

7th Heaven

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Tearing Morpeth Down
Scratchbuilding A TE Flat Wagon
Building My SHG
Under Leaden Skies
Decoders, LEDs and Speakers - An Update

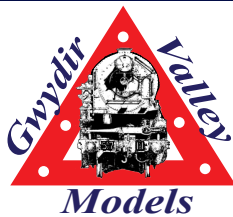
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Commercial News

ModelOkits Business Update

As Trevor mentioned in Straight Down the Line we have now relocated the Hobby Shop from Yagoona to a new larger shop located just off Pennant Hills Rd Thornleigh (complex next to McDonalds), around 250m from Thornleigh Station.

Going forward Rod and I will be focused on expanding the the Hobby Shop and further developing our range of O scale products, making use of our recently acquired Formlabs 3D resin printer, laser cutter and vacuum forming equipment. We have a long list of projects for new products and revamped existing kits.

We plan to increase the range of products we manufacture and stock, with a focus on supply of materials for modellers in a number of scales. Consequently we are changing the name of the Hobby business to "ScaleModelco" and the hobby shop will be named "Scalemodelco Hobby Centre" to appeal to a broader range of modellers. We will continue with ModelOkits as one of our O scale brand names. We are hoping to make visiting our hobby shop more of an experience with more modelling displays and from time-to-time modelling demonstrations and talks.

Opening times are indicated on the advertisement on the back page.

We will be establishing a new website and online store under www.scalemodelco.com.au. This will not occur until 2022, so until then we will continue under our existing website at www.modelokits.com

We can still be contacted at sales@modelokits.com or by mobile on 0404 935 663.

Straight Down the Line - Opinion

by Trevor Hodges

Mixed Business

I'm writing this a week before Christmas 2021 and as this issue of 7th Heaven won't be in members' hands till after the Christmas/New Year period I'll pass on my best wishes to all Aus7 Members and hope you had great time over the holiday period. I sincerely hope you were able to catch up with friends and family who you may not have been able to see for a while. I know our Christmas plans have really only been finalised in the last few days as we've waited for some sort of clarity around border closures and restrictions.

A full program of Forums is scheduled for 2022 with the first to be held on Saturday the 3rd of April and the one in the second half of the year booked for the Saturday the 15th of October. The venue is the Carnarvon Golf Club, 64-95 Notting Hill Road Lidcombe 9am to 2pm— Doors open — 8:30am. Write the dates in your diary and try to come along, it will be nice to catch up.

Because of the disruptions caused by the pandemic the Aus7 Modellers Group AGM schedule is now out of kilter because we were unable to run an AGM in 2020. For this reason it's been decided to hold off running the AGM in April 2022 and hold it at the October Forum. This will allow us to get the AGMs back onto a pre-pandemic arrangement of holding them at the first Forum after the end of the previous financial year. The schedule and program for the April Forum is planned to be the same as the one cancelled in October 2021 but the final program will be announced in the New Year.

There's little happening commercially that's specifically related to O-Scale at the moment so thought I'd use this space to mention the opening of the new ModelOKits retail premises. The new shop operates under the name Scalemodelco and is located at A4/2-4 Central Ave Thornleigh, NSW, 2120. Glenn sent me a few photos of the interior of the new shop which I'm hoping we'll have space to include in this issue. Drop in and see him over summer if you get the chance, I'm sure it will be well worth it.



Membership of the Aus7 Modellers Group costs just \$AU40 per year or \$AU57 for overseas members. Memberships are due for renewal by June 30th no matter what time of year you joined. Please forward payment to the Treasurer, Anthony Furniss at PO Box 179 Budgewoi NSW 2262. For renewal and new membership forms follow the link on the Aus7 Blog at <http://aus7.org/2014/10/12/welcome/>. Renewals can also be done through online banking, to the Aus7 account BSB 062-233 Account Number 1017 2076

Be sure to supply your name.

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Back Issues

Issues 34 onward only available at \$7.70 each plus \$2.00 p&h for one or two copies, \$4.00 p&h for three or more copies.

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On The Cover

Two views down the quiet main street of Arakoola.

Tearing Morpeth Down

Trevor Hodges



Morpeth before demolition

So how did it come to pass that I'm tearing down a layout on a property about which I'd explicitly stated on more than one occasion "they'll be carrying me out of this place in a pine box"? Perhaps I need to explain that my partner Louise and I, while having been together for almost 15 years, don't actually live together. We've got close a couple times but it just hasn't happened. When I purchased my current home I was looking for somewhere with a shed that could accommodate my wood and metal work machinery *and* the layout I planned to build. I felt I'd found this when I stumbled upon a place with a lovely little cottage in one corner of the block and a humungous double storey 9mX9m steel box in the other corner. So I buy the place and quickly commence building my latest version of Morpeth: Morpeth Mk V.

While I started out with a bright and optimistic view of what could be achieved in the space I had available on the upper level of this shed, if I'm honest not everything was as rosy as it first appeared. Ok, no space is perfect but what I hadn't taken into account in my initial assessment of the suitability of the space was the fact that a staircase entry and storage cupboard took up almost 1/5 of the floor space and working around these obstacles proved a challenge and did cramp my layout building ambitions somewhat. However, a completely unforeseen problem was the dormer roof of the shed and the way this ate up floor space and head room when it came time to building the

layout. If I'd been prepared to build the layout twelve inches above the floor this wouldn't have been a problem but as it was I probably lost another quarter of the available space from the sloping ceilings in the layout room. The original 9mX9m quickly turned into 8.5mX6.5m (about 55 square meters) and if you add in the loss of space from the stairs and storage cupboard a more accurate estimate of the available floor space was probably more like 45 square meters. I will concede that this is far more space than a lot of modellers have available but I'd been living with make dos and tiny layout footprints for the past 25 years, this space was supposed to give me the freedom to do some of the modelling I'd always dreamed of. It simply wasn't living up to these expectations.

By early 2020 I'd come to the conclusion that I wasn't terribly happy with the track layout of two of the station stops on the layout and was planning to pretty much tear the track out and do some major reworking of these areas. One of the issues was that I'd set the track centres on all my yards at the fairly standard distance of 80mm apart. I'm not sure why but this distance seems to be widely accepted as the default distance between track centre lines in this scale however, when I ran a test by placing a signal between the tracks there wasn't sufficient clearance to allow the trains to pass. So I'd decided quite a while back that if I was going to pull the track up and redesign the two yards at Raworth and Queens Wharf then I'd be widening the track centres to something like 90mm. My portable layout Morpeth had been used as the terminus of the line and while it has some limitations in terms of its track design, it was pretty much complete and sitting in the centre of the room so I wasn't planning any major changes to it at that stage.

So, keeping in mind that I was contemplating pulling the track and wiring up on something like half the layout, Covid-19 came along in 2020 and ruined Louise and my holiday plans. We'd been planning to go to Tassie for 10 days in January 2021 but this got scotched at the last moment so decided to drive out to Lightning Ridge for a couple of days instead. It was in NSW and Louise likes opals, what other reason did we need? Louise had been talking for some time about selling her place and moving to a larger but flatter place where she could raise goats and alpacas. Up till the Lightning Ridge trip her thinking about selling up and relocating had been fairly random, but if you've ever driven to Lightning Ridge you'll know you spend a lot of time in the car. Let's just say that after approximately 25 hours driving over about four days we'd come up with a fairly comprehensive plan for selling up and relocating to the Sunshine Coast about 3 hours north of where we currently live. This plan had a specific aim in mind but it also had a fairly long time line and I would probably still be living in my current home till the end of 2023.

This was a major inflection point in any plans I might have for the layout and the sort of modelling I was going to do through 2021-2024. As the new Morpeth line had not been built to be moveable, when and if a change of location



Going, going



was required the entire permanent layout other than the portable exhibition layout of Morpeth, would have to be dismantled. The permanent part I'd been working on for the past 5 years comprised about 75% of the total. The day I arrived back from Lightening Ridge any work I did on the layout that could not be boxed up and moved was essentially going to be torn apart within two years. So all work on the layout ceased. I did start work on a locomotive kit and completed the ship model Louise however, it didn't take me long to realise that I didn't want to limit myself to building rolling stock and locomotives for the next few years. By the end of March 2021 it had dawned on me that as I'd been going to dismantle a fairly substantial portion of the layout anyway little would be lost in making a start on dismantling it almost straight away.

After I made the decision to tear the layout down I invited friends over who had declared an interest in seeing the layout one last time and then got to work on dismantling it. At around the same time the real estate market had gone insane so the timeline for our move was looking like it was going to get longer rather than shorter so I made the decision to rebuild the yard of Queens Wharf in a manner that allowed it to be easily transportable, something I should have done four years ago when I first started working on the layout. The design of the yard very closely mirrors what I would have installed had the permanent layout remained in place so little is lost in that regard. I've designed this yard and the layout segments in such a way that lengthening the yard will be an easy matter if my new shed turns out to be larger than my current one. In the mean time I can get to work installing some of the scenery and structures onto the Queens Wharf section of the layout safe in the knowledge that this work can come with us when we move.

A couple of people have told me they think it's sad that I've pulled the layout down and I can empathise with this sentiment to some degree. I'm also gratified they think the layout was good enough to preserve. I'd have preferred that 4 or 5 years work hadn't had to be dismantled quite so soon after starting to build the layout but as most of the time invested over those years was in elements of the layout that can be recycled into any new layout I might build it hasn't been a total waste of time. One thing I do know is that in a way this rebuilding of Morpeth arises from my relationship with Louise in more than just the choice we might make about where we build our new home (and train shed). Having a layout built in segments will make things far easier on her in the long run whether she's facing disposing of my possessions on her own or with my doddering help in the years ahead. If I'd been sensible and followed my own advice about building layouts then I wouldn't have had to pull Morpeth down: I could have unbolted the separate segments and taken it with us. It bears thinking about because when I moved into this home I genuinely didn't have any plans for moving any time soon. Goats and alpacas bear no responsibility for this happening, it's all down to the decisions I made.



Gone

SCRATCHBUILDING A TE FLAT WAGON (OR TWO) IN BRASS

Peter Krause

Background

My home layout, Saddlersfield, has been inspired by the NSWGR operations in the Tenterfield region and includes an interpretation of Tenterfield named Saddlersfield (for obvious reasons) and an interpretation of Wallangarra named Jennings. I used the name Jennings because while the area on my layout mirrors the operations in Wallangarra space constraints necessitated a significant variation to the actual Wallangarra track arrangements. Why Jennings? Jennings was NSW's preferred name for the area (it was the Railways Commissioner's at the time's surname) and the actual portion of the town that sits in NSW is still referred to as Jennings by NSW.

One of the "industries" with rail access at Wallangarra was an army base which contained among other things an ordinance depot and transfer facilities between the NSW and Queensland rail systems.

A posting on the Aus7 Group's Facebook page a few months ago (I cannot remember the author's name) showed a scratch-built TE wagon that the author had built. That got me thinking that the TE wagon would be an ideal addition to my roster to service the army base. I also did not expect that any manufacturer would be likely to produce one.

History

The six TE wagons were built by Clyde Engineering in 1952 for the Department of the Army. They were designed for the transport of Centurion tanks and other military equipment. When not required for military purposes, the NSWGR was allowed to use them for general traffic.

The wagons were 30" long and 9'6" wide and had a capacity of 55 tons (56 tonnes).

Getting Started

In searching for information, I found an article about modelling the TE wagon in AMRM May/June 1979 written by Es Davies. The article has

provided me with enough information to give it a go. The article is written with the use of brass in mind. Having never constructed a wagon from scratch in brass I thought why not give it a go.

Parts

The parts list that I used is incorporated with this article. As mentioned in the parts list, I used mostly K&S brass strips for the construction. The exception was the floor for which Mt Albert timber products were used. With the benefit of hindsight, I probably could have used thinner brass strips. Each completed wagon weighs 12 ounces so using thinner strip would have made the cutting to shape process significantly easier without the wagon ending up too light.

Construction

In building the wagons, I generally followed the process as outlined in the AMRM article referred to above. I used an 80-watt soldering iron for assembling the wagon. I found this iron a bit cumbersome and messy to use as shows in the photos of the unpainted wagons as a work in process. This did not affect the end result after painting fortunately. My 60-watt Duratech soldering station did not have enough "grunt" for the task. With the benefit of hindsight, the process would have been much simpler if I were able to use a resistance soldering station, but I do not own one, and am not sure whether future use opportunities would be sufficient to justify the purchase of one. After painting I realised that I had forgotten to fit coupler cut bars to the wagons, so they remain on my workbench waiting for an opportunity to rectify this omission. Additionally, I am yet to organise suitable decals to allow me to complete them. And then I have to do something about some loads for them. A never-ending process.

Conclusion

It was an interesting and challenging opportunity to step outside my modelling comfort zone and build something almost completely in brass. Will I do it again? Watch this space.



Side view after completion of basic assembly



Underbody view after completion of basic assembly



End view after completion of basic assembly



Underbody view after detail added and painted



Almost finished wagon awaiting fitting of coupler lift bars

| PART | MATERIAL | SOURCE | COMMENTS |
|-------------------------|--|----------------|---|
| Base | .010" brass sheet 210 X 66.5mm | K&S #251 | |
| Side Sills X 2 | ½" X .064 brass strip @210mm | K&S 8246 | Cut to shape |
| Side sill capping X2 | ¼" X .016 brass strip @ 220mm | K&S 8230 | |
| Side Sill Stiffener X 8 | 1/8" X .032" Brass Strip | K&S 815026 | Cut to fit + drill hole for tie down ring |
| Side Tie Down Rings X 8 | 4mm Brass Chain Links | | |
| Head Stock X 2 | ½" X .064 brass strip @ 66.5mm | K&S 8246 | Cut to shape |
| End Tie Down Bars X 4 | LWB cast angle brackets + 0.06 brass wire. | O-Aust Kits | |
| Centre Sill | ¼" brass square tube | K&S 8155 | |
| Chassis Bracing | ¼" X .032 brass strip | K&S 8240 | Cut to fit |
| Deck | .188" scribed basswood sheet | Mt Albert | |
| Deck Guides | 1/8" square timber strips | Mt Albert | |
| Buffers | Cammel Sprung Buffers | Slaters #71566 | |
| Couplers | Metal Knuckle Coupler | Kadee #740 | |
| Bogies | Curve Frame | Atlas # 7065 | |
| Air Hoses + Brake Wheel | Lost Wax Brass Casting | O-Aust Kits | |
| Brake Cylinder | Pewter Casting | O-Aust Kits | |
| Air Tank | Pewter Casting | O-Aust Kits | |

A few more scenes from Glenn's new Scale Model Co Hobby Centre





Building My SHG - Part 1

Martin “Mad Marty” Hartley

“Don’t be a gunnal!” the late Dave “Grizz” Morris would often say to me. So it was about time I wrote this out. My SHG reached this stage in February 2015 and due to a series of changing life circumstances and world events beyond my control it is only now in late 2021 that I set myself the task to do this write-up. I deliberately have this in two parts as I need to finish off a few items on this model, so the requirement of a part 2 will force me to get it done and written up. No gunnas here! I apologise for the mediocre quality of the photos. These were taken on a phone camera and uploaded to facebook, the original camera files are sadly long gone and these were the best I could find.

The basis of this model is an O-Aust BHG, I believe one of the last of the stock around the time that Peter Krause sold the line to Glen Scott. I received the kit at a vastly reduced price as these were probably the last viable set of castings from a particular batch before the kit was retired for re-tooling. This is not to say anything negative, but only that this was more of a kit-bash than a kit-assembly.

The castings were of a somewhat inconsistent thickness and warped so required a certain amount of laminating with styrene sheet and thick styrene sections 6.3x2.5mm to straighten the sides and flatten the floor. Bracing of the sides had to be top and bottom and one end had to be braced vertically. After 6 years there has not been much, if any movement, so it seems to have worked. These were attached with Zap-a-Gap medium CA, using wooden clothes pegs as miniature clamps.(photo 1) Some of this bracing is visible in photos, but is generally invisible when viewing the model. I did leave room in the roof for potentially fitting interior lighting at a later stage, but so far I do not think I will do it. If I do, it will be using a rechargeable battery inside the guard’s compartment with a small switch mounted under the floor. This will

ensure compatibility with both Analogue and DCC controlled layouts.

Getting the roof to fit on top of the body and between the ends took some fettling. At a previous Aus7 Forum I was complemented on how I made the seams invisible. I explained that it took a fair amount of filler, patience and time. I started with a flat bastard file and worked my way down to 220 grit sandpaper to get it looking right. Some 1mm square styrene rod was glued in place as the rain-strip down each side.

Moving to the body sides, a lot of the moulded-on detail for the handrail feet were not particularly well formed so they were removed with a scalpel blade and fine needle files. They were replaced with various tiny piece of styrene which were glued in place once again with Zap-A-Gap Medium CA. Brass wire was used for the hand-rails and took some fiddling to get it bent to the right length, but I got there in the end. The supplied door handles looked nothing like the prototype photos and the closest I found were Slaters Midland Rail T-shaped carriage door handles, which fit the bill perfectly.

The correct location of the lamp irons and other details such as the steps on the passenger end were the subject of lengthy correspondence with a certain ex-NSWPTC Guard who thoroughly ensured the correct location for a 1950s-1960s era SHG, even managing to source prototype photos from the era which showed each part in sufficient detail for a model. The steps on the passenger end were formed from left over scraps of brass etch and small pieces of styrene cut to size. (photo 2)

The chassis and underframe was the most radical departure from the kit. I used the main floor casting, but I had to adapt the brass foot brackets to suit and used

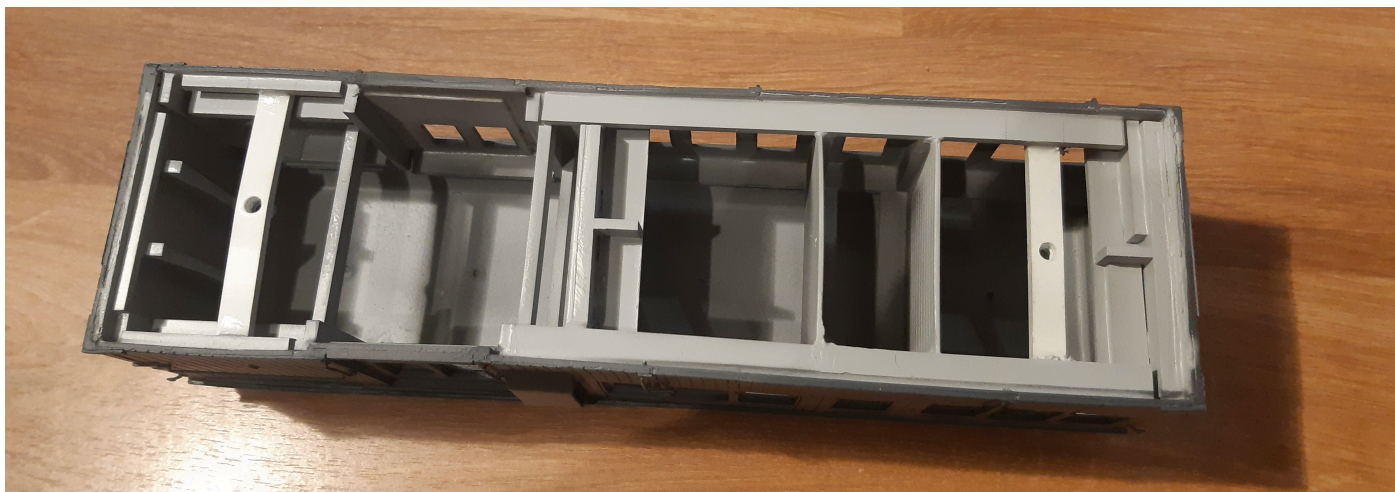
styrene strip to form the foot boards. Of course, the major change was the 2SE or "G-Type" bogies which were a Waratah Models item at the time. I also had some brass bolsters which allowed me to retain the bogies with a brass wire split-pin. The bogies had to be packed in height slightly so that the axle boxes would clear the footboards on curves, but it does not seem to affect the appearance of the model. The battery box is an O-Aust urethane item and the air cylinder and dynamo came out of my box of random castings which seemed to be about the right size and shape. Only God knows the precise origins of those castings! (photo 3)

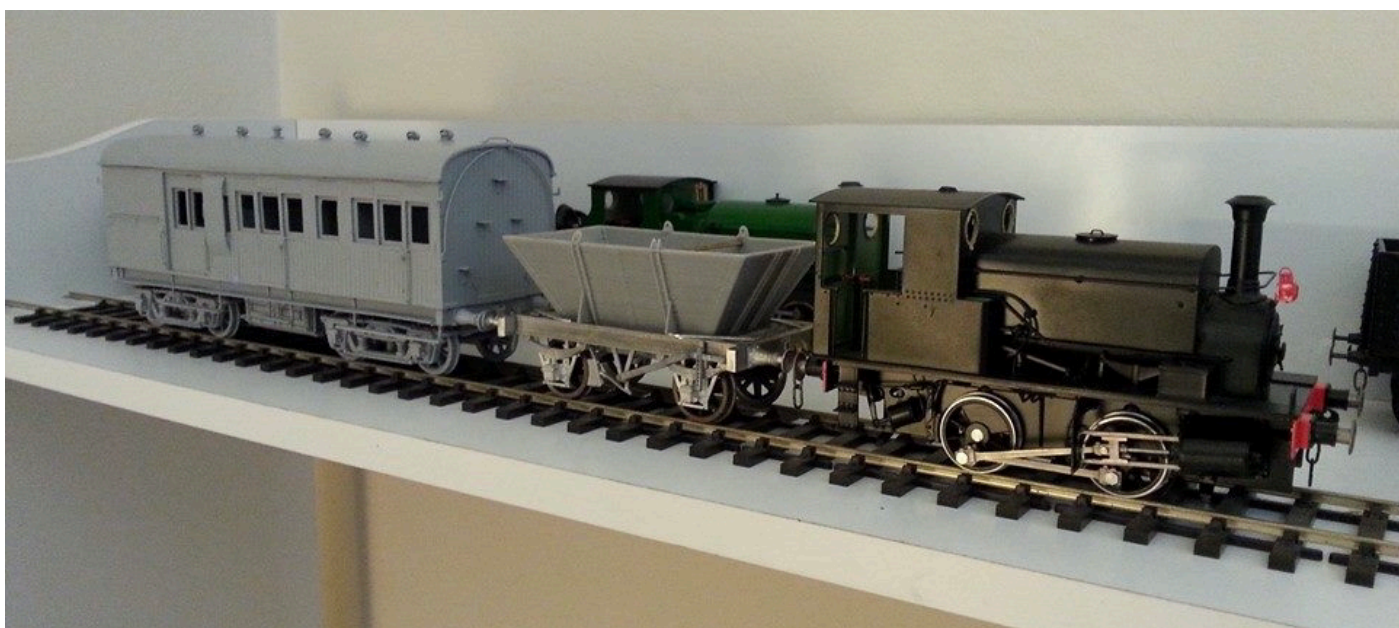
I have used some buffer-beams which were leftovers from a manufacturing run of PHG kits, but I plan to change these as they are not the correct style for an SHG. I will also take the opportunity to fit the buffers properly sprung in due course. I originally ordered Slaters working screw-link couplings, but after burning my fingers and destroying 2 sets, I changed tack and ordered some from Dapol, part no. 7A-000-003. These retain the appearance of a screw-link coupling, but the centre screw link is cosmetic only and the whole thing is pre-assembled.

The chassis is united with the body by two screws running through the floor into a pair of transverse beams with retaining nuts glued in place. This is to allow for eventual glazing and potentially fitting some lighting at a future date. I am pretty sure those screws came from an assortment packet from Bunnings or a petrol station somewhere.

All that is left now is glazing, decals, weathering and couplings, but it has been like that for about 6 years now. One last photo shows an anonymous Manning Wardle H class, which has since been numbered 1021, a coal hopper which is still waiting for primer and paint to this very day and the SHG. Lurking in the background is a green Hudswell Clarke (Bunnerong No.2 perhaps?) (photo 4)

I would like to take a brief opportunity to send out a thank-you to all the other modellers who have given me encouragement over the years. They were all on the Stringybark Creek team and circumstances have meant that I could not stay in touch with all of them. I would also like to offer my apologies to Paul Chisholm for making him wait 6 years before submitting this article. I hope this is now a promise kept.





Under Leaden Skies

By Stephen Reynolds



Roy C Link 1947 - 2020 was the editor and publisher of Narrow Gauge & Industrial Review as well 13 books on unusual prototype tramways and a producer of fine-scale kits in various scales. The origin of this kit is RCL Kits; now Kbscale.

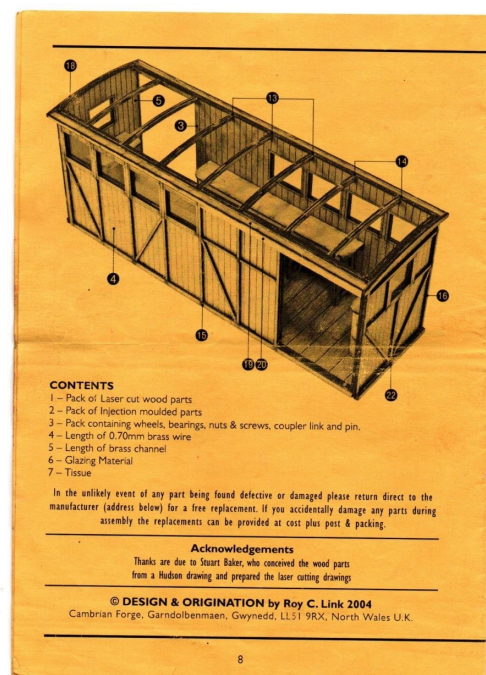
The instructions that came with the model state that it is based on Robert Hudson's drawings dated 1941, titled "Mobile Office and Workshop". I was always under the impression that the model was of a much earlier piece of rolling stock from the WWI. Hence the title, Under Leaden Skies. Drawings and photos were published in issue 84 of Narrow Gauge & Industrial Review. Whatever, it turned out an impressive model.

History of the model:

The model was purchased from a well known retailer from his pre-loved Web site. It had languished there for what seemed like years before I weakened and paid (at the time) a handsome price for it. The only reason was that besides liking the prototype as well as being 7mm was the manufacturer Roy C Link (now deceased) and knowing it was a product of his it would have to be good. I was not disappointed!

Presentation:

True to its pre-loved status the kit arrived in a takeaway food container with detail parts, bogies and wheels wrapped in tissue paper. The original packaging was long gone but all parts seemed to be there. Also included was a very comprehensive eight page set of instructions and exploded diagrams.



Construction:

As with all laser cut wooden kits I coated the timber parts with Shellac to seal the grain. Once dry I sprayed them with a grey undercoat from a rattle can. This was the start of the weathering process as well as providing a consistent surface for all future coats of paint.

The construction was fairly simple; after all, it is only a box on wheels but one needs to follow the instructions and the procedure they suggest. Some sides are laminated together with three sections including the glazing material and outside bracing. Once dry the four walls were glued together as two separate L sections making sure the sides were at right angles and perpendicular to each other.

The sliding doors worked well in the door runners and hand grabs were added.

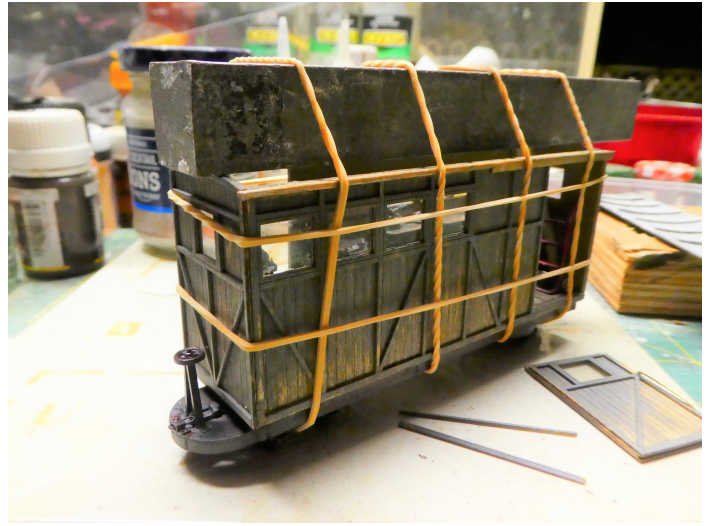


Weathering the body:

This process had already begun with undercoating the outside body grey. Some panels were sanded back to their natural wood colour. Other areas were enhanced with water based pencils. All this was blended together with a wash of India Ink.

The floor/base is made up of two identical parts. I glued over the scribed flooring and add a third layer of individual flooring planks obtained from coffee stirrers and ensured that all tabs were not covered over.

The underframe was assembled as per instructions. The bolsters were prepared and inserted into the frame along with the end frame pieces. The complete assembly was held together on a piece of glass by heavy steel weights to keep it all square and true while the glue dried.



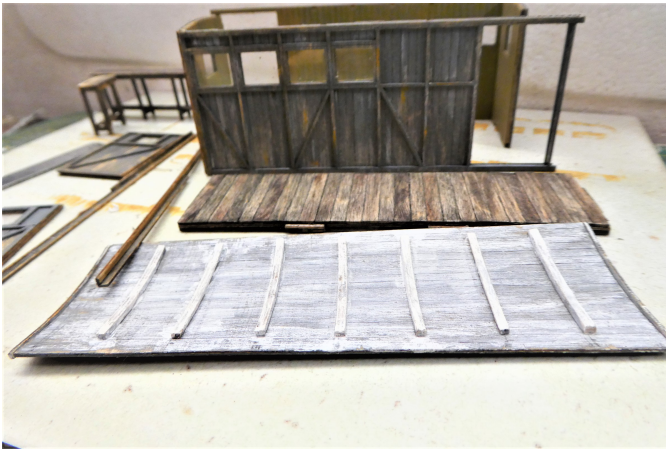
Once dry the frame was sprayed matt black having previously been undercoated along with the bogies.

The chassis came next. These was a bit involved, especially the brake bogie but following the separate exploded diagrams in the instructions all went well.

Once complete the assembly was attached (glued) to the frame. Rubber bands held all in place as well a weight to add tension and downward pressure while the glue was drying.



The roof was prepared following instructions. The inside was painted white while the top was covered with the material supplied (tissue paper) that provided a pleasing covering. The curve was gained by attaching the ply roof to a larger radius tin with rubber bands for 24 hours. The roof was painted matt black and once dry talcum powder was brushed on with a pleasing result. The roof was not attached to the body because one of the features for me of this model was the potential to add detail to the interior. I attached the roof with small amount of Blue Tack which was not all that successful. Hopefully in the future I will be able to install small attaching magnets in each corner.



Detail parts:

Because I felt this model would be top heavy, I always intended it to be a static model and I tried to use only metal parts on the floor. These included trolleys, off cuts of rail, D shackles in a basket, 44 gallon drum, gas burners, vices, forge on a stump, hand tools, lengths of copper pipe and steel rope, rags and signs, stools, a workbench and the list goes on. All were painted and weathered to bring out the detail.



Base:

I wanted to reflect the hard life the wagon had endured up to this point in time. Some time ago while preparing firewood I was cutting up lengths of very worn and weathered stair treads when it occurred to me that I could put them to a better use. So preparing a suitable base, I layed out rough sawn sleepers then spiked down two lengths of rail to them gauged 600 mm in 7mm scale to give 2 ft prototype. I then attached masking tape either side of the track and applied the ballast with watered down PVA. Once dry I removed the tape; achieving a nice clean line. I did not apply any other scenic material and left the base in its natural state trying to complement the model in a barren, neglected condition. I wanted the model to reflect the horrors of the conflict it had survived and now was still gainfully employed as a Mobile Workshop.

I





In many ways the choice of decoder is the obvious starting point. Some 18 years ago at the time of the foundation of the Aus7 Modellers Group there really was only one brand to consider if you wanted to add DCC, sound and lights to your O scale model and that was a Soundtraxx decoder. Soundtraxx, based in Durango, Colorado, in the U.S really started it all way back in 1990. This was of course well before the development of the now deservedly popular Soundtraxx Tsunami range. Way back then it was not uncommon to have to install two decoders, one to control the motor and lights and a second decoder just for the sound. Motor control was also generally limited to motors which required less than 1 amp. Fortunately all of the kits for NSWGR steam locomotives then available used small modern motors. This would change later with the introduction of the O-Aust/Bergs kit for the NSWGR 48 class with its larger motor which required a decoder which could handle a higher current rating.

Early Soundtraxx Tsunami decoder



DCC decoder developments since those early days have changed significantly with products now available from an increasing number of manufacturers. However for (7mm) O scale application within Australia, based on features and availability, that list can easily be shortened to two, namely Soundtraxx and ESU Loksound. The current Tsunami range of decoders from Soundtraxx are suitable, with some qualifications, for most of the available steam locomotive kits including the NSWGR 13, 18, 19, 30, 30T, 32, 36, 50 and 59 classes. Unfortunately the whistles are a bit of a problem, the Tsunami Light Steam K27 decoders together with those with peanut whistles are probably the closest to the sounds of NSW steam.

Many have been using Soundtraxx Tsunami decoders for years and they have certainly proved to be a reliable and trouble free performer with motors which require not more than 1.1 amps.

Incredibly it is 7 years since I last wrote about this subject, in fact the original article was included way back in 2015 in Issue # 46 of this journal.

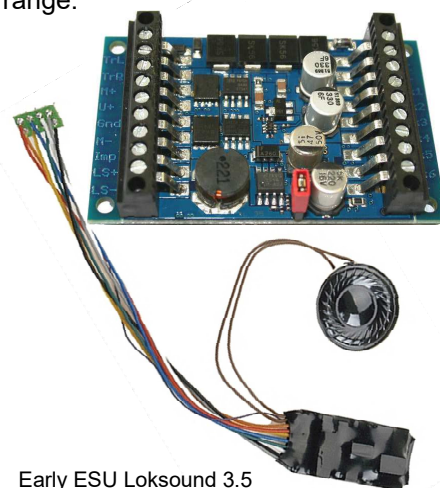
Although much of the original content is still valid there have been plenty of changes particularly in the availability of LEDs and decoders.

I will attempt to cover the current situation in this updated article. Do keep in mind that it is based on my experiences and preferences. Some may have other opinions which could be no less valid.

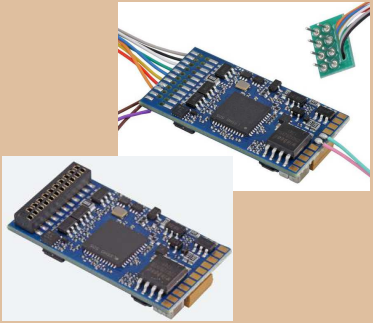


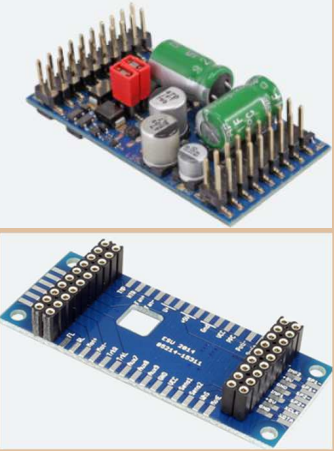
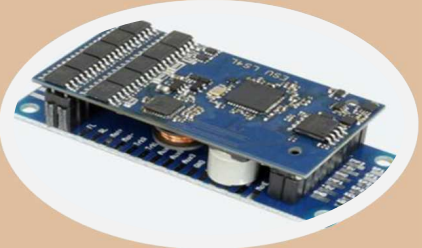

John R B Parker

The problem was that we had to accept some limitations on the number of available functions and the sound, particularly the whistle which was developed to accurately reflect the U.S. prototype. That worked O.K but it was not really an accurate representation of NSW sounds.

So for some time Soundtraxx ruled supreme until the arrival of ESU Loksound from Germany. This represented a major change for the hobby. For the first time we could purchase a decoder complete with sounds that were able to be replaced or edited. By 2014 the ESU Loksound range was in its fourth iteration with a 5th version following in May of 2019. The ESU Loksound range really have become the decoders of choice and so feature heavily in this article. Incidentally if you would like to have all the other DCC features but without sound then the ESU Lokpilot range is for you. No sound, but all of the other features for lighting and motor control are similar to the ESU Loksound range.



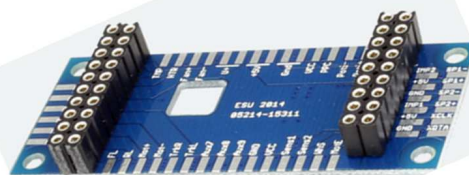
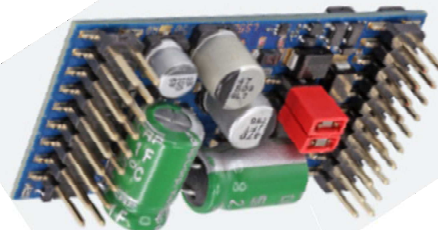
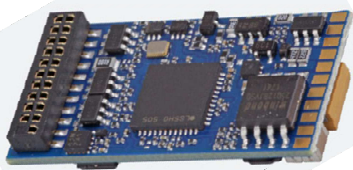
Early ESU Loksound 3.5 and XL 3.5 decoders

| Decoder Type | Key Features | Applications |
|--|--|---|
| Loksound V 5.0  | <p>Available in 8 pin plug, wired and 21 pin versions.</p> <p>Preferred is the 21 pin version used with adaptor board. Maximum 1.1 amps</p> <p>4-8 functions (with adaptor board)</p> <p>Supplied with a test sound file.</p> <p>Unlimited range of sound files can be loaded with the Lokprogrammer. Some dealers will supply the decoder loaded with a custom sound file to suit a particular locomotive.</p> <p>4-8 ohm speaker required.</p> <p>30 x 15.5 x 5mm</p> | <p>Like all products of the LokSound family the LokSound 5 is a true multi protocol decoder. It supports DCC as well as Motorola®, Selectrix® and M4. It supports 14 through to 128 speed steps as well as 2 and 4 digit addresses in DCC format and up to 32 functions. Thanks to RailCom-Plus® the decoders register themselves fully automatically on suitable command stations.</p> <p>For best results use it in conjunction with the #51968 Adaptor board to gain access to all functions. Used widely in HO models it is also suitable for all current O scale models of steam prototypes.</p> |
| 21 pin Adaptor Board  | <p>Photograph is of an earlier version, later versions can provide access to 8 decoder functions. Used in conjunction with the decoder mentioned above to provide the most convenient installation in all O scale models of steam prototypes.</p> | <p>The portion of the printed board with the two holes can be removed for the most compact installation.</p> |
| Loksound 5 Fx  | <p>Sound only decoder– no motor control.</p> <p>21.5mm x 15.5mm.</p> <p>Use with the above adaptor board.</p> <p>A version with connected wires is also available.</p> | <p>The LokSound 5 Fx is a new addition to the LokSound family: it has no motor output and is specially designed for use in control cars or rolling stock which require a sound but do not have a model drive themselves. It can still offer all the sound features of the other LokSound 5 family.</p> |
| Loksound 5 L  | <p>LokSound 5 L is intended for use in all applications where the required power exceeds the limits of LokSound 5. Ideally these are O gauge vehicles and also smaller 1 gauge locomotives. Despite its compact dimensions of only 50.8 mm x 25.4 mm x 14 mm it is equipped with a dual speaker output and integral PowerPack.</p> <p>The LokSound 5 is equipped with a multi-pin connector and is supplied ex works with an adapter board featuring solder pads.</p> <p>Every LokSound 5 L decoder has 11 amplified function outputs. On top of that there are another 6 logic outputs, which can, if so desired, control two RC servos or SUSI extension modules, including steam generators.</p> <p>Max current rating is 3 amps.</p> | <p>The LokSound 5 L decoder can reproduce up to 10 channels simultaneously. Each channel offers up to 16 Bit / 31250 kHz and thus we have finally achieved hi-fi sound quality on your layout. A dual class D audio power amplifier with up to 2-times 3W output power feeds the speakers with a permitted impedance of 4 – 32 Ohms. The huge 128 MBit sound memory assures sufficient storage capacity.</p> <p>This is the ideal decoder for O scale models of diesel prototypes. It can be used in all applications where previously XL decoders would have been used.</p>  |
| Loksound 5 XL  | <p>The LokSound 5 XL measures 51 mm x 40 mm and is available in two different types. There is a version with multi-pin connectors and one with robust screw type terminals for installation in older models without an interface socket. This version fits into all locomotives where an older type LokSound XL decoder has been installed previously.</p> <p>Max current rating is 4 amps</p> | <p>Since the availability of the Loksound 5 L , detailed above, this decoder is no longer recommended as a cost effective solution.</p> |

If you were to make a comparison between the table on the previous page to that included with the original article you would note the omission of the Select range of decoders. These lower cost versions, developed specifically for the U.S. market were discontinued when the Version 4 decoders were replaced by the Version 5 series in 2019.

The information included in that table is based on current information. It is a summary of the differences with suggestions for their most likely application in O scale models. I have not included the decoders more specifically designed for HO and N scale models.

Only the key features are mentioned. A large amount of additional information is available on the ESU website.



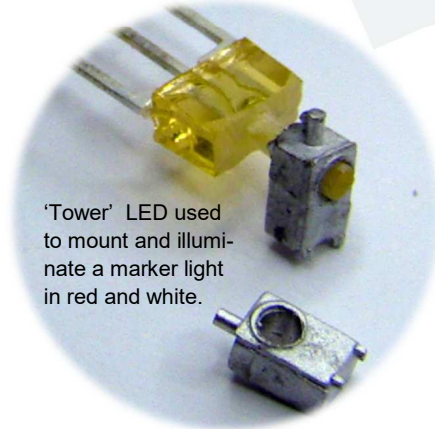
During the period that most are modelling real locomotives used incandescent globes for headlights, marker lights, and cab lighting, together with some limited use of kerosene lanterns. We could use incandescent globes in our models, not sure about kerosene that would be interesting? However neither would be a very good choice and are certainly do not carry my recommendation.

Fortunately with the ongoing development of Light Emitting Diode (LED) technology, light effects have never been simpler to achieve.

DCCconcepts was originally the go-to source for LEDs which all came conveniently packed with appropriate current limiting resistors. Since moving their operation to the U.K. they are no longer as cost effective. Australian Modeller does carry most of their LEDs but the popular dual colour Tower type LEDs and the red/white Nanolights seem to have disappeared from the range. The two most useful LED types remain as the red/white 2mm tower style and the very small wire terminated surface mount LEDs, both the red/white combination and the single chip white LED. Unless you are trying to replicate a modern sealed-beam style of headlight the 'prototype white' or 'warm white' version should be selected. AliExpress has now become the best place to source LEDs. Their suppliers have very competitive prices for most versions. (See 'Where do you get it?') The tower style, with their advantage of being slightly more rugged are available as red/white versions with a common anode. These are ideal for the marker lights at the rear of ten-

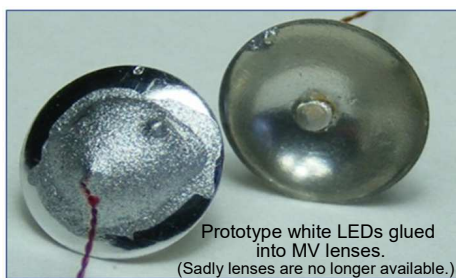
'Tower' LED used to mount and illuminate a marker light in red and white.

ders. They easily replicate the marker lights which in prototype form included a single globe with separate red and white lenses which were physically rotated in place as required.



The back to back red/white LEDs with enamelled leads have been a real asset in illuminating marker lights mounted on the side of the boiler. These assemblies are however rather fragile and short circuits can occur within the brass or white metal castings.

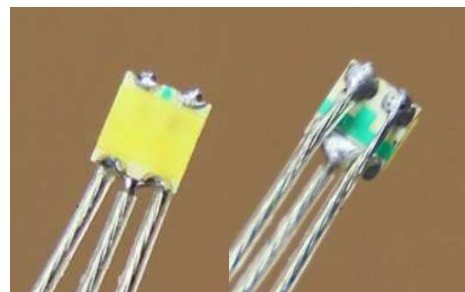
There is now a new option.



Prototype white LEDs glued into MV lenses. (Sadly lenses are no longer available.)



Prototype white LEDs can also be mounted directly into a headlight casting.



A recent arrival is a single package which includes both red a warm white LEDs with a common anode. Both of LEDs are on the same side and the chip is terminated with insulated litz wires which strip and solder with ease. It is also considerably less fragile. Good value at about \$1 each making it an excellent option.

Regretfully the speaker portion of our project is the one area that is sometimes overlooked. This is unfortunate as a good speaker with an appropriate enclosure can have a significant impact on the final outcome, particularly if the model is going to be operated in a relatively noisy exhibition environment. There are a few simple rules: The speaker should be as large as possible. Modelling in O scale gives a number of advantages based on size. Don't place the speaker in a tender. In HO scale this often the only solution but in O scale there is too much aural separation. The sound of a steam locomotive comes primarily from the boiler and smokestack. Make sure the speaker matches the impedance required by the decoder. In the examples we are using 4 ohms is preferred but up to 8 ohms is O.K. If you happen to be using an older Loksound decoder such as the Loksound 3.5 then the speaker impedance must be 100 ohms or between 8 and 32 ohms in the case of the Loksound XL 3.5. If you still have some available the best speaker, provided it will fit, is the 40mm 4 ohm speaker previously available from Jaycar as Part AS3028. Only one will be required but it must be mounted in a suitable enclosure. The next best is the slightly smaller 36mm 8 ohm speaker available from Jaycar as part AS3030. Provided there is sufficient space, two should be used wired in parallel to provide a total impedance of 4 ohms. They are best mounted in an enclosure but because of its construction these speakers can be mounted back to back without a separate box. Provided all the holes are sealed the speaker's moulded construction provides a reasonably effective enclosure. Unfortunately this speaker will be no longer be stocked by Jaycar so we will need to go elsewhere for speakers, fortunately there are plenty of options.

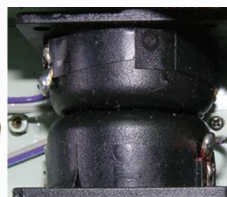
The small 'sugar cube' style of speaker supplied with Loksound decoders are ideal for HO installations but in O scale models we can do so much better sticking to the 'as large as possible' rule. A quick search on AliExpress for "4 ohm 40mm speakers" will find many suitable speakers including the following at approx. \$10 for the pair including postage.



Jaycar AS3028



Jaycar AS3030



2 x Jaycar AS3030
in parallel (49 class)

A number of suitable enclosures are available from Model O Kits (ScaleModelCo), or you can construct your own from 3 mm MDF or 2mm thick styrene. The aim is to ensure that there is no direct air path between the front and rear of the speaker cone. Don't skimp on the need for an enclosure, it really does make a difference, particularly with the lower frequencies. If you don't want to build an enclosure you could consider one of speaker enclosure combinations such as the following.



These speakers include passive radiators and come in two sizes, 24 x 55 x 14 mm and 29 x 65 x 14 mm for the large unit, both are 4 ohms. They would be ideal for the rail motor.



The essential modular plugs and sockets were previously available from Jaycar as a 32 way connector, part #P16470. These very useful connectors are now available at a lower price on AliExpress as a 40 way strip. Do not be tempted to break them by hand it is much better to use a razor saw to make up the desired number of connections.

O.K. What's next?

Anyone interested in adding smoke?

The two generators shown below are from ESU Loksound and will operate with both the Loksound V.5 and the Loksound 5 L decoders.



Smoke unit, large

Smoke unit, Dual Mini



Where do you get it?

1. Pre-soldered litz wired Bi-color RED/WARM WHITE SMD Led 0605

[https://www.aliexpress.com/item/32254903503.html?](https://www.aliexpress.com/item/32254903503.html?spm=a2g0s.9042311.0.0.527f4c4d4jAp25)

[spm=a2g0s.9042311.0.0.527f4c4d4jAp25](https://www.aliexpress.com)

2. T0603 20pcs SMD 0603 LEDS Lights Pre-soldered Micro PTFE Wire Leads

<https://www.aliexpress.com>

3. 40 Pin 2.54mm Round Tin Plated Breakable Single Row Hole PCB IC Female Pin Header Socket Connector <https://www.aliexpress.com>

Our new store is now open!

We are located at: A4/ 2-4 Central Avenue Thornleigh NSW 2120 - just off Pennant Hills Rd Thornleigh (complex next to McDonalds), around 250m from Thornleigh Station.

Our opening times are Thursday 5.30pm - 8.00pm & Saturday 9.00am - 1.00pm. Shop hours are interim until end February 2022 when we will open on more days. An announcement will be made about this closer to the time.

We are working on some exciting new O scale locos, rolling stock and lineside projects for 2022. Announcements will be made closer to when we will have these available.

Our new website and online store will be at www.scalemodelco.com.au, with the online store operational in the New Year. You can still visit our existing website at www.modelokits.com.

We can be contacted on sales@modelokits.com or sales@scalemodelco.com.au or by mobile on 0404 935 663.

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