

# 7th Heaven

Journal of the Aus7 Modellers Group Inc.  
No 69

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Autumn 2021



**NSW Coal Hoppers**

**Carlingford Station Officers House**

**Fitting Knuckle Couplers To  
the Minerva Manning Wardle**

**The Coupling Adapter**

**The Model Company  
Pavement Roller**



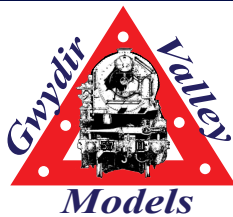
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## Commercial News

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While these have been ready for a while personal issues have delayed any action so as a practical gift the upgrade will include a motor to allow the animation of the fan in conjunction with an ESU sound decoder.

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# Straight Down the Line - Opinion

by Trevor Hodges

## New Forum Venue

On Saturday April the 10<sup>th</sup> 2021 the Aus7 Modellers Group was pleased to be able to host our first O-scale Modellers Forum since 2019. With everything that happened during 2020 and into early 2021 it was with some sense of trepidation that the executive took the decision in late 2020 to go ahead and plan for a Forum in 2021.

There were a few elements of the Forum that, in the early stages of planning, had to be altered to allow the event to go ahead under Covid safe conditions; these included not having traders attend and restricting attendees to one table of eight and having lunch served at those tables. These measures were intended to reduce people mingling thus reducing the risk but as the event got closer we were lucky enough that such conditions were eased and traders were invited along after all and lunch was available in the bistro in a similar manner to past events. Of course this made planning somewhat erratic because as the requirements changed individuals and businesses needed to be contacted to allow them to know what was going on.

While holding the event at all was a minor triumph numbers were down a little from normal. I know through word of mouth that a couple of regular attendees were absent because they were on the road doing the grey nomad thing after a year where this type of activity was restricted. No one could blame people for wanting to get away from the house for a while. I'm sure that some people were still hesitant to risk the chance of contracting the virus and this too is more than understandable. I suppose the best remedy for this is to get the jab which should allow things to gradually get back to normal and allow all of us to attend events like the Forum in the almost certain knowledge that they will be safe.

In spite of the slightly lower than hoped for numbers the new venue was an outstanding success. There were a few very minor hiccups but generally speaking the response of those who attended was to give the new venue and enthusiastic thumbs up. The next Forum is scheduled to be held at the Carnarvon Golf Club on **Saturday, October 23, 2021**. Please put this date in your diary and some along and support our event. The timetable and entry price for attending the Forum will be back to normal as of the next event.

I'd also like to take this opportunity to put in a big thank-you to all those who helped out in making the Forum happen. These include our speakers Bob Hendy and John Parker, our traders Bergs Hobbies, ModelOKits and the Signals Branch and to the executive of the Aus7 Modellers Group who all put in a lot of effort to make the day a success.

## Gauge O Guild NSW/Qld Representative

Recently the Gauge O Guild took the decision to enlarge the number of local representatives covering Australia and this has resulted in Paul Plowman [paulplowman.gog@gmail.com](mailto:paulplowman.gog@gmail.com) being appointed as the Qld/NSW rep. There have also been Victorian and WA representatives appointed.

As I know there are a number of members of Aus7 who are also members of the Guild I thought some of you may be interested to know Paul is keen to hear from members and non-members who might be willing to hold a gathering at their home or perhaps have ideas about concerning promoting O-scale in Qld and NSW.

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### On The Cover

Two of the various types of NSW coal hoppers built by Michael Parker and described in this issue.



# NSW Coal Hoppers Michael Parker

This article is primarily about my scratch building a variety of coal hoppers in 7mm scale.

My aim is to build a variety of types as a representation of some of the hoppers that ran in the Hunter Valley coal fields for use on my upcoming 4.8 metre exhibition layout.

## A Little Background History.

The coal hoppers we are all familiar with started arriving in NSW by ship from England around 1863, ordered by the Scottish Australian Mining Co. There were earlier designs but I will deal with the ones we are most familiar with.

They had timber sloped hoppers carried on cast iron frames. They had a modest 6 ton capacity and were 13 feet long. Over the following years sizes and capacities increased to 7, 8, 8.5, 10, and 12.5 tons, lettering codes changed with the capacities to "S" up to 7 tons, "SM" up to 8 tons, "M" up to 8.5 tons, "L" 10 tons, and "LL" up to 12.5 tons.

Coal mine owners were ordering hoppers from a number of UK companies, including.

The Midland Railway and Carriage Co Ltd, Ashbury & Co Ltd, Darlington Wagon Co and the Lancaster Wagon Co Ltd. These wagons were usually packaged as flat packs and used as ballast for the ships of the time. Local timber was employed for the construction.

It wasn't long before these hoppers were supplemented by local builders, with contracts issued to Clyde Engineering, A. Goninan & Co, Richie Bros, Hudson Bros, AE&RS & Co, UP Davidson & Co, R. Tulloch and R T Ball. As you can appreciate each manufacturer employed subtle but different methods to complete the contracts, with the end result being that each batch of hoppers whether from England or produced locally showed marked differences.

Paint schemes differed to a lesser degree, with most being painted with red-lead to offer some protection to the corrosive elements of the coal and harsh conditions, while lettering was white. The exception is a couple of private owners who chose light grey with yellow lettering, and the NSW Railways who painted theirs the usual dark grey. I should add here that in the early days the Scottish Australian Mining Co initially painted their hoppers bright red but this soon changed to red-lead.

## My Hoppers.

As I mentioned earlier my aim is to build a collection of 8-10 hoppers covering a variety of

eras and types, To this end there will be timber framed, steel framed, medium to large capacity timber and steel hoppers, showing some subtle differences in construction and painted finishes. I am sure that I will or have made mistakes along the way, but if the collection of finished wagons looks the part I will have achieved my aim.

My efforts so far include two NSW Railways steel framed wagons, one with a steel hopper, and the other with a timber hopper. Both wagons being large capacity and having air brakes and automatic couplers. Reference to these wagons can be found in Byways of Steam Volume 27.

My other completed hoppers include three Brown Bros items, two with steel frames and one with a timber frame, the later is in fact a rebuilt O-Aust kit, as I was disappointed with the quality of the standard kit, but I'll get into that later.

The last wagon is a timber framed hopper built for Elrington, which is finished in light grey with yellow lettering.



## The Build.

Generally I start with a suitable underframe kit, and so I started with Slaters timber underframe kit #7038A. Cost at the time was approximately \$32.00 landed, but it is complete with wheels bearings, sprung buffers and 3 links. The second kit is by Peco, under their Wonderful Wagon series. This is a steel frame type, It is considerably cheaper but doesn't include wheels. I do like these kits as they have a method of springing for the wheels that works very well. I should add here that the sprung buffers included with the kit were used because I did find an example of a hopper that



used them in NSW. I dare say they were probably part of the many imported from England in the early years. There is a prototype for everything, if you look hard enough. I use Evergreen Styrene sheet and shapes for all my builds, supplemented with brass wire where needed.

If I start with the underframes, the first thing of note is that the kits are complete with a chassis and a deck or floor, as they are intended for use in standard open or closed wagons.

With the Slaters kit I discard both parts, and very carefully glue the solebars and head stocks together, being very careful to keep everything square and flat. A piece of glass is best to achieve this. With the Slaters kit it is necessary to fit the bearings and wheels at this stage, as you can't fit them easily later. In the case of Peco this is not necessary as the frames can be bent out slightly to fit the wheels later.

The Peco floor is a one piece part, and I found it necessary to mark out and cut the centre from the floor, I used a cutting disc on my Dremel to achieve this, and once cleaned up, simply built the new frame around it. (see photos) You also have to remove the side overhang as this is designed to support an open or closed wagon.

The next step is to build the frame around the solebars and headstock, I made the side frames wider than the prototype as I wanted to fit a little lead flashing between the sills. The frames consist of two main lateral beams supported by two cross beams which are in turn supported by short smaller laterals and a pair of diagonal braces. As I also drill and tap a plate under the short laterals to accommodate auto couplers and I have to determine the correct height and add a piece of Evergreen to make it work.

Although this is up to you and depends on your requirements I include both 3 links and auto couplers (Kadee) which being tapped can be easily removed or added as required.

I add a small brass wire upright to the left of centre to hold the 3 links out of the way when I am employing the automatic couplers.

If you study photos of these hoppers you will note various braces and gussets designed to protect the most vulnerable parts of the deck and to support the hopper when carried. I cut strips of 0.25mm Evergreen and using a scribe carefully push bolt heads or rivets through on the opposite side to the finished part, before glueing in place.

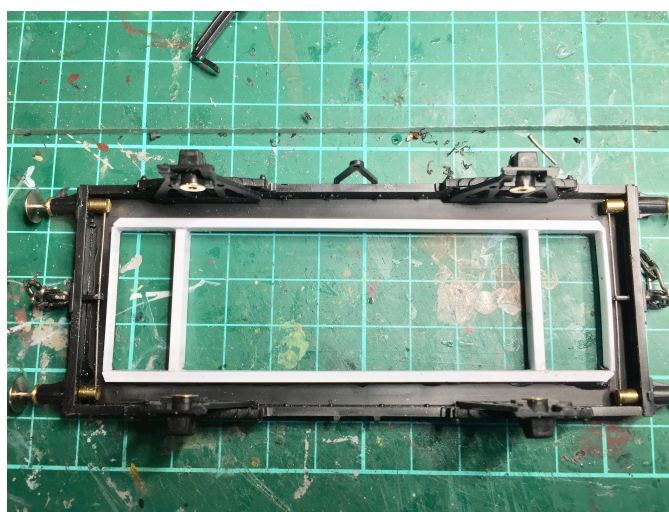
In most cases some sections of angle is employed on the inside of the deck to protect and support the hopper and small uprights are placed to form a guide to centralise the hopper when being lowered to the frame. All of these pieces are made from various sizes of Evergreen shapes.

The brake gear is fitted as per the kit as the prototype hoppers only had a hand brake on one

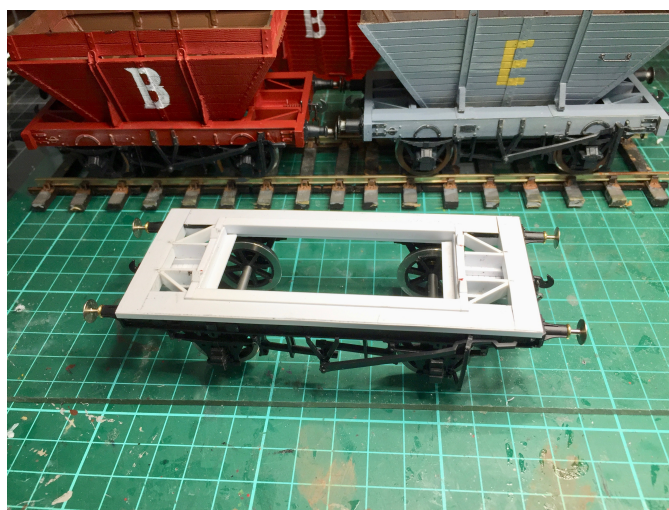
side and thats all you need. Buffers and three links are fitted as per the instructions, although it is up to you whether you fit the buffers provided or seek something more to the prototype you are modelling.

Once you are happy with the chassis it is time to paint it. The colour is up to you of course, but in the case of the Slaters with the wheels already in place I cut strips of masking tape 3mm wide and roll them around the surface of the tyre. I also paint some masking fluid onto the face of the flange. I have found that spray painting the chassis is straight forward and when dry simply peel off the masking material.

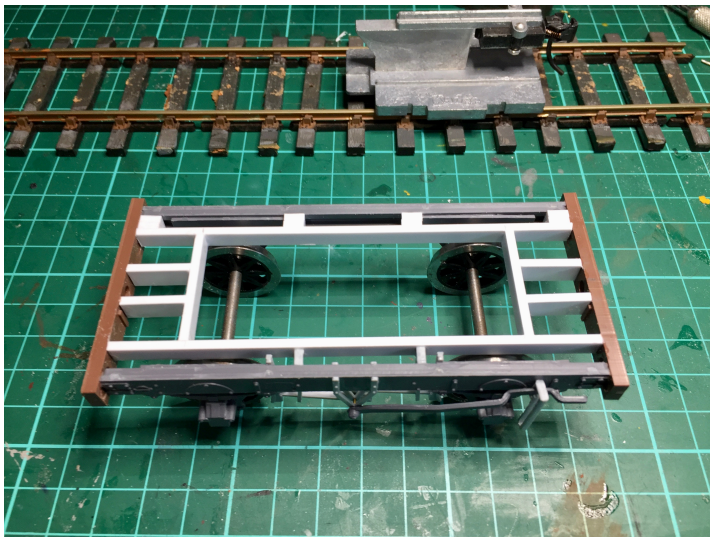
Put the chassis aside, but not too far away as you will need it as reference to ensure the hopper fits where it should.



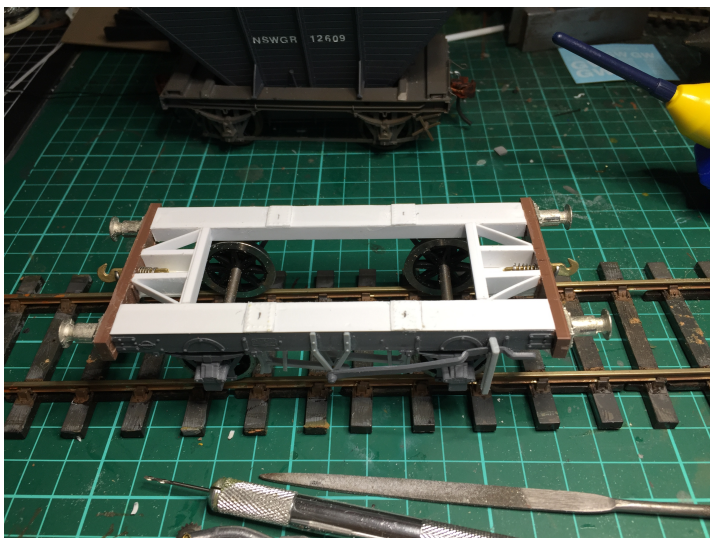
*Peco steel framed chassis partly finished and finished.*







*Slaters timber framed chassis partly finished and finished*



## Hoppers.

The hoppers are made from Evergreen scribed sheeting (2125), in the case of timber I laminate two pieces back to back of 0.5mm thickness. This provides a planked appearance inside and out which makes the sides 1mm thick and provides for a plank of approximately 5.5 inches. ( less than most prototypes, but acceptable) For a steel hopper you only need one piece of plain sheet 1mm thick, much simpler. For the large LL class hopper, the size I used is 112mm for the long top, 50mm for the bottom length, with a height of 51mm. The ends are 50 x 14x by 56 high. If you are going to make the smaller capacity wagon I think it would simply be a case of reducing the height by a couple of planks which would give the impression of a smaller wagon. You can always add a hungry board or two to give more variety. In fact this is my next wagon build. Once glued together this gives you the basic hopper body. However you will also notice that I add a rectangular box to the bottom, which allows me to hide lead inside a false bottom.

If you look at the hopper from the side you will notice that the release mechanism is visible, so the box

gives the ideal area on which to place these parts later on. The box is made by placing the false bottom on first. It should be approximately 50mm x 15mm x 1mm. Then using Evergreen strip (1210 ) 5mm x 1mm thick, make the box, but before sealing the bottom add as much lead flashing as you can fit, secured with epoxy.

All of these hoppers have angle iron bracing at the corners, both inside and out. I use 2mm angle (292). I cut lengths a little longer than needed, angle one end to make a neat fit at the bottom and then using a sharp scribe punch bolt heads along the length.

Two things to note. Use a piece of scrap at the angle of the hopper side as a guide to ensure your bolt heads line up with the planks. Secondly make sure you punch the right or reverse side so the bumps appear on the outside when installed. I use my cutting board to hold the piece while I punch it and the edge of the board to do the inside pieces.

All the hoppers of timber construction have bracing strips running up the centre, both inside and out, I use 3.2 x .25mm (106), and punch two bolt heads in line with each plank before glueing in place. Again I make these pieces longer than needed, and trim and file clean after the glue has set.

Now depending on the prototype you are modelling you will find extra bracing on the sides and ends. You can achieve this using either angle or in some cases channel. All have to be punched for bolt detail. They are also repeated inside as well as out. A note here is that using channel you can extend the piece above the height of the side and drill and trim the lifting ring before you glue the piece in place.

In the case of the diagonal lifting ring support as seen on some models I simply used strips of 1.5mm x .5mm (123), punched my bolt heads glued inside and out, and once dried trimmed and filed clean, I drilled a hole between the planks at the same angle and using super glue fitted eyelets (which are easy to obtain from Spotlight stores).

The hoppers have side supports made from a piece of plate steel in the shape of a triangle and these are usually bolted to the side strapping. The angle is a bit of trial and error for each hopper. Place the hopper onto the chassis and work out a height and width to suit the application. The bottom measurement will depend on the finished width of your chassis side beams and where the hopper sits in relation to this.

Make one and trial fit then when happy make another three. If you are making a few of these wagons it would pay to make a note of the figures to use next time.

Although the angle is bonded to the side strapping the piece will need a strip to form a foot running along the length of the bottom. Glueing these pieces requires care as you need to ensure the hopper is sitting square in the chassis and then carefully apply



glue to each piece and fit them while checking each one and that the hopper is still sitting square.

The release mechanism is a complex set of rods and levers with supporting braces and hinges. I tend to add as much as I can and the best example of this is shown in the photos attached. As you can see it is all made from Evergreen rod and strips. However you may also decide to simplify the arrangement by adding a token number of rods, handles and supports. This will also work when viewed from the side. The best idea is to study some of the photos in the books mentioned in the bibliography and choose a path to suit your requirements.

With the hopper body complete it is time to paint. This is a straight forward case of spray painting. I paint the inside with a dirty brown, misted over with flat black, then turn it over and apply the outside colour.

The only remaining thing to do is apply decals, which again will depend on the prototype you are modelling. In my case I ordered some white and yellow letters and numbers from Walthers in the US, which covered the smaller applications. However the large letters appearing on most wagons scale out at 3 feet or 21mm in scale. I was not able to find any decals this large, so I made some templates of the letters, penciled in an outline and then hand painted the letter on to the body. I am aware that this sounds difficult but once you have an outline and considering that the letter covers a lot of complex detail I think you will find that it works out better than you first think.

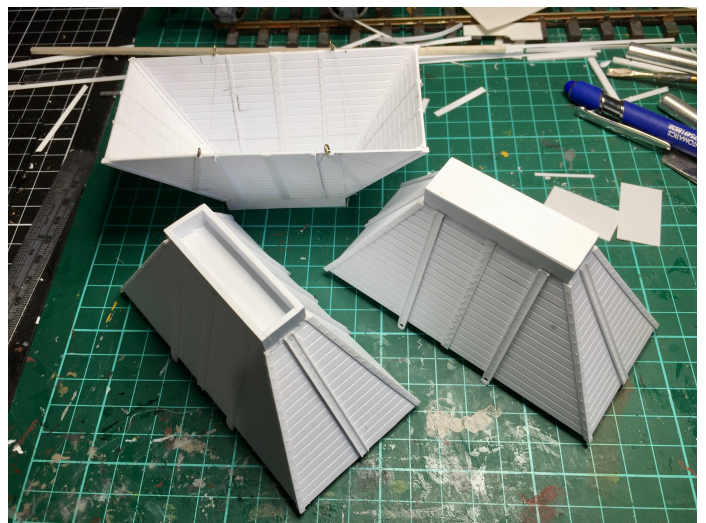
I mentioned that for the third Browns hopper, class L in the photos I purchased an O Aust hopper kit, thinking that it would add some variety to the fleet. Unfortunately when I attempted to build the cast white metal chassis, I found that it wasn't square and that the journals were of different sizes.

Although I attempted to cut, re-drill and generally rescue the chassis, I found that it simply wasn't good enough to use. Consequently I had to discard the chassis, and replace it with a Slaters timber framed replacement. This solved the problem and the build went along well, the only other thing I decided to do was to hide the thickness of the hopper body by adding hungry boards of 1mm thickness, which I think improved the final build. In the end the wagon does add variety. Unfortunately I had to spend more money in order to complete what I believe to be a poorly presented kit.

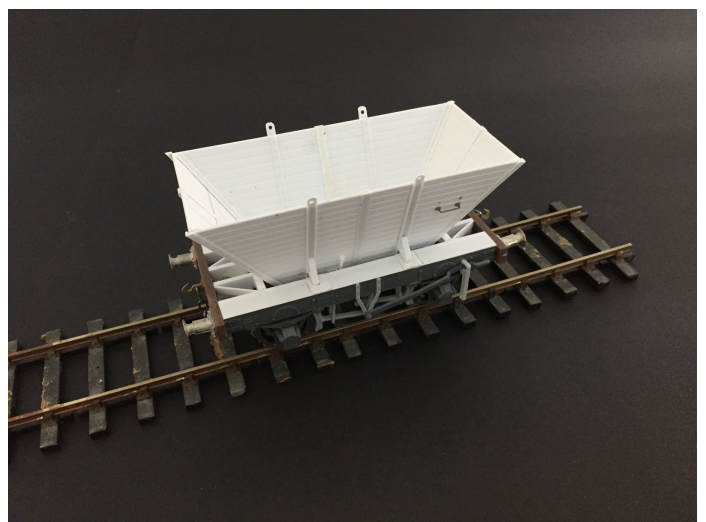
Last thing to do is apply some weathering. This is of course a personal thing, and again if you study available photos you will not that the condition of the wagons differed extremely with faded and peeling paint, dirt, and rust.



*A finished unpainted hopper.*



*Three hoppers at different stages. Note false bottom*



*Finished hopper with chassis.*

Well that's about it, I hope that this article goes some way to inspiring some of you to build at least one wagon.

Happy modelling

Michael.





## *Fitting Knuckle Couplers to the Minerva Manning Wardle*

*Trevor Hodges*

I've had a need for a small dockside shunting locomotive on Morpeth for almost as long as I've been building modules and layouts based on the line. I knew from the start that I was going to include a small pier or dock on any layout I eventually built of the line, so I knew I'd need a locomotive to push wagons about on it. I wanted this to be a small "industrial" steam locomotive and preferably one that ran on the Morpeth line or some other NSW pier. When I was in the UK in 2003 I purchased a kit for a Manning Wardle from which I built my model of Pioneer, an 0-6-0 MW that was used on the line in the 19<sup>th</sup> century. The problem was that this model always ran like lumpy porridge, even after I completely rebuilt the chassis a few years ago and for this reason I recently started casting around for a stand-in while I decided what to do about Pioneer.

I purchased one of Ixion's Hudswell Clarke 0-6-0's a couple of years ago intending to use this locomotive as a stand in for Pioneer. One of these locomotives ran onto the Wallarah Coal Company's pier at Catherine Hill Bay on the NSW Central Coast which is only about 60km from Morpeth, so I felt this would be an eminently suitable stand in. However the model I purchased, while a beautiful runner, needed a DCC decoder installed before it could be pressed into service on Morpeth's pier. I made the mistake of taking a look at what my decoder options might be on the ModelOKits stand at the most recent Aus7 Modellers Group Forum when I happened upon a Minerva r-t-r Manning Wardle (Photo 1) which came with a decoder already installed.



I blew the cobwebs out of my wallet and purchased one of these lovely little locos and when I got it home admired it as it ran back and forth on Morpeth's Pier. It comes with a Zimmo decoder with pre-loaded sound and a sugar cube speaker that produces a very acceptable volume level. So having started out with the intention of purchasing a decoder worth less than \$200 I walked away with another loco which cost well over \$700!

Now all I needed to do was install some KD couplers and the new Manning Wardle would be ready to enter service. The loco comes supplied with 3 link couplers and a couple of years ago these would have been more than satisfactory. However, having recently installed KD couplers on all my locos and rolling stock, I needed to have KD couplers on this loco if it was going to be of any use in its new role. I started by using the new Aus7 Modellers Group Information Sheet #2 (available from the web site) to check how high the top of the coupler box needed to be to allow the

installation of KD couplers and this turned out to be just over 22mm above rail head. As you can see, this ended up landing about in the middle of the buffer beam (Photo 2). I used my height gauge to mark a line on the front buffer beam and cut a slot in the beam with a Dremel motor tool cut off wheel. This part of installing couplers was going to be relatively easy as there was space behind the beam for the coupler box of a KD #743. I cleaned up the slot with files and then glued in place a 2.5cm long piece of brass angle (Photo 3) on the rear face of the buffer beam to allow me to bolt the coupler in place. There is just enough room for the coupler and box in this location and I was able to get the coupler to the required height relatively easily.

Fitting a coupler to the rear of the locomotive was a much more involved process. To get as much weight into the locomotive as possible Minerva has made the majority of this loco (including the buffer beams) from a cast metal that looks similar to the type of alloy cast model cars are made from. Everything that is



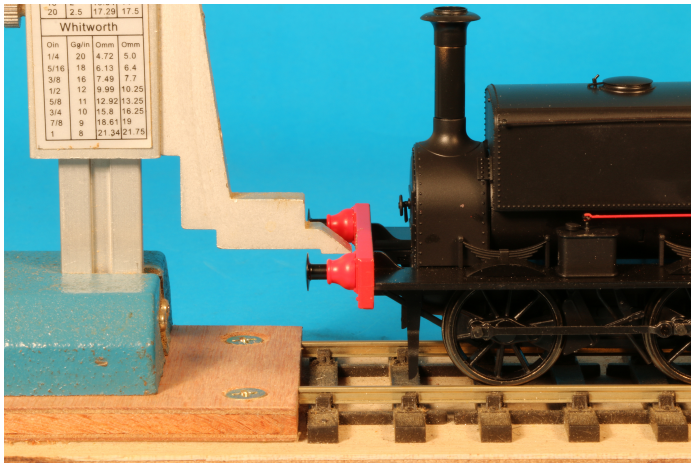


Photo 2

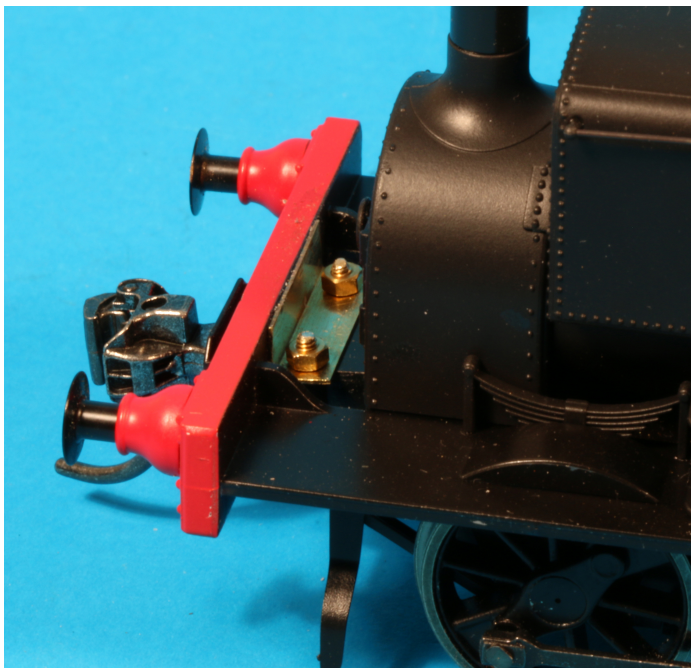


Photo 3

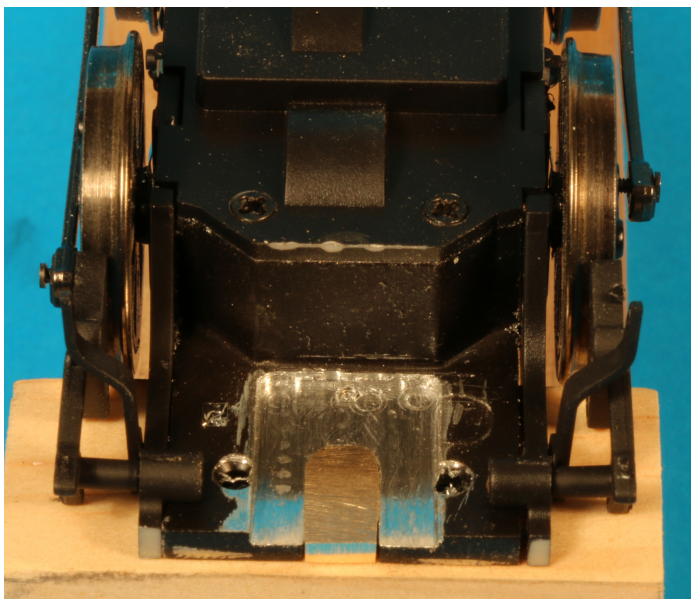


Photo 4

structural is cast from this material and as such you need to cut into the solid chassis casting and the buffer beam to get the coupler high enough. Even with a #747 underset coupler I really should have gouged out about 2mm of material to bring the coupler up to height. Using my small Seig mill I milled out about 1mm from the underside of the chassis casting (Photo 4) and about .7mm from the underside of the buffer beam. I could have removed more material from the chassis casting but this would have meant securing the coupler to the body casting leading to screws coming up through the floor of the cab: an outcome I was trying to avoid. Unhelpfully the casting includes a pocket cast in place that accommodates the factory fitted 3 link coupler which I'd removed at the start of this installation. This pocket was located exactly where I needed to place one of the retaining screws for the KD coupler, so I filled this gap with a piece of brass milled and filed to size. You may just be able to see this brass in the photo which I glued in place with some epoxy. I probably could have soldered the brass in place but this would have required me to completely disassemble the chassis, removing the wheels, motor and decoder to allow me to get enough heat into the casting to allow the solder to take a hold. I'd bought this "r-t-r" loco as a quick fix to a problem that had been caused by a loco I'd pulled apart several times as I tried to get it to run well so pulling this beautifully runner's chassis apart wasn't going to happen!

To get the hole positions located for the screws I planned to use to retain the rear coupler I employed some transfer punches I purchased recently (Photo 5) for another job I'm carrying out as I build my Century Models 50 class. These are a set of parallel pieces of hardened steel with a small, sharp tip turned into their ends and can be purchased in either metric or imperial measurements. The ones I have are metric. You simply select the one nearest to the size of the hole you wish to match in the material you're going to drill the hole in for a bolt or screw and give the punch a light tap with a small hammer. In this case the hole was 1.6mm so I selected the 1.5mm punch (they come in .5mm increments) and tapped a center mark for the two screws. I picked these punches up for less than \$50 at McJings in Sydney.

Even after milling the pocket for the coupler and using an underset KD the coupler was still about 1.5mm too low (photo 6) but when I ran it up to a wagon it coupled up fine and the difference in height wasn't as apparent as I feared it was going to be. It will certainly work ok on the short runs with only two or three wagons it will make out and back to the pier and if it becomes a problem I can always mill out a little more material to raise the coupler a little higher. I fired up the Alps printer



and christened this new addition to the Morpeth roster as the Hunter River Steamship Co's No 4 (Photo 7).

Finally, if you're wondering why I didn't consider using a match wagon to allow me to avoid installing knuckle couplers onto a Manning Wardle the answer is that I would have needed a match wagon at both ends of the loco for this to work. The total length of the Manning Wardle and two S wagons would be something similar to a 19 class and tender. Like everyone else I know with a layout in this scale I have a minimum amount of length on my sidings and head shunts, so having a shunting locomotive running around with wagons hanging off both ends simply wouldn't have worked operationally.

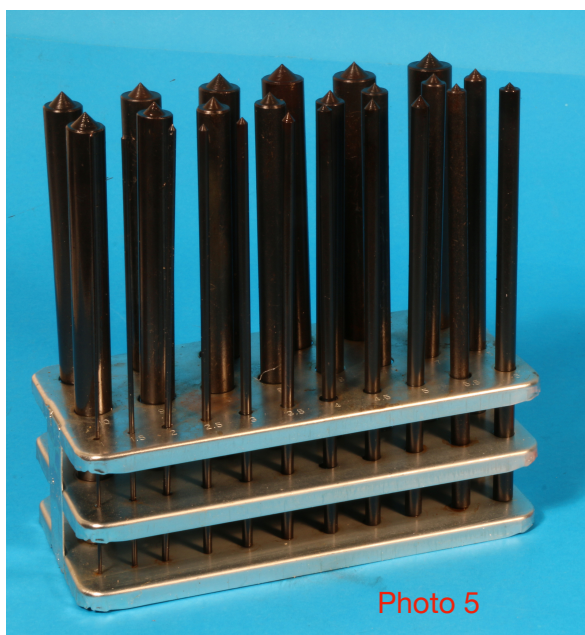


Photo 5

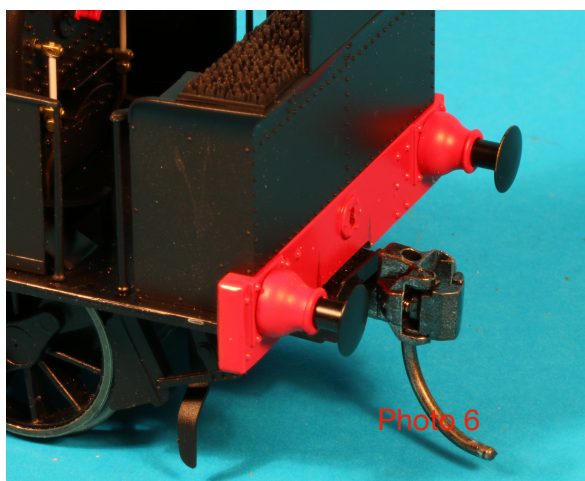


Photo 6



Photo 7





# THE MODEL COMPANY



## PAVEMENT ROLLER

STEPHEN REYNOLDS

Like all the Model Company kits this proved to be an excellent kit and a fun build. The instructions are very comprehensive and with the exploded drawings it really is hard to go wrong. A white metal and brass kit, it is a small model, only 6 cm x 4 cm

As suggested in the instructions if you have doubts about your soldering abilities then best to use glue! I used a cheap brand of Super Glue. I find it just as good as the more expensive brands.

### Assembly.

Clean up part lines and drill all dimples unless noted in instructions. Also file matching faces for a seamless fit, then wash and dry.

Once dry I departed from instructions and painted all parts. Undercoated first, with as usual the cheap undercoat grey.

Careful observation of the photos will show that the parts are resting on a screen. This is an old photo frame with flyscreen attached to it. For small detailed parts this has worked well when painting them. It holds them in place, they don't go anywhere and if your patient enough you can let the part dry or if your impatient like me, you can bounce the screen and most times the part will roll over and you can paint the other side. Once dry a top coat of Tamiya *Brilliant Orange* also from a rattle can.

Even after submerging the can in hot water for about 10 minutes, the Tamiya Orange produces a very thick coat. Under normal circumstances this would have been disappointing but as I was going to heavily weather the model, it was not a problem.

The rest of the assembly was as per the instruction. The only improvement was to the seat. I covered it with a single layer of a used tea bag attached with



PVA. This seemed to work well, it added texture and looked much more convincing than the metal seat provided. I painted it with acrylic tube paint, *Lamp Black* then gave it a dusting of talcum powder.

The model was now finished and reached the final stage of weathering. It was given several washes of alcohol and India ink. As I never measure any amounts the ink was too strong with the model appearing too dark.

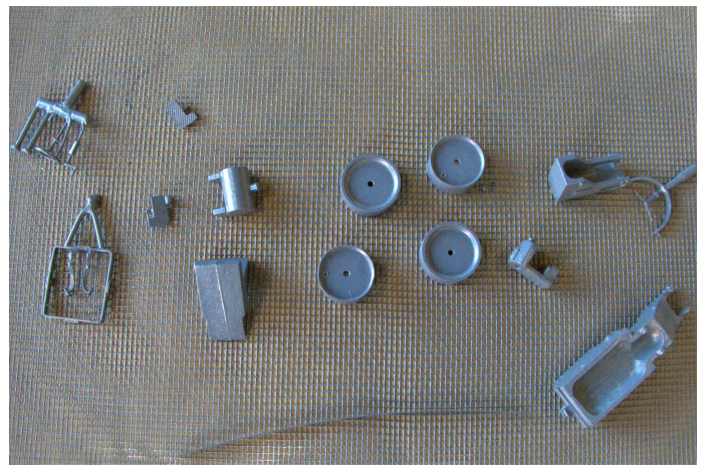
Then anywhere where rust would occur I painted various hues of acrylic paint in rust shades.

I tried to distress the paintwork with the point of a tooth pick and other sharper instruments but always keep in mind less is more. Then I went over these scratches with rust shades of acrylic paint.

As stated once finished the model was too dark so I set out to remedy this by using a paint brush loaded with alcohol. Working with downwards strokes and rubbing the brush on a paper towel, I slowly lightened the overall appearance.

Dirt and sand was pushed and mounded into the corners of the floor and fixed with PVA glue, where the operator's boots would drop dirt.

Operating levers and knobs were picked out in red so they would stand out as was the terminals on the battery which can just be seen under the bonnet.



Several washes of MIG wet mud diluted with white sprits were washed over the entire body to tone everything in.

That is about it. I still think it is a bit too dark but looks much better than just out of the paint shop.





# CARLINGFIELD Station Officer's House

Jim Longworth



*The completed Station Officer's House sitting in its intended position on the layout beside the station yard throat at the outer extremity of the station yard. The back view invites more interest with triangular verandah frieze, brick chimney stacks, outdoor Closet, two open doors, and Wash House opening.*

Many myths surround the NSW government railways. Myths distort, they combine partial truth and partial fiction. One myth concerns the issue of so-called Standard Plans for buildings. Railway 'Standard Plans' seem to have usually been drawn from pre-existing designs and practices. After being issued the plans were ignored as oft as followed. Another myth concerns allocation of different residential house designs according to the organisational posi-

tion of the intended occupant. While this was often the case; one design was sometimes allocated to various classifications of staff, and a single classification of staff might be housed in differently designed residences.

Unlike private houses which traditionally face the public road; railway residences associated with stations traditionally faced towards the station. Usually they were located inside the linear corridor of railway

land, so were often quite close to the track/s.

I find modifying a proprietary kit much easier than building from scratch. The three tracks on my small branchline terminus layout converge into one track at the end of the station yard as the line heads off to an imaginary junction with a mainline. This created a large sort of triangular space begging to be filled with something. As the space was to be on the viewer's side of the layout the single track could pass behind whatever was chosen. An obvious solution would be a staff residence sitting inside the corridor fence beside the line, facing, not the road; but, the station yard.

Layout of the Model O Kits house is based on a variant of the government railway's 'J.2 House'. The design's official title was for a 'Station Officer'; not a 'Station Master'. The 'L' shaped floor plan with a gable roof over the front four rooms and skillion roof over the kitchen and bathroom at the rear is thought to have been introduced during 1889 (see railway drawing below). Despite being called a 'House'; the residence would have been better described as a 'cottage'. Cottages were characterised by being relatively small and occupied by people towards the lower end of the socio-economic scale. Being built of weatherboard and galvanised corrugated iron the prototype was doubtless intended for a rural; not a suburban, location.

Architectural stylistic features of the model include:

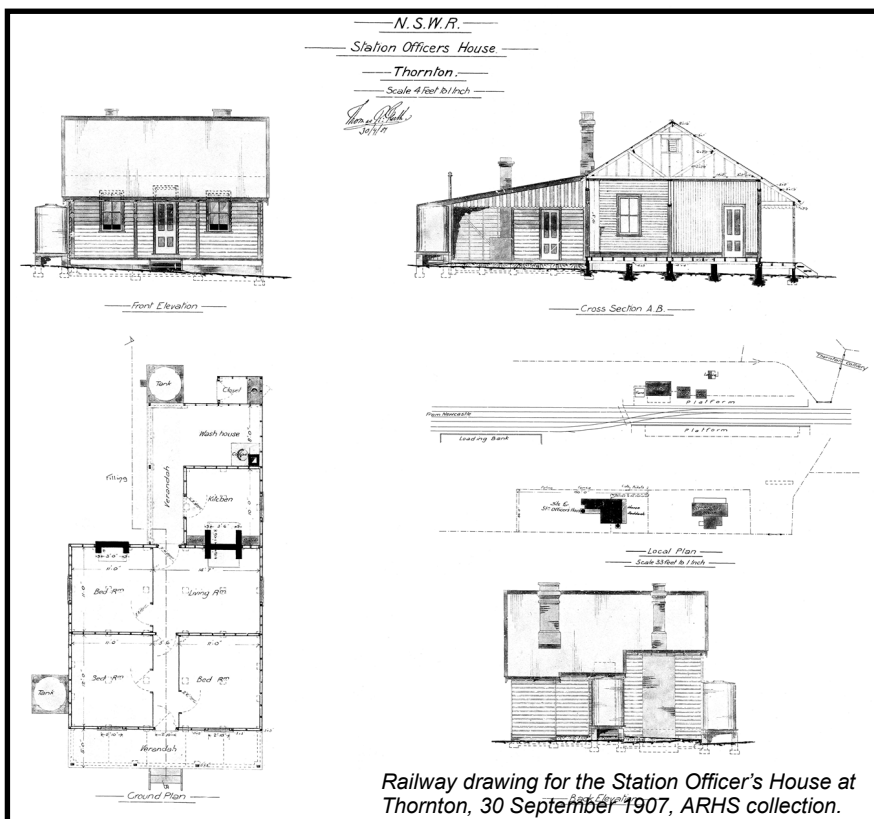
Overall narrowness at less than 27ft wide; with rooms only 11ft wide;

Weatherboard construction, probably intended to represent 7in wide rusticated boarding.

A transverse gable roof; with the front in a single plane with the front verandah tucked in underneath without breaking the pitch; raking set at a medium pitch; and left unadorned. Because gable roofs have simpler geometry they are cheaper to construct than hipped roofs. Galvanised corrugated iron roof sheeting was cheaper to transport, required less roofing timber to support it, and was cheaper to lay than slate or tile. It also held lower perceived status;

Symmetrical front fenestration; and absence of any decorative valance along the front verandah beam between the verandah posts;

No ornamentation applied to the side bargeboards;



*Railway drawing for the Station Officer's House at Thornton, 30 September 1907, ARHS collection.*

Minimal ornamentation of vertical 'V' jointed boards without any inter-board cutout detailing, and only plain serrated bottoms, for the triangular ends of the front verandah and back verandah fascias. Some railway drawings for this type of residence indicated that alternate vertical boards were to be painted alternating different colours;

Central front entry leading into a central hallway;

Solid timber framed four panel doors; with the lower panels being much shorter than the upper panels;

Low brick chimneys placed at the rear of the transverse ridge line which were barely visible from the front of the house, and absence of terra cotta chimney pots emphasised the building's modesty. Ornamentation is restricted to simple rings of corbeled brick courses which were rendered over;

Window hoods to reduce direct sunlight from entering the building. Railway construction drawings for this type of residence specified that: *'Hoods to be placed on all windows on Western side of Building'*;

Rainwater storage tanks. Railway construction drawings for this type of residence specified that: *'Tanks to be placed on Eastern side of Building'*;

Screened porch roofs over the rainwater storage tanks to reduce warming of the tanks and consequentially their precious stored potable water;

Small door at floor level through the rear wall of the Closet to allow the toilet pan to be removed for emptying and replacing with an empty pan. Round metal vent stack rising from under the boxed-in toilet seat, exiting through the side wall, and rising well up to disperse gasses and unpleasant odours away. Exiting through the wall avoided the need to waterproof around any roof penetration.

The Model O Kit for the Station Officer's House consists of laser cut pieces of thick cardboard set within a surrounding back sheet. The material is a joy to work with as if working with thin wood; but without any grain to work against. A very thin razor sawblade was inserted into the laser cuts and cut through the tiny remnant connecting tabs. Stubs of tags were

smoothed over with a small file. Scrap cut-outs provided ready-made wall stiffeners and right-angular brackets for reinforcing wall corners. A couple of parts were notably malformed. One part was missing. Sometimes the kit's written instructions contradict the illustrations; so assemblers need to be thinking a few stages ahead of their actual stage in construction. To enhance stiffness I replaced the cardboard front verandah and Wash House fascia boards with pieces of strip wood. [The front and back verandah vertical posts should have been replaced likewise too.]

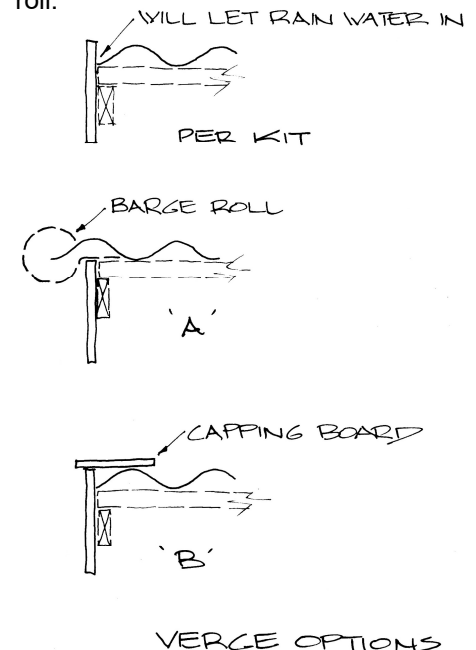
As I wanted the building to sit up off the ground on low timber stumps, rather than on a screen of horizontal slats as in the kit, 12mm was cut off the bottom portions of the wall sections. 12mm was set by the height of the kit's front verandah decking supports. The baseplate was thus raised up off the ground to become the floor for inside the building, while still providing a wonderfully flat and square base on which to build. The bottom of the Bed Room chimney was retained because the brickwork needs to sit on the ground below. Baseplate portions for the rainwater covers (x2), outside toilet 'Closet', and front steps were cut off for the same reason. The front verandah baseplate was retained with the intention of covering it with a veneer of very thin real wood boards [It should have been painted grey so it would disappear between any gaps between the covering boards]. Handrails and 'X' panels were omitted for visual clarity. Timber front and back steps were fabricated from wooden paddle pop sticks. Building 7mm scale external timber steps to Australian Standard AS 1657 (2018) / Building Code of Australia (BCA) is no easy task!

The side Stringers were painted, and the horizontal Treads stained. Timber building stumps were 12mm lengths of c.8mm diameter balsa dowel, stained grey. [No, white-ant caps were not installed.] Stumps (x46) were set out on a roughly square grid derived from railway construction drawings for this type of residence, and spaced closer together where supporting the concrete flooring of the back verandah and Wash House. Because the 'Closet' was to sit on the ground a separate concrete floor with a small external pad was provided.

An internal wall, made from scrap card, was inserted between the Kitchen and Living Room because the Kitchen door was to be left ajar. Likewise two internal walls were inserted around the back Bed Room because the room's sash window was left open

for viewers to peek inside the structure. An internal bedroom-hall door was left white for effect. Otherwise internal dividing walls were not installed because the building was not intended to be lit internally. [Omitting the internal walling was probably a mistake]. The Closet door was also modelled in the partially open position, inviting viewers to try and peer inside. [No, the wooden toilet box was not modelled.] That meant a 12mm high strip of walling was required along the Closet's shared wall to close off the sub-floor space underneath the Wash House concrete floor.

Corrugated galvanised iron sheeting came in a range of lengths, eg, 6ft; 8ft; 10ft; 12ft; 14ft, but was commonly 3ft wide. The sheet of corrugated plastic for the roof as supplied, was cut into horizontal strips 72mm wide (to represent 10ft long sheets and provide some down-grade overlap). Cutting the strips into 21mm (to represent 3ft wide sheets) was deemed unnecessary. [In hindsight the joins would have probably improved the roof's visual texture.] A length of the angular frame surrounding the sheet as supplied, provided a suitable profile for reusing as the ridge-capping. The junction between the side bargeboards and roof sheeting as provided for in the kit (see Verge Options), needs modifying to prevent water running down the inside of the bargeboards. Either the roof sheeting needs to be extended laterally out to cover the top edges of the boards (Option 'A'), which was usually finished by enclosing the outer edge of the roof sheeting within a Barge Roll. Alternatively, Barge Capping Boards need to be added covering the side edges of the roofing material and top edges of the boards (Option 'B'). I chose Option 'A'; but without the barge roll.

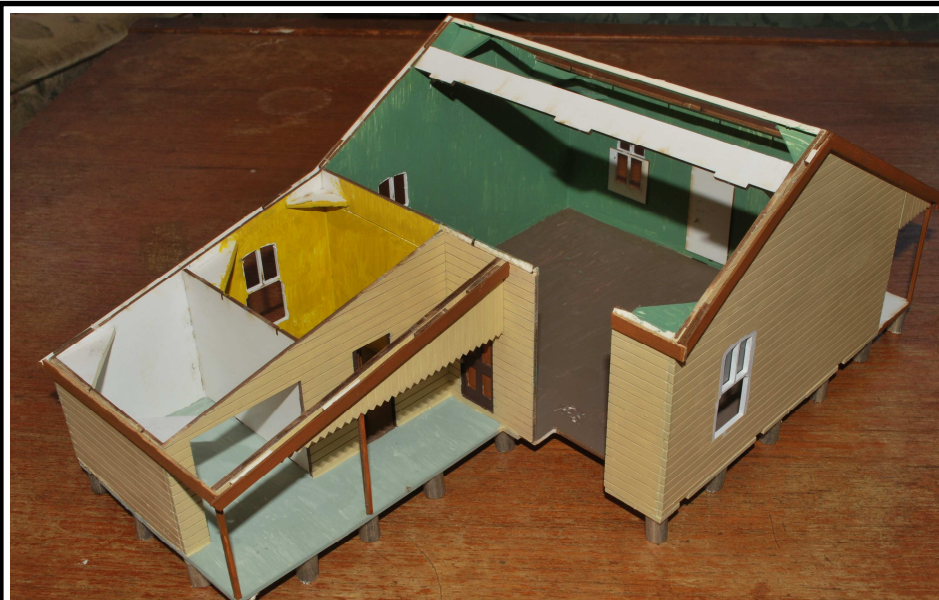




Returning the horizontal joints between the weatherboards around the corners across the thickness of the cardboard walling was a tricky; but essential chore, though ultimately a visual failure. [Suggested resolutions to this problem with laser cut kits for buildings are welcome! One option might be to incorporate a vertical square timber corner bead or boxed corner.] The circular water tank with a conical top, as supplied, was replaced with two larger capacity ones with flat tops. The two intended tank protective awnings were omitted [because I don't remember seeing them on railway houses]. Because the tank stands are highly visible, geometrically interesting, and iconic country structures the kit cardboard ones were replaced with stands made from strip wood. Only one window hood (sometimes called a window eyebrow) was installed and that was repositioned onto what would be the viewing side of the building. While being un-prototypical, locating both window hood (notionally from the western side) and tanks (notionally from the eastern side) onto the same side of the building enhanced visual interest. The underside top rear arris of the hood roof was chamfered off so that visually the hood roof would sit flush against the walling. Barge boards were generally set out from their walling 3mm to create eaves to enhance 3-dimensionality.

The kit does not provide either air vents in the two attic gables nor along the walls just below ceiling height. I didn't bother to design, fabricate, and install them either; [but regret not installing the attic ones – maybe one day]. Window glazing was stuck to the inside of the walls using dabs of Tamiya acrylic paint. Door knobs were made from bead-headed sewing pins.

According to the kit instructions, posts for the rainwater tank stands are to be cut so that the tanks sit at an angle off the vertical – I don't know why. Rain water tank stands were made from strip wood to suit the dimensions of the two replacement tanks, and stained grey. Guttering was represented by Evergreen scale models  $\frac{5}{32}$ in 'I' channel and downpipes by  $\frac{1}{8}$ in diameter tubing. Both were painted 'Dark stone'. The Closet is not guttered and guttering across the back of the rear bedroom is absent and unresolved.



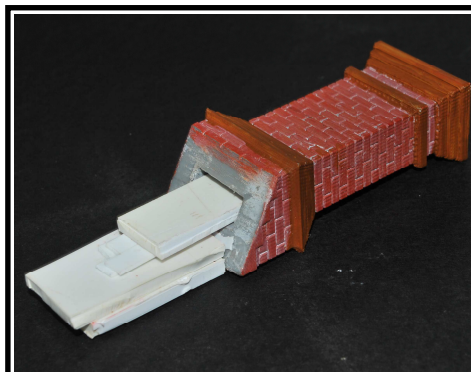
*Basic shell of the building using the base panel as the floor, after trimming to remove unwanted projections. Progress was pushed forward on many different components in parallel at the same time. While waiting for glue or paint to dry sub-assemblies can be progressed and added to the developing structure. Side barge boards have been set out c.3mm from their walls to impart a 3-dimensional character. Instead of the roof trusses as supplied, substantial cross bracing was installed between the gabled side walls. The bracing was also intended to provide solid supports for where the horizontal sheets of roofing would be overlapped, starting at the bottom and working upwards. The void in the back wall is for inserting the brick fireplace, while the sash window was modelled with the bottom sash in the raised open position to provide visual access into the structure. Internal walling with its different wall colouring is yet to be installed around the third Bed Room.*



*Smoothing away remnants of connecting tabs off pieces of the kit which are too small to be held by hand while filing, without filing away one's fingers.*

wall. The Closet stink pipe was made by sticking an 0 scale buffer shank into the end of a piece of  $\frac{5}{32}$ in diameter tube and painted flat black. (I wonder if stink pipes were so often painted black to heat up the air inside so causing it to rise so creating a forced draught?) Two stabilising rod stays were added. Chimney brickwork was primed, then painted with Humbrol 100 matt to represent local red-brown baked clay bricks, then given a light wash with Model Master water-based flat white and immediately wiped clean to imply cement mortared joints. Rendering on the chimneys was painted Medium Stone.

Chimneys are an attractive part of the building's roofscape. The kit provides three; but no stink vent for the Closet. The Wash House and third Bed Room chimneys sat nice and vertical; but not the Kitchen-Living Room one. Sitting on top of the roofing it would not stand vertical. My solution was to cut an opening through the roofsheet and insert the bottom of the chimney upright a bracket was fabricated from thick styrene sheet, with one end inserted upwards inside the chimney flue and the other end pointing downwards and glued to the Living Room



*Fabricated support bracket inserted into the Kitchen/Living Room chimney to be attached to the Living Room wall to keep the chimney vertical.*

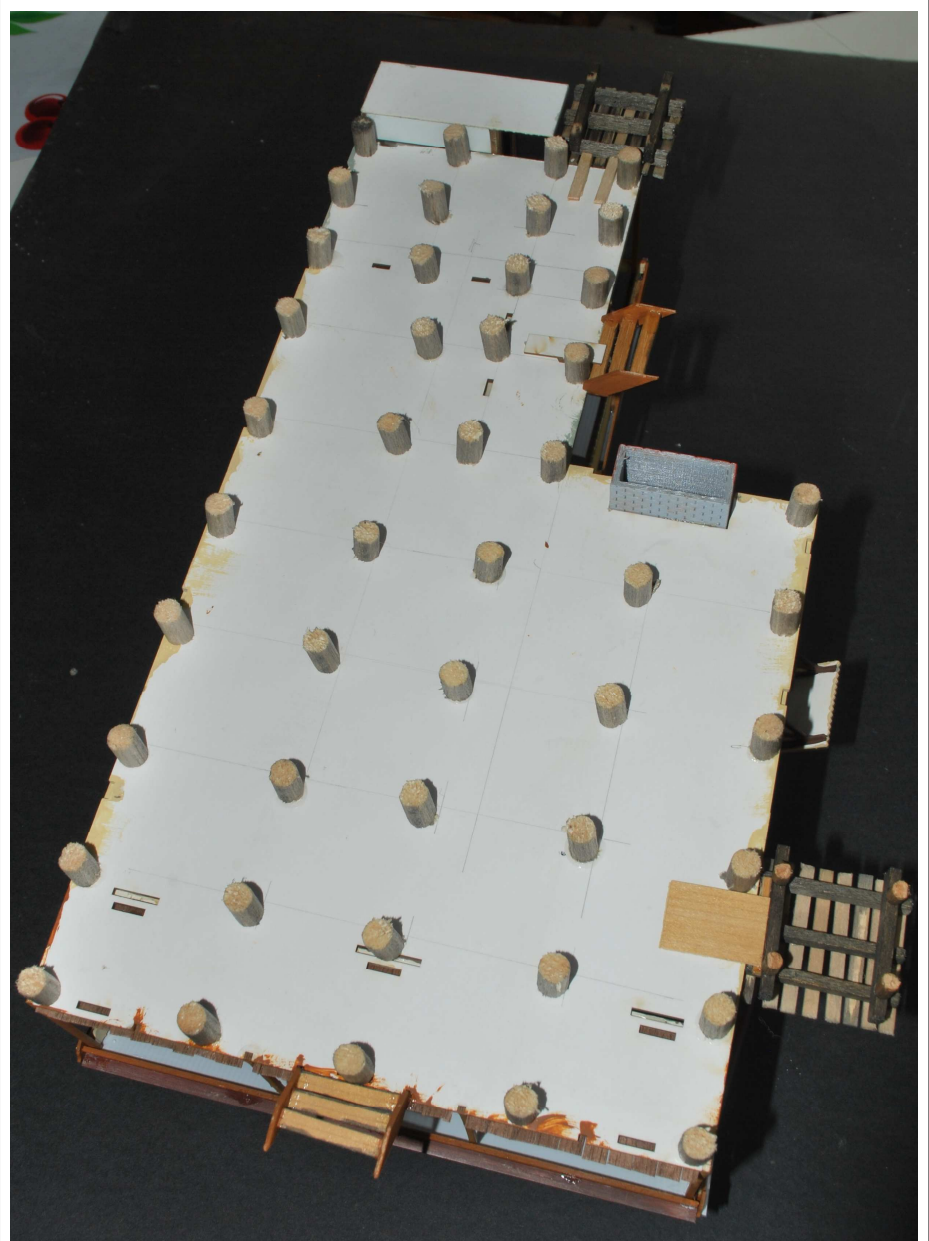


I should have painted a black square onto the angled corner of the washing tub hob to represent the fire hole through which sticks were fed to burn to heat the water in the copper above. [Perhaps the hole could be incorporated into the 3D printed structure?]

Painting the exterior was in NSW government railway so-called 'stone' colours,<sup>1</sup> of: 'Dark stone' (Tamiya XF-10) for trim; 'Medium stone' (Humbrol 62) for barge boards and door panels; 'Light stone' (Humbrol 71) for walling; and white for window frames. Flooring in the Wash House, Back Verandah, and Closet was painted with Tamiya XF-12, 'J.N. Grey', to represent concrete, including across the back and along the right hand side, around the Wash House, where the edge of the concrete slab is expressed at the base of the weatherboarding. Internal flooring was painted with Tamiya XF-52 'Flat Earth' to represent polished floor boards. Internal walling was painted with whatever colours were in my stock to represent the now distasteful colours of yester-years cottages. Corrugated iron roofing was painted with Tamiya Light Grey fine surface primer in a deliberately varying pattern and left without further over painting. Staining timber on steps and tank stands was with diluted black ink.

## References

1. McInerney J, 'Stone' Colour Schemes for NSWGR Buildings, *Branchline Modeller*, No.1, 1994.
2. Longworth J, While the Kettle Boils, *7th Heaven*, Autumn 2011; Longworth J, Praising Potential Peri-urban Prototypes, *7th Heaven*, Winter 2013; Longworth J, nd, 'UNDER CONSTRUCTION', *7th Heaven*, in prep.



*A not often photographed view showing the different dimensioned grids for stumping under the timber and concrete flooring. The base of the third Bed Room chimney and concrete floor of the Closet project downward to sit on the ground. Both tank stands and the rear steps were discretely secured to the main structure with strip wood or cardboard offcuts.*



'CARLINGFIELD' is my third 0 scale model railway to be built in our Family Room.<sup>2</sup>

*The SM's cottage has come on well,  
it's nearly ready for the staff to in dwell.  
The SM wants to move right in,  
so a family home he can begin.*

*As for the paint, it has a fresh smell  
Jim Longworth*

## Acknowledgments

Assistance from John Parker, and photography by Bob Gibbs is acknowledged and appreciated.



# The Coupling Adapter

Roger Porter

One of the more frustrating issues facing a railway modeller is deciding on which couplers to fit to locomotives and rolling stock. For those modelling in HO scale the decision is more or less already made because the industry has largely adopted the Kadee knuckle coupler as the default coupler, almost regardless of the type of coupler that may have been fitted to the prototype being modelled. But things are quite different for 7mm or "O Scale". In some cases the scope for running O Scale models is limited and some may be destined to remain in the display cabinet or on a mantelpiece where couplers are not an issue. This was the case with my own initial steps into 7mm modelling. At that time the decision was made to fit my models with whatever type of coupler was fitted to the prototype, be it auto knuckles, screw couplers, three link/hook or whatever as at that time appearance was more important than operational convenience. However it soon became apparent that difficulties were to be encountered in attempting to couple vehicles with mismatched couplers, but along with many others I thought that if the real railways lived with that issue then so could I.

As my stable of locomotives and rolling stock grew, more opportunities came to run the models, brought about by involvement in the Arakoola exhibition layout and later my own home layout. It was then that the limitations of my earlier decision to stick with prototypically correct couplers surfaced. The problem that seemed to crop up most often was when wanting to couple a car or wagon to a locomotive fitted with a rear or front draw hook. Certainly the transition links which can be fitted to knuckle couplers offer a partial solution but they are not without their own difficulties. In attempting to find a solution quite some hours were spent at the modelling bench fiddling with bits of wire, springs and the like while attempting to come up with a gadget that would enable a draw hook and knuckle to reliably couple even if that situation didn't occur in prototype practice.

After some false starts I came up with a device that I'll call the "coupling adapter". The following photographs show how it's made and how it works. The adapter has only been trialled on Waratah dummy knuckle couplers but with modification may also work on Kadee or Protocraft couplers as well.

The starting point is a Waratah dummy knuckle coupler that has had the shank sawn off as close to the coupler head as possible. Then drill a 0.8mm hole into the rear of the coupler head in the same position as the now removed shank. Form a loop from 0.8 brass wire and press the plain end into the 0.8mm hole and secure it with Loctite or ACC.

When forming the brass wire loop note the following

- a) For security against unwanted uncoupling it helps if the brass wire is a force fit in the hole. Deforming the wire may help achieve that.
- b) The eye of the loop should be slightly oval shaped to better fit over the draw hook.
- c) The eye of the loop should just pass a 0.8mm drill.
- d) The eye of the loop should be as close to the coupler head as possible.
- e) The wire hook should be bent downwards about 30 degrees.

Refer to photos 2,4 and 5.

When under tension the adapter works as expected, but what stops the wire loop from lifting off the draw hook under buffing or compression forces? By chance more than intent the 30 degree upward bend causes the wire loop to jam under the draw hook and prevents it from lifting off. Some more tweaking may be required to achieve reliable operation.

Finally when installing the adapter something must be done to prevent it from just falling through the jaws of the mating knuckle coupler and landing on the track below. Solder a scrap of sheet brass across the top of the jaws of the adapters knuckle. It's highlighted in blue in photo #3.

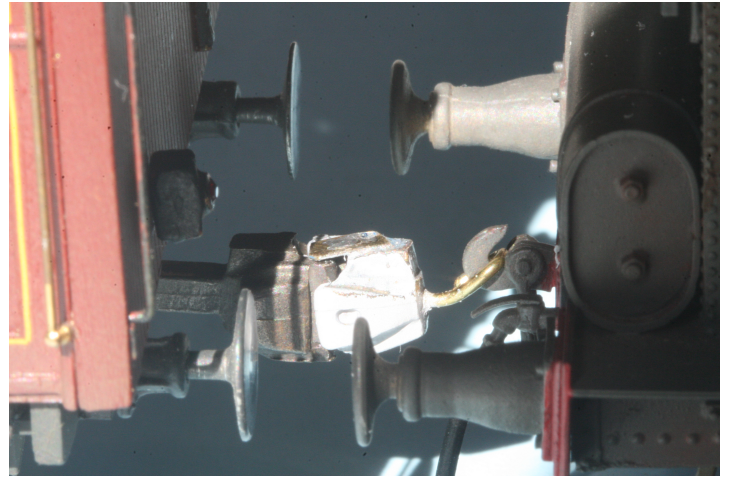
This exercise has shown that adhering to the correct scale couplers may not have been the best operational decision and I have now settled on the Waratah knuckle as my default regardless of the prototype because with the use of this adapter vehicles so fitted can be coupled to the draw hook fitted vehicles easily and reliably. Some cars and wagons have been converted along with a couple of locos. But there's a balance. I

don't think I'd feel right about fitting knuckles to a delicate 19 class or even the buffer beam on a 38 class and I definitely couldn't defile the the late John Brown's svelte R.O.D. loco with such a fitting.

In conclusion; recently 7mm activities have moved me from being a collector to a runner and increased freedom in coupling vehicles has greatly enhanced that. As someone wiser than me recently said "there comes a time when operational convenience overrides scale fidelity".



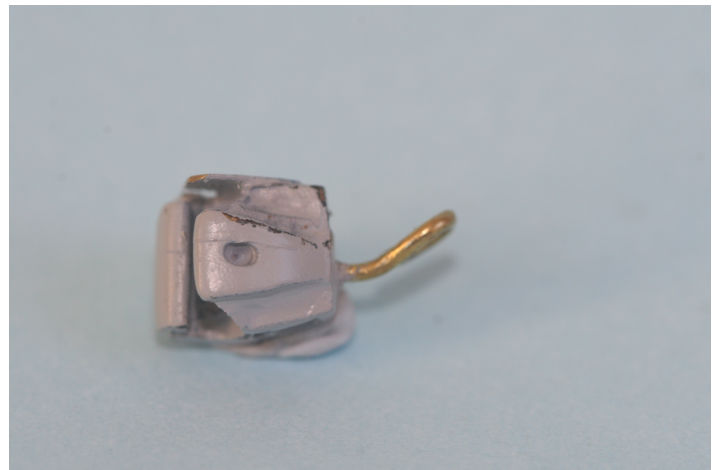
*Photo 1. Adapter coupled to KF wagon*



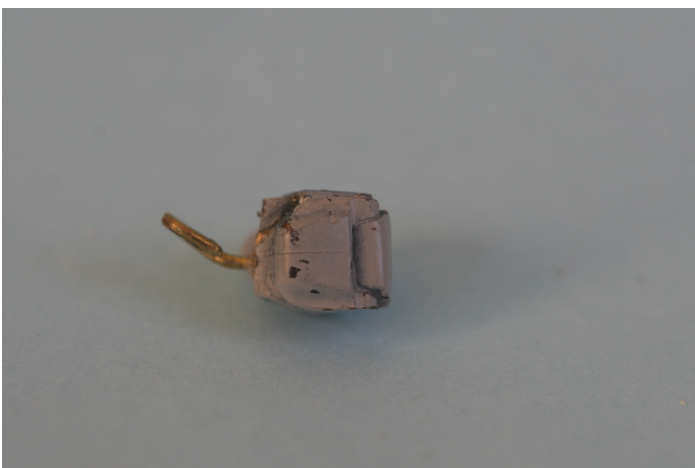
*Photo 2. Adapter coupled to 19 class tender and ACM car*



*Photo 3. Viewed from above. Note blue highlight.*



*Photo 4. Viewed from side. Note angle of wire loop.*



*Photo 5. Viewed from side. Note angle of wire loop.*



*Photo 6. Coupler on 19 class tender.*



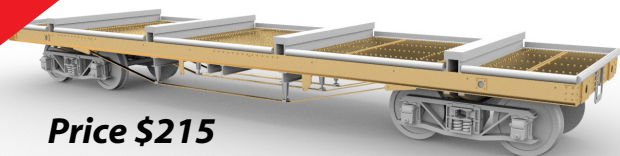


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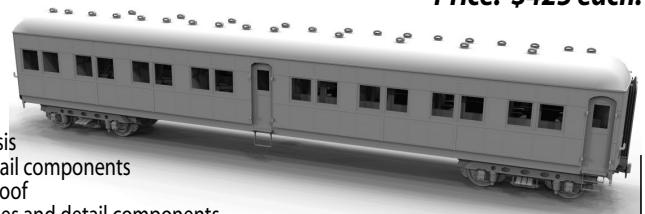


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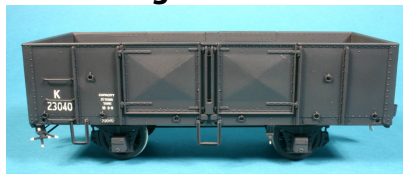
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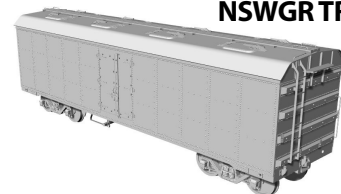
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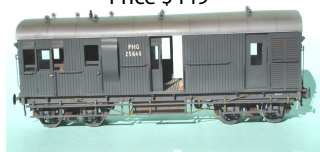
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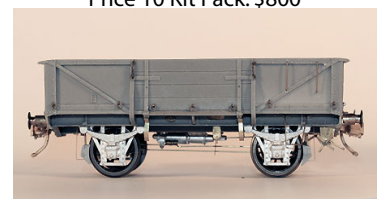
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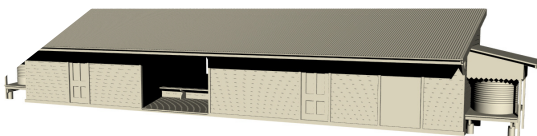


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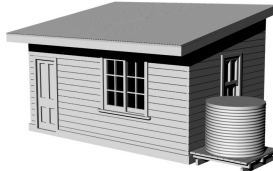
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Quality Laser Model Cut Kits with Plastic Details

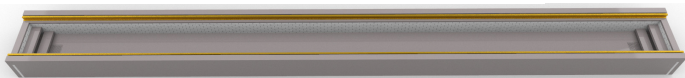
### NSWGR A4 Station Building Kit Price \$129



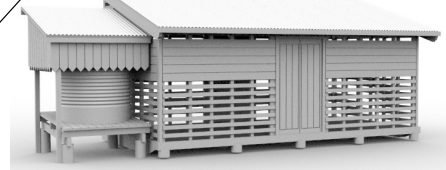
### NSWGR Timber Platform Signal Box Kit Price \$49



### NSWGR Inspection Pit Price \$20



### NSWGR Cream Shed Price \$65



**COMING  
SOON**

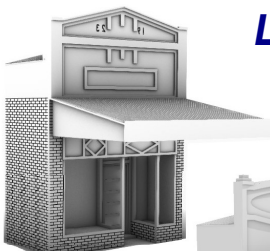
## Low-Relief Terrace Houses, Shops & Corner Shop Kits

Quality Laser Model Cut Kits with Plastic Details

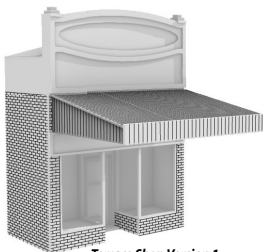
**Prices TBA**



Terrace Shop Version 2



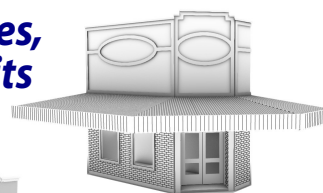
Terrace Shop Version 3



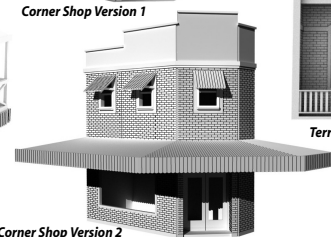
Terrace Shop Version 1



Corner Shop Version 3



Corner Shop Version 1



Corner Shop Version 2



Terrace House Version 1

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