

# 7th Heaven



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# Straight Down the Line - Opinion

by Lionel Pascoe

## A Different Perspective

Last year I again helped to man Arakoola at the AMRA 50th Anniversary Exhibition at Liverpool and drive trains using the NCE DCC radio cabs. This allows watching the trains from the front of the layout in amongst the viewers and enables adjusting the speed, direction, headlight, marker lights and horn etc. as the train moves through the layout, sometimes coming to a stop at the station for those passengers wanting to get on or off. Then you hit the whistle and start to take off. In O-7mm these engines are big and (once the engines characteristics have been entered) the DCC system gives really slow starts and upon clearing the platform we can see the side rods slowly turning over and as the train starts to pick up speed before passing from the scene.

I would often walk behind a photographer and stop to look at the camera screen. All too often I would see the valance at the front of the layout, then the whole layout with a small train in the middle moving through the scene, or something resembling an aerial shot taken from a helicopter looking down onto the scene. Imagine what it's like for an N scale layout! I asked them if they would like to put their cameras next to the valance to get a different shot, one that allows them to get down beside the track like in real life.

Well Arakoola allows that with a highly detailed scenic back board and when you are parallel to the tracks you are there right in the scene. The foreground, the trains and the buildings or scenes behind the train and then the receding scenery pictured on the back board give depth. What spoils most shots like this is layouts with hardly any back scene; or boards that are blue and don't allow the eye to look into a scene and then back to the trains. It's a view block not a back scene. So why not use this depth to get photos that capitalise on it rather than ignore it?

The next time you're at an exhibition and want to take a photo ask the operator if you can get down low and close and really get into the scene with the subject or use the zoom if behind the barcade. Be part of the scene and see the difference. It was surprising to hear comments from photographers who took the opportunity to stand beside the valance shooting into the scene. From toy to model in a shot. And with a big smile they departed to go back and take a picture of layouts they had already taken – from a different prospective. Go back and have a look at the cover shot. It's a perfect example of what I mean.

## Looked at the web site lately???

Our web site at <http://aus7modellersgroup.org> may contain more than you think. If you haven't had a look recently why not revisit. It might be especially timely to take a look at the index of past 7th Heavens and if you don't have complete collection send to our Treasurer Anthony Furniss for those you are missing. Issues prior to #15 are sold out and some others are down to only a few copies. When they are gone, they are gone. It is very unlikely there will be any reprints.

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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

This shot of Roger Porter's ballast train on Arakoola is a great example of the type of photo that Lionel Pascoe is talking about in his opinion piece. The editor would love to have some more examples from members to grace the cover or the Showcase page.

Photo by Maikha Ly

# LCL - More or Less Part 3

## Diorama Presentation

Stephen Reynolds



Photos by Gerry Hopkins MMR

As I have no layout to install the LCL on and I wanted to display it, I decided to construct a small diorama. One thing I learnt a long time ago is if you want your models to stand out you have to give them that WOW factor.

I wanted to add as much detail as I could so a good starting point was leaving both doors open, it gives a lived in look and more floor space to add detail. To gain access to the interior the roof was made removable. I also wanted to install a light to help illuminate the interior. At a little over 7ftx6ft3 inches in scale ft. it's not a very big object to catch someone's eye, so I decided to add a small lean-to off the side but still I wanted the model to be out-there even more.

I have often appreciated the way modellers in others codes sometimes use mirrors, turntables or a combination of both to display their models. So why not have the diorama on a rotating turntable so that all sides could be viewed? That would certainly sexy things up. A search on eBay for Display Turntables soon paid off. I sent \$26.00 to Hong Kong and within a matter of days the turntable was on my doorstep. The turntable diameter of 28 scale feet, gave me the boundaries for the diorama and allowed me to determine what could and could not be achieved in this small area.

As well as the internal light in the container I wanted to add a street light on a timber pole and also a

flickering light in a 44 Gal. drum as if there was a fire in it! The turntable itself was powered by it's own D cell battery but I needed to power the lights and the fire by using batteries as well. This eliminated the need to run a transformer and enabled the diorama to be self contained.

The method I used was very crude but it did the job. Both the internal light in the LCL and the street light were powered by a package of 10 rechargeable pencil batteries again sourced on eBay from Hong Kong. They are used to power remote control cars and this lot puts out 12 volts, enough to run the two 12 volt LED. All this was hidden by making a false bottom out of picture backing cardboard in the base of the diorama and thus creating a void between the turntable plate and the underside of the diorama. This all became one, that could be lifted off to gain access to the hardware inside and the whole lot could rotate without the worry of wires becoming tangled.

The flickering light in the drum came from a Home Décor. It is an imitation candle, they come in a pack of 4 for the princely sum of around \$16.00 and the best is they also have their own power system with an on/off switch. They run on a pencil battery. I retrieved the LED bulb from inside the candle, gave it a coat of orange 'finger-nail -paint', drilled a hole big enough for the bulb to go through in the bottom of a Grandt Line drum then ran the wires back down through the base to the power source. That's the large white circular object in the photo of the underneath. I drilled a number of holes in the side of the drum, painted it with Chromacryl Burnt Umber acrylic paint plus weathering powder then added some sticks and timber in the top, ash from my combustible fire around the ground outside, placed the switch to ON and I had a flickering fire in a 44 gal drum.

Once the electronics were dealt with I constructed the lean-to using prestained coffee-stirring sticks for the walls and balsa for the floor that had been cut/scaled down. From this a rather rough structure was assembled. There were no plans just an idea. All that I wanted was a reason to add detail and to achieve this I kept the building very open. The corrugated iron came from the



*Note the rust on the trike and the fire in the drum.*



scrap box. It was weathered, distressed and the graffiti was applied. The graffiti is MicroScale decals, perhaps a bit modern for the era I eventually intend to model but they set the scene off.

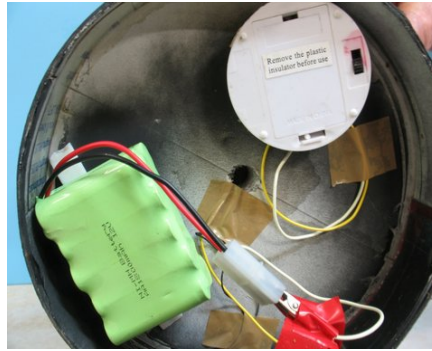
Detail came from many sources; some purchased and some from the scrap box. Some are 7mm, some 1:48 and some are HO. All were sprayed undercoat grey then judiciously painted, trying not to have each individual piece stand out but to blend in with its surrounds.

The trike is a white metal kit by Tony Smith; a member of the Aus7 Modellers Group. It is not completely finished but adds interest to the front of the scene. I contradict myself by saying that the LCL is the only model I have used the salt method on. I was forgetting I also used it on the trike and this is a white metal kit but not a very expensive one. I was pleased with the result but I would proceed with caution where metal is involved.

The shelves and table are scratch built from styrene, while the shovel, seven pound hammer and pick are from Waratah. The figure and the 44 gal drum are from the Model Company. It is the true 44 gal drum in 7mm scale not the Grandt Line drum with the fire in it, that is 1 in 48 scale but being plastic was much easier to work with. The tap and broomstick is from Kerroby and the hose a piece of wire painted gloss green.

The telegraph pole was a piece of cedar cut-out on my band- saw and shaped to the right thickness and cut to length. A groove was cut in what became the back of the pole. This was to run the wires in for the 12 volt LED. A hole was put through the pole where I wanted the light. Then the wires were bent to the shape of the light fittings and their shape maintained by applying super glue. Then a few coats of No More Gaps were applied mostly to hide the wires running in the groove up the back of the pole. The lamp shade is a drawing pin minus pin.

That brings me to the end of Constructing and Detailing an LCL and once again proves that even in a small area, a lot can be achieved in 7mm and that achievement brings much enjoyment. Have a Go.

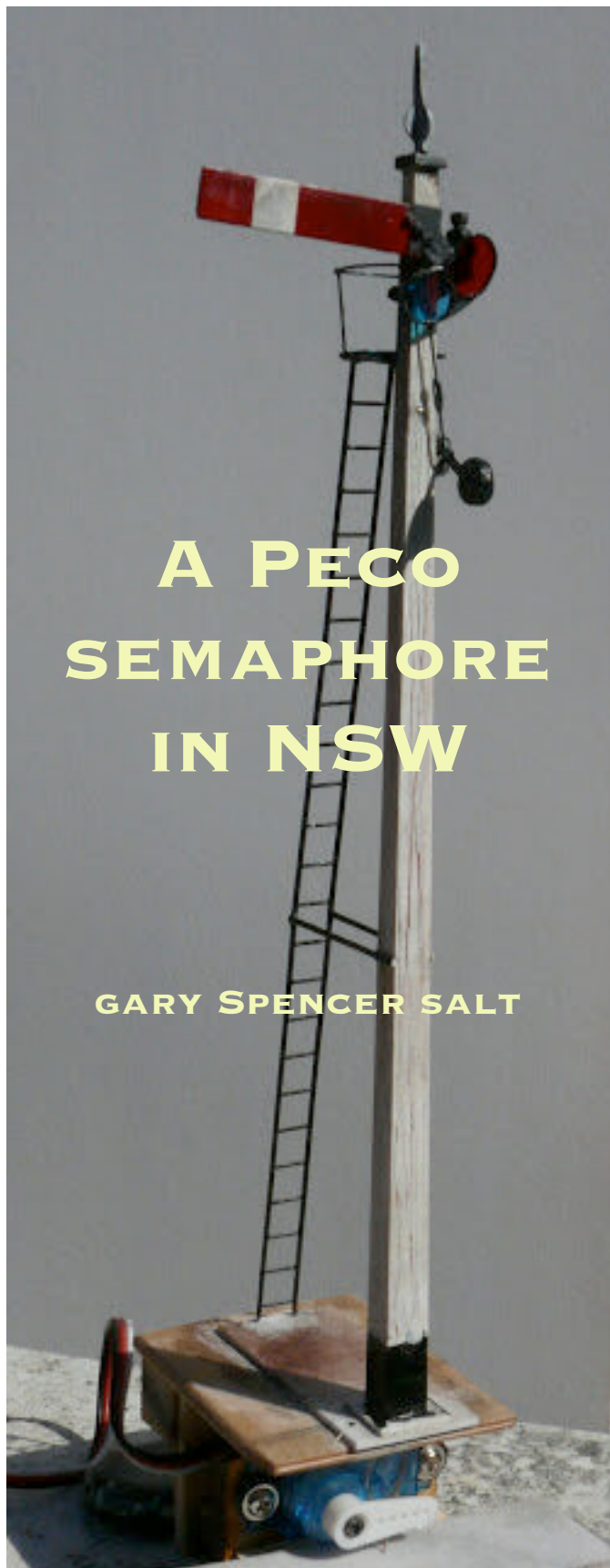


*Looking up at the void in the underside of the diorama*



*Turntable powered by a single D cell battery*





Timber semaphores are currently available from Kerian Ryan Models for NSWGR 7 mm O scale [# **KRN023**] but searching the web lead to the possibility of using the Great Western Railway semaphore kits marketed by Peco [#LK-790] to create a plausible NSWGR working semaphore. Kerian Ryan's signal is an all brass model, highly accurate and excellent value but



some modellers feel more comfortable in plastic and well - this one looks different...!

The general outline for this model is in a article published in the ***Australian Journal of Railway Modelling*** in Issue #8 on page 13.

#### **Pole Preparation.**

Begin by marking the location for the lamp mount 12 mm from the top of the post. As this is to be a working signal a wired LED will be routed through the cavity in the tapered pole from the kit. To do this create a 1 mm wide notch in one of the pole halves at 10 mm from the top to intersect with the factory cavity. Chamfer the lower edge at 45 degrees to reduce the angle of entry of the LED wire into the pole cavity.

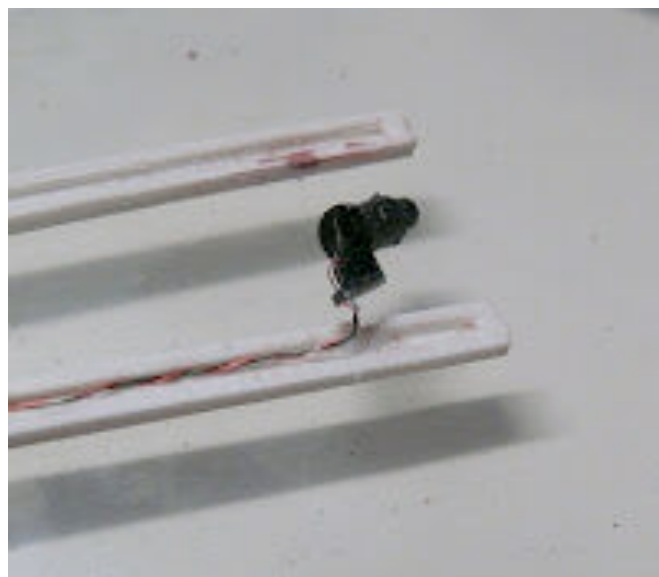
The tapered pole components supplied with the kit are correct but have distinct dishes in their faces which will need to be filled with spot putty. On this model automotive spot putty

was used and works as well as the more expensive model puttys - after drying for 24 hours dry block sand with 120 grit aluminium open cut paper.

Identify the correct sides by taping the pole halves together with green painter masking tape then drill all holes shown on the supplemental plan at the end of this article. All holes are 0.020" [0.5 mm] except the balance pivot which is enlarged at installation.

**Hint:** Locate the simulated bracket for the platform. This is at the **REAR** of the pole.

Why painters tape? it can be removed week's later!



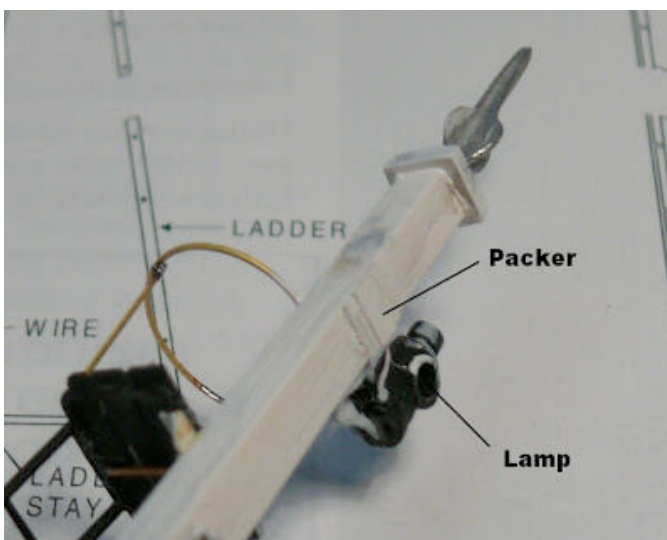


### Lighted Lamp Assembly

The lamp body was modified by drilling a 0.03" [0.8 mm] hole through the centre of the simulated lens then a hole was drilled from the base to intersect with the first hole. Both holes are then enlarged to 2.0 mm and the remaining part of the lens is cut flush.

Install a tested **TCS YELLOW micro LED** into the lamp body. Bend the wire parallel with the base of the PCB and install through the hole in the base of the lamp body. The hole will have to be extended into the lamp body further to centre the LED at the lens opening. When correct the wires are lightly twisted together for their full length and a piece of styrene was shaped into a wedge to jam the LED into its position - a drop of liquid adhesive is applied to keep it in place.

Fit the lamp to the base provided by threading the wire through the base and glue. The wire is fitted through the notch in the side of the pole. The wires are retained by small balls of blue tack to aid assembly. Once happy with the fit glue both pole halves together using a liquid cement and a fine brush. The pole was assembled with the joint vertically pressed on a sheet of glass to align both sides. Gluing was done about 20 mm at a time from the base to the top checking the fit on the way to the top then glue the lamp base into its final position, and set aside to dry.

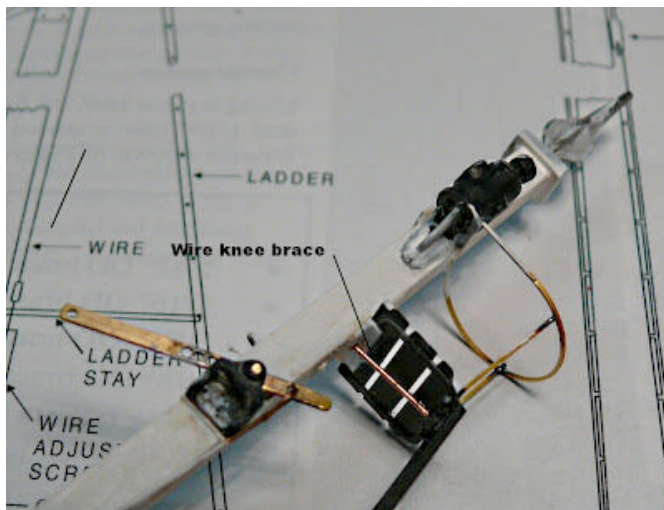


Glue the packers shown onto the poles. Styrene strips used were 0.156" & 0.080" x 0.010" and placed 10 mm from the top of the pole to the top edge of the larger size with the smaller size centred on the larger.

### Balance Arm Assembly

Fit the etch brass eye bolts supplied with the kit with ACC to provide a guide for the rods. Remove the straight balance arm and solder a piece 0.030" brass wire 20 mm long through the pivot hole projecting 5 mm on one side. Remove the balance arm pivot bracket from the sprue and glue on the backing plate from the kit and when dry cut the backing plate flush with the inside edges of the bracket. Enlarge the hole for the pivot point to 0.03" and then glue a 0-90 brass nut around the hole centres as a packer.

Using a full length of CMA 0.020" [0.5 mm] phosphor bronze wire crank one end at 90 degrees x 5 mm then engage with the balance arm and thread the wire through the eye-bolts from the top to allow installation of bracket and balance arm. Fit the balance arm by placing the 5 mm shaft projection into the hole located in the pole to match location of the bracket. Slide down the bracket and when aligned apply a drop of liquid adhesive to the bracket and fix the assembly to the face of the pole. Check freedom of movement, set aside to dry then bend the wire at the attach point at 180 degrees and trim to taste. Do not try to make the loop too tight as the wire will break.

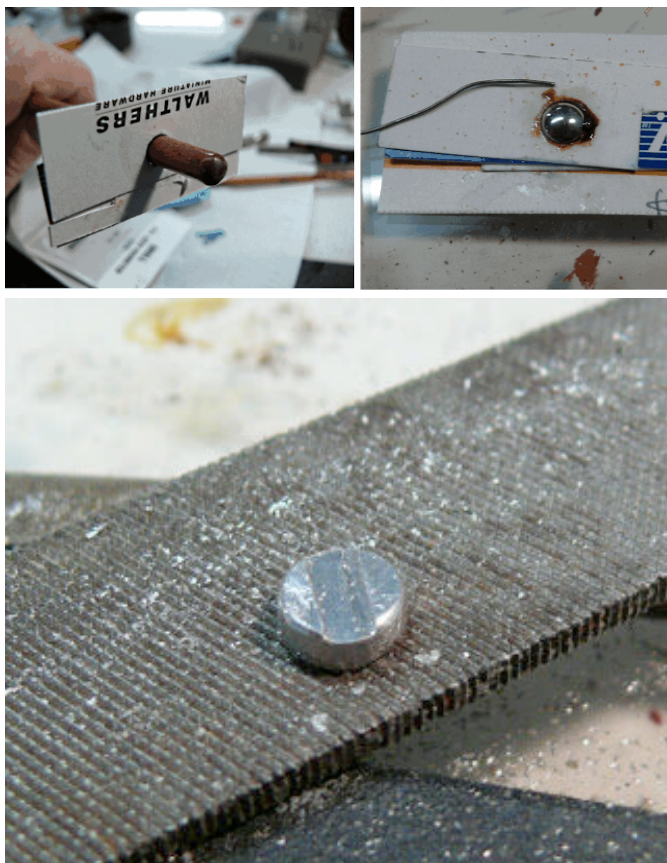


You can choose to use the counterweight supplied with the kit but it appears a little small and the arm needs weight.

To manufacture the weight four [4] hangers from drills packets were glued together using the end of a paint brush as a mandrel, Remove and coat the inside with ACC and allow to dry.

The weight is made by melting solder into the hole on a piece of glass. The one in the photos was manufactured from resin core solder but if you have 90 degree low melt this maybe better.

Remove the weight and using a single cut bastard file remove the meniscus until you have a flat disc, file a groove in the back using the side edge of a small flat file then apply ACC to the weight and fit to the arm.



## Arm

Lower quadrant semaphore signals use an arm that sits in a horizontal position and may be lowered to (about) a 45-degree angle. They can only give two indications. In the horizontal position a red light is displayed, in the lowered position a green light is displayed. There are two types of arms. A distant signal uses a fishtail arm, home and starting signals use a square-tail arm. See diagram at end.

Semaphore distant signals in New South Wales are fitted with a fixed green light, positioned above the arm and spectacle, so that they may be easily distinguished from stop signals at night. Although yellow lights were trialled, neither they, nor yellow and black arms were adopted, meaning that distant signal arms are still painted red and white.

If the home or starting signal is at danger, the distant signal will be at caution, its arm in the horizontal position with a green light over a red light exhibited at night. If the home and starting signals are clear, the distant will be clear, its arm lowered, with two green lights exhibited at night.

Select the arm type - depending on whether your signal is to be a home or a distant. Both types are supplied with the Peco kit.

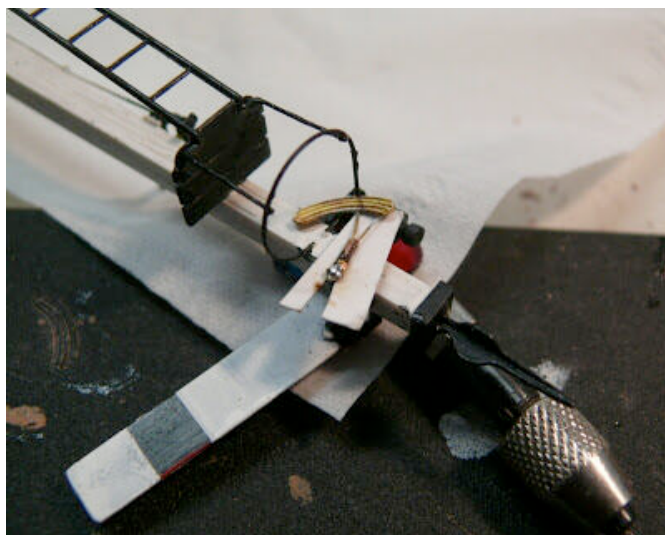
Begin assembly by mounting the spectacle plate to the arm. On the model a hole was drilled through the flag to suit the tab on the spectacle plate. The tab on the spectacle plate was bent and inserted through the hole and fixed with ACC to provide more strength. Using a razor saw create a groove for the lens material between the arm and the brass etch. Trim one end of the lens material to fit onto the spectacle. Apply a bead of ACC

then dab lightly with a scrap piece of foam to reduce the glue mass. Fit lens material into the groove in the arm and lower onto the back of the spectacle plate. The joint line to the next lens should lie about the centre of the joint face on the spectacle plate to allow full support for both lens. Repeat for the next colour.

Drill the pivot point in the arm 0.03" for the pivot and .0.22" for the actuator wire then drill both actuator attachment points on the arm. There are two balance arms provided. Remove the cranked unit and at the point where there are 3 etched holes solder a length of 0.030" x 25 mm brass wire into the first hole to project about 20 mm from the rear and a length of 0.020" x 10 to project about 5 mm into the third hole. To do this use a scrap of MDF and using the etch as a guide drill the appropriate hole about 0.005" oversize about 5 mm into the block, insert wire, lay over the etch, flux and solder. The assembly should now be square and parallel and if not adjust as required. Insert the etch into the arm picking up the pivot point and the unused actuator hole with ACC will provide a strong attachment for the arm. install one of the washers provided with the kit over the attachment point for the actuator [unused hole] and ACC to the back of the etch.

Install the arm pivot bracket. You have a choice of the plastic one supplied or a fabricated assembly. On the model the brass etch was used with a piece of 0.062" KS brass tube which was soldered into the groove in the etch. it was a little loose but at hand. Glue the arm pivot into position shown and allow to dry. When dry trial fit arm and check operation. Paint the backside of the arm as access will be difficult when assembled. The area on the post behind the arm can be painted white now for the same reason.

Fix the arm assembly, remove the two etches for the lamp back and solder as shown in the photograph. Fit a cardboard V, fit lamp back to pivot with a little flux, adjust as shown and apply a spot of solder then check operation of the assembly.



Manufacture a connect rod from 0.020" phosphor bronze wire 40 mm long. Form a Z at one end then measure the required length for the rod. Fit a turnbuckle and form the end at 90 degrees. Thread

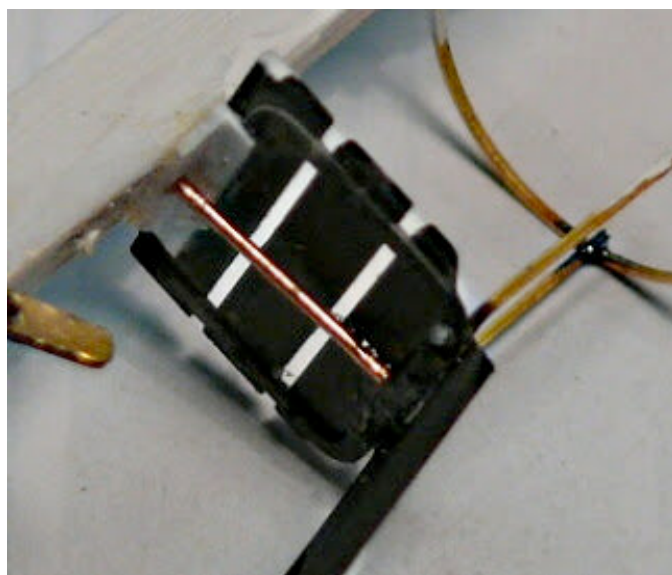


the **Z** through the balance arm using the middle hole in the group of 3 and the outer hole in the flag. This is fiddly and takes time to ensure smooth movement. The packer that was glued to the face of the pole and the formed **Z** in the balance arm will trap the wire in its correct working location.

The turnbuckles are Grandt Line S scale D&RGW narrow gauge and are fixed to the both actuator rods about 1/3 the way up the rod. These must be installed before the final cranks in the rods are added. To fix determine its location and apply a little ACC to the rod and slide one end of the turnbuckle into the glue.

### Final Assembly

Decide if the signal is to have a service platform or just a ladder. Either is correct. To install the service platform drill two 0.020" hole on the ladder edge of the platform to match the stiles of the ladder. These will be used for the vertical supports that are soldered to the etched ring shown on the Peco plan. Glue a piece of 5/32 styrene angle to the back edge of the platform on the underside then fit to the pole using the cast straps as a guide. On the model a scrap piece of 0.050" wire was used for a knee brace. Drill a 0.020" hole through web of the angle on its centres and trim wire to pick up the inside edge of the frame cast into the platform on the underside. Apply a drop of ACC to both ends and allow to dry.



The signal assembly is installed onto a 3 mm piece of ply 40 x 55 to allow mounting of the servo. Fabricate a base from 1 mm styrene sheet as shown in photo 48 x 20 mm then glue a 12 x 12 pad to the top. Locate centre and drill 5/32 thru for the wire to pass through. Mark location for the actuator rod and drill 1 mm thru. Glue the completed post onto the base using ACC then fit the ladder to base and platform. Adjust the ladder in the base to align one tread with the top side of the platform. Ensure that the actuate rod is not fixed by the ACC.

The finial is now fitted to the top of the pole. Dress square then fit the finial with ACC and allow to dry fully. The finial used was a Model Signal Engineering **SC017** and is close to a NSWGR type or

contact Kerian Ryan Models and order his **KMR031** NSWGR finial.



### LED Lighting and Power Supply

Scrape the enamel wire ends for about 3 mm then tin and repeat for two pieces of 36 gauge wire black and red 75 mm long. Solder the LED wires to the plug wire by placing them parallel to each other then run the soldering iron along length of each to fuse the wires together.

Insulate using liquid insulation available from Jay Car Electronics.

**Note:** On the LED wire **red is negative** [black wire] - green positive [red wire].

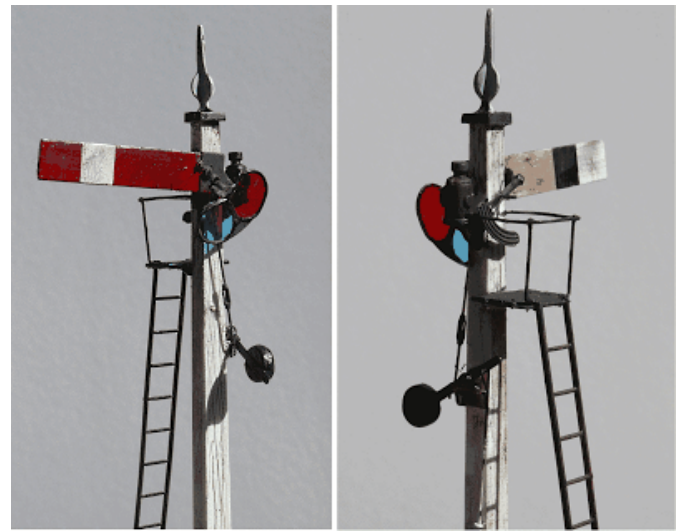
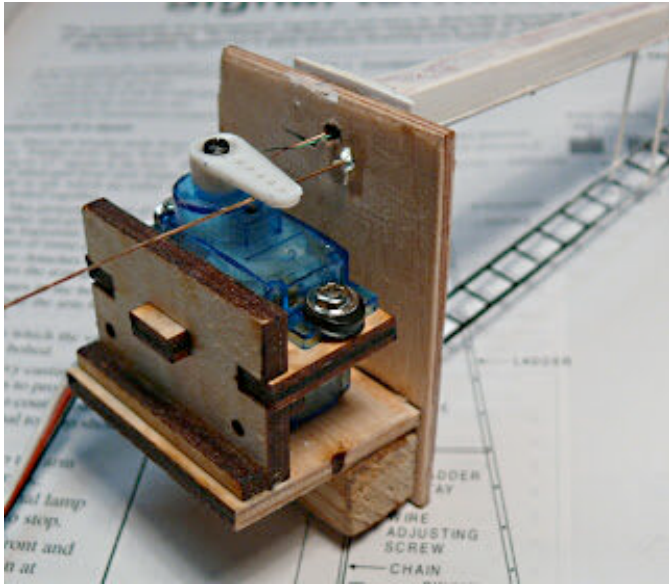
The lamp light is powered from a **ESU 50705** lighting strip. Remove the two red led supplied with the unit then solder the wires from the signal LED onto the pad remembering that red is common [negative] as supplied from TCS. The ESU unit is voltage regulated so any power source up to 15VAC or DC can be used including the DCC bus. The power for the light circuit is delivered by a **NCE Switch-it** and using a 1 amp zener diode will allow the output to switch the LED light on/off as required in a 24 hour operating session.

### Signal Actuator

The signal is actuated using a TAM Valley Singlet. The singlet was chosen for its slow speed, low noise and that TAM Valley provides a DCC accessory decoder which is necessary for future digital signal control.

The TAM Valley servo mount is manufactured from laser cut ply, assembled and is mounted to a 3 mm ply base with a piece of 1/2" square basswood glued to the back edge. Fit the signal to its base and align the face of the arm on the servo and glue the servo mount to the base using the 1/2" block.

It is vital that the assembly drops as freely as possible to allow the use of the fine 0.020" [0.5 mm] wire. Actuation should be in tension with the servo to begin the system balance. Adjust the servo movement to the TAM Valley instructions and finally set its working address.



**Note:** Ensure the servo is allowed to centre itself before trimming the wire.

Consider installing the assembly in such a manner that the whole unit can be removed for service as a complete unit and plugs should be installed for the light and the TAM Valley Servo.

### Painting

It's recommend that you go to Kerian Ryan Models site to review the notes on the painting and to appreciate the detail provided by that kit and maybe have a go.

### HOME



STOP



PROCEED

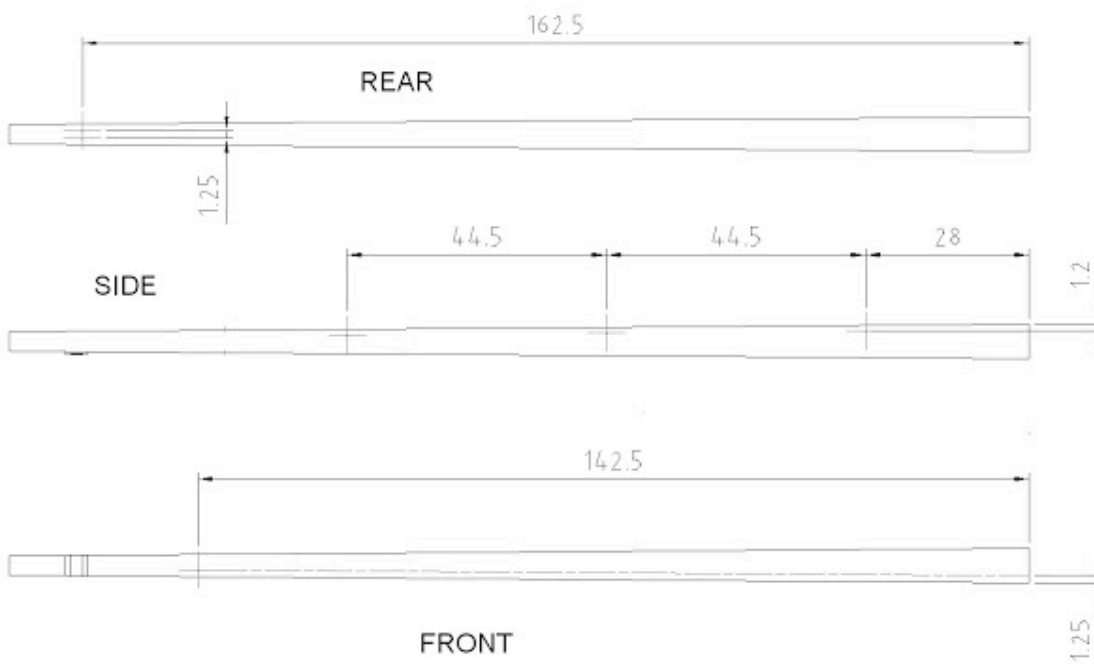
### DISTANT



STOP



PROCEED



**Drill all holes 0.020" [0.5 mm]**



# O Gauge Railway Modelling for Australian Railway History

*continued*

*Jim Longworth*

## Modelling the Place of Railways in Australian Industry

"Australia rode on the sheep's back" goes an old saying. The sheep rode on the railway. One aspect of railway history that is difficult to communicate is the dominant, if not monopolistic, place that rail transport once played in transporting just about everything between primary producer and processing works and port; and carrying manufactured goods and products in the reverse direction between city and country. This was reflected in the bewildering variety of types of rolling stock once making up the fleet. Some items were built as general carriers, e.g. open wagons. Some items were built to carry specific goods, e.g. wine tankers.

O gauge models can be made of the various types. O gauge models of are big enough for the wide variety of goods, once carried in open wagons and on flat wagons, to be readily recognisable to the average viewer. Displaying a collection of O gauge models of diverse character, carrying even more diverse loads, allows viewers to begin to understand the historic significance of the railway in the Australian economy.



*The ubiquitous 4-wheel S open wagon carried a diverse range of goods from sawn timber to crushed rock. Some goods needed to be protected from the environment by draping a tarpaulin over them.*

## Modelling the Diverse

Many classes of rolling stock were minor variants on a theme. Within each functional group of rolling stock, e.g., combined guards van and passenger carriage, there were many separately-coded variations. Rather than trying to display a full sized: HG; BHG; EHG; LHG; MHG; PHG; SHG; etc, O gauge models of each different sub-coded group could be used to illustrate the diversity in design variations.

The railway provided a limited range of services at a wide variety of locations. Standard designs of buildings were common, as was modularisation to provide easily expandable designs, even portability using, at least theoretically, re-usable materials. Standard architectural designs were produced for a range of buildings. Each design is recognisably different to other designs. Models could be used to illustrate the range of station buildings once to be found across NSW. The classic example of railway architectural modularisation was that of pre-cast concrete buildings. Pre-cast concrete panels were slid down inside grooves in the vertical sides of pre-cast concrete posts. Additional post and drop-panel panels could be added to basic designs to extend the length of the building as required to house staff and facilities for the expected volume of traffic at the station.

O gauge models could show the range of potential variations.



*Variations on a theme. Modification of the basic 4-wheel U open wagon. The basic 4-wheel U open wagon; the CU 4-wheel open wagon was permanently fitted with a ridge pole and tarpaulin; and the enclosed RU 4-wheel wheat hopper wagon.*



*Variations on the need to provide passenger accommodation for a few passengers along lines where there were too few passengers to justify running a separate passenger train. The small 4-wheel HG, the larger bogie SHG, and the larger bogie LHG guards vans are just a few of the diversity.*

## Modelling Evolving Designs

Through time basic designs for types of railway rolling stock changed. Designs crept incrementally within a group, and more rarely leapt between old and new classes. For example, the small timber-bodied 4-wheel open wagon coded D, became the large timber-bodied bogie open wagon coded BD, which in turn became the even larger steel-bodied bogie open wagon also coded BD. This historic progression in wagon size and use of materials could be presented in model form a lot cheaper and easier than in three full-scale prototype wagons.

Many classes of rolling stock were modified during their operating life, e.g., removal of roof-top ice hatches and bunkers from some refrigerator vans converting them into general un-chilled covered vans, and re-coded for their changed function. Other wagons were stripped down, converted, and re-coded from revenue-earning to non-revenue-earning maintenance-only use. The complexities and permutations are too numerous to be displayed using prototype items. Models could be used to illustrate the historic recycling of some of the more significant classes of rolling stock. Depicting every of the countless minor variations of an S truck in prototypical form, is an unsustainable use of resources.

However, O gauge models of the more significant variations could be used.



*Evolution from the small 4-wheel D open wagon, into the larger 4-wheel S open wagon, into the larger 4-wheel U open wagon.*



*Evolution from the small 4-wheel D open wagon, into the larger bogie BD open wagon with timber sides, into the larger bogie BD open wagon with vertically ribbed steel sides.*

### Modelling the Unseeable

Few younger people can be expected to have seen items of railway rolling stock under construction in heavy engineering workshops. Railway modelling magazines are replete with articles giving a blow-by-blow description of how a particular model item was constructed. Yet the process and stages of constructing a real locomotive, wagon, or carriage is rarely covered in the railway literature and never shown in museum form. A series of partly constructed models, showing the different stages of construction, from the base metal slabs for the frames, through fitting the wheels, footplate, boiler, cab, fittings, and pipe work, up to a finished item ready for its trial run, could relatively easily be displayed to chronicle constructing an item of rolling stock. A steam locomotive would be a logical choice. Fine scale kits in O gauge are readily available, and would be ideally suitable as a source of supply for the parts. Displayed in a locomotive workshop or erecting shop would place the models in a logical context and aid in interpreting the building.

Looking at the stations across the network today, the extant population is dominated by the larger or once more important stations. However numerically, smaller few-room roadside and building-less wayside halts were once the more common forms of station. Timber and galvanised iron were the commonest building materials; but are very under-represented in the extant stock of operating or preserved station buildings, most of which are built of brick or stone. Models could be used to illustrate the once common; but now rare types of station architecture.

### Modelling to Inject Movement

Trains were built to move, and are best interpreted as moving objects. Yet organising a moving full size train is fraught with administrative effort and high cost. Models offer the opportunity to inject movement into an otherwise static display.

The AMRA O gauge layout relies largely for its impact on the sight and sounds of moving trains. The layouts

*Stringy Bark Creek* and *Arakoola* inject movement into their well detailed atmospheric displays.

At least two major British railway museums compliment their displays of full size prototype items with operational O gauge model railways. The NSW Rail Transport Museum at Thirlmere has a small collection of coarse scale O gauge rolling stock items, as does the RailCorp Office of Rail Heritage. The items could be combined and run on a suitable layout in the RTM at Thirlmere.

### Conclusion

Using O gauge railway models and model railways, to scale or otherwise, is a good option for telling some aspects of Australian railway history.

### Addendum

The following letter pertaining to this series of articles was recently received by the editor.

Dear Sir,

A while ago a friend showed me a copy of your Spring 2012 magazine in which there was mention of the NSWGR's O 1:43.5 scale model railway at the RAS Easter Show and some other places. During the 1960s I was involved with these layouts. The first built was 1949 shortly after I started on the job. I also remember the display in the 1930s as a small child seeing off the Melbourne Express at platform one.

The 1950s - 1960s layouts were not third rail but surface contact stud system. They used NMRA/AMRA standard wheels and track. Around 1949 Fleet changed from the British coarse scale to finer NMRA standards introduced in the USA in the late 1930s.

The training layout in Railway House basement used American Flyer and Ives track and was USA standard gauge of 54mm. Walther Stevenson in George Street had pieces of this O gauge tinplate track for sale during WW2!

Models for the display layouts were made within the railway workshops and outside, e.g. a pair of 44 class by Col Shepherd.

The apprentice signal electricians and I designed, installed and during the show maintained the electrics. Not prototype practice but it was useful experience.

Layout HO- A was long gone mid 1960s and HO-B was built to travel the country. Then in 1969 HO-C was built to replace the O scale which for many years was used at the Newcastle Show.

Hopefully this will clarify part of NSWGR model railway history. Please contact me if you would like further information on the subject.

Yours tractionally  
Arthur W. Perry

P.S. Traction (electric) modelling is my interest.



# A DIY CHASSIS ALIGNMENT JIG

DAVID LORD

I originally had no intention of writing this article; however, the plea for contributions to 7th Heaven from our President coincided with my solving of a problem that has bugged me for some weeks now.

I am currently building a Lancashire and Yorkshire 2-6-0 Crab locomotive, although it is not NSW, the problem I had is similar irrespective of locomotive type, be it steam or diesel. In my case, having built a greater part of the chassis and fitted cylinders and slide-bar assembly, I discovered the lower slide bar of the cross head prevented the fitting of the front driving axle and wheels. This problem could have been reasonably easy to solve if I had noted the issue earlier in construction, and note, the kit instructions made no mention of a possible problem.



**Above: Slide bar effectively prevents insert of front driving axle.**

Since the chassis frame was already complete, the basic solution is simple, arrange for the complete front axle and wheels to drop in place after painting of the chassis. However, the simplicity of the task is nothing like as easy as actually constructing whatever is required to achieve that solution, as anyone who has struggled with axle and coupling rod alignment and quartering will know, unless you own rather expensive chassis alignment jigs, it can be a rather hit and miss affair.

In my case, the problem was exacerbated by a set of coupling rods that required much larger bearings than the usual (5/16" diameter) that I had available. The kit instructions indicated "fit large coupling rod bearing, not supplied". To date I have not found a supplier and that negated any chance of using the coupling rods to align the axles.

I have a set of axle alignment rods/axles that work quite well with Slaters small coupling rod bearings, but they proved totally useless with the existing large coupling rod bearing size. (See Photo).

**Right: Side view of chassis and tubular axles in place.**



**Above: The 3/16" OD and 5/32" OD size tubing, the coupling rods and a 3/16" alignment axle with tapered ends for using with the normal 3/16" axle size and tapered various sized coupling rod bearings, the size of which in this instance is way too small for the coupling rod bearing holes that are 5/32" in diameter on this particular model.**

Now some modellers would most likely have some pretty nifty equipment and tools to complete this task. They may well have placed the short alignment bearings into a lathe and turned a 5/16" shoulder for the coupling rod on the alignment axle. I on the other hand use pretty much kitchen table hand tools and solutions that would be expected to raise the hairs on their necks. Unfortunately, that is the way it is for many of us, so I had to come up with a kitchen table solution of my own.

My solutions to problems are often commenced in the kitchen, for example, a glass plate is usually recommended as being a flat surface to build on, so I regularly use a glass plate borrowed from Mum's kitchen, suitably checked for true flatness using my trusty steel rule, two lengths of wood providing a raised rest for the axles and all is set for resoldering the axle bearings into alignment set by the actual coupling rods that are to be used on this locomotive. Thinking about this method was the easy bit, very similar in operation to the proprietary chassis alignment jigs (maybe not as elegant or as easy to use) but I was attempting to find an inexpensive way of using the items of brass tube and timber blocks.

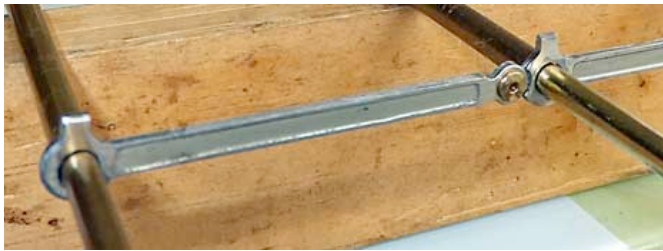
O gauge driving axles are usually 3/16" diameter and I had some 3/16" outside diameter, (5/32" inside diameter) brass tubing. In addition I also had 5/32" Outside diameter (OD) brass tubing that would slide inside the 3/16" tube. Coincidentally and very lucky for me, this 5/32" tubing was a close fit for the bearing size of the coupling rods.



I checked the brass tube straightness by rolling along the glass plate, borrowed from Mum's kitchen, carefully checked for being flat and true (within reason), plus two blocks of wood that are as true as I can measure and suddenly I had a very basic chassis alignment system, as seen in the photographs.



**Above: Plan view of chassis, tubular axes with coupling rods fitted for aligning the axles.**



**Above: Coupling rods fitted over the 5/32" OD tube, the 5/32" OD tube slipped inside the 3/16" OD 5/32" ID to simulate the coupling rod bearings**

Did it work? Well, after having made a number of attempts (many wasted) at other ways of achieving an acceptable result, mainly caused by the unusually large coupling rod bearing size, I finally found a method that will work, and yes it has worked well. The axles have been easily aligned better than any other attempt I have made with this particular chassis kit.

I used the full length 3/16" brass axle's full rods to minimise any error or variation in the end result, as any slight variation at the extreme ends of these axles would be reduced at the chassis sides well within tolerance for smooth running, so I expect the end result to be much better than some of my abortive ideas and attempts at driving wheel chassis alignment. To complete the project, I have turned six coupling rod bearings to suit the 5/32" connecting rod bearing size, the centre connecting rod bearing being double thickness to accommodate both the coupling and connecting rod assembly.

The future. I have decided to adapt this principle by putting aside three axles of full length, plus six short lengths of 5/16" tubing for inserting into the ends of the axles, possible with small plugs in the end for use with Slaters coupling rod bearings as a means of a reasonable steam or diesel engine chassis alignment jig. These items along with the pointed short steel axle alignment jigs should ensure that I have the basics of coupling rod and chassis alignment reasonably well covered at very low cost, plus, hopefully I will remember where I have placed these items future use.

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The kit comes with interior furniture of three chairs, a desk and an upright cupboard, and also the signal box frame and levers. The chairs are just so cute – with the fine detail! (See photos). Unfortunately on my model, the interior will be hidden so no one will see how good the furniture looks!

I know from the sales of this model at the Forum that there must be at least another twenty-plus of these kits in the modelling cupboards of those who attended and I urge everyone to give the model a go because I would be interested to hear feedback from other modellers on their experiences with the kit.

I am very impressed with the design of this kit, as well as the many other kit structures Outback Models kits has on offer. Unfortunately for my chosen scale of 7 mm, this is the only 7 mm scale kit Outback Models currently has available.

**Disclaimer:** The writer has no affiliation with Outback Models and the kit was purchased at the Aus7 March 2012 forum for the "show price".

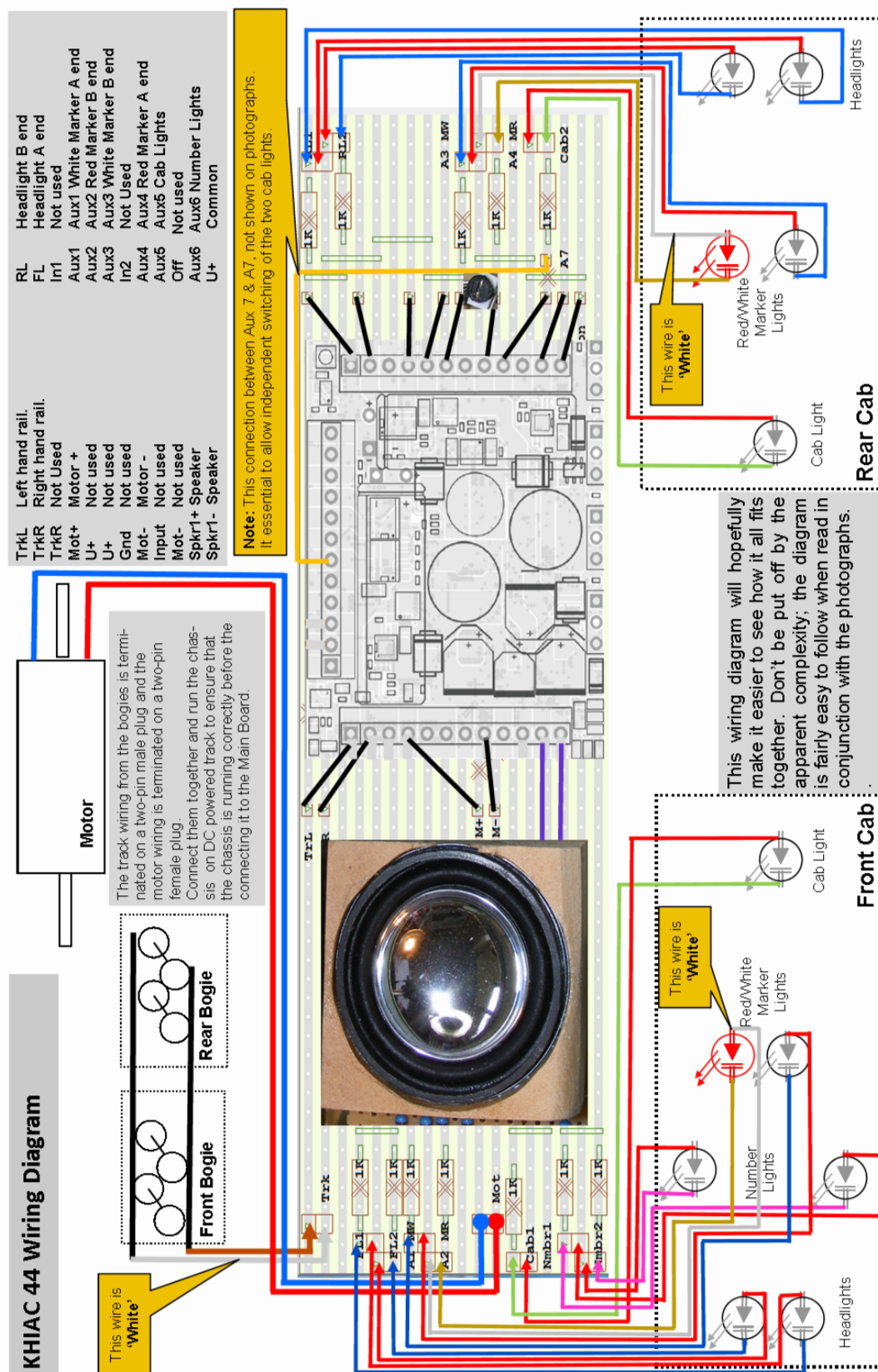


### Special Note from O-Aust Kits

Given recent reported incidents it is timely to point out that the Century Models Z19 and D50 locomotive kits and all associated components are the property of Parlana Services (ABN 25 736 637 163) and the business names Parlana Services, O-Aust Kits and Century Models are owned by Peter Krause and registered with the Australian Securities & Investments Commission (ASIC). It is therefore inappropriate for any other person or entity to claim to be or claim to represent Parlana Services, O-Aust Kits and/or Century Models or to directly copy or obtain for gain any components owned by these entities without the express permission of the owner.

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Peter Krause





# Incremental Gains

John Birch

Some of you will be aware that I try to work to Scaleseven (S7) standards. It certainly doesn't make things easier but that is my preference. However you can get some of the benefits of S7 by using what is known as 0-MF (standing for medium fine) standards. Since our NSW track is probably handbuilt it is no harder to build to 0-MF than to Finescale as adopted by the Aus7 Modellers Group. So what is 0-MF?

0-MF uses a track gauge of 31.5mm. There are variants which use 31.2mm and 31.0mm but 31.5mm seems to have become an accepted compromise. This may seem perverse since it is more inaccurate than 32mm. The gauge narrowing allows the flangeway, the distance between the running rail and check rail to be narrowed from 1.75mm to 1.5mm. This improves appearance, but more significantly it improves running as the wheels are guided more precisely through pointwork, and the wheel will no longer drop into the gap at the crossing vee.

For those who prefer to use ready to lay plain track, a tactic used by some modellers is to use 32mm gauge except on pointwork at which point the gauge is narrowed. A friend of mine, Ken de Groome, has done this on his layout of the Metropolitan Railway station at Rickmansworth, a huge project. I remarked one day on the look of the pointwork and that's when I found out. The narrowing is certainly not noticeable but the finer

look of the points, especially the check rail clearance, definitely is. The running is also noticeably better, and the click as the wheels go through the points is significantly reduced.

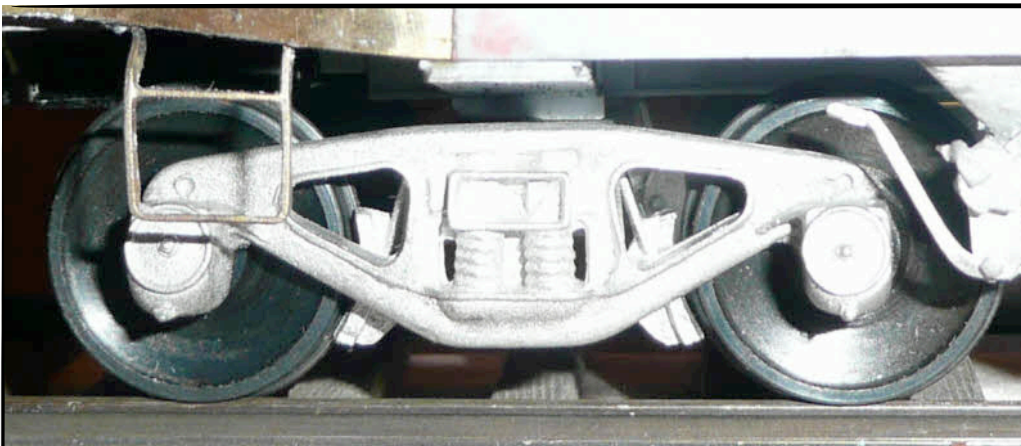
The beauty of 0-MF is that any stock with wheels to Guild Finescale standards, which this group has adopted, will run through it, so unlike us S7 modellers, you will not lose interchangeability of stock with your friends. The significant dimension is the wheel back to back measurement which must be no less than 29mm. Track gauges can be obtained from Roxey Mouldings (not listed on their website though) and a lady called Debs whose details I have yet to establish.

The illustration, by kind courtesy of Richard Lambert, of a crossover on his Heyside layout will I hope be all the persuasion you need. You can see more of Heyside on the Gauge 0 Guild's website gallery, and if you are a member, on the forum.

And that brings me on to the subject of wheels. Those of you who recall the article I wrote about building the chassis of my 50 class to S7 standards might recall the finer look of the flanges. Now I am not suggesting that you reprofile all your wheels although I believe the appearance of the models would benefit. However there are occasions when you get lucky. I needed some 2'9"

disc wheels for a BWH I was building and I wondered whether there was something available which would mean I didn't have to get the reprofiling tool out. And I got lucky. North West Short Line sell wheels profiled to the American Proto48 standard and they offer the option of these for 32mm gauge. Better still they do a 3' wheel in 1:48 which is pretty close to 2'9" in 7mm. I bought a couple of sets and the accompanying picture shows how they look. I reckon they are a great improvement on Finescale. However a few tests on fine scale track before committing might be wise though I am confident they would be fine on 0-MF

I headed this short piece "Incremental Gains" and these thoughts offer no more than that. Hopefully we are improving what we do all the time and these are just another couple of ideas to throw into the pot.





At the Aus7 Forum held on 24 March 2012, we were privileged to have two guest speakers from Victoria – Laurie Green and John Hunter. Laurie and John are well known in the Australian narrow gauge scene, and their modelling history with layouts and dioramas has been well covered and documented in both Australian and American narrow gauge magazines. Laurie and John have won numerous awards for their modelling, and Laurie has been awarded the National Model Railroad Association (NRMA) Master Model Railroader award in recognition of his high standard of modelling.

Laurie has a web site: [www.lauriegreensweb.com](http://www.lauriegreensweb.com), and for many years, I have been a regular visitor to this site. This site has a good photographic record of the many layouts and scenery structures which Laurie had produced. Laurie's internet site includes a "My Friends" tab, which has a vast photographic collection of the many modelling projects undertaken by Laurie's group of modelling friends. These pictures are predominantly narrow gauge modelling, nevertheless, for years, I have always been fascinated with the exceptional standard of the modelling, and these modellers' creativity and skills in bringing the scene to life. I urge everyone to visit this site, when they have a free half-hour or more to enjoy the high standard of quality models.

Laurie and John have embarked on a new business venture under the name "Outback Model Company" ([www.outbackmodels.com](http://www.outbackmodels.com)) and they are producing model structures, using card as the principle material.

In conjunction with Laurie and John's visit to the March Forum, Outback Models celebrated the event with the release of their first 7mm scale model structure the "NSWGR Small Signal Box", and this was available for sale at a special introductory price, for the attendees. Outback Models produced a reasonable quantity of kits for sale at the Forum, however demand exceeded supply, and by lunch time all kits had been sold. I missed out on buying a kit from the original batch, nevertheless, Outback Models took orders from any attendee who missed out, and my kit was received in the mail about one week later.

The term "card-kit" does require some clarification, as this term can refer to two distinctly different types of models. Some card kits are "printed card" and the "card" may be a heavy grade of paper or a light grade of cardboard. These card kits typically have cuts in the paper to allow the model structure to be removed from the printed card sheet and the model structure is effectively folded into shape and adhesive applied to complete the model. As these card kits have been printed no painting is required.

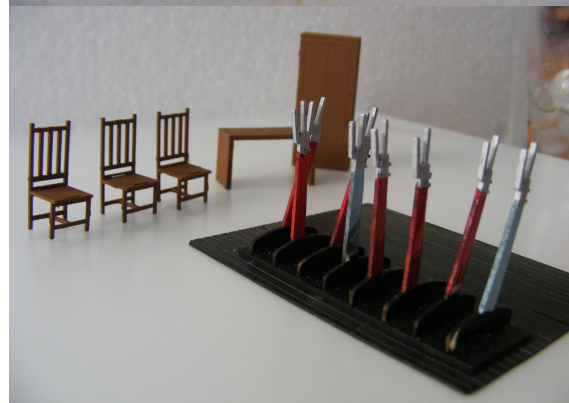
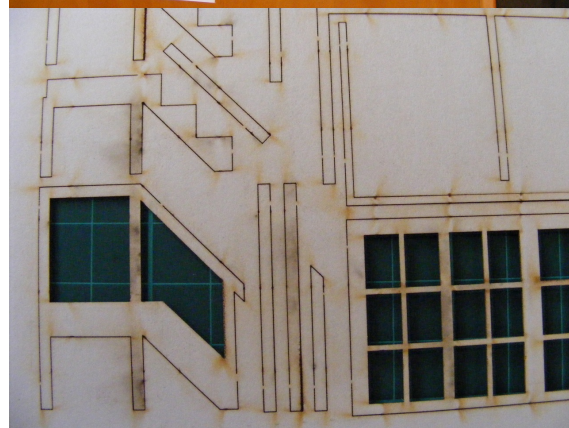
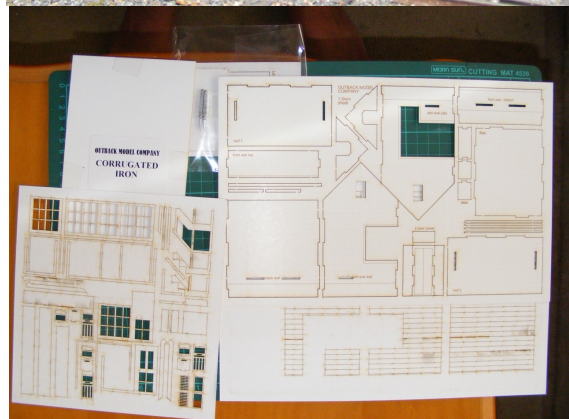
The Outback Models kits represent the other type of card kits available, whereby the individual pieces used to construct the structure are produced with the pieces laser cut into the card sheet. The card sheet is supplied in its raw state, and it is up to the modeller to paint the pieces to their chosen colour before constructing the kit on a piece-by-piece basis.

The description "NSWGR Small Signal Box" may be a little vague and also needs some clarification. Greg Edwards has prepared a Data Sheet covering this style of Signal Box (Data Sheet S7) and Greg describes it as a "Low Elevation Signal Cabin". This was a very early style of signal box built in the late 1880's and they were relatively few and had a very "English" appearance.

In the late 1970's, I lived at Oatley and worked at Engadine. Whilst my usual mode of transport to and from work was by car I could not resist the temptation of the occasional rail trip to work.

## REVIEW OF THE OUTBACK MODEL COMPANY'S NSWGR "SMALL SIGNAL BOX"

BRUCE WOOD



This involved catching the electric suburban to Sutherland, and changing to the railmotor service (two CPH's and one trailer) to Engadine. On the short trip from Sutherland to Engadine we passed Loftus junction, which serviced the Royal National Park branch, and the Loftus signal box was very similar to the model produced by Outback Models. The Loftus Signal box commenced operation in 1886 and continued to operate till 1991.

I have prepared this review to outline my experiences in constructing this kit, however I need to strongly emphasise that this was the first card kit I have ever constructed and it was a learning experience. I will go into more detail further into the review, however not everything went according to plan, and I accept that this is a result of my inexperience of building a card kit and taking on new and different construction processes, and my mistakes should not be taken as a direct criticism of the kit.

I have had some long-term reservations over the strength of card kits, believing card meant "cardboard" and concerns over the strength and long-term durability of the material. This maybe a legitimate concern for some card kits, however the card used by Outback Models is a resin impregnated card similar to the material used in some takeaway food containers and the material is significantly stronger and more moisture resistant than plain cardboard.

The kit was well presented in a clear plastic bag with a colour picture of the completed model. The instructions involve 8 A4 pages and the information is well presented and of a good standard. The instructions are very adequately illustrated with numerous pictures and diagrams. The kit pieces are located on three large, and one small pieces of card and the card comes in two thickness, depending on the structural strength requirements needed for the part. The parts which require good structural strength like the walls have a robust thick card, and detailing pieces like the weatherboards have a relatively thin card. There is also some aluminium strip for the corrugated iron roof and two white metal pieces for the finials. The kit is designed so that some of the adjoining card pieces have interlocking tabs which will ensure these parts are correctly aligned.

This model was approached in the opposite way to how I would typically undertake a model structure. My normal approach with constructing a structure would be to complete the construction, and then paint the model. The Outback Models kit works in the reverse. The individual card pieces are painted and then the model is constructed. The instructions suggest using a white aerosol undercoat to seal and prepare the pieces of card before any parts are removed from the sheet. I didn't have any paint on hand like that suggested so I used my airbrush and an automotive self-etch primer, similar to what I use to undercoat the majority of my models. For the "top-coat" of the structure parts, Outback Models suggest using "artist" acrylic paints available from an arts shop supplier. I wanted my signal box to be painted in an authentic NSWGR scheme of standard light stone and dark stone colour. When I looked at the range of colours available for the brand of paint which Outback Models recommend I could see I

was going to need to mix paints to achieve the correct stone colouring so I thought I would stick with the paint I know best which is Humbrol enamels. Consequently I did a mix to represent the NSWGR light stone and dark stone colours and this was airbrushed onto the card. The Humbrol took to the card/self-etch primer perfectly OK.

The instructions do not number parts for identification purposes like most model instructions but use illustrations to identify parts. I found the instructions easy to understand, and I dry-fitted pieces together to check the assembly before using the PVA (Aquadhere) adhesive for the permanent join.

One part of the model construction which I found to be very challenging was the fitting of the individual weatherboards. The walls have a thick card inner wall, (for the structural strength) and the individual weatherboard planks are attached to the outside. The kit has a measuring gauge to use so that you use the correct spacing between planks. However I may have been too impatient by trying to attach too many weatherboards at the one time, because with the inner wall wet with Aquadhere I had weatherboard planking slipping and sliding in every direction. The weatherboard planking does not sit flat. It sits at an angle which results in very little surface contact with the backing wall and this makes it harder when you attempt to do fine adjustments to get the planks perfectly spaced. Maybe a more sensible approach would be to glue a couple of planks at a time and wait for the glue to go-off before attempting the next couple of planks. This would significantly extend the time to plank the wall, however it may achieve a more professional looking job. To be fair, I probably have a lot more learning to do on working with card kits. Also, when I was trying to get the planks into the correct position I managed to get Aquadhere onto my fingers and onto the painted surface of the weatherboards. At least with Aquadhere being water based and on a durable painted surface like Humbrol enamel, the Aquadhere can be carefully removed with a damp rag.

I made a couple of variations to the standard kit instructions. The kit suggests concrete foundations, steps and platform. For the signal box foundations, I believe brick would have been more common, consequently I used Slaters "brick" Plasticard. For the steps and the platform, I believe these would be more likely to have been timber, and I have used scribed styrene to represent the wooden planking. The kit does not have guttering, or downpipes, and I will probably construct these from styrene as a final inclusion.

**My final assessment.** This was a fun kit to build, although the weatherboard planking did get the stress levels running high. The end result – the model looks fantastic, and it was a very attractively priced kit. As I mentioned earlier, this has been my first card kit and it has been a positive learning experience, and with the knowledge I now have the next card kit will be approached with more confidence and will be constructed to a higher standard. I still have a question mark over the long-term durability of card, and whether the material will deteriorate with age more quickly than the other materials I typically use on my structure modelling, such as styrene. >>>>14



# Commercial News

Trevor Hodges

## O-Aust

O-Aust Kits [info@oaustkits.com.au](mailto:info@oaustkits.com.au), and via the web site at [www.oaustkits.com.au](http://www.oaustkits.com.au), at PO Box 743, Albany Creek, Qld, 4035, mob 0419680584 or (07) 3298 6283 have advised that the O scale (1:48) Queensland Rail DH locomotive kit that was planned to be ready for the Brisbane Show has been delayed due to motor and wheel supply delays. A pilot model is available and it will be operating on an On3.5 QR layout that will be on display at that show. When the wheel and motor supply problems have been sorted out the kit will be available in On3.5 and On30 versions. It is powered by twin self powered bogies in a similar manner as the O-Aust Kits VR Flat Top T locomotive. Kit price is expected to be in the \$650-\$800 range.

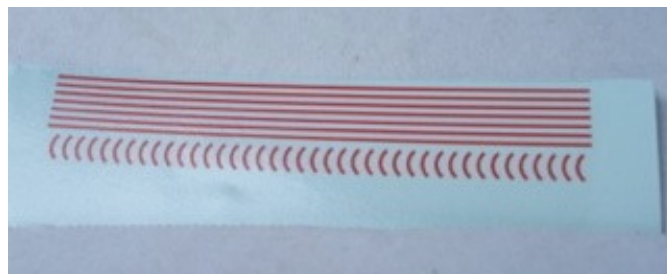
Now available are decals which will enable modellers to place the red lining on 30 class tank locomotives as per the locomotive on Page 18 of 7<sup>th</sup> Heaven #36. Price is \$8.00 per set. Similar HO decals are also available.

Patterns for the CX dogbox passenger car are now about 95% complete and it is hoped to have kits available by June. Different pattern making techniques have been used for this project than were used for the R cars. This is expected to make the assembly process more "user friendly" and produce a superior end result.

Once the CX is completed it is planned to upgrade the 50 class kit with a new mechanism which will be of similar specifications to that used with the 32 and 30 tank and should be available later in 2014 with the T class tender. A different tender is also planned for release 2014.

The O-Aust Kits version of the 30T is also progressing well and should be available later in 2013. It differs from the kit produced by Graham Holland in that its mechanism will be of similar specifications to that used with the 32 and 30 tank and will come with a 6 wheel P class tender as standard. The T class tender will be an optional extra as will the Baldwin tender which it is understood was fitted to a couple of the 30Ts. Anyone who wishes to purchase a Century Models 30T should direct their enquiries exclusively to O-Aust kits.

O-Aust have experienced a few technical issues with the VR ZLP guards van which have now been resolved. The aim is to have this ready for a release at Caulfield in August, 2013.



## Ixion Models

Ixion Models/Ixion Models, PO Box 303, Quakers Hill, NSW, 2763, Australia, (02) 9626 9273 or (02) 4957 415, [info@ixionmodels.com](mailto:info@ixionmodels.com) and [www.ixionmodels.com](http://www.ixionmodels.com) have passed on the news that tooling has commenced on their newest project the Fowler 0-4-0 diesel mechanical locomotive in 1:43.5. The locomotive will run on 32mm standard gauge track.

The model represents the solitary example that was built by Fowler for the Great Western Railway in 1933.

The locomotive was sold to George Cohen, Sons & Co Ltd of Leeds in 1940 and was later passed on to the UK Ministry of Supply. It was built to a generic design that was in production from the late 1920s until the 1950s. One example of this class of standard gauge locomotive came to Australia, and worked the military railway at the Woomera Rocket range in South Australia in the 1950s.

The model will be available in GWR lined green as seen in the prototype photo, and also painted, but unlettered and unlined for industrial use. It will have a similar specification to the Hudswell Clarke loco: finescale wheels; diecast chassis, powerful motor and low gearing for good slow running. It will be DCC and sound ready with a highly detailed injection-moulded body and sprung buffers. It will be supplied with a set of injection-moulded accessories.

## Model Railroad Craftsman

Model Railroad Craftsman, shop 2 Level 1, 64-70 Main St, Blacktown, NSW, 2148, (02) 98318217 or fax (02) 98314132 [sales@mrrc.com.au](mailto:sales@mrrc.com.au) and <http://www.mrrc.com.au/> have announced that the NSW 40-class upgrade kit will begin shipping soon after the Easter weekend. At the time of writing the last stage in the delivery process, the writing of the instructions, was near completion. The first batch of seven units will be delivered to those who have pre-paid with the others to follow later. Suitable decals for this project are being prepared.

The 5 ton crane is scheduled to be shipped from the factory in late April, 2013.

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**VR B 4 WHL BOX VAN (1:48)**

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**NSWR C30T STEAM LOCO**