

7th Heaven

Journal of the Aus7 Modellers Group Inc.
No 62

\$7.70 inc GST
Winter 2019



Commercial News

Another O Scale Service Station

Getting Back Into It.

The Impossible Layout - Part 8
Now Known as Murray Street

Building The Model O Kits Z13 Class

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Saturday 26th October 2019



Venue North Sydney Leagues Club "NORTHS"

12 Abbot St Cammeray

9am to 4pm — Doors open — 8:30am

Specialist Trade supplier's attending

Presenters

Ron Cunningham
Clinton Dowsett & Keiran Ryan

Topics include

Mail trains of the New England
3D print modelling a 73 class,
Grain Silo's

Show n Tell. Bring your latest model to display
and share the progress on your latest project

\$35 includes Tea/Coffee
Lunch available in the Club
Bistro
Everyone Welcome



Straight Down the Line - Opinion

by Trevor Hodges

Annual Fee Increase

I would like to start by reminding members that at last year's AGM a resolution was passed to increase the annual subscription for membership to the Aus7 Modellers Group to \$40, up from \$35. Overseas membership subscription will rise to \$57. This increase is necessary to help cover the cost of production of 7th Heaven. Memberships for all members are now due for the 2019/2020 year so please contact the Treasurer to ensure you continue receiving 7th Heaven. See details on the next page.

2020 Exhibition

I regret to inform the membership that I've taken the decision, in consultation with the executive, to **not** proceed with the O-scale exhibition in 2020. The initial letter to members I distributed via a recent Forum and by the online chat group <https://groups.io/g/Aus7ModellersGroup> was an attempt to gauge the viability of such an event. We gained a satisfactory level of support through offers to bring layouts and offers of help in organizing and running the event. However after a lot of thought and some financial calculations I simply couldn't make the numbers add up. An event such as the proposed exhibition is essentially a gamble that we can get sufficient paying attendees through the door to cover the cost of hiring the venue and the myriad other expenses incurred. I was not prepared to risk group funds to essentially underwrite the exhibition. While the exhibition has been added to the agenda of the 2019 AGM in October this is so the decision to not proceed can be entered formally into the minutes and to allow me to more fully explain to members why the decision has been taken. I'd like to thank all those members and executive who offered their support especially our Secretary Chris Lord for his enthusiastic backing of the proposal.

Forum Attendances

Attendance at the April Forum was particularly low with people paying to come through the door counted at thirty one. We tend to average about fifty. This low level of attendance is concerning as it is not sufficient to cover the cost of hiring the venue and as such is not viable over the long term. It also means that the traders are less likely to attend as they need to make sufficient sales to justify their own attendance. I'm always very conscious of not lecturing attendees about low attendances as this amounts to me preaching to the converted. I'm also very conscious that some people come a long way to be there, incurring significant cost in effort, time and money. However this doesn't alter the hard fact that unless we can attract sufficient people to come along then something is going to have to change. Can I encourage all members to make a special effort to attend the Forums and if possible encourage a friend to come along, even if they aren't an O-scale modeller? We all know the talks are often of interest to modelers who don't necessarily work in O. Perhaps I need to remind members that I now organize the Forums having taken over this role from John Parker recently. Members need to be aware that being a mind reader is not a skill either John or I possess. If you have an opinion about the Forums please speak up. I'm easily contactable at trevorchodges@gmail.com (note the "c" in my name in this address) or at the upcoming October Forum.

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Full Page: \$125 Half Page: \$65
Quarter Page: \$32 Eighth: \$15

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Back Issues
Please contact the Treasurer to obtain back issues.

Issues 1-33 sold out.
Issues 15+ are \$7.70 each
\$1.50 p&h for one or two copies.
\$2.50 p&h for three or more copies.

All opinions expressed are those of the respective authors only and do not represent any official view of the Aus7 Modellers Group Inc.

On The Cover
The cover this issue illustrates the very attractive Model O Kits Z13 locomotive. John Parker took a break from his layout building to construct this kit and he describes how he went about it starting on page 13.

Please

Don't let your membership lapse

Membership of the Aus7 Modellers Group costs just \$AU40 per year or \$AU57 for overseas members.

Memberships are due for renewal by June 30th no matter what time of year you joined. Please forward payment to the Treasurer, Anthony Furniss at PO Box 3404 Asquith NSW 2077. You must be a financial member to vote at the AGM in October. For renewal and new membership forms follow the link on the Aus7 Blog at <http://aus7.org/2014/10/12/welcome/>

If membership is not renewed this is the last issue you will receive. To receive all four issues per year you need to renew before September 30th.

Renewals can also be done through online banking. Deposit directly to the Aus7 account BSB 062-233 Account Number 1017 2076 Be sure to supply your name.

Notice of Aus7 Modellers Group Annual General Meeting

Venue: North Sydney Leagues Club, Saturday the 26th of Oct 2019, 12.45 pm

Agenda Items

1. Election of officer holders
2. President's Report
3. Presentation of financial accounts
4. General Business
 - Mooted 2020 Exhibition

Note: If members have an item they wish to add to the agenda please contact the Secretary at least 2 weeks prior to the AGM. Any financial member of the Aus7 Modellers Group is entitled to vote at the meeting. Proxy voting will be allowed. Any member wishing to vote by proxy should contact the Secretary.

Forum Bring & Buy

North Sydney Leagues Club, Saturday the 26th of Oct 2019

The Bring & Buy will allow attendees at the Forum to sell excess model railway items to others at the Forum. The conditions of selling or buying are detailed in full in the document "Selling and Buying Guidelines" available from the Aus7 Modellers Group web site. The following are the main details:

- Registration should occur before 9.30am with selling concluding at 12.45pm.
- Selling on the Bring and Buy table is **free** to all members.
- All sale items should be of general relevance and interest to O-scale modellers (1:43.5 & 1:48, SG or NG)
- Security for items placed on the table are the responsibility of the owner. The Aus7 Modellers Group will take all reasonable steps to keep the items safe however will accept no financial responsibility for items lost or misplaced.

Please contact the President with any queries.

Commercial News

Trevor Hodges

ModelOKits

ModelOKits, PO Box 379, Sydney, NSW, 1700, (02) 97073390, 0404935663, <http://www.modelokits.com> & sales@modelokits.com, shop open most Fridays between 10am to 1pm at Unit 4/61-71 Rookwood Rd Yagoona NSW 2199, have passed on the following news:

- The next locomotive project, due to commence production in 2020, will be the NSWGR (Z)12 4-4-0 locomotive which will be available in both kit and ready to run form. Prices and tender options will be announced in due course.
- NSWGR (Z)13 class ready to run pre-orders will commence arriving in early August. We will also have some 13 class ready to run locos in preserved and black available at \$2750.
- Minerva Manning Wardle K's with DCC sound are now in stock at \$725 each.
- FS & BS passenger carriage should be available by end of September at \$425 per kit.

Another O Scale Service Station

I very much enjoyed reading Ray Rumble's article on O Scale Model Building Kits, which appeared in 7th Heaven # 60, and the picture of Ray's Service Station looked very authentic. However, there is one matter that I feel compelled to take Ray to task on - why were you hiding your motor vehicles?

Australian 7mm modellers have been absolutely spoilt with the wide range of locally produced motor vehicles available, especially during the steam transition years where just about every manufacturer's model has been produced in every conceivable colour!

I also enjoy modelling service stations. However I see motor vehicles as being an integral part of the accessories needed to create the scene or diorama!

Bruce Wood



A RAILWAYMAN IN THE MAKING

Could this be you? Taken from a NSWGR advertisement in Walkabout Magazine - December 1952
Sent in by Aus7 member Robert Hodges

Getting Back into It

Lee EJ Styger



Introduction and Background

This article is intended as a reflection on the first of a series of models I completed after quite some time away from the hands on side of the hobby. Having maintained a keen interest in all things relating to railways and to railway modelling, it was becoming somewhat embarrassing that my output had remained at zero for many years. The gap in modelling was due in part to a move to Australia some time ago, a bit of a self imposed exile from the modelling community, and an extremely busy period, however, with some encouragement from my wife, it was time to give it a go again.

The first problem was where to begin especially noting all of the changes in the hobby since my hiatus began. 7mm scale was not a difficult decision, I had been active previously and enjoyed it. Likewise, and a little controversially nowadays, I chose to keep with the Welsh (old Wales) narrow gauge theme. These choices were based around wanting to rebuild my confidence and recommence with something familiar, simple and low risk, both in terms of likelihood of completion and initial cost to begin with. I also wanted a project that could be completed with a basic tool kit and on the kitchen table. I had quite enjoyed scratch building in the past, but at this point I decided to kit build / kit bash as a lower risk and an easier comeback. The kits were all a familiar mix of subjects, one was acquired second hand and the rest were a chance find on a trade stand at the Epping show a couple of years ago.

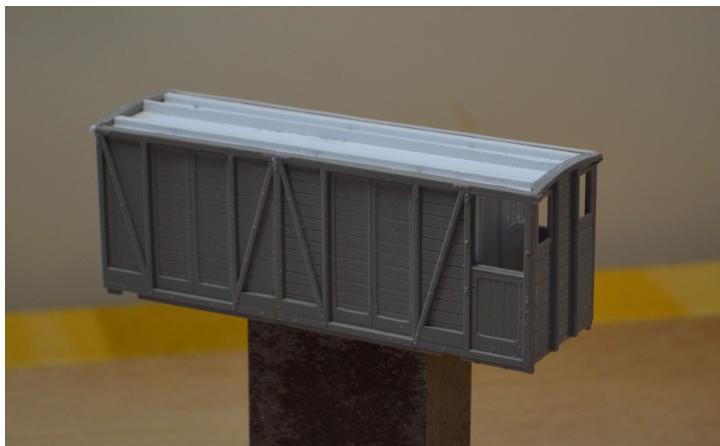
The accompanying photographs aim to show a montage of some of the models and highlight the challenges and solutions as I progressed. This article is in no way intended to be a definitive on the only true road to modelling enlightenment, but rather hopes to encourage those of us getting back into it.

The Bogie Brake Van

I had always enjoyed building the Wrightlines models, but unfortunately they are no longer available. I was however fortunate to be able to get hold of a partially build one from the 7mm Narrow Gauge Association second hand goods service for a very modest sum. The model turned up and as describe at the time, was a body with a couple of Ratio bogies and not a lot more. As delivered, the body was in generally good condition, some minor repairs were necessary and strengthening of the structure was needed that included some longitudinal beams of plastic strip running along the inside of the body and a chunky false roof to keep it all square and rigid.

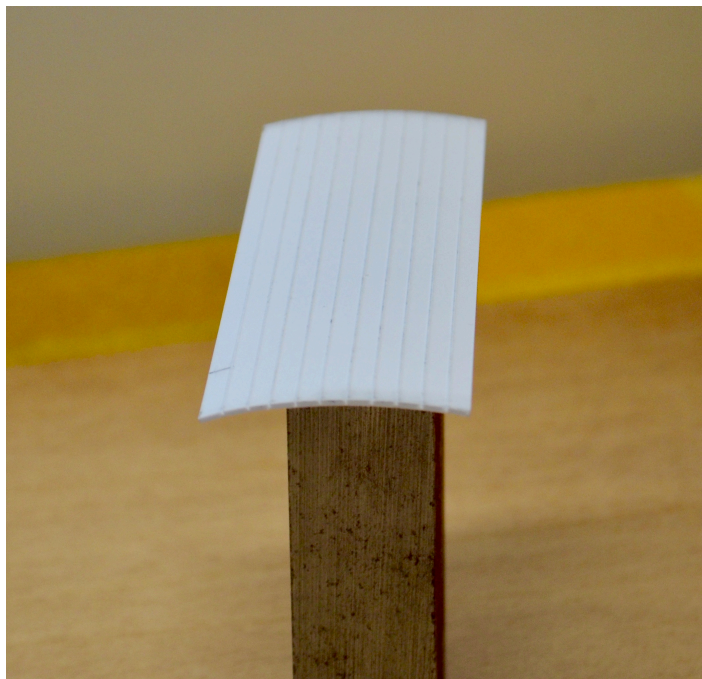
Having built one of these kits before and having always thought that this particular model, as designed, looked a little like two four wheel brake van bodies joined together (which of course it is), when I built my original model and once again with this model, I chose to remove one of the guards verandas and give the vehicle an asymmetric stance. To my eye, the asymmetry of this vehicle makes

a nice and convincing overall result - albeit more Welsh than "New South Welsh".



Bending Roofs

I have never really mastered the art of bending a consistent roof profile out of plastic sheet using hot water and rolling pins etc., however, I fell across the technique of partially scoring plastic sheet with a series of parallel lines and, as if by magic, the flat sheet begins to take on a curve. The closer the lines are together the tighter the curve. I found that by keeping the score lines at a scale plank width and the roof profile takes on a nice "real world" form. Once the roof profile is in place, it is then permanently attached to the rigid body and "blent" in using filler or micro strip, resulting in a homogeneous roof/body structure that looks as though it belongs together (i.e no more gaps!).



Removable Floors

Another problem I have always had is building a model where the roof is detachable and/or added after the floor and any internals are completed and secured in place. Once again, no matter how I tried, I end up with gaps and warping that does not help the overall appearance of the finished article and does not help maintain confidence moving forward. Now, I typically complete the basic structure with a false roof in place and then put the actual curved roof on top of that. Any access inside the model is achieved from the underside of the vehicle and any internal detail is completed on the bed of the chassis that slides up into the underside of the body structure.

Completing Bogie Brake Van

Through necessity, I have had to re-think my choice of paints for my models because the materials I previously used in the UK are not available in Australia. In truth, this situation was nearly a deal breaker for me, because of my philosophy of kitchen table modelling and not wanting to have to go down the road of compressors, airbrushing and a bunch of equipment for “professionals” and importantly, having to clean the stuff after use. The second point was somewhat more rational insofar as the finish I was delivering was nowhere near my expectation and my personal confidence was becoming a significant blocker to progress.

This challenge has turned out with a surreptitious solution insofar as wherever I go in Australia there is good supply of Tamiya spray cans and small pots of paint, that work especially well and even appear to take on the “thin coat” characteristics similar to the cellulose paint I used many years ago. Overall I think the big learning here is that I am now using a single paint system that is designed for the model building community and it simply works.

Remarkably, the change in paint system enabled me to build a new layer of experience and confidence, that led me to the point of acquiring both the compressor and airbrush and indeed a small, purpose designed spray booth for model making! This system works perfectly in a corner of a small shed (not the corner of the kitchen, or at least not the second time). The acquisition of a spray painting system would appear to be a contradiction to my points above, however, this collection of models has been a road to discovery and I find that the total paint system works well together, the spray cans provide incredible coverage, followed by some hand painting for highlights, before the airbrush tones everything in together. In the end, this has been a great confidence booster and provided a significant level of satisfaction. Put simply even though I never thought I would own spray painting equipment, and I still don't like cleaning out the air brush, my newly acquired skills have delivered a new dimension to my models and based on the results so far, is something I wish I had done decades before.

The other trick I have learned is the art of speckling paint onto a base coat for texture, blending and interest for the large expanse of roof. Basically, once the major roof colour has been applied, small speckles of complimentary paint colours are deposited onto the monotone colour of the roof using either low pressure / distance spraying technique with either a spray can or airbrush. The paint goes onto the roof in tiny (mostly)

amounts and gives a good representation of roofing cloth and, from a model point of view, breaks up a typically boring block of colour by providing texture and interest to the eye. This technique is also excellent for hiding any blemishes that might be on the surface of the model.



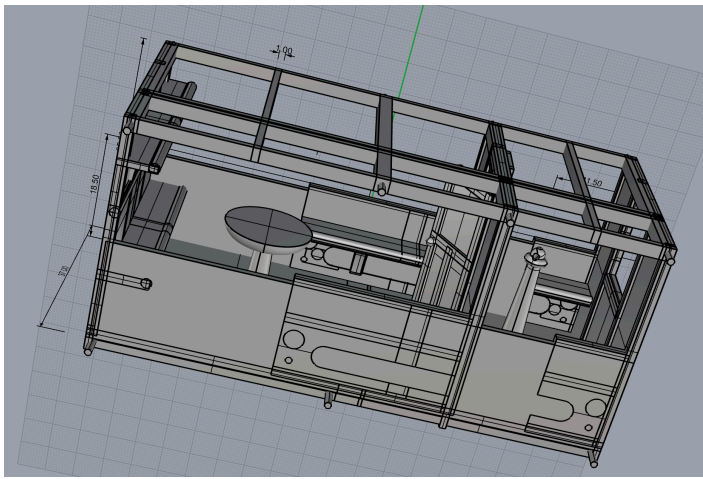
Peco 4 Wheel Coaches

The Peco 4 wheel coaches are a long established model and a “must” for every 7mm scale, narrow gauge, modeller at one time or another. These examples are my first two, one being completed as is and the second modified as a first class observation coach. The only real “extra” with both of these models is that they have full interior detail that were “constructed” using 3D printing.



The 3D Printed Interior CAD Model for the Peco 4 Wheel Coach

This image shows the CAD model of the interior for one of the Peco 4 wheeled coaches. Once again it got me into a new aspect of the hobby by creating my own CAD data, sending it off for printing and then finishing the parts (I have more on that topic in the future if the editor would permit). I have found 3D printing to be an excellent way of complementing the commercial products available to us in this scale.



Wills Taxi Hut Coach

The conversion of the Wills 4mm scale taxi hut to a respectable 4 wheel 7mm narrow gauge coach is common in the hobby. These model coaches are basically the hut, with a new curved roof of plastic sheet. The bodies are mounted on a spare chassis kits from the Peco open wagons used in the conversion mentioned below. They are supposed to represent early period coaches and/or workers coaches and give reasonable representation.



The Bogie Open

The bogie open was constructed from two Peco 4 wheel open wagons joined together and mounted on the original Ratio bogies that came with the bogie brake van. This is once again a common conversion in the 7mm narrow gauge community, but my twist was removing one of the side panels before joining the sides together and making the wagon shorter than is common with this conversion. To my eye, the proportion of the wagon is better and more "narrow gaugie". The lettering is sprayed on using 3D printed stencils that I had printed the same time as the interiors for the Peco 4 wheel coaches.



Model Photography

A final learning, and something I now need to reflect upon regarding some articles and photographs of others work I have read and criticised over the years, is that the move to digital photography has been great and offers significant benefit, however, photos in a larger format to the size of the model can be cruel and show oddities that are not noticeable at normal viewing distances (I hope our editor is kind to me or at least the models in this article). I also find that the reproduced colours are not always the models best friend, and when choice permits, I opt for black and white photography every time. I find that black and white photos enable the model to take on a more "historic" stance and trigger a suspension of disbelief not possible with colour.



On Reflection

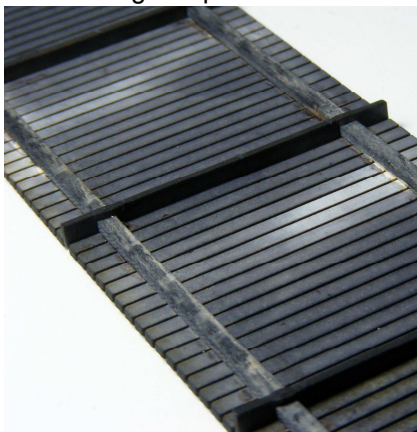
On reflection I am rather pleased with the overall results and it has been a great, low cost and low risk way to up-skill / re-skill. Naturally, looking back I feel that there are many areas I could have done better, but I do have to be realistic and create a balance between my own view of perfection and my available time, skill, and the effort I can put into a model. My original thought process was to aim for super detailing these models and everything I would do into the future. However, the tradeoff of time, skill and cost took me to a place of rather more simplicity than I was expecting, but once again, this has turned out to be quite surreptitious because alongside making even the smallest project attainable, the results have an almost "water colour" quality to them that makes the eye and imagination do the rest. One thing I have noticed is that despite the fact the hobby has generally moved on during my exile, the genre and emphasis of modelling in Australia has always and continues to differ to that of the UK. I am resigned to the idea that my stuff will always be a bit of an oddity in Australia, but then that said, my stuff is narrow gauge, and Welsh, so that might be a bit of a giveaway to the more critical eye! The great thing is that regardless of genre, region, or even if you decide to have gnomes up your signal posts, there is much to learn from our modelling community and assimilate along the way. Moving forward, I think perhaps I should be aiming for something Australian and closer to home.....so where's that kit for that 7mm scale, Victoria Built, Malcolm Moore V8..... 2ft gauge of course!

The 'Impossible' Layout

Part 8

MURRAY STREET

The replacement Shapeways Signal Branch bracket signal¹ mentioned in the last episode arrived safely and this time it did fit. It still has to be assembled and painted but we will return to that project later. Apart from all the necessary final weathering and the need to add to the general untidiness of the scene, module 3 is now virtually complete. The rear of the scene, just in front of the backdrop has been completed with a paling fence made from three Model O kits excellent paling fence kits². To create the 1400 mm length required the kits were modified slightly by replacing the individual laser cut card horizontal rails with lengths of O scale 2 x 4 inch timber. Weathering was achieved using the same Raven Shoe Dye and methylated spirits solution used previously for weathering sleepers.



A number of short lengths of 1 mm diameter brass wire were then used to secure the fence into the foam "embankment". PREP Multihesive Styrene based glue³ was ideal for affixing the wire to both the fence and into the foam securing everything firmly in place.



Some time ago Trevor Hodges included a piece in his long running and most informative blog, 'Morpeth in O Scale'⁴ on the use of DAS air dry modelling clay to model brickwork. If I recall correctly he achieved great results modelling the stonework on a mill. Trevor also used the modelling clay to shape individual stones. I have not previously used this technique but am certainly aware that many military modellers frequently use the method. The layout requires a water tank, as there were a number in the Darling Harbour goods yard and one in particular was featured within the boundary of the area being modelled. The following photograph, a greatly enlarged excerpt from a much larger photograph I was able to find on the internet, is rather grainy but it does clearly show that the base was built from large sandstone blocks, surely an ideal candidate to try out this form of modelling.



Decision time

Entitling a series of articles "The Impossible Layout" seemed like a good idea at the time. I really wasn't sure that the idea of building a small home layout, based on just a tiny portion of the enormous Darling Harbour Goods Yard, would be an achievable project. However the end is now in sight so as suggested at the March 2019 O scale Modellers Group Forum it is probably time for a name change. The "Impossible Layout" will become "Murray Street". The name has been chosen as that was a real place and the name did appear on the prototype's signal box. This has been replicated with some accuracy on the model alongside the partially modelled double deck goods shed.

John R B Parker

My local art supplies shop did not stock the well-known DAS brand of air-drying modelling clay; they did however have stocks of a competitive product, Boyle air-drying clay. I purchased a 500 gram pack with the pack indicating that it had a terracotta colour. A white version was also available at a slightly higher price, but for this application the terracotta was probably the correct choice. I have since noticed that the big hardware chain familiar to us all also stocks this brand of air-drying clay. A six sided box was constructed from 3 mm plywood⁵ with all sides being glued in place with PVA adhesive. This provided a solid structure to which the modelling clay would be applied. After the initial glue dried 2 mm styrene panels were added to the top and bottom of the box protruding about 3 mm on all sides, with the intention of using them as guides for the thickness of the clay. The same 2 mm thick styrene was used to make two simple forming tools that would be used to press the shape of the sandstone blocks into the clay. There are many useful guides accessible on the internet for this product with all sorts of hints on avoiding problems particularly those associated with cracking. Prior to applying the clay the box was dampened with water and I also applied a little PVA glue to the faces of the box, hopefully to ensure that the modelled clay would stay firmly fixed in place. It is possible that this step was unnecessary. The following photograph taken 3 days after the application and prior to final finishing did show some signs of cracking along some of the mortar lines. It was however a simple matter to re-



move these imperfections and carve in additional details prior to, or even after the clay has completely dried.

A few days later I returned to this water tank by first air-brushing the base with a couple of different shades of light brown Tamiya acrylic paint, XF-10 Brown and XF-52 Flat Earth. The tank, seen in the background of the photograph above had been previously assembled from left-over resin castings donated from an earlier tank kit which Trevor had assembled. This practice of passing on possibly useful kit components from one modeller to another is something that should be encouraged; does anyone need any windows? The castings received were not exactly the correct parts but there were sufficient panels to build the new smaller tank that the layout required. Suitable sized pieces of 1.5 mm styrene were glued in place for both the base and the "water level" top. Tamiya X-5 Green to which I added about 20% Tamiya XF-1 Flat Black was air-brushed to the top to represent the water filled tank. Two-part clear gloss epoxy will be added later to replicate the actual water.

The water tank rested on the base on four reinforced steel beams. Styrene "H" section girders approximately fifteen scale inches high were glued to the base of the tank before final painting. The exterior of the tank was then air-brushed with Tamiya XF-63 German Grey and then the whole unit

was weathered with various shades of weathered black, grime and rust. Tamiya Panel Line Black Accent Color was applied along the mortar lines between the sandstone blocks to add to the grimy appearance. In the time period that the layout is modelled the tank was no longer in use so on this occasion there was no need to model the actual water spout.





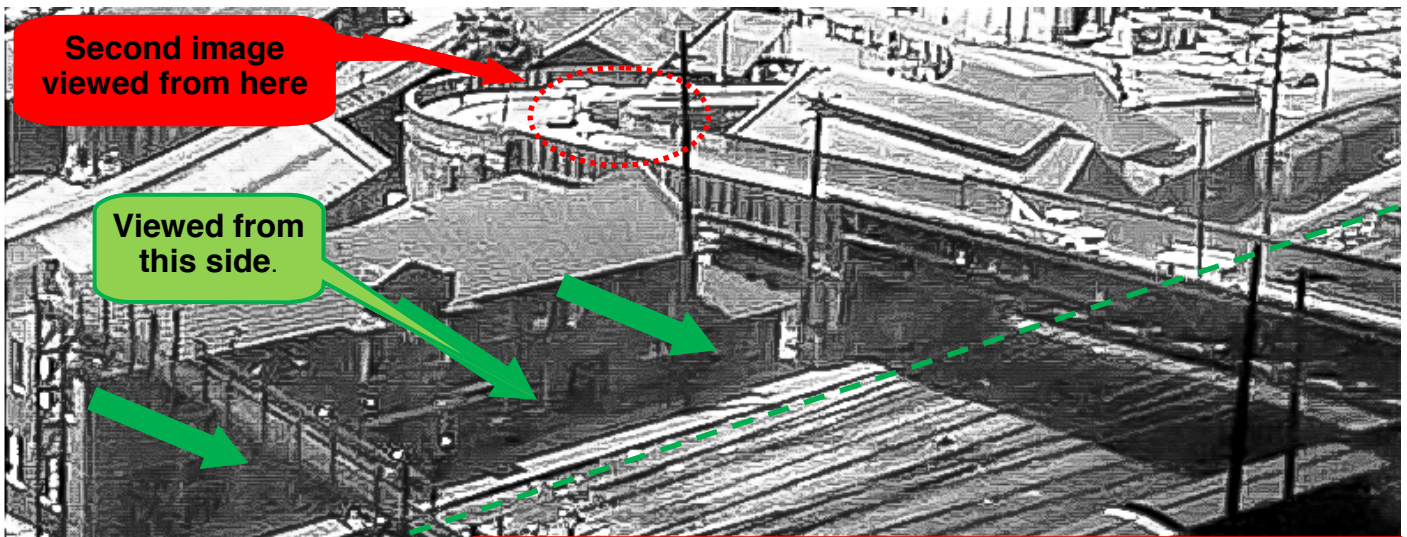
My particular thanks to Chris Lord for being able to supply a much better photograph of the building than I had been able to identify, despite an extensive internet search. The reader may recall that my unsuccessful search for this information was mentioned in the part 7 of this series. Chris was able to confirm the earlier opinion that at one stage it did belong to John Lysaght (Aust.) Pty Ltd. An interesting feature of this photograph, shown above, is that the signwriting of the original "Ltd" has been painted out and the original "Pty" has been changed to "Ltd". I have not been able to ascertain exactly when this occurred. It proved to be a simple building to

model, at least in the "building flat" format that had been used for all the other buildings.

This Lysaght building with only nine windows was obviously much easier to construct than the other much larger buildings with their row upon row of windows. As before it was constructed from 3 mm MDF covered with a slightly different version of the brick paper used earlier, this time with a brown hue. Model O Kits vacuum formed O scale "corrugated iron"⁶ was again used for the roofing. Unfortunately photographic evidence for the windows was a little unclear so the 3D printer was again brought into use to print a version which hopefully is reasonably correct. The windows used in the double deck goods shed were

used as the starting point with a new window being produced, this time slightly wider and narrower than the previous versions. They were made as a push fit and subsequently glued into the laser cut openings. The building photographed below, is shown prior to weathering and before the installation of the plastic window "glass". The photograph actually highlights the damage caused by the glue to the paper rather more than is obvious in reality. The weathering which will be added should obscure this; otherwise it may be necessary to replace the brick paper before the building is finally attached to the backdrop on module two.





The old William Henry Street Bridge will provide the left hand view block on the layout. The bridge disappeared when the major road changes to the Darling Harbour area commenced in the late 1960's. Photographs of this piece of infrastructure are rather rare but this excerpt of a larger image gives some idea. The photograph seems to suggest that the bridge had the familiar lattice style of support spans with brick walls on each side of the roadway. However the adjacent second photograph could easily confuse the issue somewhat as the bridge is now clearly shown as being constructed from solid paneled girders both above and below the roadway. In reality of course the two photographs are taken from very different positions. The second image is of repairs being carried out on the corner of the approach to the bridge, photographed at approximately the encircled point. The dotted green line represents the edge of the layout so the section of the bridge to be modelled does have lattice support girders mounted on sandstone piers with low level brick walls. I used the Anet A8 3D printer to print pairs of 29 x 5 scale foot girders from a Thingiverse design⁷. These were then modified by removing some of the webs and then joined end to end and laminated to a piece of 1.5 mm styrene. The end result was a girder some 44 feet in length. Additional shorter lengths of girder will be used to extend the bridge to its viewable length. More details on this bridge will follow in part 9.

I then returned to the Shapeways Signal Branch signal.



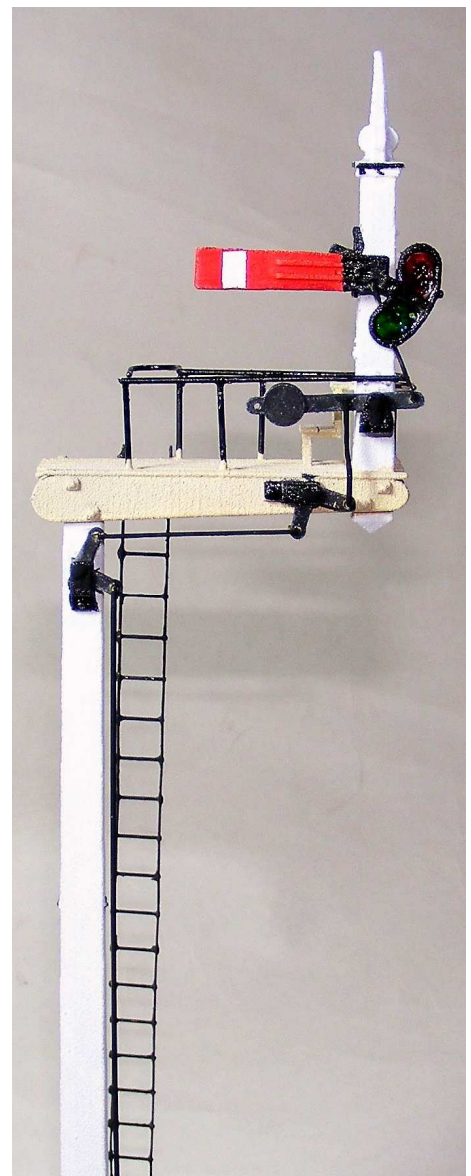
Where do you get it?

1. Signal Branch Bracket Signal
<https://www.shapeways.com/marketplace?type=product&q=Signal+Branch+>
2. 6 Foot Timber Paling Fence
<https://modelokits.com/>
3. PREP Multihesive Styrene base Glue
[EBay](https://www.ebay.com/)
4. Morpeth in O Scale
<https://7mmaussie.wordpress.com/>
5. 2.7mm 1200 x 810 mm Project Panel
[Bunnings Warehouse](https://www.bunningswarehouse.com.au/)
6. O scale vacuum formed corrugated iron
<https://modelokits.com/>
7. HO Girder Bridge
<https://www.thingiverse.com/thing:813829>
8. 7 mm Ladder Stiles 4 Stiles/2 ladders
<https://www.krmodels.com.au/>

Ray Pilgrim's instructions were followed, apart from some modifications to more closely match the photograph of the actual signal.

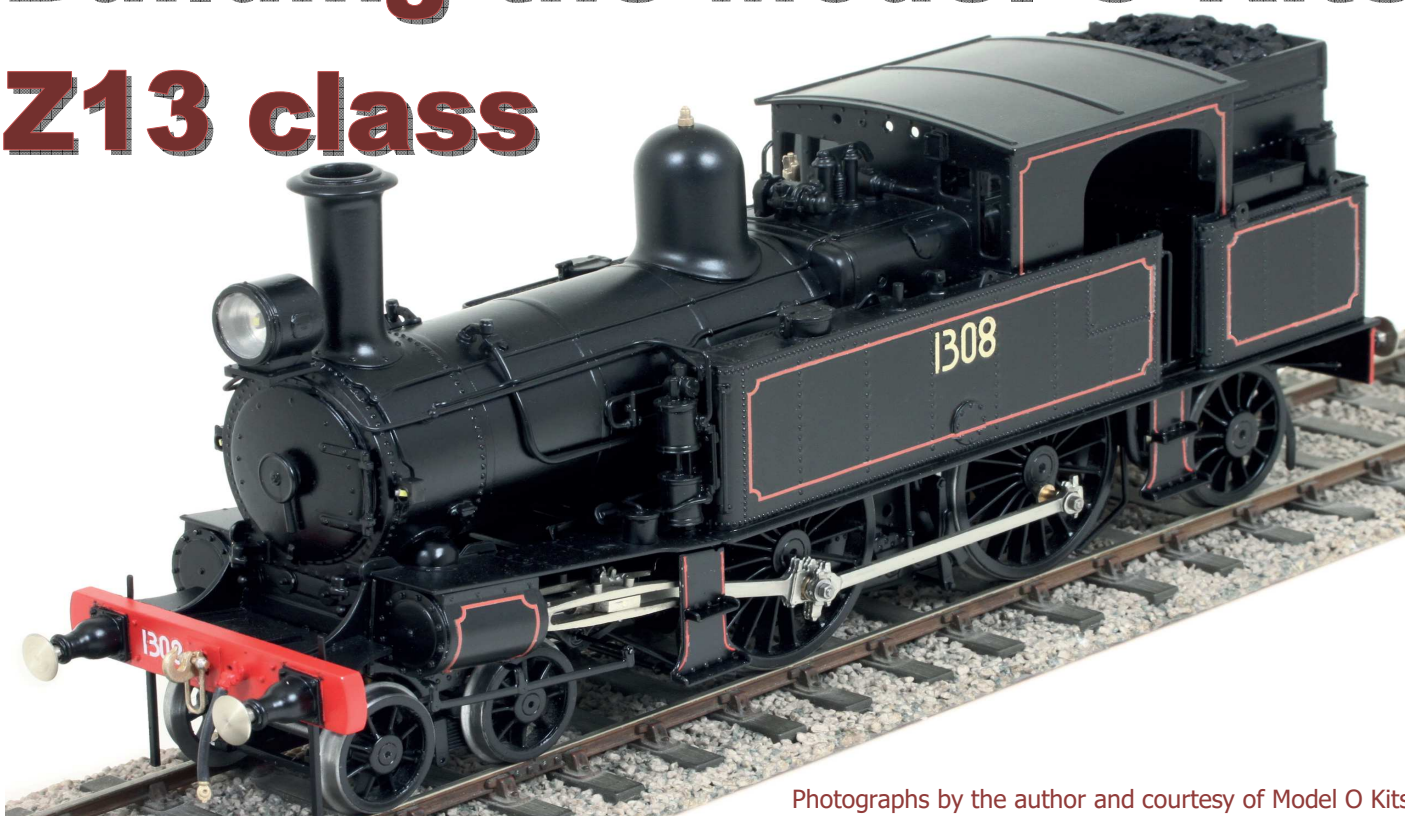
The 3D print was then painted and fitted with a ladder built from Keiran Ryan's ladder kit⁸. The signal is currently static but will ultimately become operable with the addition of a LED and a servo.

...to be continued .



Building the Model O Kits

Z13 class



Photographs by the author and courtesy of Model O Kits

I am not sure why it happened this way, but a peek inside the Model O Kits bright red box convinced me that this loco needed to be built now rather than at some time in the future. Why it managed to achieve a building priority ahead of the 90% completed AD60 and effectively force a short break in the current layout build still remains a bit of a mystery.

Upon opening the box it became obvious that this had the potential of being a fairly quick, at least in a relative sense, build. The kit includes a large number of white metal castings together with etched nickel-silver and brass parts. It does follow the trend which started with the 59 class kit in that the majority of the components are white metal, no need for any complicated forming of etched brass components in this kit. Some may feel that this is a shame but it does mean that kits and RTR models are available at a realistic price that most can afford. I am sure we all recognize that this is currently a very small market and that an all brass-etch model together with its necessarily higher price would probably not be viable. One of the benefits will be that it will be a shorter build. Perhaps there is less chance of the kit sitting on the shelf for years whilst the modeller gathers enough courage to start. This isn't a difficult kit to build. It would be a great choice for anyone's first foray into O scale NSW modelling.

The comprehensive instructions for the build are provided in the now familiar DJH Model O Kits style complete with a large number of photographs of the step by step construction. The instructions are included as a multi-page full colour set of A4 pages instead of being provided on a CD as with previous kits. I understand an electronic version is available on request from Model O Kits for those who like working with a computer on their modelling bench to enlarge the helpful photographs. I suspect most will however appreciate the paper version as it does save the cost and slight inconvenience of having to print your own copy.

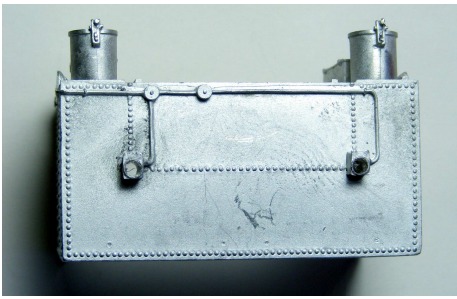
Prior to commencing the build my first task is always to discover the best location for the speaker enclosure and the decoder. Now the NSWGR Z13 class is not the smallest of all the NSWGR locomotives but the reduced space compared to

larger locomotives certainly does provide some challenges in determining the most suitable locations particularly for the speaker. As the boiler door can be left removable there will be sufficient space in the boiler for either the Loksound V 4.0 or V5.0 decoder together with an adaptor board but the speaker location presents a more difficult challenge. Where possible my preferred choice is the familiar Jaycar AS 3028 40 mm 4 ohm Mylar cone speaker¹ or 2 of the smaller, and still available, 36mm 8 ohm Jaycar AS 3030² speakers. Including two AS3030 speakers would appear to be an impossible task but initial checking indicated that it might just be possible to squeeze the more desirable AS 3028 into the coal bunker. Some slight modifications to the castings will be necessary.

Building the latest Model O Kit

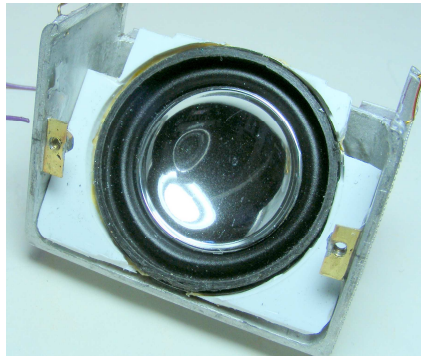
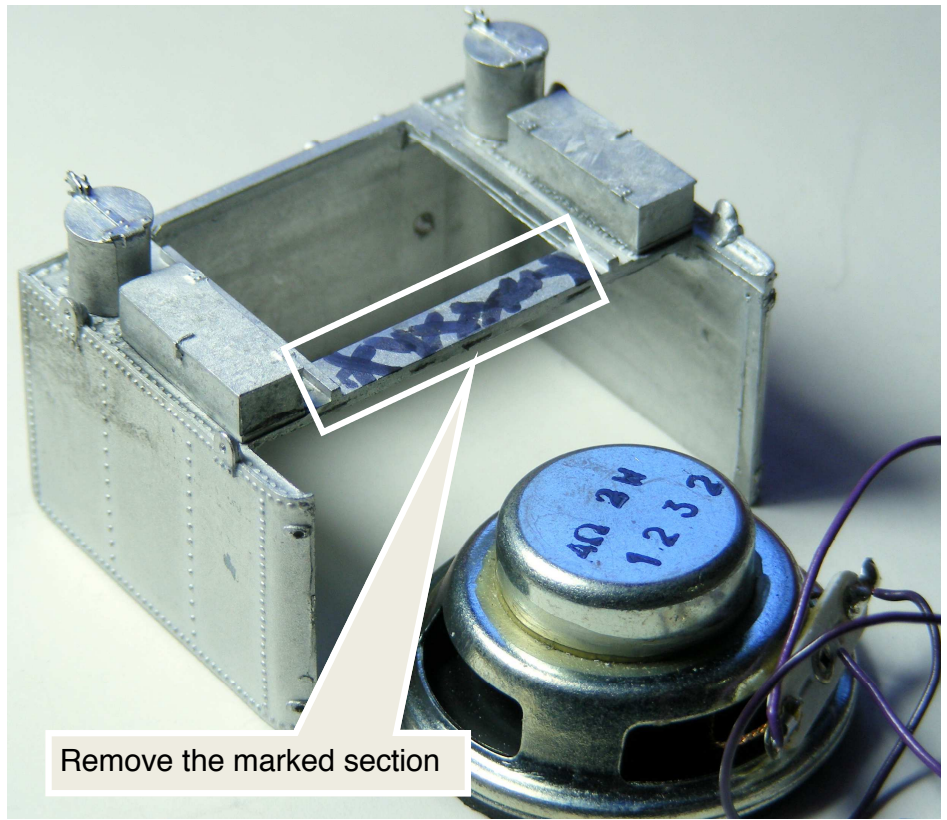
Is this the easiest to build Model O Kits locomotive? Very possibly. Following previous examples everything is included in the box to build an O scale DC version of this relatively small NSWGR tank locomotive. I am sure that you, like me, will be keen to start construction of your kit. Hopefully this article will assist by identifying some points which need to be considered when building the DCC version complete with sound and lights.

John R B Parker



The speaker will be mounted in the lower portion of the bunker but some modifications as shown are required prior to fixing it in place. It will be noted that the rear marker lights have been conveniently included as part of rear bunker. The holes in the casting are probably large enough for Nanolights but I prefer to use the more rugged DCCconcepts tower red/white LEDs³ whenever possible. It was necessary to enlarge the holes by drilling them out with two or three smaller diameter drills until finally achieving a 2 mm diameter opening. (The castings of the marker lights may break if drilled directly with a 2 mm drill.) The LEDs were finally inserted from the rear. As the bunker will ultimately house the speaker, the rear light and both marker lights it is not advisable to permanently fix it to the footplate as shown in the instructions. To secure it and permit its removal 8 BA nuts were soldered to small brass brackets which were attached using low melting point solder to the lower edge of both sides of the bunker. Matching location holes for two brass 8BA fixing screws were drilled in the footplate.

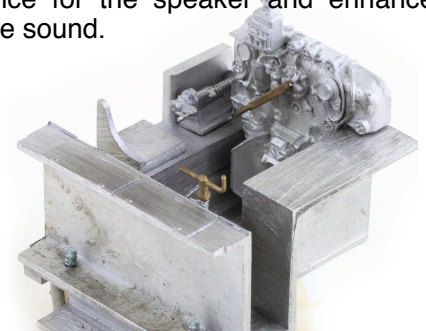
The web shown in the adjacent photograph should be removed to provide space for the speaker, which had been previously mounted on a piece of 2 mm styrene approximately 45 x 45 mm. I glued



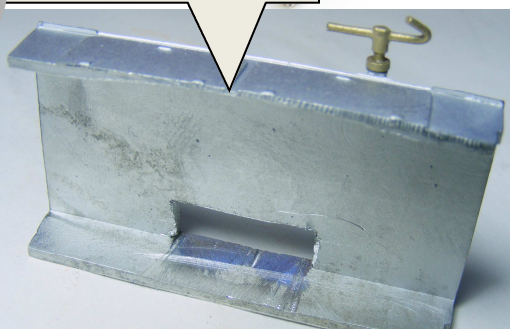
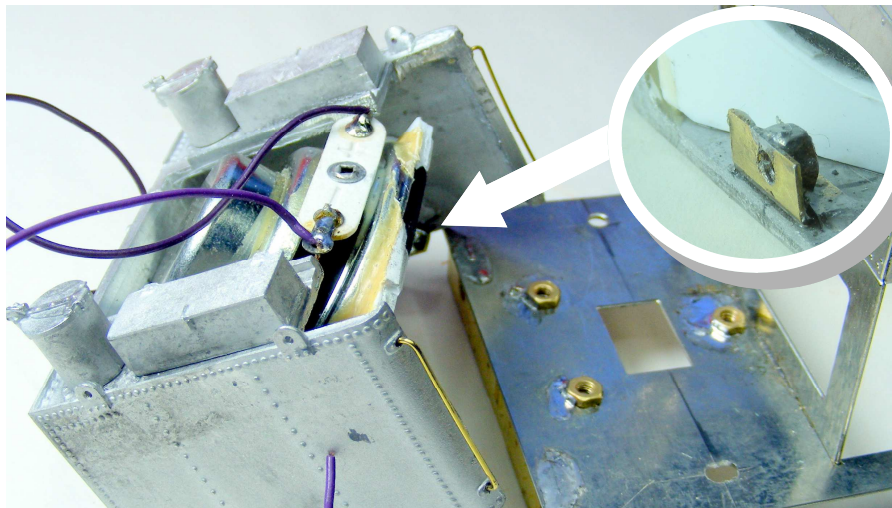
the speaker in place into the 40 mm diameter opening with acrylic contact adhesive. The speaker was finally fixed into the casting at an angle facing downwards; you will find that it is necessary to trim the styrene to provide clearance for the rear wall of the cab.

If you do not have a AS3028 speaker available the smaller AS3030 8 ohm speaker could be

used as a substitute. The end result will have less volume but will still be an improvement on any of the physically small speakers common to HO installations that might be suggested. As is clearly shown in the instructions this model permits the construction of the entire cab separate from the rest of the model. The cab is finally inserted in place from underneath the body and secured with two screws. The rear wall of the cab also needs to be modified slightly as shown to provide additional clearance for the speaker and enhance the sound.



Opening made at the bottom and this edge is ground back to provide extra space for the speaker.



With the selection and location of the speaker resolved it is time to look at the sound decoder. In this model it would also be desirable to provide all of the following lighting:

- **Front Headlight**
- **Rear Headlight**
- **Front White Marker Lights**
- **Front Red Marker Lights**
- **Rear White Marker Lights**
- **Rear Red Marker Lights**
- **Simulated Firebox**
- **Cab light**

That is a total of 8 functions, two more than can be supplied by a combination of a Loksound V4.0 or V5.0 and the familiar # 51968 adaptor board. Previously this would have been resolved by the addition of a second, small lighting-only decoder to cater for the additional functions. There is now a better solution. Although not currently listed on the ESU website there have been some improvements to this adaptor board, as it now includes sufficient transistors to permit the use of all the functions included on

the decoder. I strongly recommend the use of this later version of the adaptor board which may also be available as part number #51957⁴.

It would be possible to make all the connections to the decoder, LEDs and speaker by loosely soldering everything together but the end result might be a bit of a mess and prone to failure. You will not be surprised that I chose to use the now very familiar Vero type matrix board⁵ as an aid to keep everything organised and reliable.

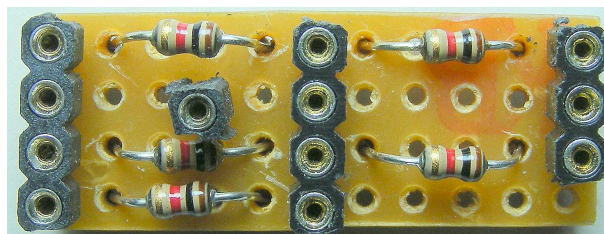
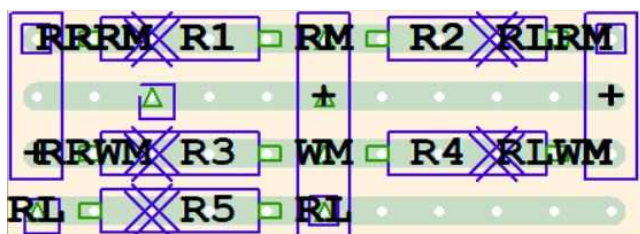
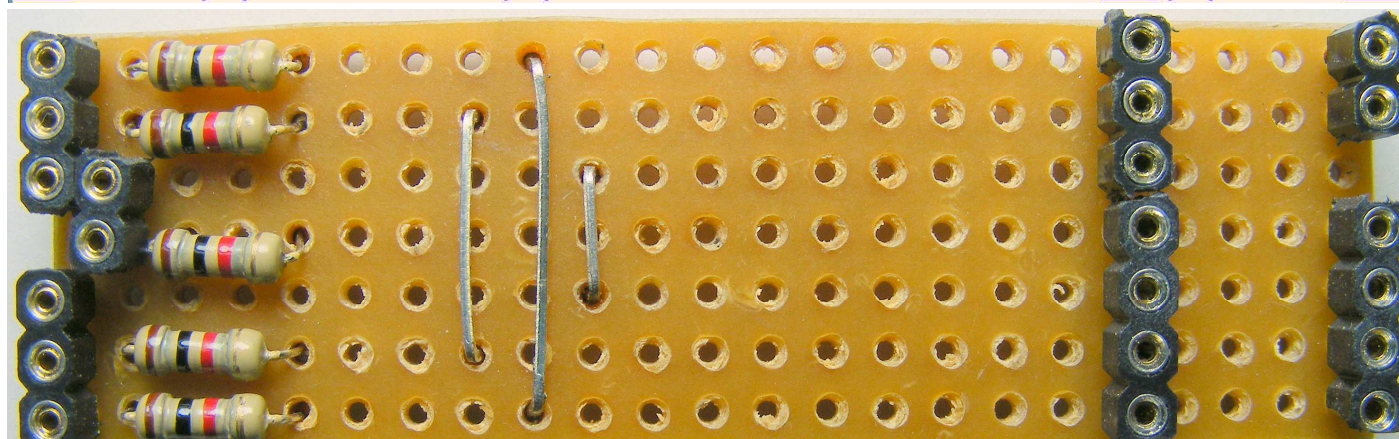
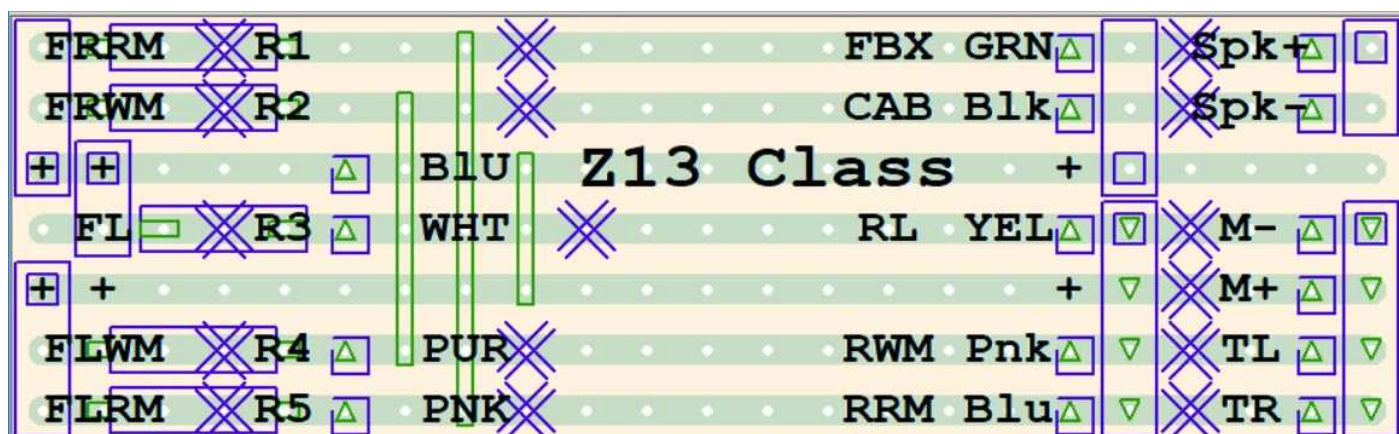
The Vero type matrix board is best cut to the desired size with a razor or coping saw. It can also be handled in a similar way to styrene using the score and snap method, provided you score along a line of holes. The rough edges produced by breaking the board can easily be finished off with a file. The main loco board which will be placed in the boiler is 23 holes wide and 7 holes high (approximately 60 mm x 20 mm). It is generally best to cut the tracks where indicated by the "double X" before adding any

of the components. Check the position, (by counting holes), carefully, before using a Spot Face Cutter⁶ or a 3mm drill hand turned between the fingers. You only need to ensure that the track is cut, do not drill through the board. This board has 16 cut tracks. Turn the board over to the component side and add the 3 wire links using tinned copper wire. The 7 x 1K ohm resistors can then be soldered in place.

The last items to add are the sockets cut from a Jaycar PI-6470 I.C. socket strip⁷. The lengths required include 1 x 7 way, 1 x 4 way, 2 x 3 way and 2 x 2 way sockets. They should all be soldered in place.

The smaller board which will be mounted in the bunker is 11 holes wide x 4 holes high, 5 cut tracks, 5 x 1K resistors. 2 x 4 way, 1 x 3 way and 1 x 1 way socket.

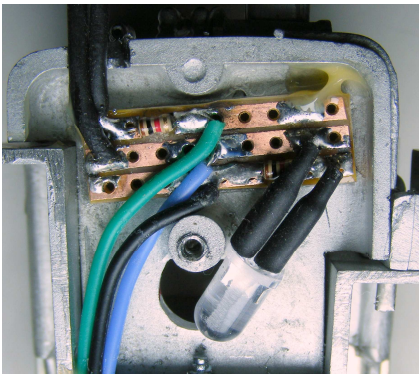
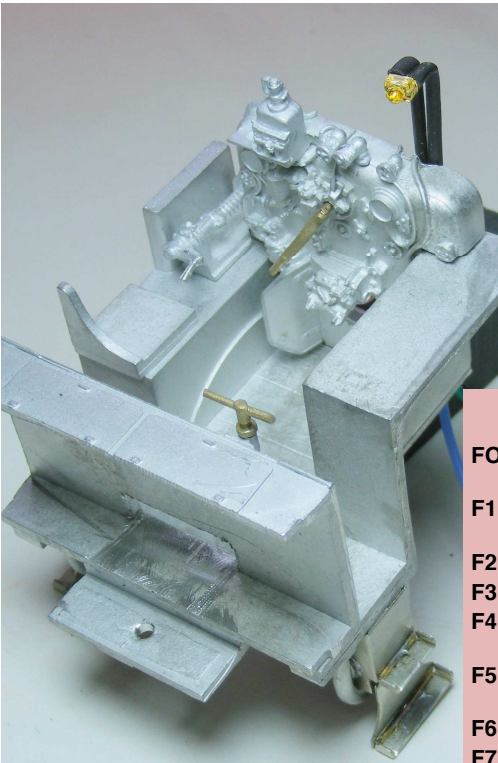
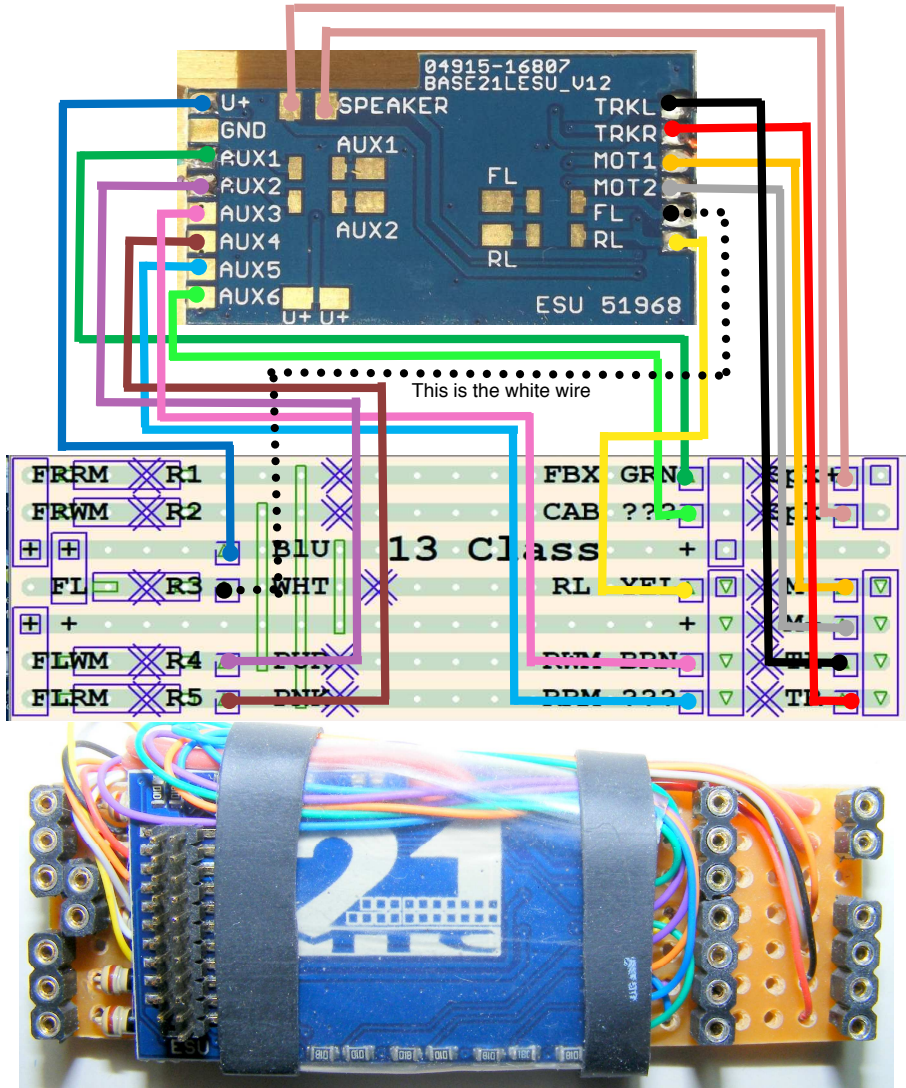
Note that the diagrams below are viewed from the component side. The horizontal lines represent the copper tracks and the location of the cuts on the copper side of the board.



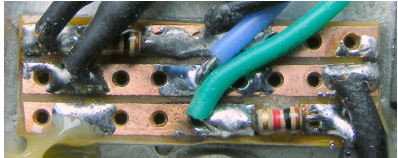
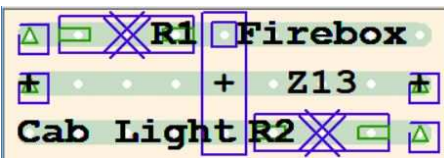
The 21 pin Loksound V4.0⁸ or V5.0 decoder comes with two speaker leads attached. These should be unsoldered or removed with wire cutters. The decoder will then be able to be conveniently plugged or unplugged from the adaptor board as required. It is now necessary to connect the adaptor board to the main loco board but first those two speaker leads that were removed from the decoder should be connected to the appropriate pads as shown on the adaptor board. All of the flying leads from the adaptor board should now be soldered to the main loco board as shown in the adjacent diagram. I soldered these leads directly to the Vero board but they could be soldered to additional connector strip sockets if desired. Finally the adaptor board should be inverted and then attached to the Vero board. Heat-shrink tubing can be used ensuring that there are no connections to the uninsulated wire links on the board. The large “21” should now be visible.

In order to make it easier to follow, the wiring diagram at the end of this article does not show any of these permanent connections between the adaptor board and the Vero board. All of the subsequent connections to the various locations within the loco are terminated with plugs cut from the same connector strip that has been used for the sockets.

A third, much smaller piece of Vero board, this time 3 holes high and 9 holes wide was used for both the firebox and cab light LED⁹. Two tracks are cut and two 1 K ohm resistors are placed together with a 3 wire connection as shown in the adjacent photograph and in the wiring diagram. This time the components were added to the copper side to avoid any short circuits with the bulkhead. This board is fixed with double side tape and glue to the inside face of the bulkhead as shown. Prior to fixing the board in place the bulkhead was modified slightly by cutting two slots, one at the bottom corner to provide for the wire egress and one at the top edge for the cab light. The cab light LED is extended into the cab with the leads being insulated by heat-shrink tubing. I fitted an available 5 mm bright red LED¹⁰ for the simulated firebox illumination by first filling the flange to ensure that if fitted in the confined space.



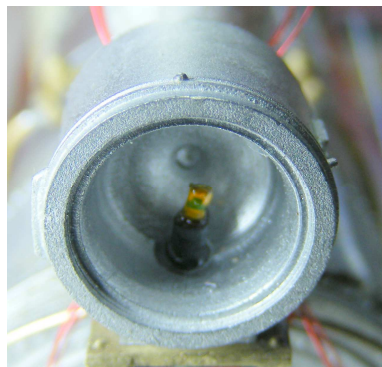
Function Allocations	
F0	Headlights + Dynamo sound (directional)
F1	Start sound plus firebox (Aux 1) on/off
F2	Whistle (playable)
F3	Blowdown
F4	White marker lights on/off (Aux 2) (Aux 3)
F5	Red marker lights on/off (Aux 5) (Aux 4)
F6	Cab lights (Aux 6)
F7	Brake Set/Release
F8	Volume (2 levels & mute)
F9	Drive (Heavy Load)
F10	Brake (Operable)
F11	Dim Cab Light
F12	Sound of coal shoveling



The lost wax brass castings supplied with this kit for the front marker lights are provided complete with mounted pins which cater for easy attachment to both sides of the boiler. They could be soldered in place but I chose to make them a press fit and then added super glue for added security. Before they were mounted in place the front portion of the cavities were enlarged with a number 48 drill (just under 2 mm) to provide a little more space for the white/red Nanolights¹¹. I also gave the cavity two coats of white paint and dipped the Nanolight in the amber coloured varnish which was supplied as part of the DCCconcepts package. This is intended to reduce the possibility of LED failure caused by short circuits within the brass marker light fitting. A short piece of black 0.6 mm heat shrink tubing was used as an insulation sleeve over the three enamel covered wires from the Nanolight LED. The LED was then secured in the marker light casting with clear glue using the UV cured glue pen¹². A 0.9 mm hole was drilled alongside the marker light on both sides of the boiler to permit the entry of the leads from the LED which in turn were terminated with a 3 way plug as shown in the wiring diagram.

A similar approach was used for the headlight this time using a single prototype white Nanolight¹³, terminated with a 2 way plug.

All of the wiring is terminated first primarily at the rear of the locomotive, that includes the plug ended connections to all the rear lights, speaker, cab light and firebox plus the 4 way connection to the chassis. The other end of all the above are all pulled forward through the boiler and then terminated. After adding all the necessary connectors all are then plugged into the main board assembly which can be finally located in the boiler. The smoke-box will then be secured in place with either a simple wedge or glue. At the time of writing the model is not yet complete but hopefully it will be by the publication date of this issue.



Extra Parts Required Z13 Kit

1. AS3028 40mm 4 ohm speaker
2. AS3030 36mm 8 ohm speaker
Jaycar
3. LED-RWT Tower red/white LED
DCCconcepts – Model O Kits
4. #51968 or #51957 Loksound Adaptor Board
– Model O Kits
5. HP9542 Vero type Matrix Strip
- Jaycar
6. TD2461 Spot Face Cutter
- Jaycar
7. PI 6470 I.C. socket strip
- Jaycar
8. Loksound V4.0 or v5.0 decoder
– Model O Kits
9. LED-PWF3 LED
– DCCconcepts – Model O Kits
10. ZD0106 3 mm Red clear LED
-Jaycar
11. LED-NLRW White/red Nanolight
– DCCconcepts – Model O Kits
12. 5 Second Fix UV Light Glue Pen
- EBay
13. LED-NLPW White Nanolight
– DCCconcepts – Model O Kits

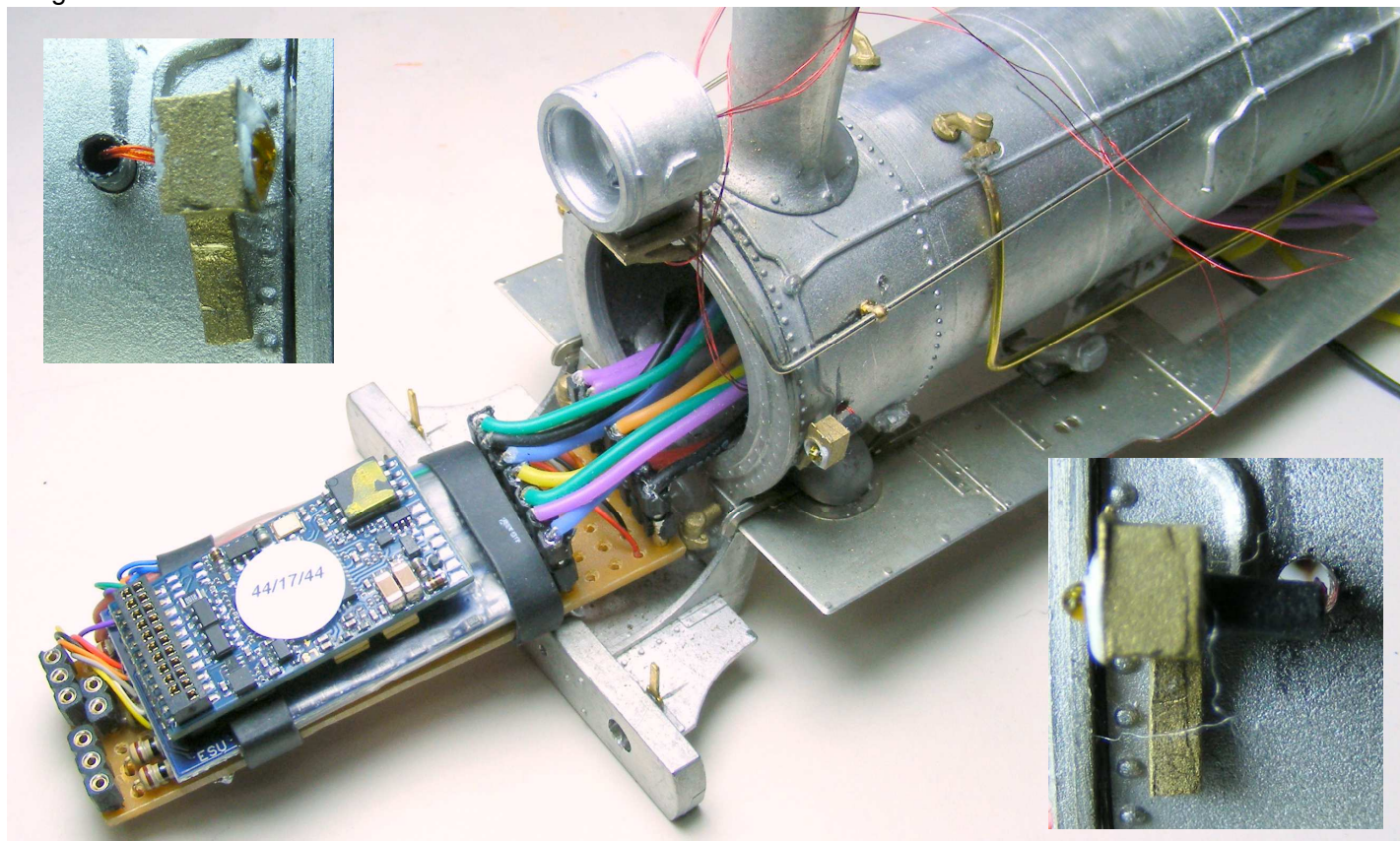
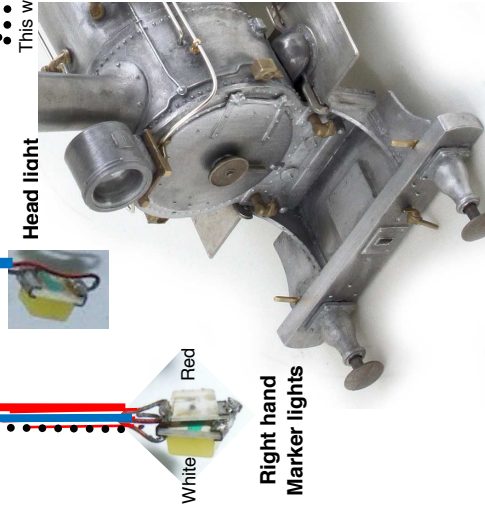


Figure 1 shows a mechanical assembly with a red LED light. A schematic diagram is overlaid on the image, showing a 'Firebox' and 'Cab Light' section. The diagram includes labels for 'Firebox', 'Z13', 'Cab Light', and 'X' marks indicating specific components. A red arrow points from the LED light to the 'Firebox' section of the diagram.



For clarity the decoder and adaptor board are shown above in the correct position but slightly smaller than actual size. **None of the connections to the adaptor board are shown. (See previous pages.)**

All resistors are 1K ohms, codes indicated on the board above are...

FRRM Front Right Red Marker	FRWM Front Right White Marker
FLRM Front Left Red Marker	FLWM Front Left White Marker
RL Rear Light	FBX Firebox
CAB Cab	Lighting
RWM Rear White Markers	RRM Rear Red Markers

4 way plug and socket can be added between the body and chassis

Left hand
Marker lights



Fine Scale 1:43.5 (7mm) O Scale kits



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Kit Includes:

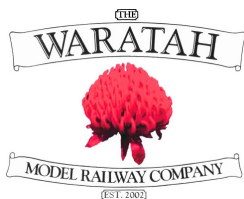
- Etch Brass sides/Roof/detail components.
- Laser cut acrylic chassis,
- White metal bogies,
- 3D printed ends and detail components.

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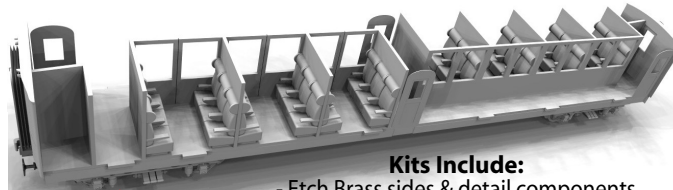
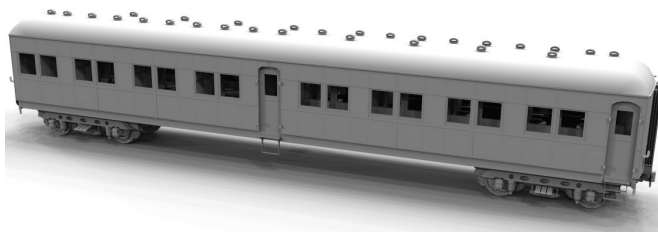
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British O Scale RTR

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- Mount Albert lumber
- Tortoise Switch Motors
- Proses tools, Jigs and rolling roads
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