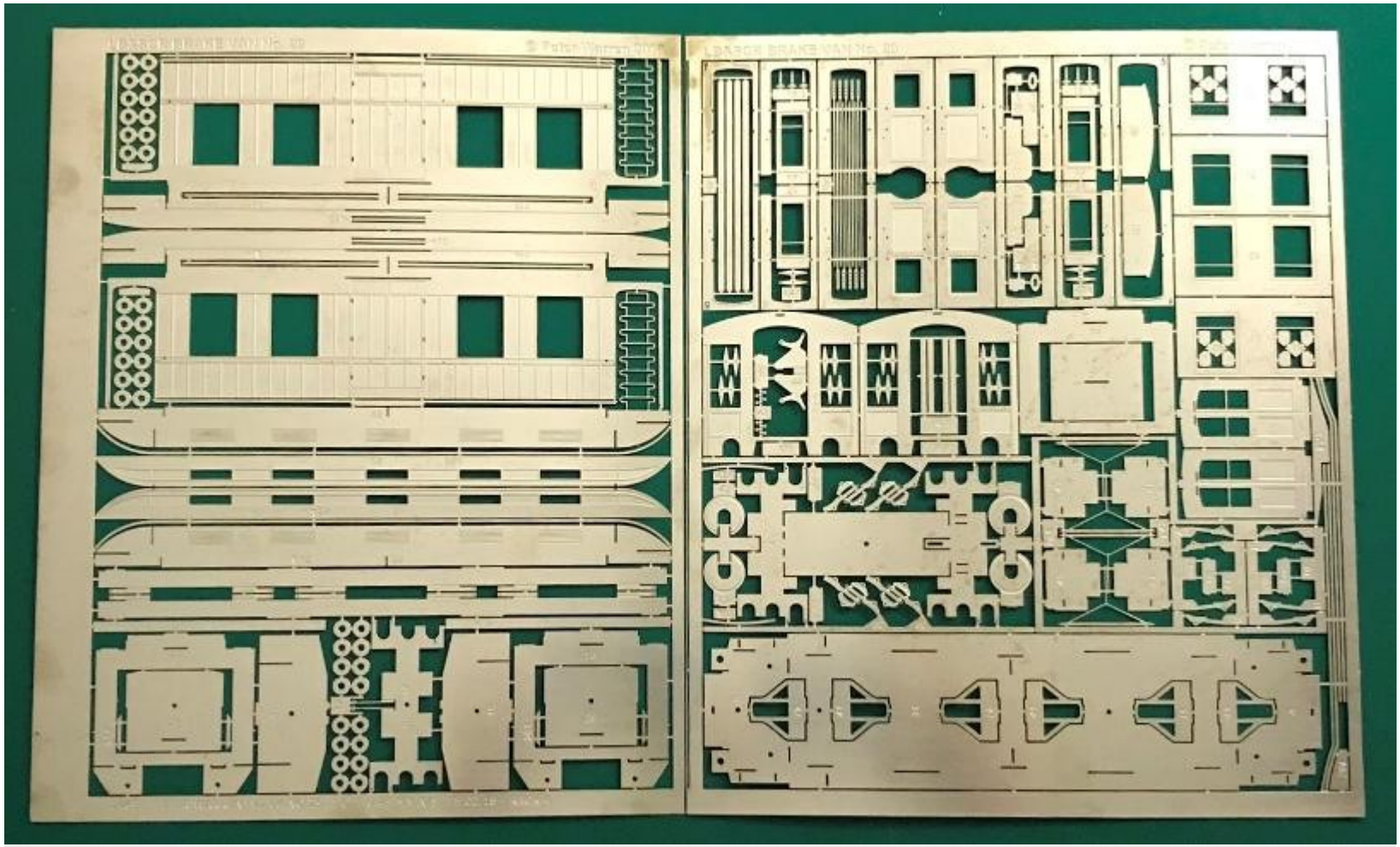

Photo 6: Etched components for the van in nickel silver (Peter Warren)

**Choice of Material**

With their straight, flat sides, Pullman vehicles look deceptively easy to model. In the case of the 1895 Pullman Limited set, the main challenges were going to be the domed clerestory roofs and the recessed doors. I treated the model of van no. 29 as a prototype for modelling the rest of the train, as the roof and end doors were of similar design to the Pullman cars themselves. Having spent so much time producing my own CAD drawings I thought that I was half way towards producing a design for etching - the computer really is one of the most powerful tools available to modellers!

I designed the van as a kit of parts in 0.45mm etched nickel silver as I felt the disadvantage of the extra cost would be outweighed by the ease of assembly and improved accuracy and consistency, especially where details such as the vehicle ends were repeated throughout the whole train. Eventually the resulting etched sheet for the van contained around 200 components!

**The Carriage Body**

The main challenge here was the recessed doors. Being at the end of the vehicle, the door frame is potentially thin and fragile at the point where the carriage side curves round to join the ends. The panelled doors and frames required four layers of etched nickel silver to achieve this. I wanted the construction to be self-jigging wherever possible and included three pinholes so the various door layers could be accurately pinned together to maintain alignment when soldering.


Photo 7: The recessed door layers and the windows were added before the sides were removed from the fret (Peter Warren).

The carriage sides themselves were stiffened along the top by folding down a section to form the base of the lower roof and folding up a section to form the lower roof profile alongside the clerestory.

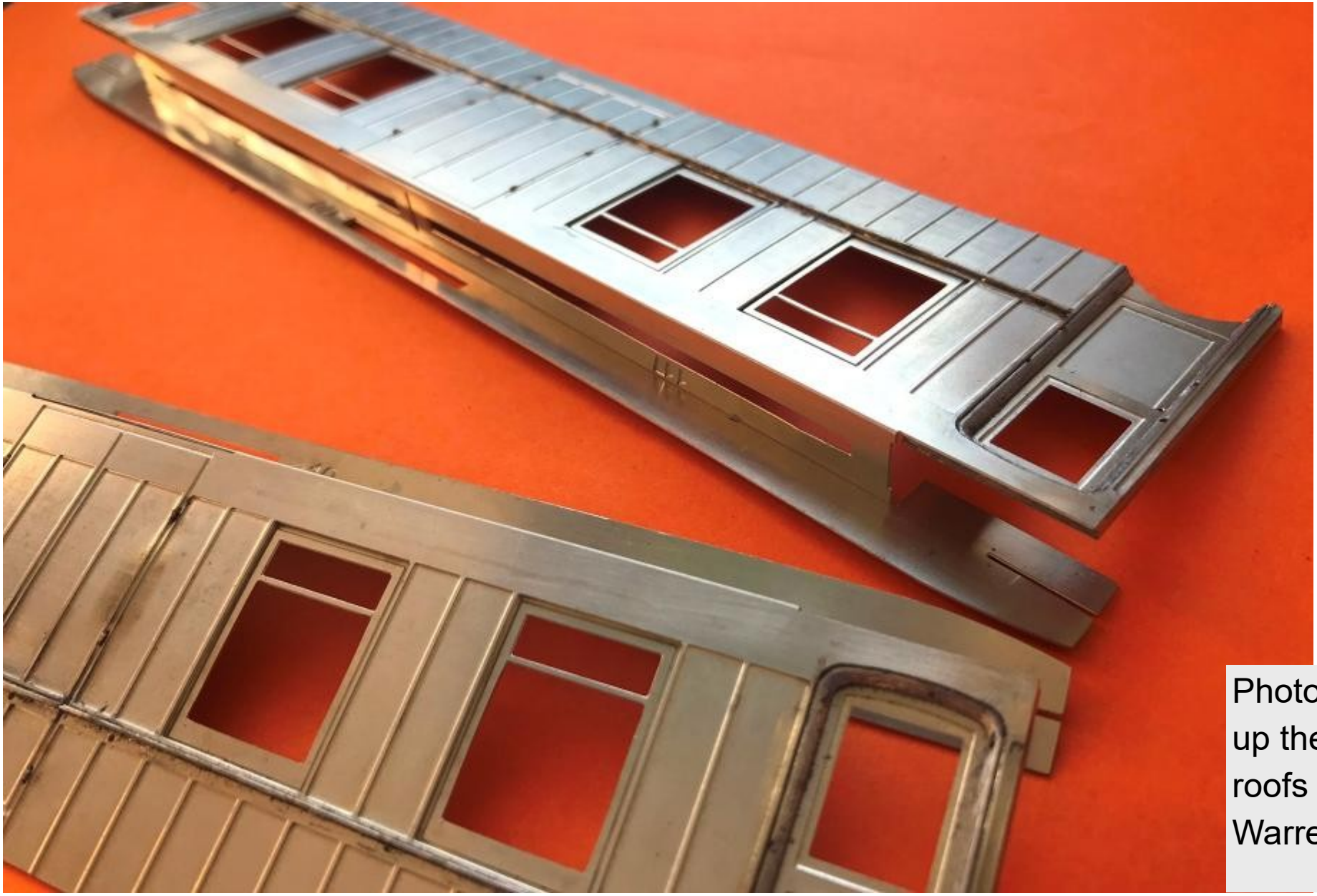

Photo 8: Folding up the lower roofs (Peter Warren)

Three internal partitions space the carriage sides apart, located in the correct position by tabs and slots in the lower roof. The basic box was completed by a ceiling piece over each end vestibule which engaged into slots in the lower roof and end partition. The result was that all these etched parts could be slotted together and hold themselves in the correct position before carrying out any soldering.


Photo 9: The basic body shell assembled before soldering (Peter Warren)

The bow ends, which extend below the line of the sides, were added subsequently to this rigid box structure. Almost all the assembly work was carried out using ‘no-clean’ solder cream and a resistance soldering unit.

Photo 10: Adding the ends to the carriage body (Peter Warren)

## The Roof

I designed the distinctive clerestory roof of no. 29 to be permanently fixed to the carriage body so the cantrail detail could be as neat as possible; this meant that the underframe and floor, together with internal fittings, could be a separate unit. This is easy to arrange for a slab-sided vehicle. Forming the subtle double curvature was readily achieved using solid straight-grained balsa which can be sanded very rapidly to the cross-sections required. I adapted this old-fashioned technique for van no. 29 by incorporating a nickel silver profile around each portion of the lower roofs; this provided an integral jig which could be infilled with timber then quickly sanded down to profile. The same principle was applied to the design of the clerestory section. This has a separate nickel silver frame which, in addition to the down-curved side profiles, incorporated a couple of nickel silver spacers giving the correct cross-section curvature at each end of the main roof; the domed ends were infilled separately and the whole clerestory section sanded to shape before being fitted into the space between the lower roofs. Several coats of varnish and filler were applied to seal the timber, rubbing down between each coat with wet-and-dry paper in the traditional way.

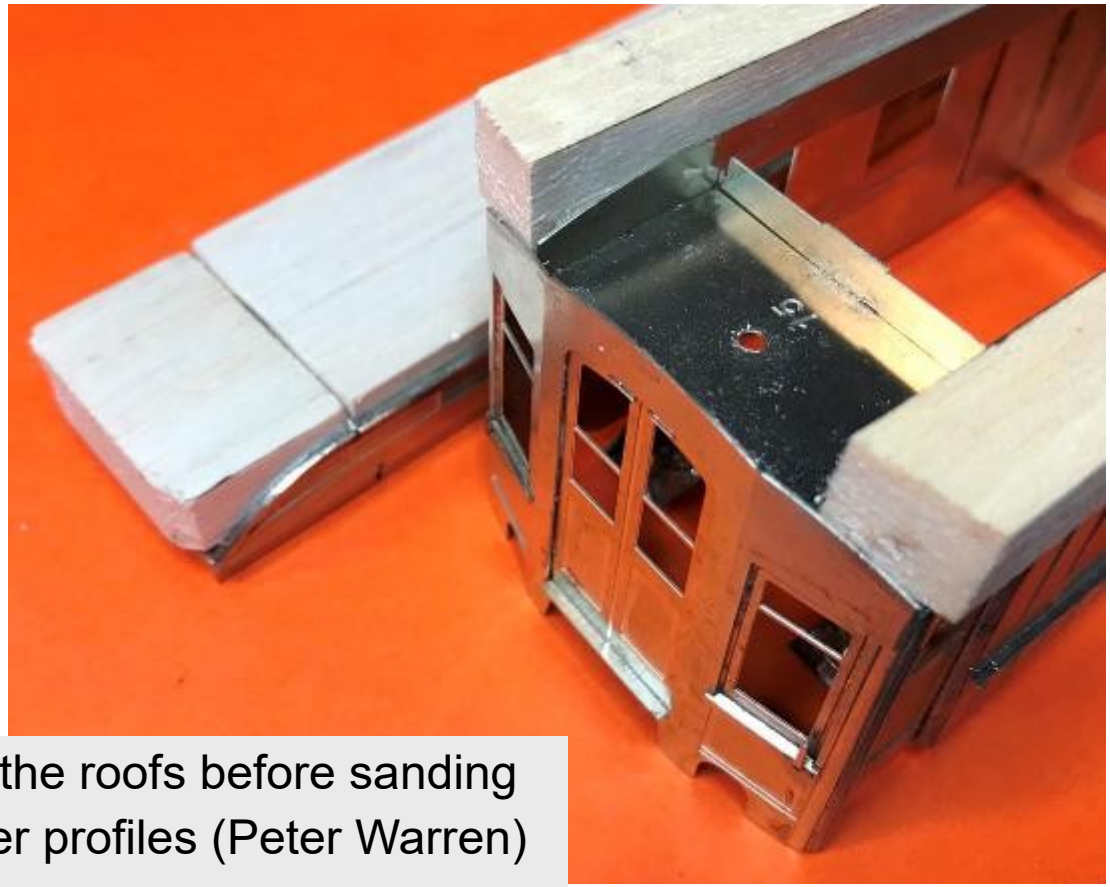

Photo 11: Building up the roofs before sanding back to the nickel silver profiles (Peter Warren)

## The Underframe

After my old-fashioned roof and computer-etched carriage body, the underframe is a relatively straightforward design in etched nickel silver, bolted into the body shell. The springs and axleboxes are whitemetal castings by Roxey Mouldings, carefully modified by removing the cast W-irons. I paid homage to Peter Korrison by using the principle I first encountered in his kits where two of the axles are mounted in a pivoting subframe – a sort of bogie arrangement – with the third axle being fixed.

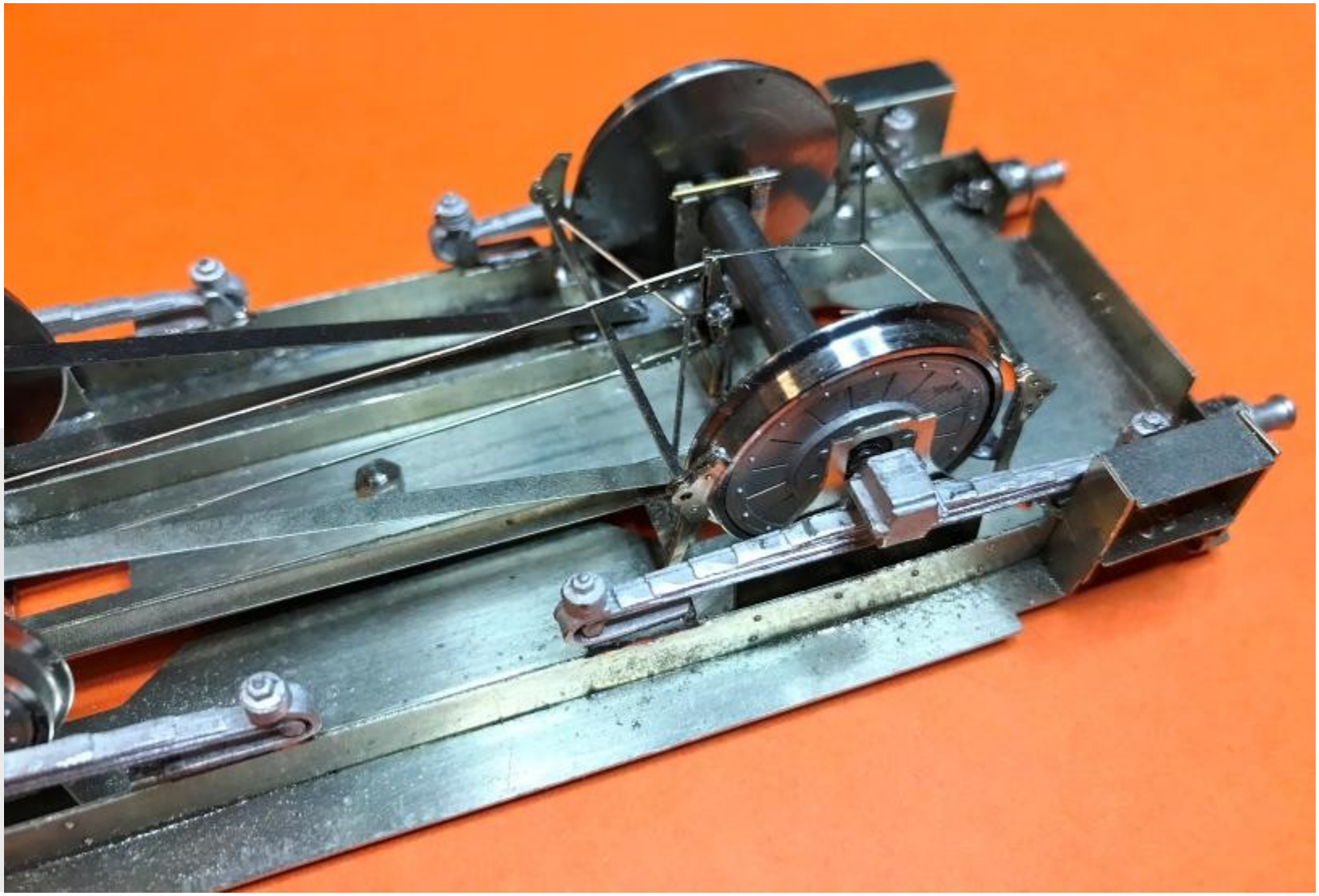

Photo 12: Fixed etched W-irons with cast springs and axleboxes, pivoting subframe with inside bearings and brake gear (Peter Warren)

As well as the visible brake gear, I also included a representation of the pulleys and belts on the centre axle which drove the onboard dynamo. The floor also carries internal detail – the handbrake, dynamo and battery boxes although these can only be glimpsed through the end windows.

Photo 13: Trial run before painting (Peter Warren)

## Painting and Assembly

The benefits of all the laborious design effort were realised when assembling the model, which was a relatively rapid process. Painting took longer; the whole train was originally painted in a dark ‘bronze green’ colour with elaborate stencilled gold decoration – the well-known umber and cream livery was not adopted until 1906[7]. The basic colours were airbrushed, followed by thinned Humbrol Gloss Cote as a base for the transfers. The roofs of early Pullmans were finished in red oxide instead of the usual white., making a colourful overall effect.


Photo 14: The completed van awaiting weathering (Peter Warren)

The transfers were applied using Micro Set and Micro Sol to encourage them to bed down across the various mouldings, after which they were sealed with another thin spray of Gloss Cote. Finally, Testors Dullcote was sprayed on to produce a more realistic sheen finish. Weathering has still to be added.


I am not sure what Peter Korrison would have made of all this but the whole project has been most enjoyable. I am pleased with the result and would like to acknowledge the generous assistance provided by Ian White in getting this far. Now for the three Pullman cars!

Photo 15: Van end detail (Peter Warren)

References


1. *Model Railway Constructor,* February 1972
2. *Carriage Stock of the LB&SCR* - P. J Newbury (Oakwood Press 1976)
3. HMRS drawing no. 17366 - LB&SCR drawing 4021A 23/5/1895
4. RAIL 414-745 - Diagrams of coaching stock 1870-1910
5. *LBSCR Carriage Stock* – S M Hunter (Model Railway News August 1964)
6. *LB&SCR Carriages Volume 2; Four- and Six-wheeled Saloons, Vans and Restorations* - Ian White, Simon Turner & Sheina Foulkes (Kestrel Railway Books 2016)
7. P84 *Southern Style Part 2 – London Brighton & South Coast Railway* – P J Wisdom (HMRS 2016)



Thanks to Paul Garratt, HMRS Drawings Archivist for permission to reproduce an extract from HMRS drawing 17366.



Photo 16 - The complete van before weathering. (Peter Warren)

Van 29 at Addison Road (Peter Warren)




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# Using new technologies to get projects finally completed!

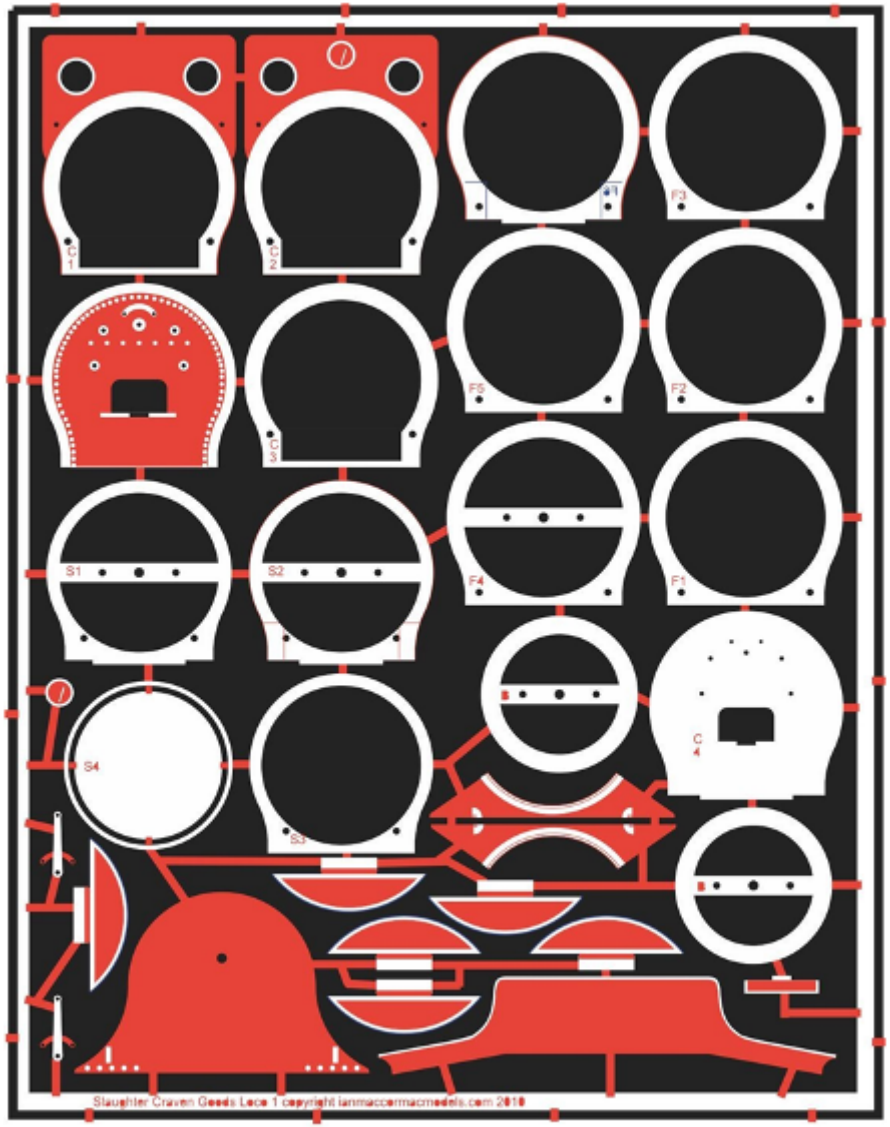
By Ian MacCormac

Many of you will have followed my trials and tribulations in trying to get early LB&SCR models available to both myself and to you over the last decade.

Things are slowly turning the corner and it has mostly been my inability to make good masters from which to take castings that has held me back.

There has also been much bereavement in my family, not just aged parents and in- laws, that we all come to, but my kid brother not making it after contracting Leukaemia. I have also had an ongoing battle to keep a very severe case of Tinnitus from destroying my day to day living. I had to take early retirement on medical grounds four years ago now because of this and it took a while to get used to the fact I was now retired and not still working into my late ‘60s as was the grand plan! I would like to record a big thanks to many of you reading this, as without your help and kind understanding, my mental state would not have coped. Well, that was written in Mental Health Awareness Week and I, for one, am glad that we do not hide everything away with a stiff upper lip as we did in the past.

It was on May 29 2010 that I started to design the Craven Standard Goods built by Slaughters. I had bought a photograph at a recent exhibition, fig 71 in Bradley Vol 1, Slaughter Goods No 253 as built November 1868 – a beautiful picture of a humble goods loco with lots of polished brass parts! I had been lucky in being able to photograph original plans held at the National Railway Museum (NRM) and scoured all the available books and articles for more photographs of this class.



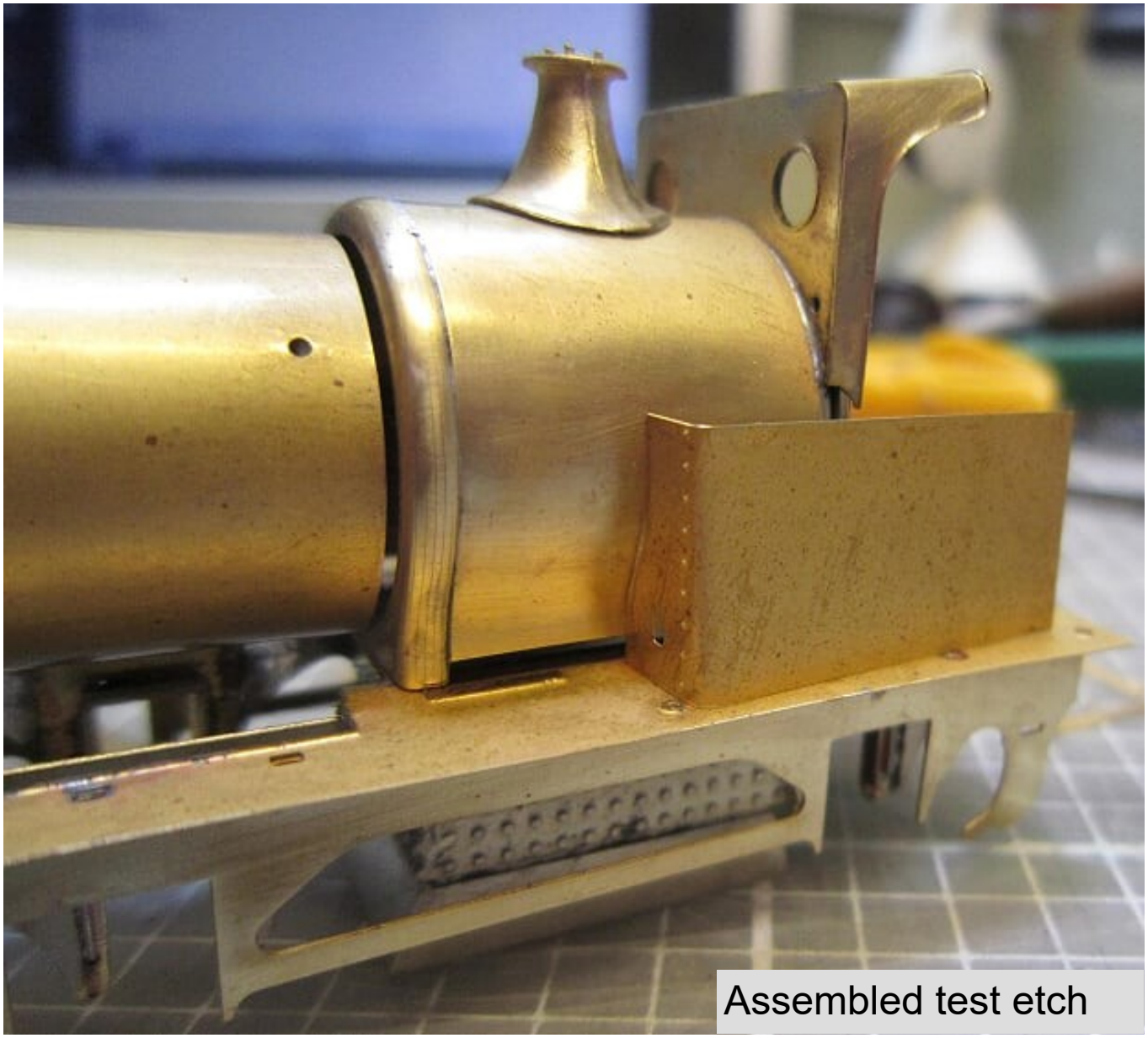
Early body artwork 2010

| Slaughter Standard Goods Notes | Visible changes from photographs | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| | Original number | 249 | | 250 | | 251 | | 252 | | | | 253b | 253a | | 254 | |
| | Build date | 9/1868 | | 9/1868 | | 10/1868 | | 10/1868 | | | | 11/1868 | | | 11/1868 | |
| | Renumbered | | 468 | | 469 | | 470 | | 471 | 471 | 471 | | | 472 | | 473 |
| | date | | 10/1881 | | 10/1881 | | 10/1881 | | 10/1881 | 10/1881 | 10/1881 | | | 10/1881 | | 10/1881 |
| | Renumbered | 515 | | | | | | | | | | | | | | |
| | date | 3/1898 | | | | | | | | | | | | | | |
| | Withdrawn date | 8/1898 | | 8/1894 | | 4/1896 | | 4/1896 | | | | 4/1896 | | | 8/1894 | |
| | | | | | | | | | | | | | | | | |
| 1 | Top feed into square based safety valve casing | | y | n | | | y | | n | y | y | n | | n | n | |
| 2 | Chimney changed to Stroudley type | | y | n | | | n | | n | n | n | n | | n | n | |
| 3 | Front sandboxes positioned above running plate | | y | n | | | y | | y | y | y | n | | y | y | |
| 4 | Sandboxes in front of smokebox wings | | y | n | | | y | | n | n | n | n | | y | y | |
| 5 | Sandboxes behind smokebox wings | | n | n | | | n | | y | y | y | n | | n | n | |
| 6 | Operating linkage and supports for sandboxes | | y | n | | | y | | y | y | y | n | | y | y | |
| 7 | Front footplate extended over buffer beam | | y | n | | | n | | y | y | y | n | | n | y | |
| 8 | Coupling rods changed | | y | n | | | y | | n | y | y | n | | n | y | |
| 9 | Extra side protection to cab | | y | n | | | n | | n | n | n | n | | n | n | |
| 10 | Front coupling hook/chain and plate/lamp iron changed | | y | n | | | y | | y | y | y | n | | y | y | |
| 11 | Front lampirons change position because of 4 | | y | n | | | y | | n | n | n | n | | y | y | |
| 12 | Injectors beside ashpan because of 1 | | y | n | | | y | | n | y | y | n | | n | n | |
| 13 | Handrail along LHS boiler shortened | | y | n | | | y | | ? | y | y | n | | n | y | |
| 14 | Removal of LHS Smokebox control rod - affects 13 | | y | n | | | y | | ? | y | y | n | | n | y | |
| 15 | Patch at bottom of smokebox door - lower shape changed | | n | ? | | | ? | | ? | ? | n | n | | ? | y | |
| 16 | Front lower tender step extended | | y | n | | | n | | n | n | n | n | | n | n | |
| 17 | Tender sandboxes fitted by handrails | | y | n | | | y | | y | y | y | y | | y | y | |
| 18 | Removal of Lubricator ? LHS Smokebox | | y | n | | | y | | ? | y | y | n | | y | y | |
| 19 | Removal of Slaughters builders plates | | y | n | | | y | | y | y | y | n | | n | y | |
| 20 | Change of number plate styles | | y | n | | | y | | y | y | y | n | | y | y | |
| 21 | Removal of valve on lhs firebox in front of weatherboard | | y | n | | | y | | ? | y | y | n | | n | y | |
| 22 | Removal of tube/valvecock on LHS and RHS engine from top of bend in clack valve pipe | | y | n | | | y | | n | y | y | n | | n | n | |
| | | | | | | | | | | | | | | | | |
| | Original condition | | | y | | | | | | | | | | | | |
| 24 | plus tender sandbox | | | | | | | | | | | y | | | | |
| 25 | plus front sandboxes, operating linkage, coupling rod changed, coupling hook, lampirons, LHS smokebox controls, remove LHS Lubricator, remove Slaughter build plate, change numberplate style, remove valve LHS Firebox | | | | | | | | | | | | | | y | |
| 26 | long or short smokebox door hinge | | s | | | | | | | | | both | | | | |
| 27 | Buffers repositioned higher | | | | | | | | | | | both | | | | |

Table listing variations among the Craven “standard” goods locos.

I found a side view of No 250 in new condition at the NRM and had that scanned and printed and with that and others, set about minutely examining them to determine any changes visible that would need to be incorporated in the kit design. I found rather more than I had bargained for, see the spreadsheet, but could start to draw up parts for etching trying to allow for changes in coupling rod style, safety valve housing, sandboxes appearing, crew protection, etc. Over the next couple of months, I drew up the artwork, having to change laptops and programmes used, as various Microsoft 'upgrades' scuppered what I was doing.

Eventually I managed to get enough drawn for a test etch and it returned from PPD after three weeks and I started to assemble it. Mostly it worked okay but a few tweaks were needed to the chassis and the body parts, as is usual, and the reason that etching takes time to complete.



Assembled test etch

You can see in the photo that the firebox wrapper was too short but the six layers of etch to get the front shoulder had worked. The cab angles were correct but the backhead needed thickening slightly. I had found an Alan Gibson GWR safety valve that was a fairly close match and a LSWR chimney for a G6 seemed about right also. The inside motion nickel silver etch had worked reasonably well, but the holes were too large for the axles in the outside cranks.

It was at this point that I took over producing the Circular for the Society, which seemed to take a lot of time communicating with the then editor, Klaus Marx, and then the printers in Hove. Work responsibilities were increasing and then family life and other events occurred as I described at the beginning and it is only fairly recently that I have restarted this project.

The reason I did was that I still really want one of these locos, both in 4mm and 7mm scale—having found that after cataract surgery in both eyes, the larger scale can be easier to deal with sometimes. The other driver for this was the purchase of a 3D resin printer and finding some 3D CAD tutorials that actually made sense and could be followed! The software I use is Fusion 360 and the printer is an Anycubic Photon. I bought it from Amazon as they had a sale; it has been updated since but is still available.

It uses a resin that is cured by exposure to UV light. The machine is supplied with software that slices your design up into many layers and exposes these layers to the resin, in a vat, before moving it up by whatever amount you have set. I use 0.03mm layers for most things and this 'layering' effectively disappears on the finished part. The resin cures and becomes a plastic similar to acrylic which takes primer and glues well enough.

I started with a Craven loco buffer as it seemed to have a fair degree of difficulty but nothing that the tutorials had not covered. The tutorials are available online at

https://warwick.ac.uk/fac/sci/wmg/about/outreach/resources/fusion_tutorials/ and are very easy to follow. The software is available as a free download

https://www.autodesk.com/campaigns/fusion-360-for-hobbyists .

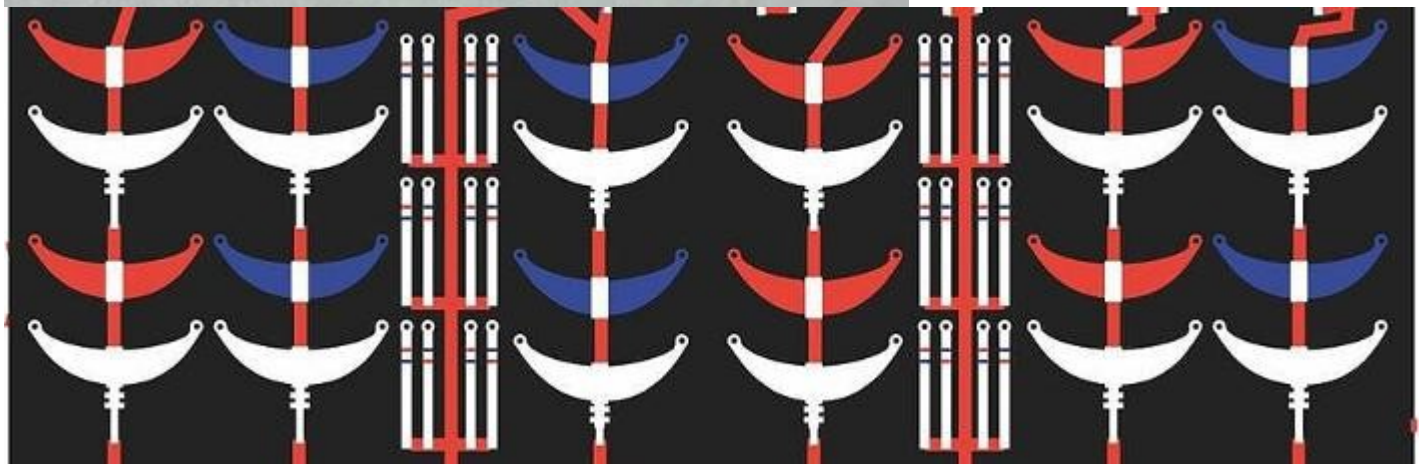
I was very encouraged by this and have therefore been using this method to produce some parts to help me nearly to complete some longstanding projects. This meant that I also needed to have a complete rethink about what parts to include in an etched kit and why. This, of course, meant I needed to experiment with the

My drawing of the Craven loco buffer

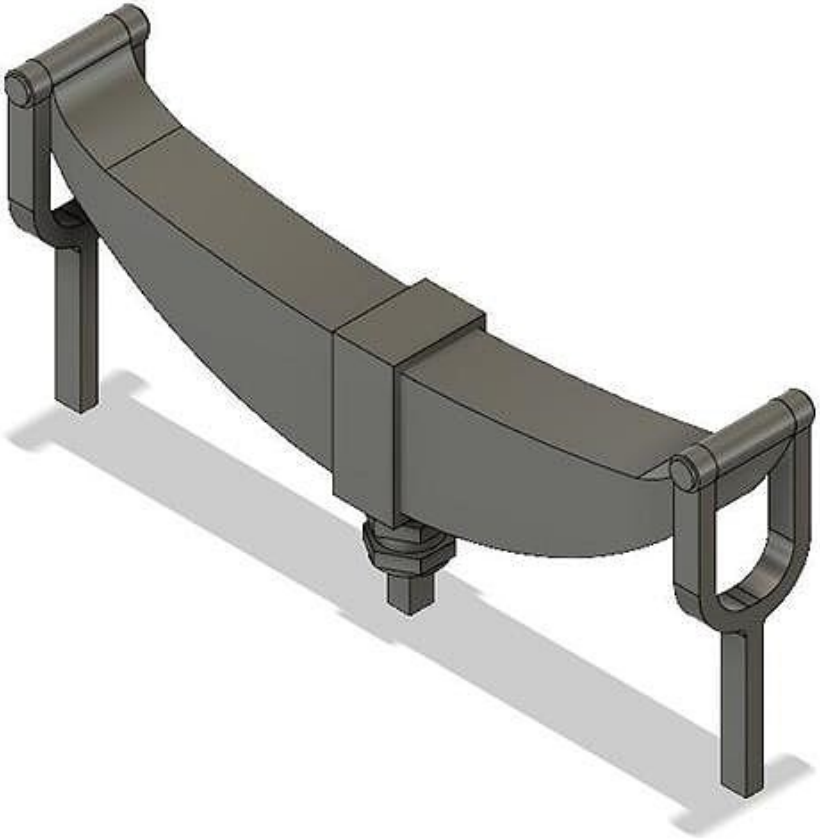
The Craven buffer as printedin 7mm scale. The web either side of the nut is 0.2mm width

parts that I had not yet manufactured for the various etches that I had produced, both for locos and carriages, which is quite extensive in its own right. I had also to try to think what parts are a pain in the proverbial to make from etches, when a one piece casting would be so much easier.

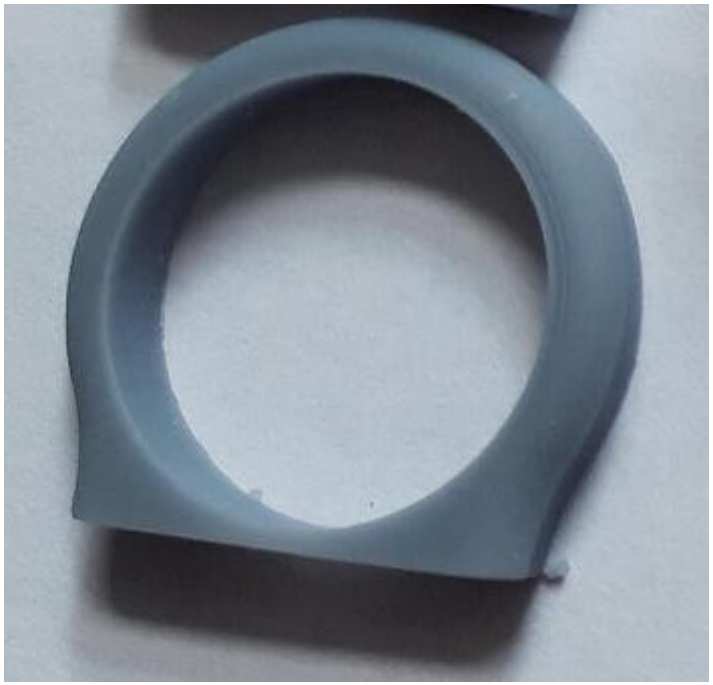
Top of this latter list was the above-footplate springs on the loco. As an etched part, I had drawn it from eight parts, four for the body of the spring itself, necessary to get some depth to it, and two parts at each end, trying to replicate the garden fork fixing. The red is etched from the front of the sheet, the blue is etched from the rear of the sheet, black is etched from both sides and white is not etched at all. The red and blue part are half etched to allow the central strap to show, the white, core parts of the spring body, have the nut shape at their base.



The four parts making up each end of the spring support ‘garden fork handle’ had two half etched grooves, one from each side to try to enable the part to be bent into the fork handle shape. The resulting resin printed part is shown, in its raw state, straight from the printer with small supports still attached to the underside but a complete success in terms of the shape and the ease of producing it. Which brings us to another area - having shared images of this and other printed parts on RMWeb and a few other places, a few modellers have been saying this is not proper modelling and they prefer to build everything from metal. That’s fine with me, everyone to their own in this hobby. It is for relaxation and all I’m trying to do here is get some locos finished and sell copies through E.B. Models to some others who have expressed an interest!



The firebox front is a case in point here. I drew it up and have soldered up six layers of etching and then filed a load off to produce the brass version as per the earlier photo. It was a far easier task to draw this in 3D and then print it. It isn't brass though? So? Neither is the acclaimed Hattons SECR P type dome. I will be experimenting with various finishes to see what is possible. Gold leaf is a thought, gold Alkyd paint another, and who knows what else. I know aircraft modellers burnish thin metal onto plastic to represent aluminium and steel; is this possible for brass?



And then, how far does one go with the printing? A complete firebox with safety valve cover as shown? Or without? It took about 10 seconds to draw the changes there.

Splasher

Cylinder cover

Clack valve

I am now just putting the 3D Design drawings here to show what can be accomplished. There will be a photo of the printed 4mm parts following.

Safety

Dome

Chimney

Smokebox door

Whistle

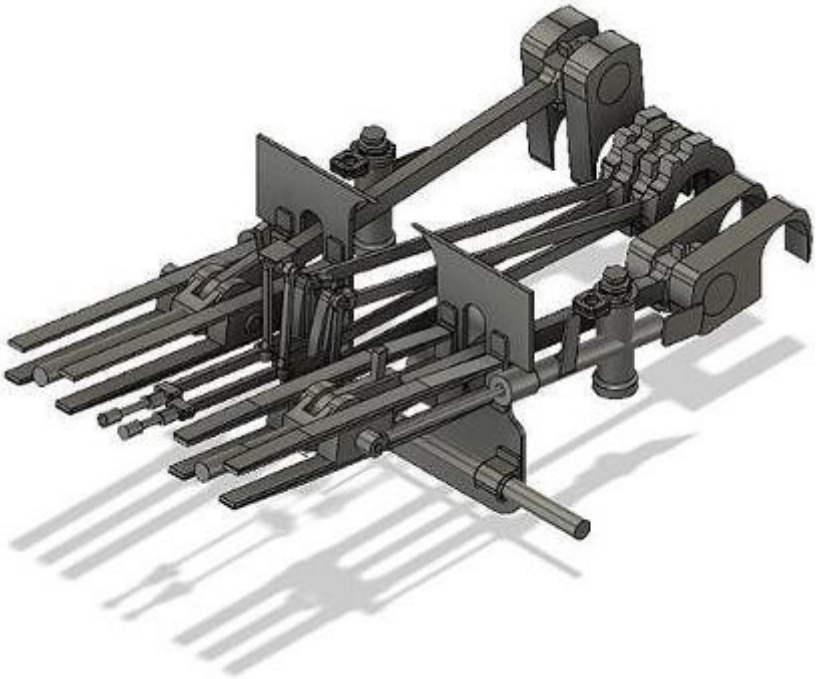
Backhead

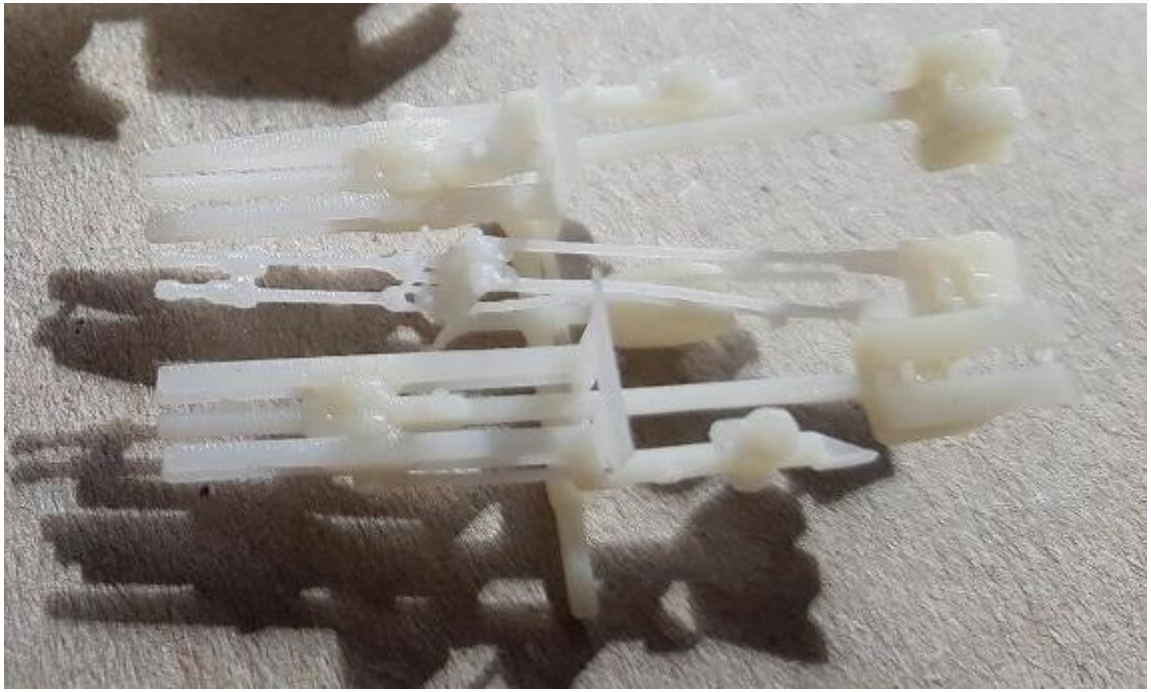
Safety valve

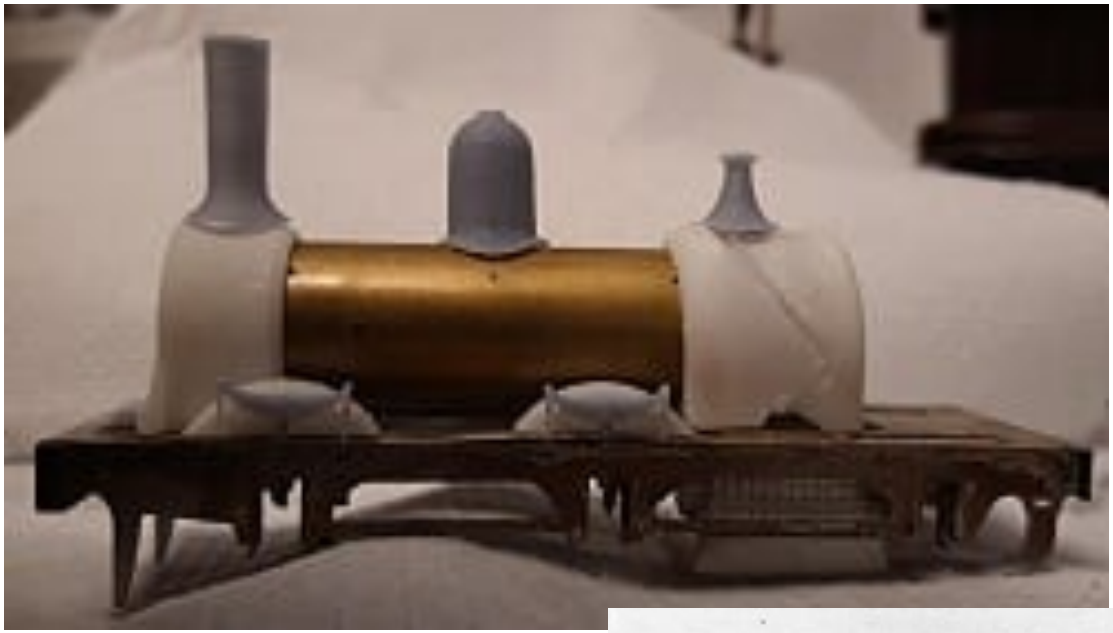
Smokebox oilcup

This photo shows some of those designs in the resin at 4mm scale. The backhead has evolved since this was printed, as I realised that I could add the shelf below the firehole and the quadrant for the regulator, both of which you will have seen in the drawing. I have yet to test print a complete firebox but will be doing so soon.

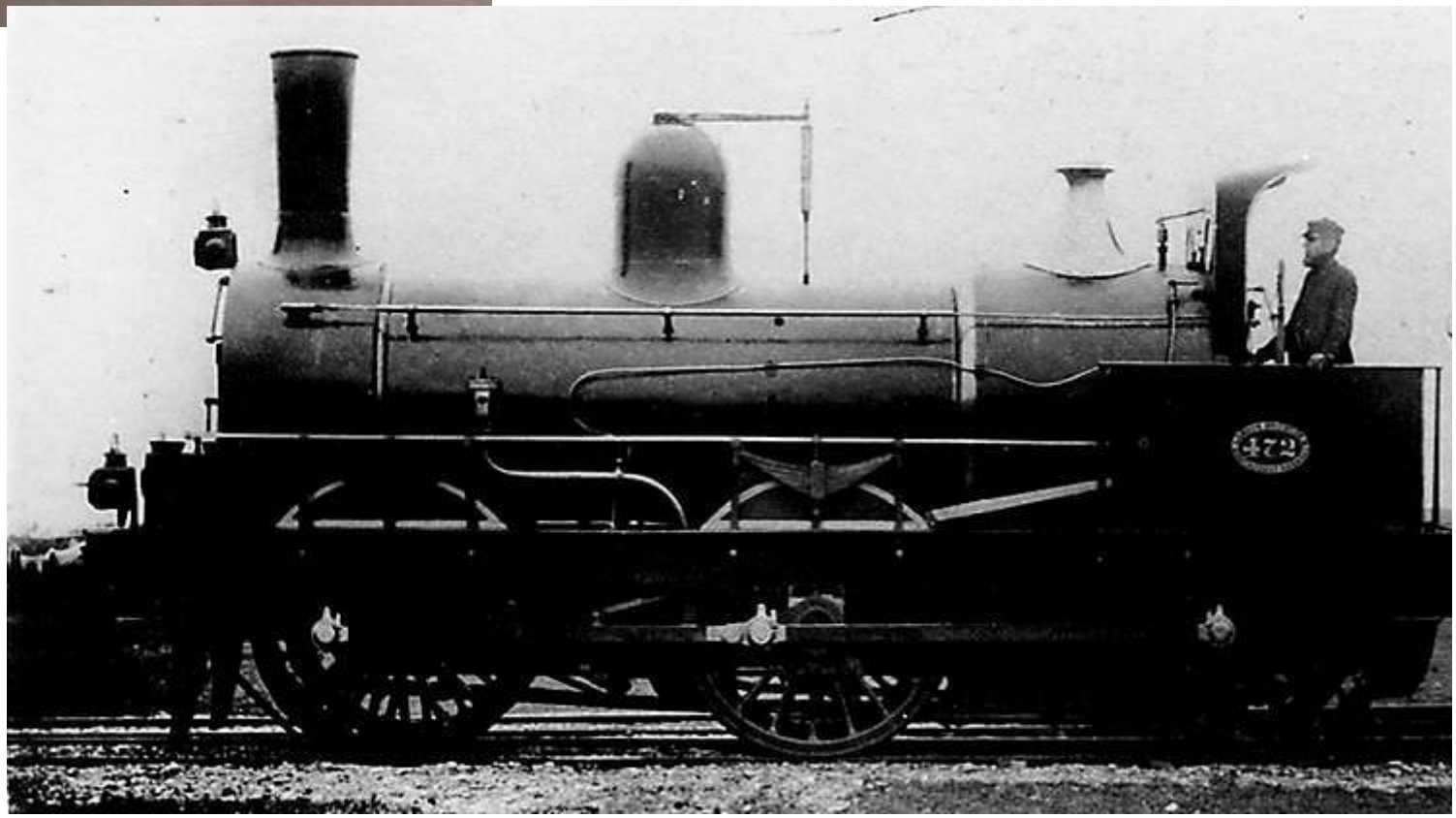
One then has to think what else could be achieved to make the model better? Another thing I had struggled with and which I feel improves the look of a model is to represent the inside motion in some shape or form. So, this was a bit more difficult to draw but eventually, after a week at it, I managed the following. When printed, this has shown I have pushed things a bit too far for a one piece print. There are also some areas that require thickening up a little and there needs to be the rear of the cylinders also represented to keep the slide bars from sagging at the ends. The weighshaft and lifting links and eccentrics etc should also be separated into a second unit and just be glued in place. It is only when you start this sort of thing that you learn where everything connects to and there is only a very small area connecting these to the rest of the inside motion and it is therefore very fragile. The resin print photo shows the eccentrics at a different angle to the drive cranks as a result of this weakness. I also thought I could add the top half of the motion bracket and maybe also the reversing lever on the end of the weighshaft.



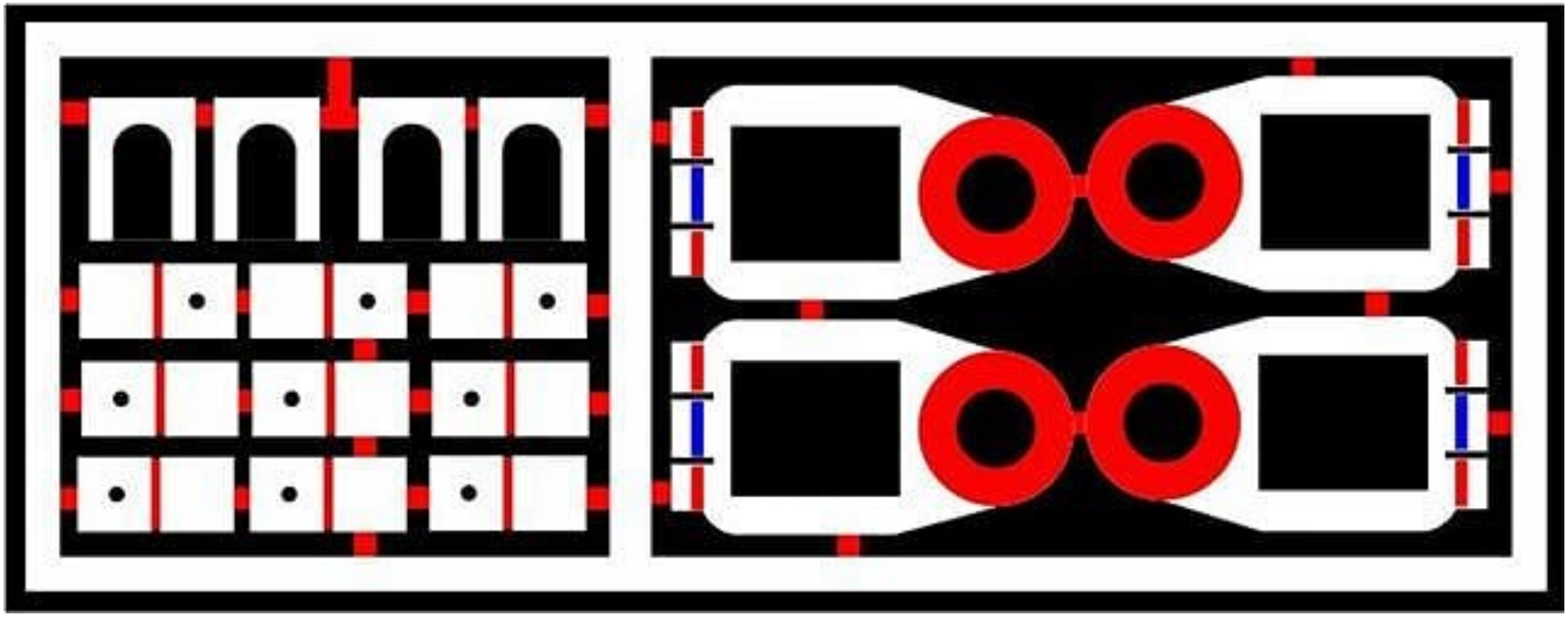




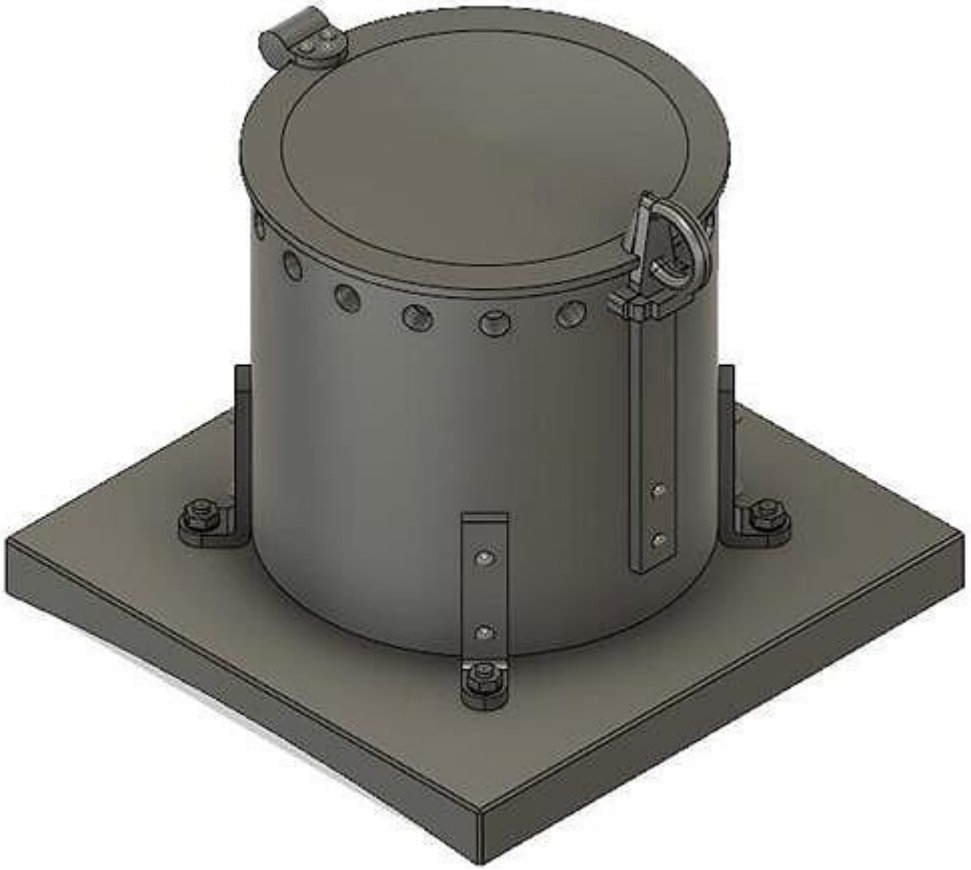
This is all still a work in progress but I thought this would make an interesting read and show where I was up to and going? You can see from the comparison photo that the springs need reshaping and lifting higher and the one piece firebox needs to be thickened so it will print in one piece and not split like the one shown. It will be the correct length! See this finished in part 2!

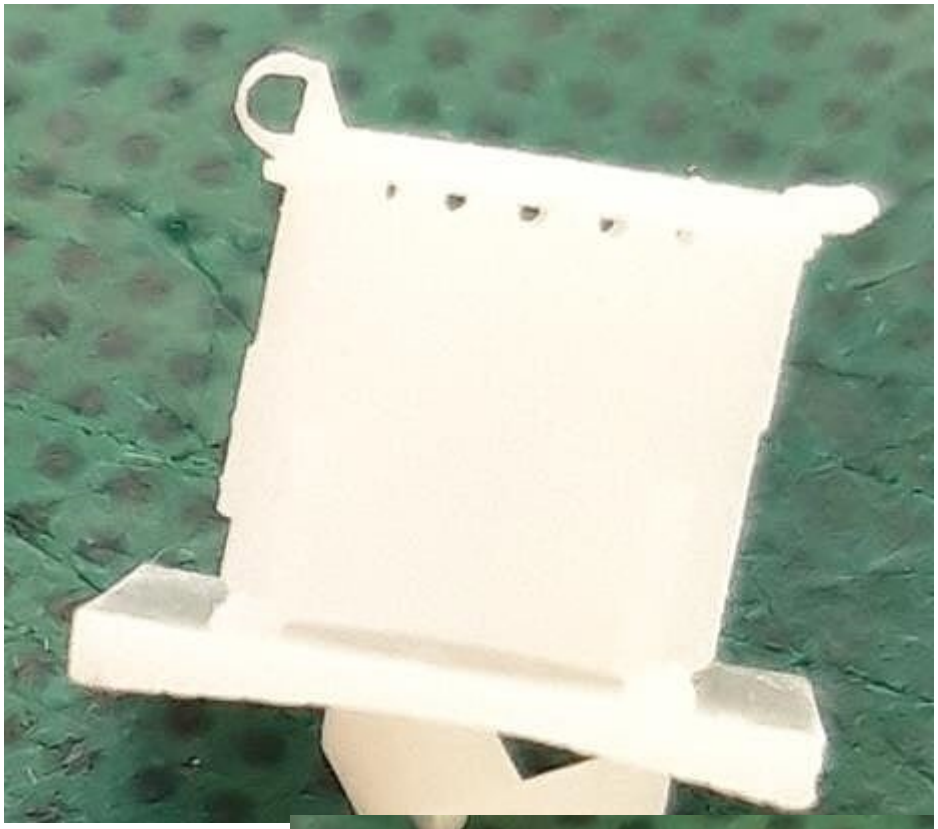


Carriage parts have been worked on concurrently, mainly in 7mm, as Chris Cox of 5&9 Models has always been able to supply castings for most of what I had produced up to now in 4mm scale. On beginning 7mm modelling a few years ago, a Roxey Stroudley 4 wheeler was where I began. I had several reservations about these. I prefer sprung underframes and I did not agree with the size of the oil lamp top castings at all. A small etch was produced, as shown, to infill the Roxey W-Iron and convert the underframe to being sprung on Bill Bedford's guitar springing system.

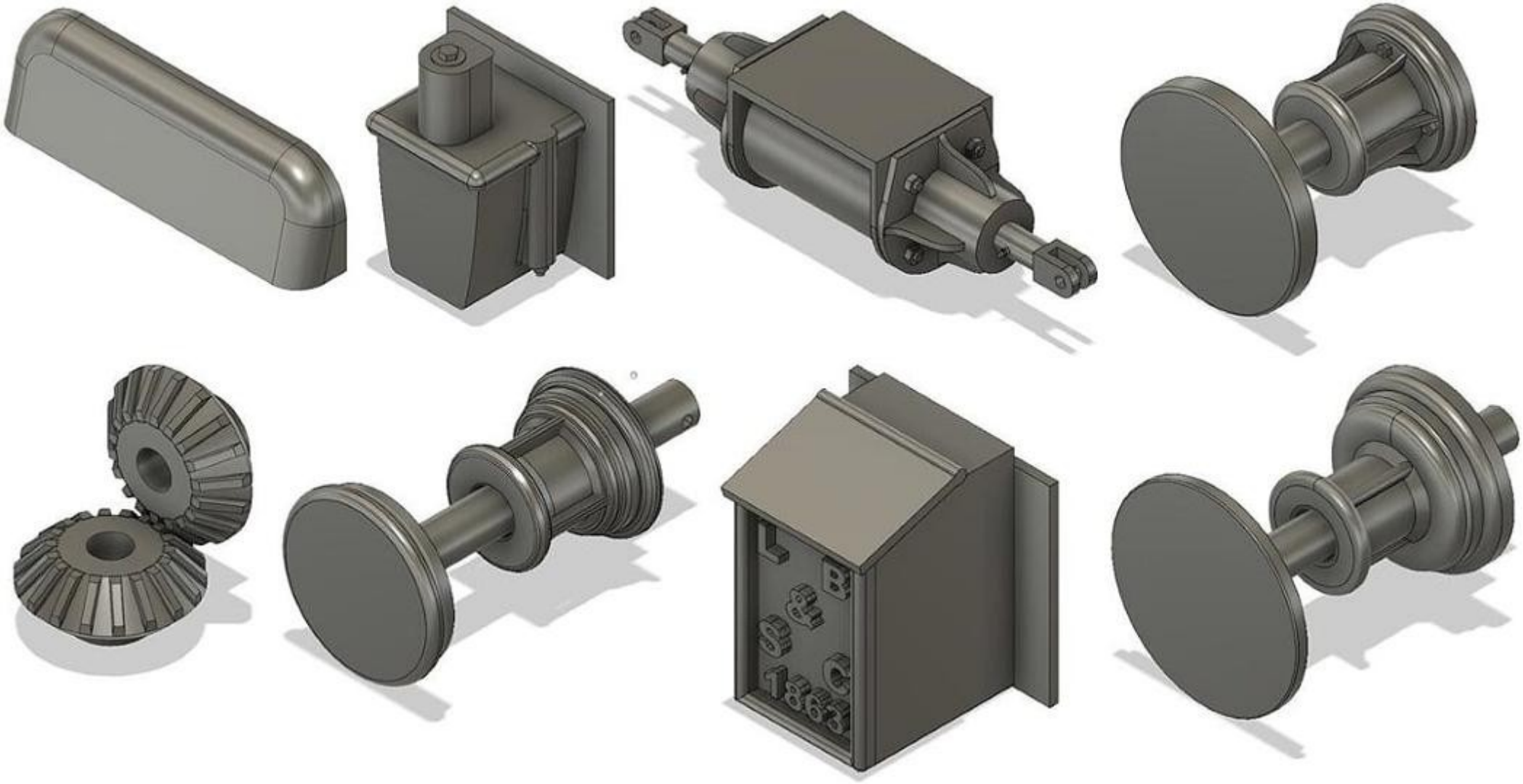


A 3D design was completed, following the photos and dimensions from White, Turner & Foulkes' excellent LB&SCR Carriages books for the lamp top protectors and bungs. I thought I would test the resolution of the printer with this drawing as the handle on the bung is quite fine and the holes around the top of the lamp top protector are only 0.2mm diameter in 7mm scale. I was seriously impressed by the results of both of these and will be looking at designs for other parts for the roof as these are very visible in our models.





I printed them in white so as to avoid painting issues and have bought a few different colours of the resin for this same purpose.



All kinds of 3D designs have been drawn up and they have all printed successfully in both 4mm and 7mm scales. I have been trying to get other projects completed so there will be something new for the AGM in October.

For instance, this is the first print of the 7mm castings for Stroudley's 18/21 0-4-2 tank, to enable the E.B.Models kit to be completed in 7mm. Obviously not all parts are there yet and not all printed correctly - I certainly need to redo the smokebox door!

The 6'6" Pullman bogie, 7mm at the front and 4mm at rear ends this part of this article. A lot still to do but this 3D printing is a bit of a game changer, at last! More in part 2!!



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# Stepboards - Craven and pre-Craven

## By Ian White

Having completed LB&SCR Carriages Volume 3, and fully drafted Volume 4, I recently turned my attention to some very early carriage models that I had partly assembled back in the dim and now distant past. The sets of castings were produced by Chris Cox (5 and 9 Models), and I set them aside when I got to a difficult bit, namely footboards. In the past I've tried various approaches to adding these delicate suspended structures and either ended up with something made of plasticard that is easily broken, or given up and fitted the full length upper boards that replaced the original hangers on those carriages which lasted well beyond 1870; hardly an option when some of the carriages I was modelling were open sided or even roofless! A quick look through some drawings showed that they varied enormously, sometimes having a

Plate 1. One of Eddie Carter's 12 inch scale footboard hangers at the Bluebell Railway. The short upper board was usually a metal plate (as per this example) but the lower bracket supported a full length wooden board, almost 2 inches thick, by 7 to 10 inches deep (plus a small upstand at the rear edge).

simple straight hanger and sometimes one with a kink in it. I then looked to see how Eddie Carter had fabricated the real thing back in the days when there was a possibility that the Bluebell Railway's Second No.35 might become a project. That is now unlikely, but the parts may one day find a use on a project to create a replica Craven carriage, or form part of a display involving some carriage parts.

I decided that a metal structure was essential and with seven kits to finish off I wanted something I could mass produce. To make the upper step I scored a 4mm x 3mm grid into some sheet brass (0.3mm thick), and then used a micro mill-drill (Sieg X0) to drill 0.7mm holes very close to one long edge of each piece. The pieces were then cut into strips using an 8 inch miniature shear brake, so that I could "waggle off" (there must be a technical term for that) each piece in turn, and solder it to a short length of 0.7mm thick NS wire. I needed almost 50 hangers, but I made a great many more as some were unacceptably off centre. My hole drilling was even but not my marking out, so you can tell I'm not an engineer! Using a simple jig to hold the piece (slots in a scrap of wood), I filed both sides of the wire above the upper board to a flat before bending it 3-4mm (solebar depth) above the upper board to form a prong to fit into a hole drilled at the top of the solebar, centrally under a door. The lower board was made from 0.6mm x 3mm copper clad strip (4mm wide might have been better but I did not have any), with holes at door centre positions drilled very close to the edge. I put two pieces together and held them onto a scrap of wood with double sided tape while they were drilled on the adjacent edges in the mill-drill; each piece protecting the other in case the drill was so close to the edge it might get broken. I set the upper and lower boards a scale 18 inches apart, although the prototypes did vary.

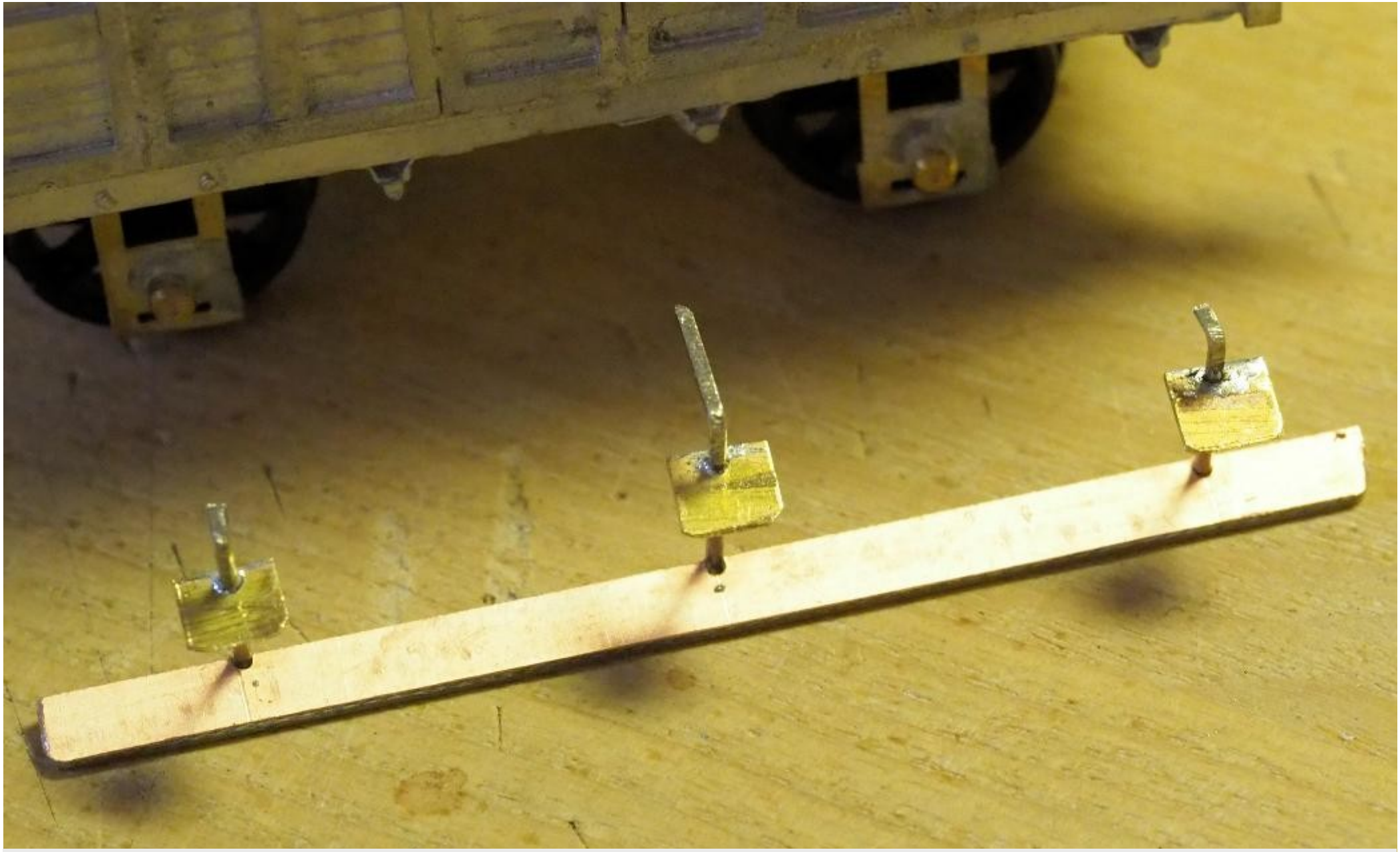

Plate 2. The basic assembly before creating any required cutouts for axleboxes, and fitting the upstand immediately in front of the hangers.

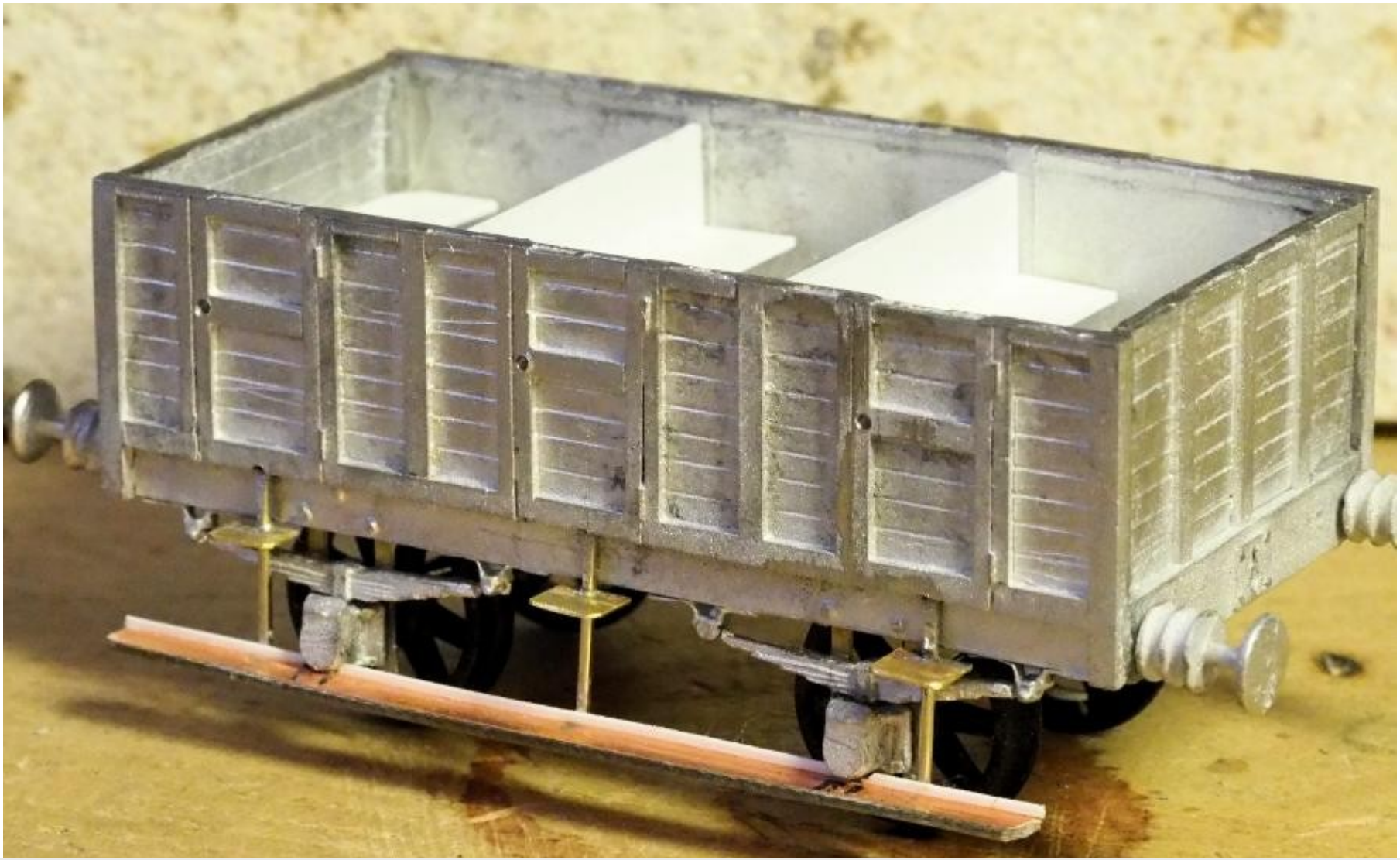

Plate 3. A trial fit of the assembly after the microstrip upstand and cutouts had been added. I am not compensating the very short wheelbase carriages but the longer ones will be, so they will need deeper cutouts or lower footboards. The narrow strip of copper clad strip behind the upstand is easily disguised. The resulting depth in front of the upstand is little more than a scale 6 inches, which is a fraction undersize.

Plate 4. Eddie Carter also produced the lower and upper sections of a set of Craven endsteps.



12 inch/1 foot scale parts shown by permission of Eddie Carter

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# Hayling Island - a progress report

## By Richard Barton

Kitson 0-4-2 "Bognor" arrives at Hayling Island with a rake of Craven coaches. The Royal Hotel horse drawn bus is waiting in the forecourt for custom.


Terrier No 43 "Gipsyhill" passes over Langston Bridge with a train of Stroudley oil lit coaches. The Arun coal barge in the foreground was scratch built by the late Peter Korrison.



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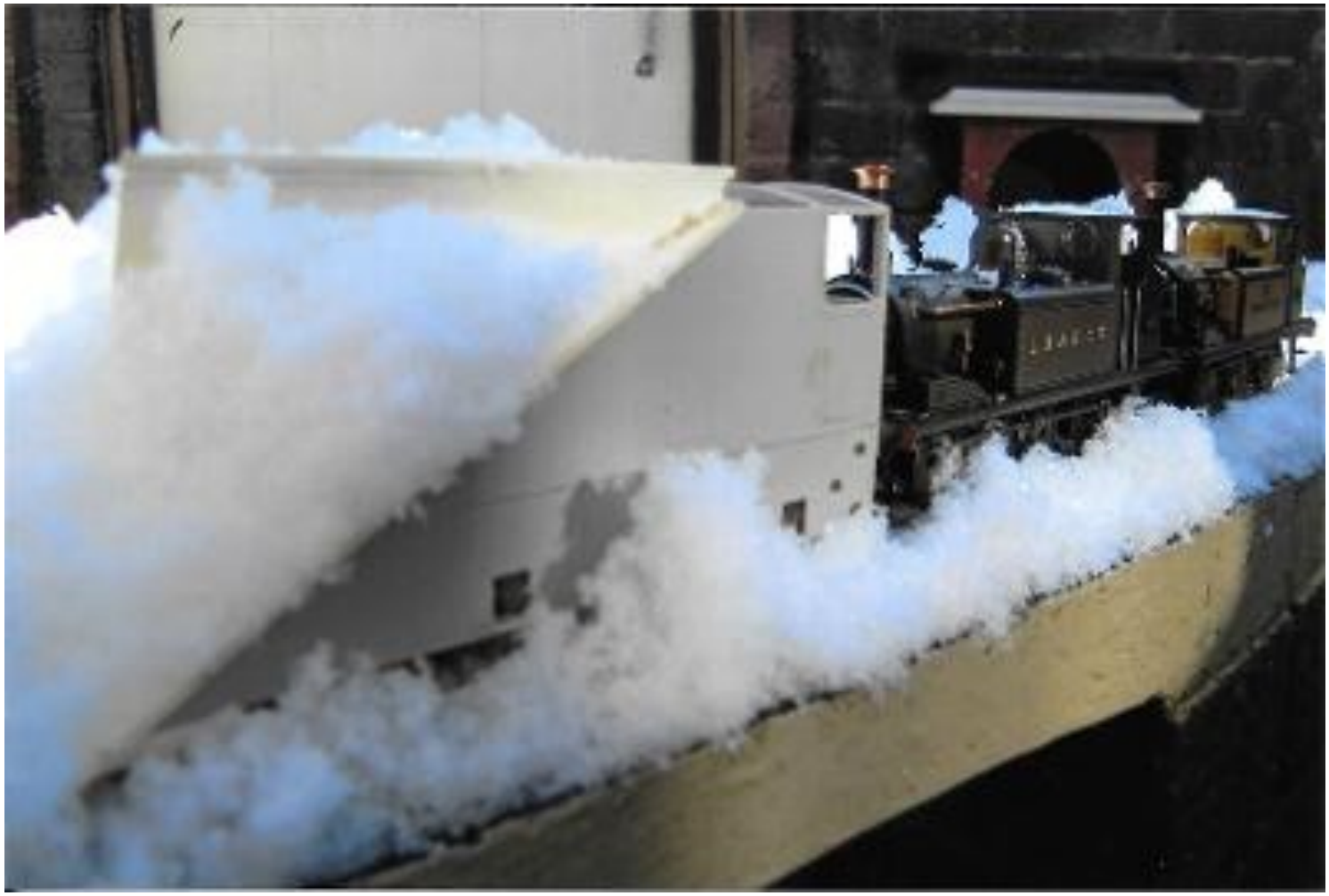
# More scenes from Ashcombe Down

## Mike Cruttenden

Starting with a brief reminder of the weather earlier in the year, the first couple of photos show that Ashcombe Down operates all year round!



Obviously dogs like playing in the snow!

A pair of Terriers clearing the line.


Arch Overbury's coal train, headed by E4 class No 473, heading northbound, crossing Summitt Bridge.


E tank, No 110, Burgundy, now preserved on the Isle of Wight Steam Railway, heading southbound across the Queen Alexandra bridge, hauling Colin Paul’s breakdown set. Tool van and staff carriage still to come.


John Birch’s D tank, No 229 Dorking, shunting in Ashcombe Downs sidings.

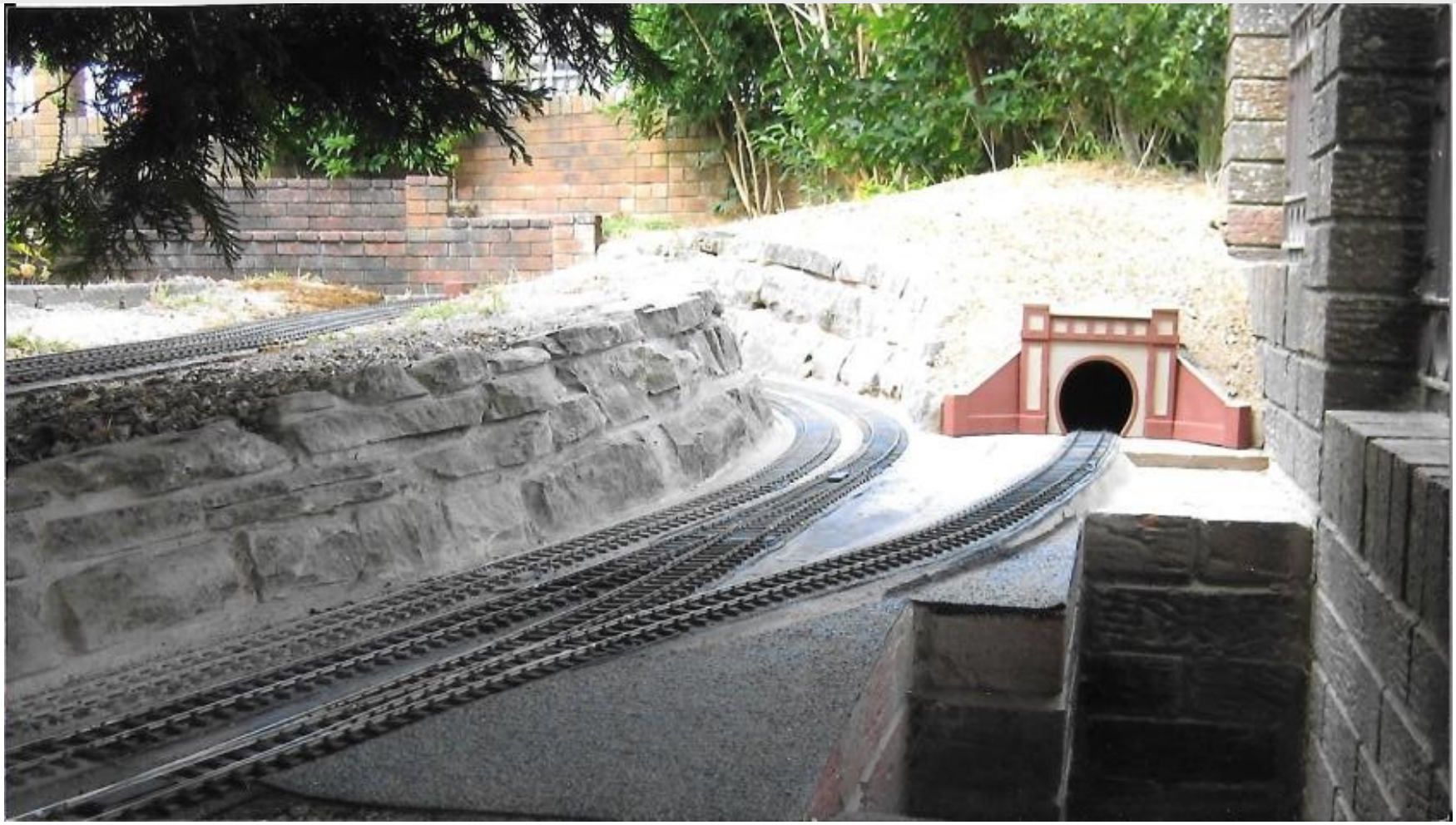
Ashcombe Downs does not have a goods yard - only facilities for loading and unloading horse boxes and carriage trucks.


E tank Aldrington in goods green, hauling flat sided van and 4 wheeled passenger brake.

The train is crossing Summitt bridge, one of the highest points on the line, and will descend the 1 in 75 gradient to Sand Rocks junction, where it will join the down relief line into Ashcombe Downs station.

Sand Rocks junction was built last year, with the cutting leading to Summitt bridge and the branch to the Down Relief road. In the middle of the picture to the left, you can see the high level by pass lines leading to Summitt bridge.

Nature has still to finish the job of covering the new hillside. The tunnel mouth is removable and replaced when not in use by a cover to prevent the local wildlife setting up home. The tunnel itself is of square cross section that is big enough to allow easy access to recover breakdowns or accidents without damaging stock.



Mid 1960s, before all the goods yards closed. A typical pick up goods train of the period.

Note temporary fencing on the viaduct after the original scale version was destroyed by black birds using the viaduct as a landing ground! The hazards of garden railways!


K class no 337, waiting on shed. The original builder of this loco is unknown but it was rebuilt by Colin Hayward and is now owned by MSC group.

In the background, a radial tank and a Gladstone, both in umber livery.

Arch Overbury's horse box special, approaching the southern end of Ashcombe Downs.



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# An update on Vintner's Yard

## By Eric Gates

Vintner's Yard recently had an outing at the Nailsea Model Railway Exhibition. This caused me to give the layout a quick dust and hoover and was an opportunity to add two new locos to the roster (as if Vintner's Yard needed additional locos).


373 makes a nice contrast to the Craven saddle tank, which was built from Ian White's etched frets. The pair are a useful conversation piece for people who expect Brighton locos to be painted Improved Engine Green, with a name down the side in great big letters.

**373**

The saga of the 18/21 tank loco kit was documented at length in Digest 8, but the deadline for the show pushed me into completing the paintwork on the loco, which is now finished as No 373. Basically, this just required a coat of varnish and a little light weathering.

I prefer to use acrylics where possible and 373 was given a coat of MicroSatin to produce an overall eggshell finish. “Weathering” for clean locos, to my mind, is as much about the differences in texture, as in the application of grime. Therefore it consists mainly of a light dusting of MicroMatt, diluted with a little water and windscreen wash. A little bit of brown is added when I am spraying the undersurfaces and some black, sprayed vertically downwards. In this way, the sides of the tanks retain a slightly glossier finish than the other bits. There is a bit of bare metal around the boiler feeds and some white staining below the tank fillers and that is pretty much it.

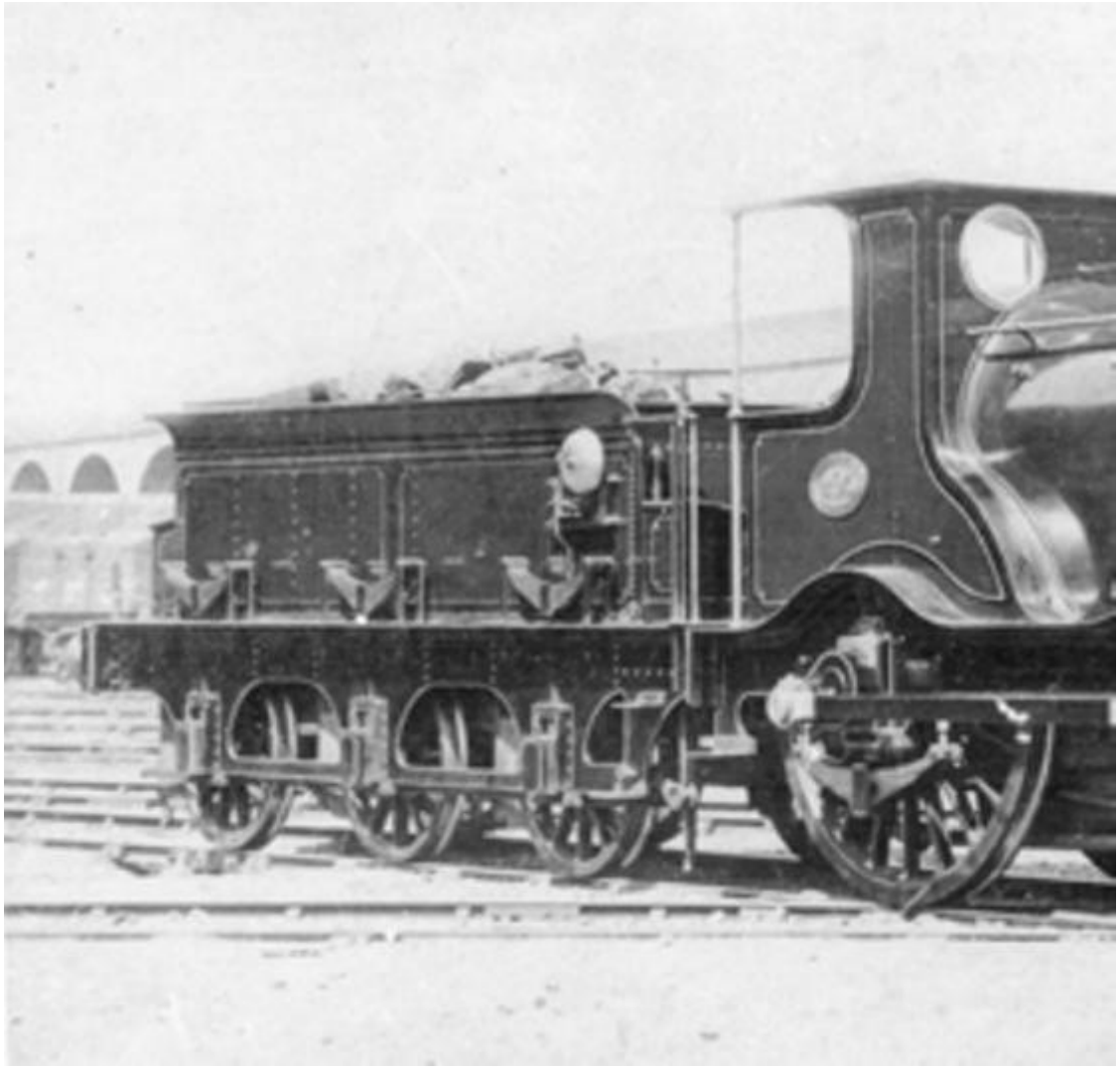
## Kensington

The other newcomer is Kensington, which is the work of Mike Waldron, who both produced the kit and, in this case, built it. His solution to the challenge of fitting underhung springs, that are removable so that you can still take the body off the chassis, is documented in LB&SCR Modellers' Digest 8.

My contribution has been to paint it, which, as usual, exposed a number of queries.

The lining round tender frames appears in photos to be applied around the cutouts in the frames, as well as along the bottom edge. When I tried to apply the lining transfers both the bottom of the cutout, and the edge of the frame, it was clear that there was not enough space for the two sets of lining. I suspect that this is because the lining transfers are actually somewhat overscale, since you have to look pretty hard at photographs to see the valence lining at all. After some thought, I

opted for the solution that I used on Wave, the Manning Wardle owned by the Newhaven Harbour Company. On this loco, the valences are so shallow that I took strips of the buffer lining, which has five bands. Taking a sharp craft knife, I sliced down the middle, to get just red/black/yellow. This was then applied down the edge of the valences. That was fine along a straight valence, but with the curved frame cutouts, it was one of those jobs that seemed never ending. And once the tender was complete, the loco had to be done in the same way. The result is certainly visible, but, placed next to the Singles, which just use ordinary valance lining, is noticeably different. I am not sure that I see a way around this one.



The lining around the front of the cab is rather simpler than on the Singles. Whereas they have a boiler band at the rear of the firebox and lining around the bottom edge of the weatherboard, Kensington appears to have none of this. I had assumed that this had been one of the ways in which lining was simplified over the years, but it may be that each class was given an individual lining scheme.

The front buffer beam is surprisingly deep and I had to do some “cutting and shutting” to get the buffer beam panel to look more or less right.

Interestingly, in the course of the two days of the exhibition, I had three separate conversations in which Vivien Thompson's name came up. The Railway Modeller articles on Eastbourne and the various articles on constructing buildings clearly had a seminal influence on modellers of a certain age. In each case, her work had convinced a reader that pre-grouping modelling was a feasible option. It was only when I got home and checked that I realised that Eastbourne was Railway of the Month in the Railway Modeller for January **1968**. Ouch!



I can think of no good reason for three top link locos to have gravitated to Vintner's Yard, but they make for an interesting comparison of express locos from the early Stroudley period.

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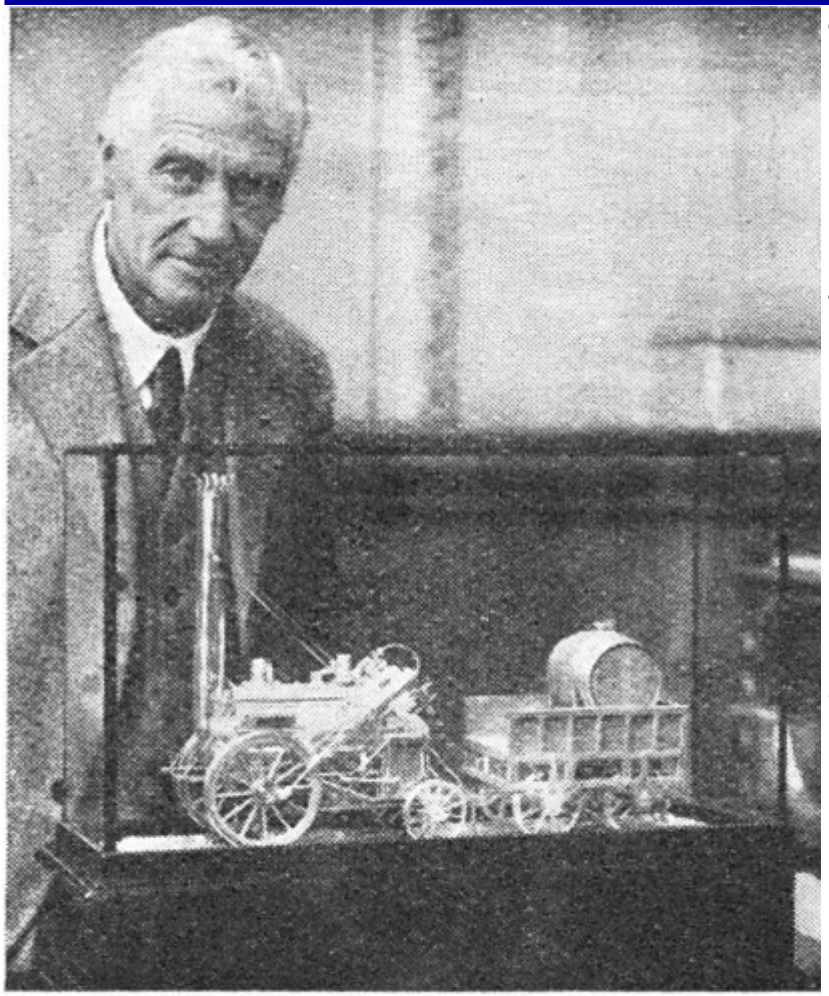
# Dr John Bradbury Winter

## By Clive Croome



DR. J. BRADBURY WINTER WITH THE "SILVER ROCKET."

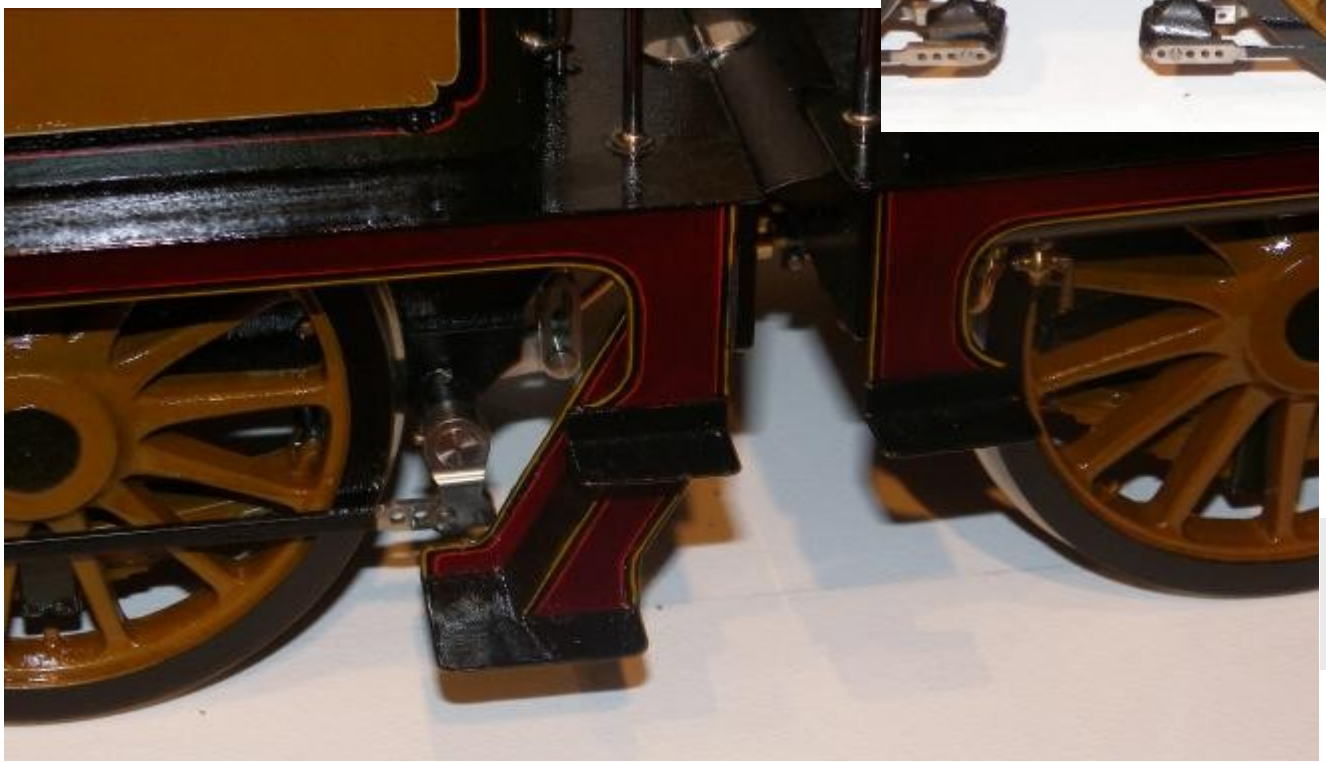
The accompanying photograph may be of interest to readers by putting a face to the name. It was printed in the Railway Magazine, Volume 71, page 273 as part of a report on the 1932 Model Engineer Exhibition.

"*Among the crowning features of this year's exhibition there were three loan exhibits by Dr. Bradbury Winter, already well known to railway enthusiasts, if only for his beautiful model of the London Brighton and South Coast locomotive Como. Foremost among these, from a railway point of view, was the model of the Rocket, executed in silver. The Silver Rocket has been built, like the Como, entirely as a labour of love, by Dr. Winter, assisted by Miss Christabel Mackworth, at Dr. Winter's Alpine residence. Through the co-operation of Mr. Clarence Goodall, the managing director of Robert Stephenson and Co. Ltd., Dr. Winter was enabled to work directly from the drawings used in the construction of Mr. Henry Ford's full-size model of the original* ***Rocket****. Work on the silver model was begun in October 1929, and completed in March 1932. Dr. Winter*

*was in personal attendance at the special stand devoted to the display of the* ***Silver Rocket*** *and his two other exhibits, the latter being an electric clock working on the "Congreve" principle, and the remarkable "Perpetual Date" calendar, the conception of which, apart from its construction, occupied six months.*"

This does, of course, provide the opportunity to include some pictures that were taken in 2014 by Sue Rose, when members of the Circle were allowed to have a look at Como, without its case, in order to try to match the different elements of the Stroudley livery. The model is one of the few near-contemporary examples of the livery and has been kept under controlled conditions. The colour comparisons that were carried out were used to inform the colour swatches included with Peter Wisdom's Southern Style, Part 2.

The visit provided a very rare opportunity to appreciate the exquisite detail of the model.

Photographs of Como copyright Sue Rose.

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# The new Hornby Terrier - a review

## by Nicholas Pryor

Hornby made a surprise announcement at the start of the year with what appeared at first glance to be a spoiler release of a newly tooled Terrier model to challenge that previously announced by the combination of Dapol in conjunction with the NRM and Rails of Sheffield. Since then, it has been revealed that Hornby have been working on this project for some years. Several versions in BR, SR, SECR and KESR liveries have already been released for sale and have generally had a good reception in the market. The last to arrive is that in Stroudley livery.

My model of no 655 "*Stepney*" arrived on 31st May and was immediately impressive on opening the box. This completely retooled and re-engineered model is a vast improvement on the previous ex-Dapol model, first introduced in 1989. It compares for colour well with other RTR releases, and is to my eye a more convincing version of IEG than for example the Dapol 7mm versions, or the early Dapol and Hornby 4mm versions. A number of the issues identified on the livery samples shown earlier this year have been attended to. There is now lining on the cab and tank fronts, and the under part of the boiler (which is part of the chassis casting) now is finished in IEG rather than black. The Westinghouse pump is also lined. The axle ends and counterbalance weights (with a larger weight on the centre axle) are the correct green. There is lining on the front buffer beams and the overall impression at normal viewing distances is of neat lining to a high standard.


The Southern liveried version, No 662, formerly Martello

There is a good deal of additional fine detail, with a very detailed cab interior finished in an approximation of the correct colour. The chassis has much fine detail including wooden brake blocks with fine rigging and very delicate sand pipes. The frames are in red – I had always understood that only the guard irons should be in this colour. All looks to be to correct scale – I could not see any immediate inaccuracies, save that the buffer beams look slightly too shallow. One other slight disappointment is that the coal load in the bunker (which is unconvincing as these things usually are) is not removable, so some surgery will be required if this is to be improved.

The model is numbered 655, so is only suited to the brief period between *Stepney* being renumbered into the Duplicate List in June 1901 and being repainted into Marsh umber livery in 1907. The numbers match the fine transfer numerals shown on a contemporary photo. They are sufficiently small that an etched number plate (from Ian MacCormac – who else!) appears to mask them entirely. Thus it would be feasible to renumber the model back to match its condition as built.





The running qualities of the model are transformed from the erratic and noisy original Dapol designed mechanism. My sample ran smoothly and quietly straight from the box, and proved very controllable at low speeds. It subsequently lapped the test circuit hauling 9 brass 4 wheelers with no sign of slip or effort. There have been some reports on the internet that a few models have exhibited tight spots or running problems, but the general comments have been positive. Overall, this is a welcome upgrade of this popular model. It provides a very convincing replica of the original in a convincing livery with neat lining, with much improved performance for a fraction over the price of the last release of the old model. It is released at a suggested price of £89.99 which is a minimal increase on the cost of the most recent version of the earlier model. It is widely available for prices around £80-85 from the major internet retailers (mine came from Kernow MRC, who are not quite the cheapest, but are certainly the most pleasant to deal with). With a little subtle weathering and detailing and with a crew in the cab, this model will not look out of place on any LBSC layout.

Hornby has just announced a second version in IEG , No 48 "*Leadenhall*", which should be available at the end of the year. If past performance is any indication of future behaviour, we might reasonably expect a whole series of further issues of other named versions. I suspect though that we may have a long wait for a Marsh era liveried version, judging by the single issue of No 662 by Dapol and the slow sales of the Bachmann E4 in this livery.

The competing model from Dapol is still awaited. Judging by the samples I saw at the Alexandra Palace Show in March, this will be to an even finer standard of detail than the Hornby model and about £30 more expensive. There is no news yet as to when these will arrive, but they are said to be close to delivery. With the popularity of the Terrier in its various pre-grouping liveries, there is probably a decent market for both models. I have *Boxhill* in IEG livery and the SECR version on order, and it will be interesting to compare the two versions side by side.

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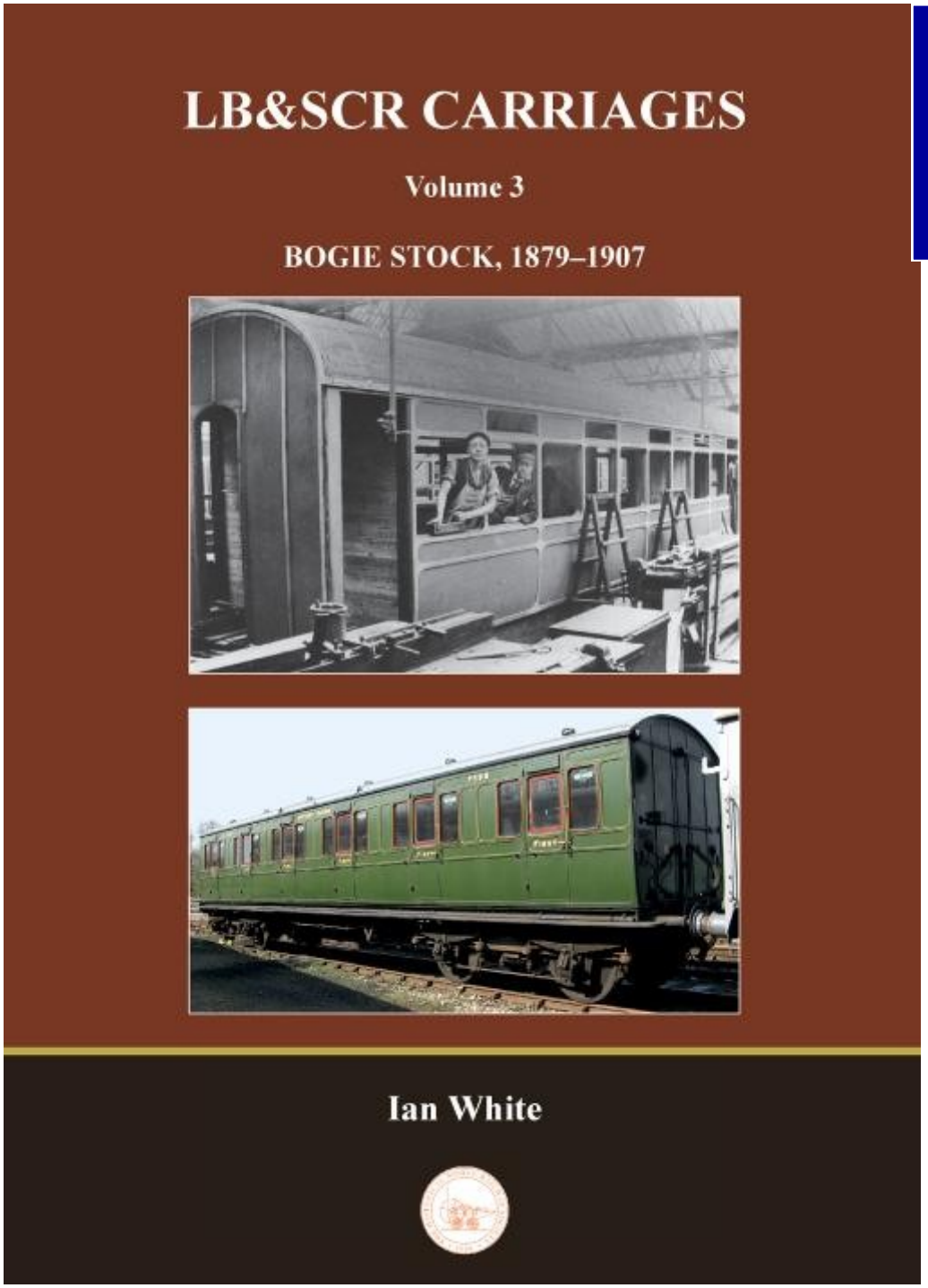



# LB&SCR Carriages, Volume 3 Bogie Stock 1879 - 1907

The Historical Model Railway Society (HMRS) is pleased to announce the publication of *"LB&SCR Carriages, Volume 3, Bogie Stock 1879 - 1907".*

This is the first of two volumes providing illustrated coverage of the bogie carriages of the LB&SCR, a company with a large and diverse fleet despite its limited route mileage; previous volumes (Kestrel Books, 2014, 2016) described the 4- and 6-wheeled stock. This new work makes substantial use of the HMRS drawing collection where the author is a volunteer. New drawings are provided where needed, and examples of planned but unbuilt designs are included showing that the ambitions of the designers far outstripped those of a conservative management. There is extensive photographic coverage with some previously unseen views, and extensive train formation data.

The book will appeal to model makers, historians and restorers of LB&SCR, SR and other carriages, and like previous volumes, all royalties will be donated to the Bluebell Stroudley Coach Fund.

The forthcoming Volume 4 will complete the series, covering the remaining arc roofed and motor carriages, AC electric stock, saloons, and ambulance trains. Unlike any previous work on LB&SCR carriages, it will also describe the fleet of over 60 Pullman cars that were an integral part of the passenger services.

The Society hopes this publication will be a worthy addition for all those interested in the LB&SCR bogie carriages between 1879 and 1907 and bring new understanding to railway modellers, historians, preservationists and all those interested in the history of transport.

Plates black & white: 143 Number of drawings and diagrams: 122 Total pages: 230 Format: A4 portrait

Author: Ian White

ISBN - 978-164516-144-8

Price: £29.95 (HMRS members £19.95) plus post and packing

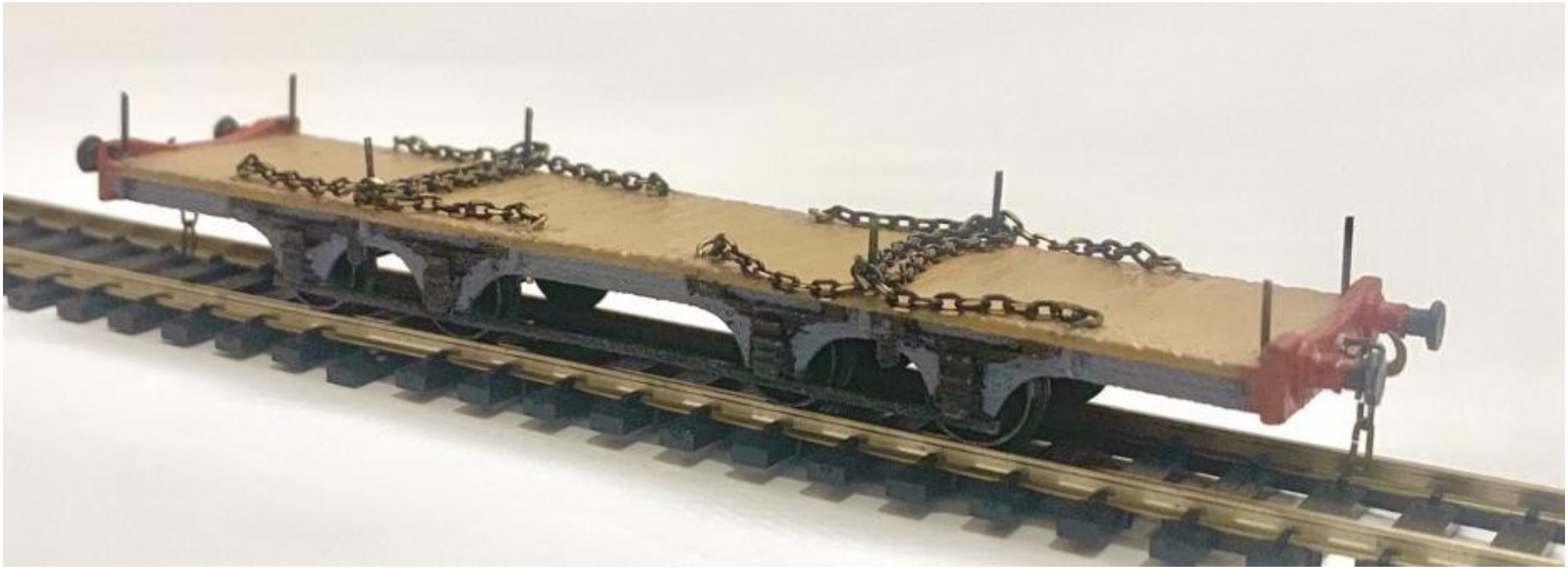
Available: All good book shops.

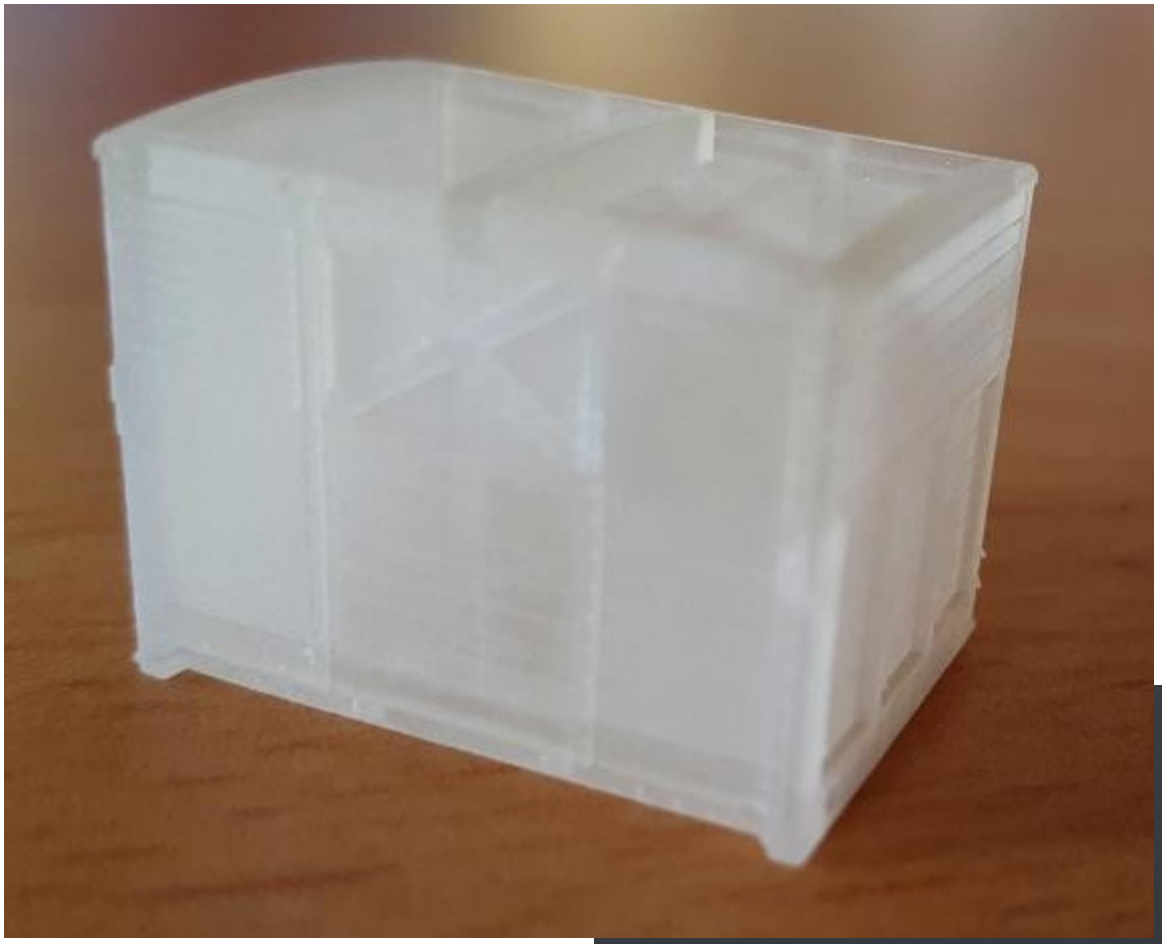
Direct from the Society with £4.50 P& P added to the above (outside UK at cost) :

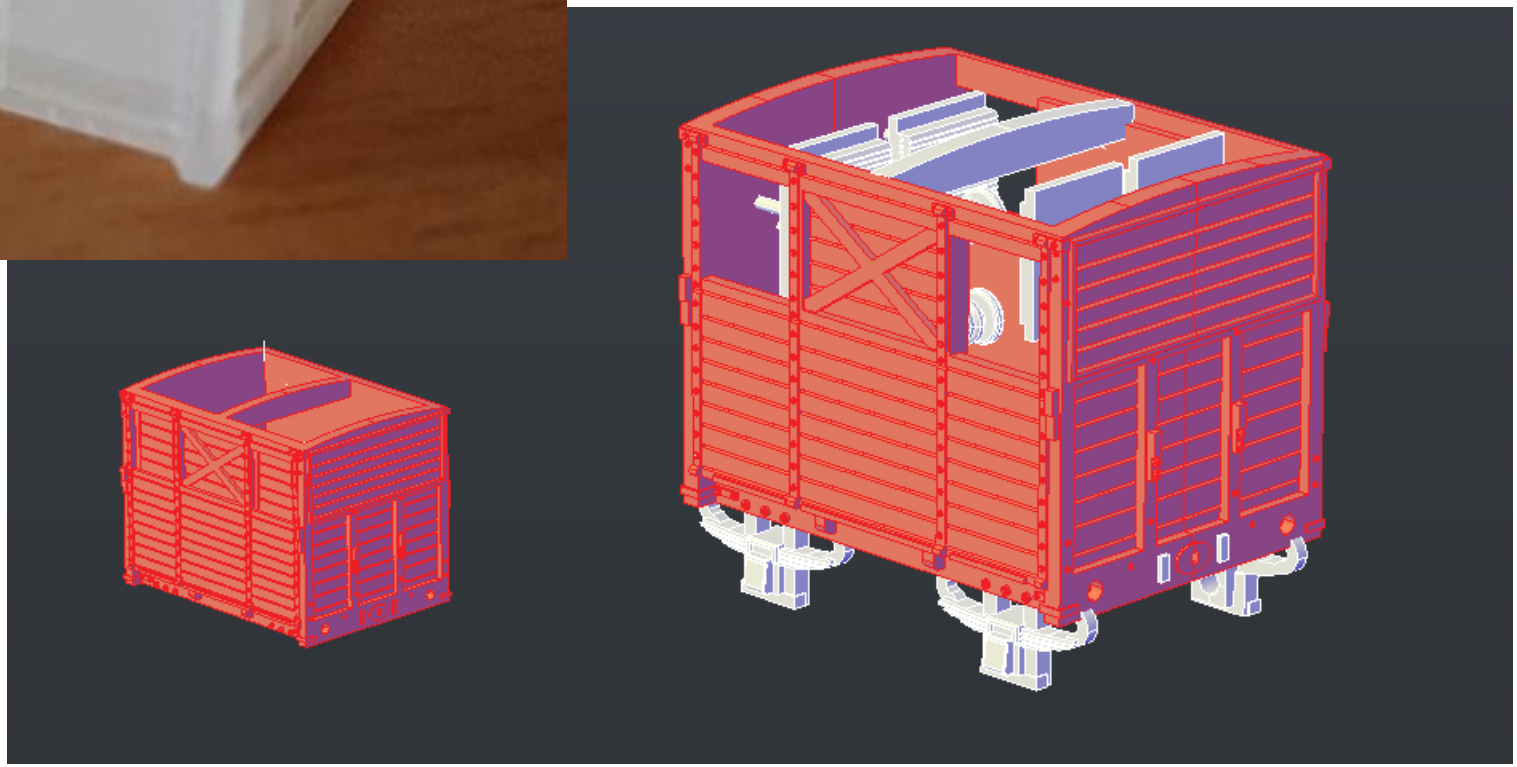
Book Sales HMRS Museum & Study Centre The Midland Railway – Butterley. Butterley Station Ripley DE5 3QZ

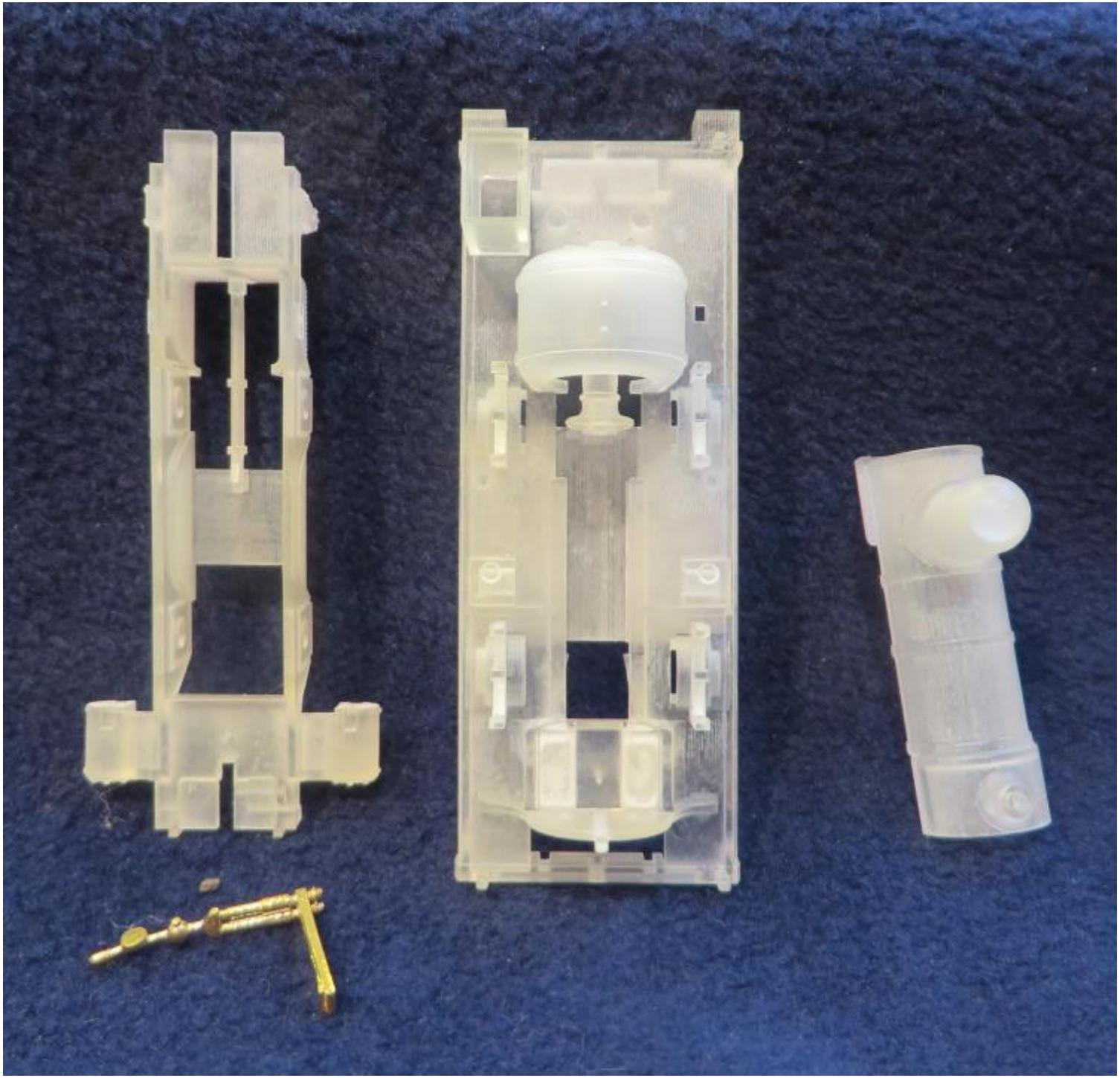
# 3D Printing - new products

Javier, who runs the Barm Shack on Shapeways, has been busy. New releases include the well tank No 400, which served as Brighton Works shunter, the short horsebox, which goes back to the early days of the Brighton and the 30 ton, rigid 8 wheeled machinery wagon, built in 1899. Future plans include Hayling Island/Inspector, which is next on the list. All are available in most scales.



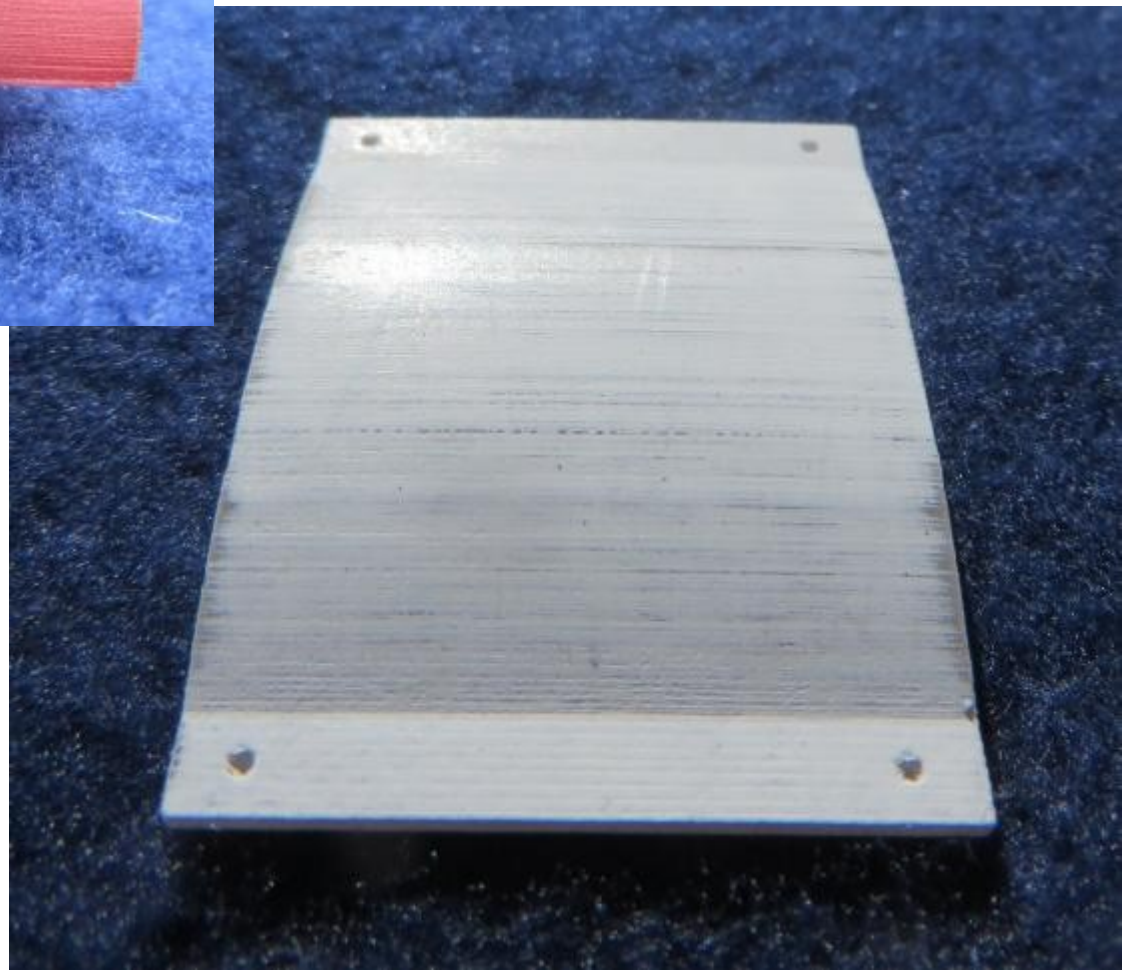






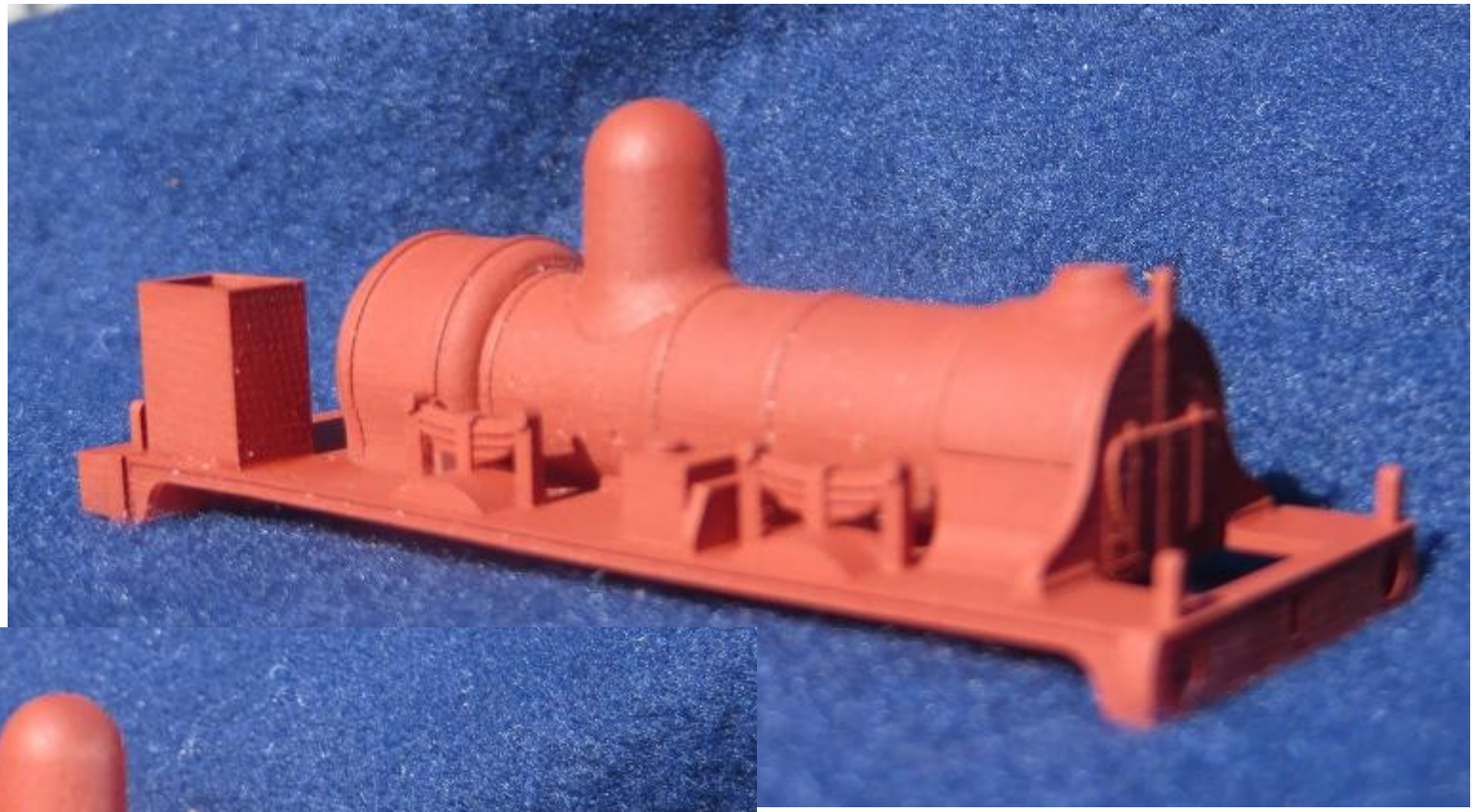
By way of illustration, the following photos show a set of prints for No 400, bought in the UK and delivered from the Netherlands. What you get are three pieces printed in translucent material, which is “smoothest fine detail plastic” for this order. There is a separate order for the fittings which are printed in brass and cover the Salter balances. Altogether, and including shipping, the order amounted to €91.41.

Detail parts – buffers, reversing lever, chimney, cab roof and guard irons - are moulded inside the larger items and need to be snipped out.

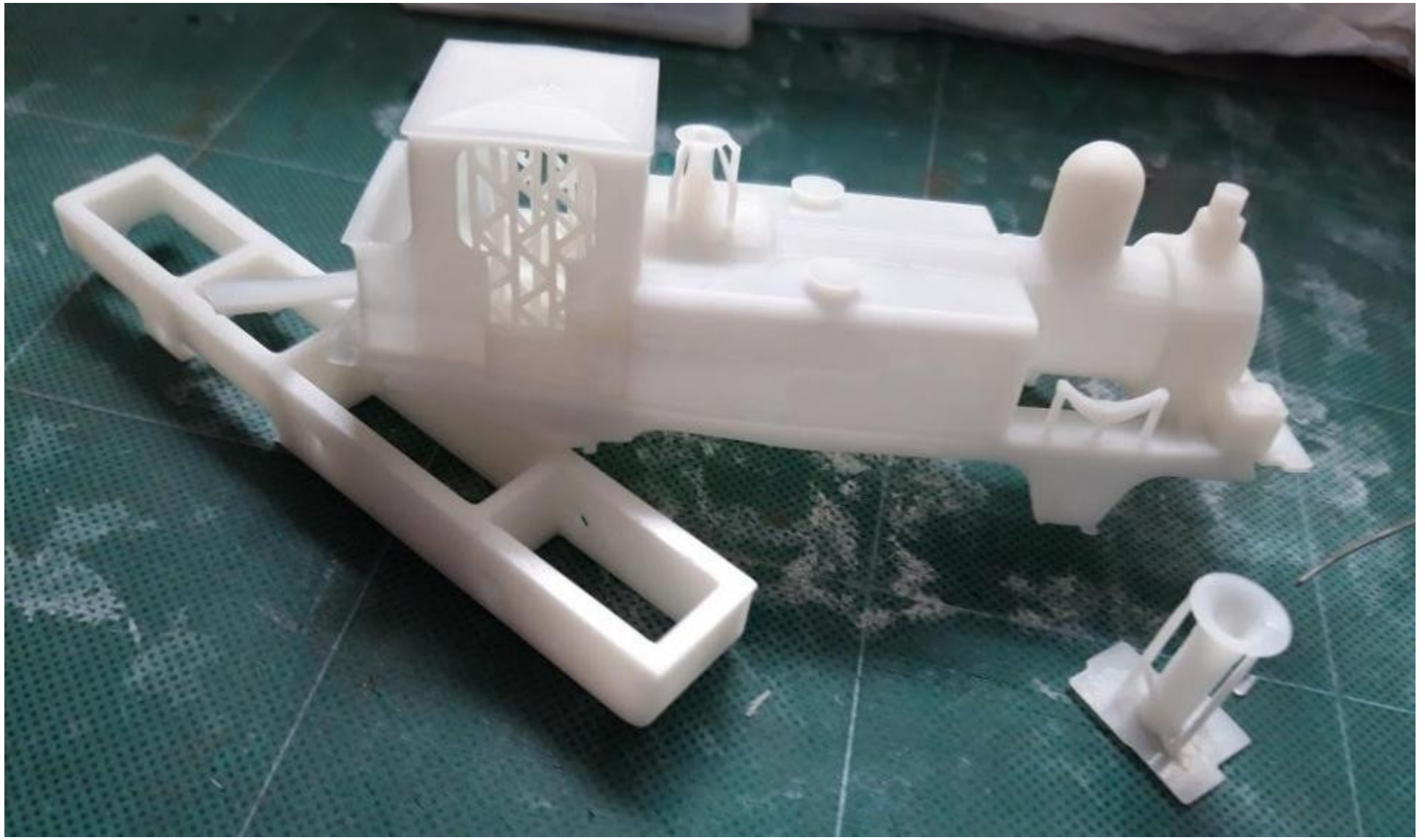


I have given the various bits a quick coat of car primer, which makes any layering in the printing a bit more obvious to the camera. The boiler is untouched, but the cab roof has been smoothed with P1000 wet and dry paper. It now feels completely smooth but the lines show where the paint has been removed from the ridges.

All the motion, slidebars, crossheads, connecting rods and coupling rods are left to the ingenuity of the builder.



Finally, I could not resist fitting the boiler to the footplate. The only problem now is that I am nervous about taking them apart, as they are a rather snug fit and I should hate to discover how far they will bend before breaking!



Killian Keane has been working on a 3D print of Seaford, the little single tank that received a makeover from Stroudley. The photo above, taken by Ian MacCormac, shows a test print of the loco, still with the support pieces, that facilitate printing, in place. The final version is likely to be made available through Sparkshot Custom Creations.

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# Dapol Stroudley 4 Wheelers - 7mm

Following on from the 7mm scale Terrier, Dapol has announced a set of Stroudley 4 wheeled carriages to match. The range will include a diagram 30 First, diagram 31 Composite, diagram 32 Second, diagram 33 Third and diagram 34 Brake/3rd. According to the publicity release, the first batch will reproduce the original mahogany livery with gas lighting and be available in 2020. Further variations will follow to cover the various permutations of livery, lighting and braking - no doubt including those that went to the Isle of Wight.

# Terrier Names and Numbers - 4mm

Precision Labels have started selling name and number plate transfers for Terriers. They appear to be to scale, and the numberplate, despite being a transfer, shines just like real brass. You get 4 for each transfer, so messing up isn't an issue. £6 per set plus £1.75 postage


Photograph copyright Gary

# Brighton Layouts that you may see at Exhibitions

Ferring

Plumpton Green see linked website

Hailsham see linked website

Saltdean see linked website

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# 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 journal entitled the Brighton Circular.

While the Circle is primarily focussed on railway historical research, there has been an important interaction with preservationists, particularly on the Bluebell Line, 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, paint and lettering on a limited run basis, which are made available among other members.

Membership of the Brighton Circle for 2019 is

£18.00 for full membership

Applications should be sent to

The Membership Secretary, Peter Wisdom

peter.wisdom.wisdom@btinternet.com

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

# THE BRIGHTON CIRCLE

An historical society dedicated to the furtherance and publication of original research into the history of the London, Brighton and South Coast Railway

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**MEMBERSHIP APPLICATION FORM**

**To the Hon. Secretary, Peter Wisdom, 76 Woodbourne Avenue, Brighton BN1 8EJ**

I hereby apply for membership of the Brighton Circle.

**SIGNED..... DATE.....**

**NAME.....**

**ADDRESS.....**

**.....**

**.....POSTCODE..... (BLOCK CAPITALS PLEASE)**

It would be helpful if you could give some idea of your main interests in the history of the LB&SCR and any special interests. Please indicate if you are a modeller and give any details.

I enclose a cheque/postal order for £19.00/£10.00 to cover the joining fee of £1.00 plus twelve/six months membership of the Brighton Circle for the calendar year 2019 (please delete as necessary).

Cheques should be made payable to **The Brighton Circle.**

**Privacy statement**

The personal information provided above will be stored on a computer database of members' details and used for administration purposes by the Brighton Circle's appointed representatives.

Please sign below to indicate that you agree to give the Brighton Circle permission to use the personal information that you have supplied in the following ways

- To store it securely for membership purposes
- To communicate with you as a Brighton Circle member
- To send you general information about the Brighton Circle

Please be advised that you can request for your data not to be used for any of these purposes at any time by contacting the Honorary Secretary by e mail at peter.wisdom.wisdom@btinternet.com or by post to 76 Woodbourne Avenue, BRIGHTON BN1 8EJ

**Signed..... Date.....**


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