

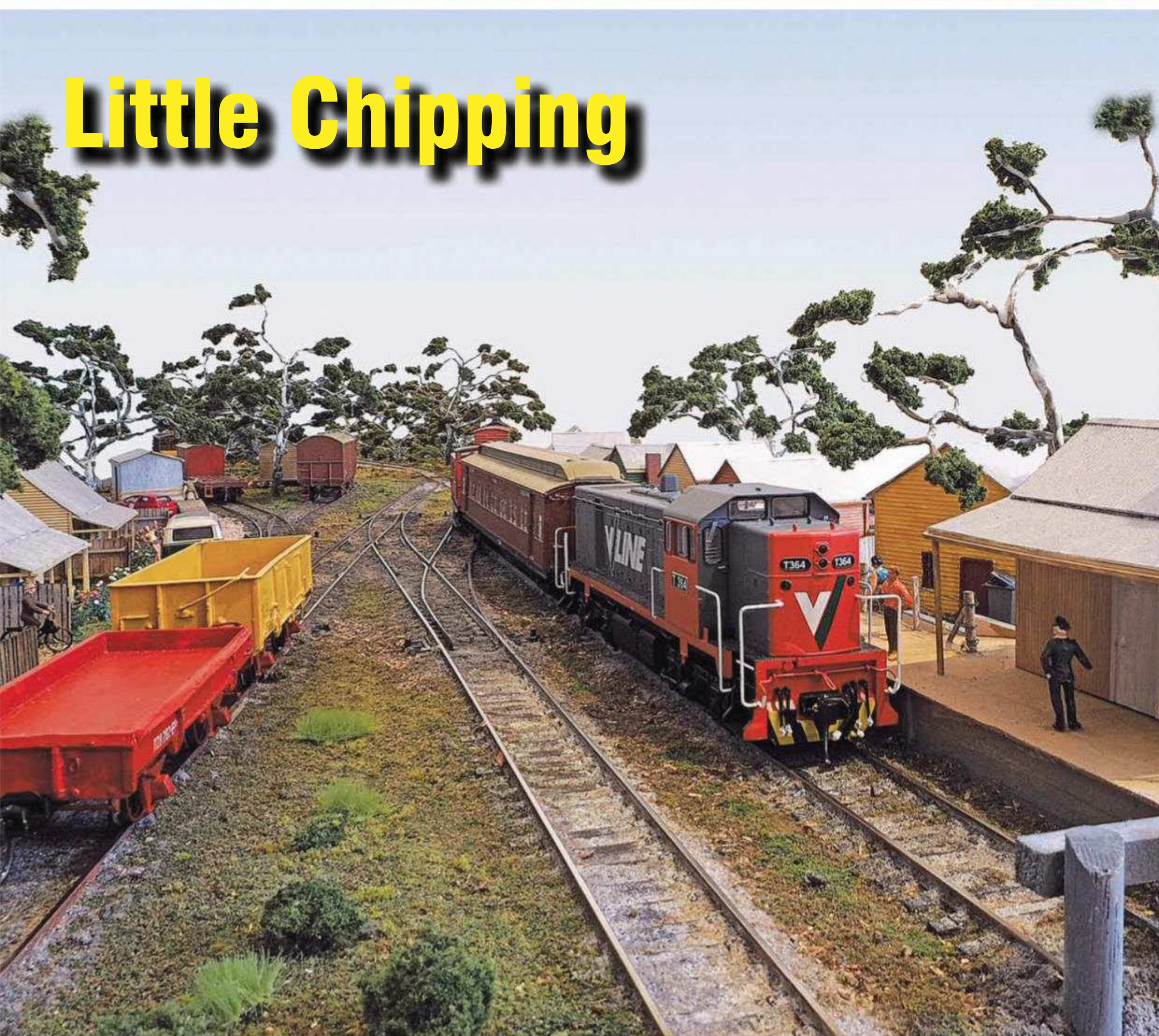
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MODEL RAILWAY

MAGAZINE

Little Chipping



On the Workbench: Austrains 30 Class
Build a VR MU Louvred Van
Lightweight Benchwork
Reviews • Mailbag • AMRM News

Issue 332 Vol.28 No.11

ISSN 0045-009X



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Editor: James McNerney

Issue 332 Vol.28 No.11

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ON THE COVER: A Powerline T class in V/Line colours approaches the platform at 'Little Chipping', the latest in a series of 'minimum space' HO scale Victorian prototype exhibition layouts constructed by Martin and Mandie Murden. This layout is described in this issue, starting on p.18. Photo by James McNerney.



Too Expensive?

Regrettably, we all too often hear these words describing the cost of purchasing models for the railway and for as long as I can remember, this has been a common comment. Back in the late 1960s, as a newcomer to the modelling of Australian prototype, I really wanted a brass NSWGR 38 class. Model Dockyard had produced them, but the second hand price was beyond my pay packet, as was the Garratt and the Victorian R class. I was able to accept the fact that these models were beyond me, although later I was able to possess an R class for a decade or so.

Things changed a bit in 1969 when George Berg released the Japanese-made brass NSWGR 32 class. A quick dip into my pocket for \$59.95 found a nice brass model on my layout. Now let's keep this value in perspective. I was making just over \$26.00 a week as a tradesman in 1966, when decimal currency arrived. By late 1968, when I was trying to buy a house, I was getting \$71.71 in hand, after tax and deductions. As a tradesman I was reasonably paid, but nothing like the tradies of today. When the Berg's 50 class arrived it took a week's wages to purchase the model. Realistically, most of us could not afford the models, but then most items in life were cheaper and in my case, overtime was fairly abundant. Still, I have to remember I was earning over the average wage.

Close on the heels of the 50 class, Lima released the ready-to-run NSWGR 44 class in plastic, but there was a trap. Initially it came in a package; loco, two carriages, a circle of track and a battery controller. And it was only initially available from the popular shopping chain of the day; Norman Ross I think was the name. But at \$30.00 a pop, on special, it was indeed a steal! Finding a shop that had them used up many gallons (we still thought Imperial then) of petrol as we chased over the suburbs of Sydney to find a pack for ourselves and a mate or two. Time may have dealt harshly with the Lima 44 class, but it certainly reduced the price of a ready-to-run model and, at half a tradesman's weekly wage, made Australian model railways more affordable, even after the introductory special faded away.

Turning to today's models, a recent purchase was an Auscision 48 class diesel and an Austrains 30 class steam locomotive, \$310.00 (prepaid) and \$550.00 respectively. Expensive compared directly to 1970 prices certainly, but in 2018, when the average wage is \$1164.60 (November 2017), much less in 'real' terms. And when the models of 1972 and 2018 are placed side-by-side there is no comparison. To start with most of the 2018 models run so much better than those built 45 years ago. The detail on the models is superb; maybe occasionally a bit flimsy for my now aged fingers, but the models are now so much better, in all respects. So do we get value for money? I cannot answer for others, but I find that there is plenty of visual and operational enjoyment with today's products and that includes the rolling stock.

However, living in a wealthy first world country, where many have surplus income that permits enjoying an expensive hobby, we should keep everything in perspective. Not all in this country have that surplus income to participate and as sad as this fact is, there is nothing much a model supplier can do to change the price of the models. We, the modellers, demand good running, highly detailed and accurate models. Producing these models costs money, at times a lot of money. The models of today have detail separate from the model. This detail has to be prepared, including pre-painting, and then hand positioned into place (generally a press fit). Even though this manufacturing process takes place in third world countries where wages are far less than Australia, still the cost is expensive and becoming more so.

Granted, these facts are no comfort to those who find the cost of participating too high, but I guess it could be a bit like wanting to drive around in a top of the range Mustang when one's income can just afford a very old Morris Minor. Loving care and good maintenance will keep the Morrie running to get from A to Z, even if not in quite the 'style' of a new Mustang. If the desired model is too expensive to purchase there are alternatives, such as scratchbuilding, or detailing and 'fettling' an older model...

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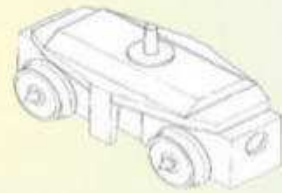
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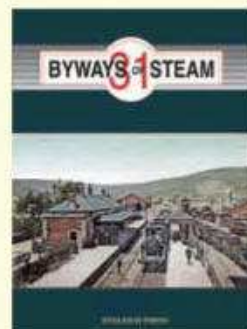
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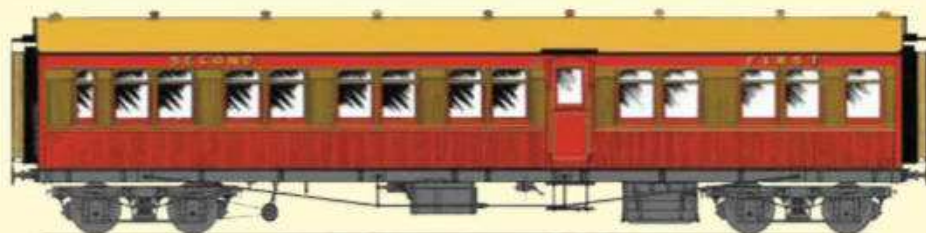
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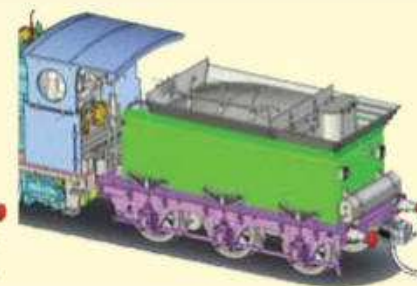
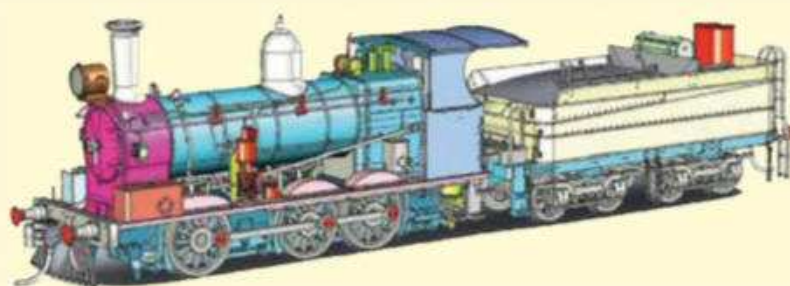
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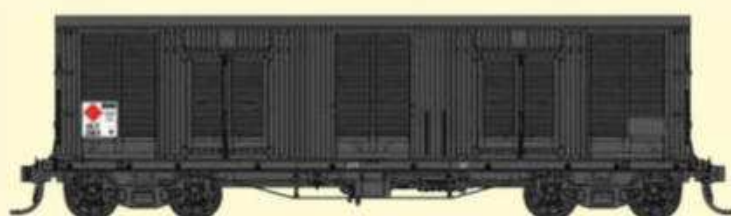
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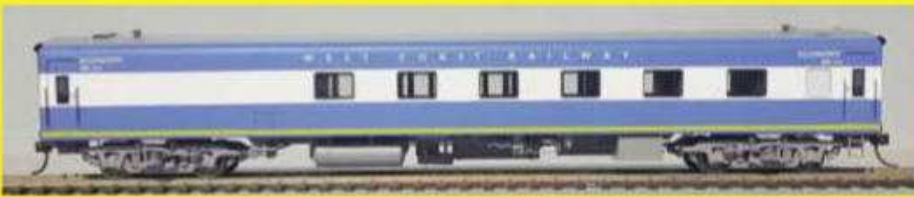


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PC-100E BCH-29209. PC-100F BCH-29417
PC-100G BCH-32393. PC-100H BCH-32749



BWH NSWGR Grain Hopper.(1953-79)

PC-101A BWH-28735. PC-101B BWH-28962
PC-101C BWH-29298. PC-101D BWH-29423
PC-101E BWH-32008. PC-101F BWH-32274
PC-101G BWH-32545. PC-101H BWH-32638



Frt Aust. VHBF Wheat Hoppers

PC-300A. VHBF-1109B
PC-300B. VHBF-1103Q
PC-300C. VHBF-1116F



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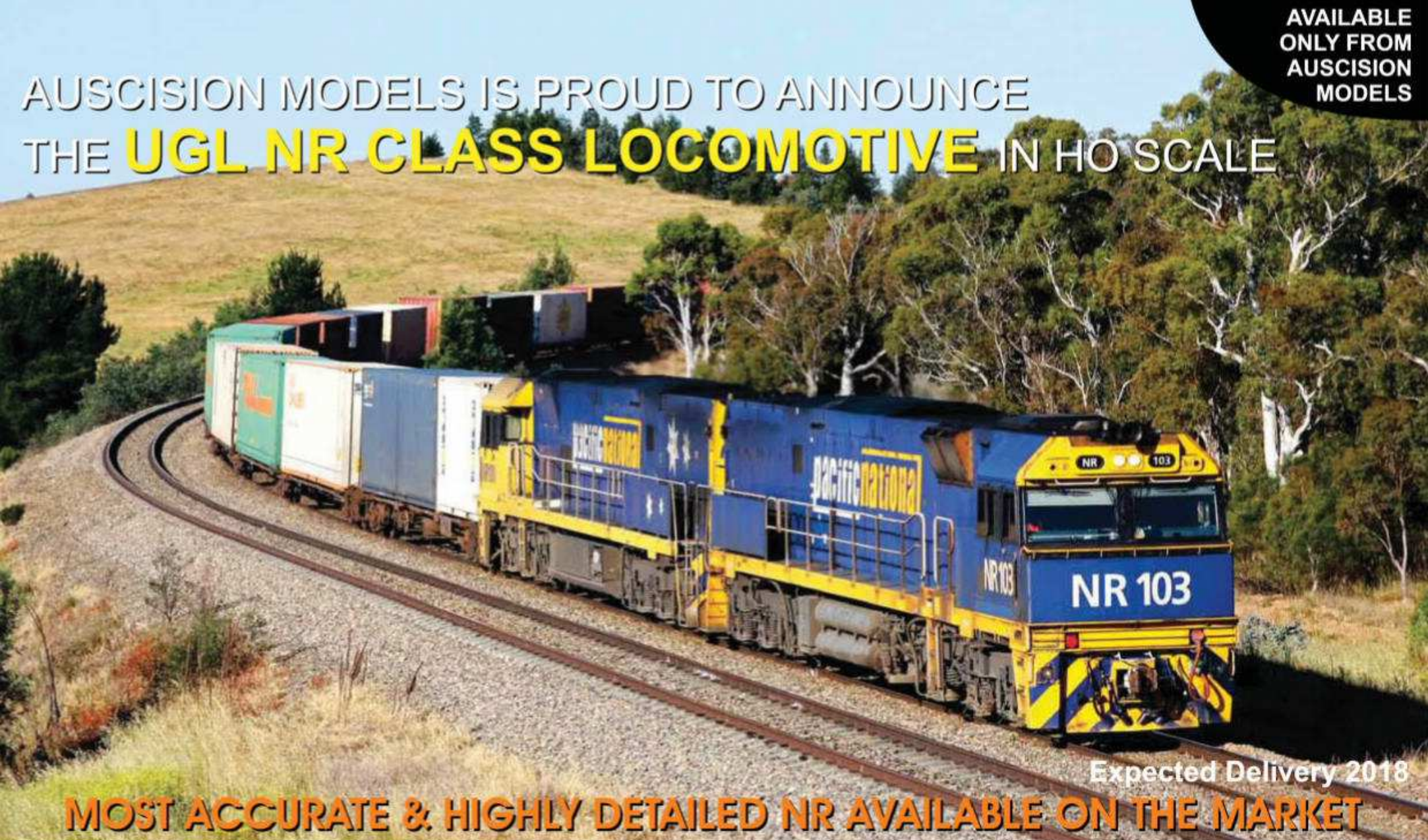
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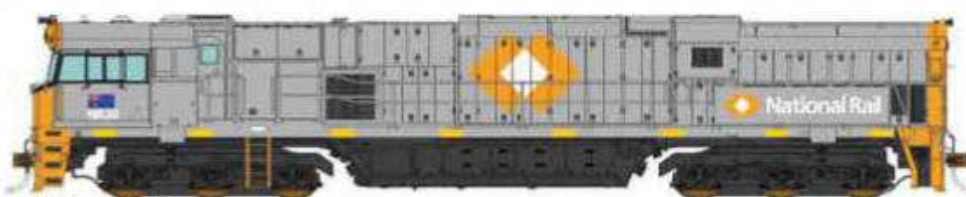
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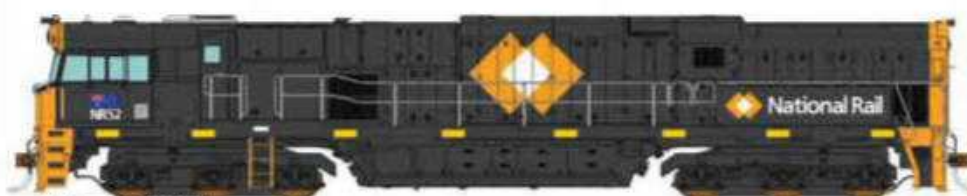
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▲ A passenger train is about to depart for Twigg. The coach is a VR Casts ABL which needs to be completed (no door handles for one thing) with the Z Van coming from SEM. The locomotive is an Austrains Y class diesel and is a delight to operate. The post and fence on the platform took a knock at some stage and hasn't, as yet, been fixed. Mandie suggested it was the work of the Chipping Cat. The oil tanker is a Hornby vehicle that was modified to look a little more Victoria-appropriate as per Peter Eisenhut's article 'Conversion of a Mainline Tank Wagon to a VR Four Wheel Tanker' in AMRM Issue 121 (August 1983).

Little Chipping

Martin Murden describes the third in a series of minimum space exhibition layouts he has constructed over the last three decades. Photos by John Dennis unless otherwise indicated.

◀ A view of the yard as the layout's oldest loco, an Alco Models Y class diesel purchased in 1984, brings a goods train into the station. The photo shows the typical situation faced by an operator, a full yard. It is even necessary to use the station platform as a siding to hold wagons. Most of the wagons in the scene have been constructed from Steam Era Models kits. At the far end of the layout, the opening to the 'train-table' can just be seen.

In August 1827, as he was sailing along the Victorian coast, Lt Charles Twigg chanced upon a small bay. He named this Leafy Bay after his good friend, George Leaf, recently elected to the House of Commons as the member for Little Chipping.

The VR branch line eventually built to Leafy Bay ran through several small towns whose names were associated with this event. These included Little Chipping, Twigg, Fern and Leafy Bay. Fern was, of course, the family home for the Leafs. Every epic journey brings a good story, even in model railways.

An article on our model of Twigg appeared in AMRM Issue 182 (October 1993) and we followed it up with an article on Leafy Bay in Issue 214 (February 1999). Both layouts are minimum space

shunting layouts, requiring two operators to exhibit. Since these articles were published, Twigg has had almost every building replaced and the trees have been replaced twice. It is currently undergoing another refurbishment. Leafy Bay has had one new set of trees. Both have had the scenery refreshed several times. With Leafy Bay we used live frog points and under track magnets for uncoupling. These were subsequently installed on Twigg.

Both are still exhibited, though not as often as they used to be. Our younger daughter has grown out of trains and the older one has her career and started a family as well, leaving little time available. She still comes to exhibitions and operates the layouts. Fortunately my wife, Carol, will also give a hand from time to time.



At A Glance

Scale: HO

Prototype: Victorian Railways

Period: None in particular

Layout type: end-to-end minimum space shunting

Layout size: 2m x 450mm plus 800mm fiddle yard

Rail height above floor: 780mm

Baseboards: 89mm x 19mm and 38mm x 19mm pine with 12mm MDF top

Track: Peco code 100

Control: DC

Locomotives: kit-built and r-t-r

Rolling stock: mainly kit-built

Builders: Martin and Mandie Murden

An overall view of the layout from the station end. The holes in the end of the baseboard cover a variety of purposes. These are for the addition of Perspex at exhibitions, the 'train-table' for when *Little Chipping* is connected to *Twigg* (the track without a buffer stop is the through line) and the wooden end for when the layout is boxed up and put away. The layout can be quickly set up/dismantled at home. The Land Rover is from Oxford Models and was purchased while in England. It sits next to the real estate agent's office; an appropriate conveyance for such a person in the country.

After completing *Leafy Bay* the intention had been to build Fern, the town between Leafy Bay and Twigg, with the potential to join the three layouts together. We even started the buildings while developing a track plan. However, a small problem got in the way. While on leave in 2003, I received an email from my employer to the effect... don't come back.

We took this as an opportunity to go into business with two people whom I knew in the financial services industry. Anyone who has owned their own business will tell you, to be successful you are going to have to devote a lot of time and effort. For a time the railways didn't get as much attention as they had previously.

I retired in 2016 so, all being well, there will be more modelling time. Fern will,

hopefully, be built one day. In recent times more modelling has been done and the buildings constructed for the new layout, *Little Chipping*. A track plan was found in the July 2010 issue of *Railway Modeller*. Different scale and prototype, but minimum space. A little bit of modification and we had our track plan.

We like to shunt trains and with the other two layouts we use a 100 train sequence timetable that can be transferred from one layout to the next. This could take six days or more when exhibiting to finish. At each exhibition we pick up from where we finished at the previous exhibition irrespective of which layout is being exhibited. At home, sometimes we use the timetable, other times we don't. The rest of Victoria is represent-

ed by a five train 'train-table' which can be used with all of the layouts.

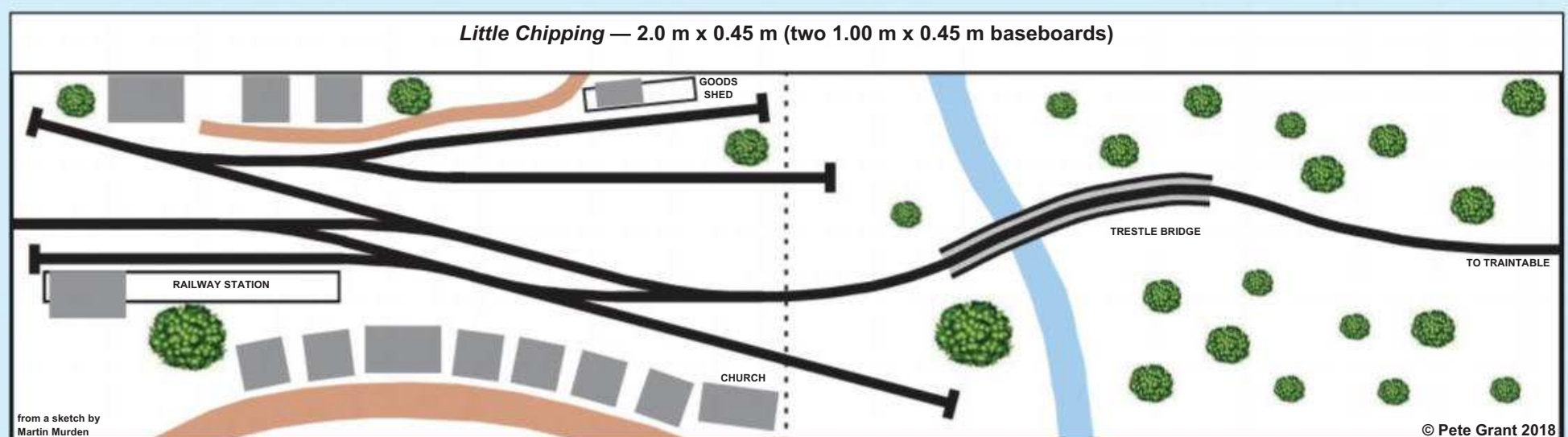
For *Little Chipping* we wanted something similar to the other layouts, but with a difference; all of the turnouts would be on the one baseboard, allowing the second board for scenery. The layout measures 2m by 450mm and the fiddle yard is 800mm in length. Train lengths are restricted to a maximum of 600mm, the same as for *Twigg* and *Leafy Bay*. And this is in HO, minimum space. A typical train is a loco with three four-wheel wagons followed by a guard's van.

In constructing the new layout, mistakes were made and problems encountered that either did not want to be resolved or required some thought to overcome.

We do get some comments about the layout height (780mm, about table height) from time to time. At home I can sit on a bar stool and comfortably operate the layout. When constructing our first layout, *Twigg*, we took into consideration the then height of our children. We have also found, when exhibiting, many parents appreciate the height chosen. They don't have to pick up their children in order for them to see the layout.

Baseboards

The boards have been built using frames constructed from 89mm x 19mm and 38mm x 19mm pine with 12mm MDF laid on top. Cork tiles were then glued to



the MDF. This has allowed us room to lower the ground on one board and build a small bridge. Each board is a metre in length.

When travelling or not in use at home, we have used some plywood to create a box with the two baseboards. Easy for storage and easy to transport. With *Leafy Bay*, a set of legs was hinged to each board and there is a free-standing set for the centre of the layout. We also modified *Twigg* to be the same. So, as it worked, we decided to use the same approach with *Little Chipping*.

A triangle is made by having a piece of wood attached to both the hinged legs and the baseboard. This is cut in two and reconnected with a hinge, making it easy to erect the particular baseboard and also ensuring the baseboard does not collapse.

Our only problem for *Little Chipping* was the board on which the trestle bridge is located. One of the challenges after construction had commenced: we couldn't fit the piece of timber to make the triangle. Because the baseboard had been lowered to accommodate the bridge, the leg for that baseboard wouldn't fold flat. The solution we arrived at was to have a piece of timber that is screwed to the leg and the baseboard when the layout is erected. This ensured the leg did not move while we were operating.

Track

Code 100 Peco track and live-frog turnouts have been used. This is consistent with *Twigg* and *Leafy Bay*. While I can appreciate layouts that use a finer code of rail, we have found the code 100 track meets our requirements. We do have a couple of items with larger flanges that appreciate the extra size of code 100, both Lima (a B class diesel, which we acquired shortly after they were released in 1993, and a GY wagon which our elder daughter Mandie received as part of her prize for winning a section of the model making competition at the first Hobsons Bay exhibition). The B is not used on *Little Chipping*, other than for through running, due to the track plan being designed for smaller locomotives.

I intended having only small radius turnouts. However, due to a mistake I made when acquiring these from The

Buffer Stop, we finished up with some medium radius points as well which made the track plan a little more difficult to follow and required some adjustments.

The track was laid onto the cork and held in place with small nails. The layout was then wired and tested. The track was then ballasted and the nails removed. Ballast is a mixture of sifted sand, from the beach at the end of our street, plaster and used photocopy toner. Once put in place we applied a mixture of PVA glue, water and dishwashing liquid using an eye dropper. This was left for a couple of days to dry.

Before the ballast was applied to the turnouts we put some La Belle oil under all moving parts of the points. This prevented them from being glued solid and the layout, after a cleanup of the ballast, runs smoothly.

At least that's the theory. And it worked first time on the other layouts. But not this time. I was not happy with operation when the layout was first ballasted. So up came all of the track, the ballast was removed and the track re-laid. When we got this part operating smoothly again we could then move on to the next stage.

To assist with running we glued a piece of 0.010" styrene strip 1mm wide to the check rails for each turnout. We had found this helped with smooth running on *Twigg* and *Leafy Bay*.

Live frog turnouts assist greatly with short wheelbase locomotives such as the two rail tractors and the M class diesel. Kadee under-track magnets have been placed in several locations. We don't put a specific marker to indicate where they are. After running for a few minutes, operators soon know where all of the magnets are located!

Electrics

We don't use DCC. That's not to say I disagree with the concept. I can certainly see the benefits on the large HO layout at the club of which I am a member. Our layouts work on the 'one engine in steam' principle, even though they are all diesels. All of the track on the layout is live, so there are no sections to switch through. Offstage, on the 'train-table', only one track is live at any time.



Owners, Mandie and Martin Murden, ready to operate at the Phillip Island exhibition in 2018. The photo also gives a good view of the 'train-table' and also shows the 'complex' lighting system acquired from Bunnings. The strip of carpet was leftover when a new carpet was laid at the owner's home. It certainly makes exhibiting easier on the feet! Photo by Carol Murden

On our other layouts we have used the wire-in-the-tube approach to operate the turnouts. This time was different. I tried three different sizes of wire and couldn't get the turnouts to operate satisfactorily. Perhaps if I had removed the springs from them, the outcome may have been different, but this was not something I wanted to do. So up came the track and ballast again to enable holes to be cut in the baseboard for Peco point motors.

To operate the trains we have two hand-held controllers with a spare if needed. When we change trains, we change controllers. Joe Saliba from the Sunshine Model Railway Club built the controllers for us many years ago. They



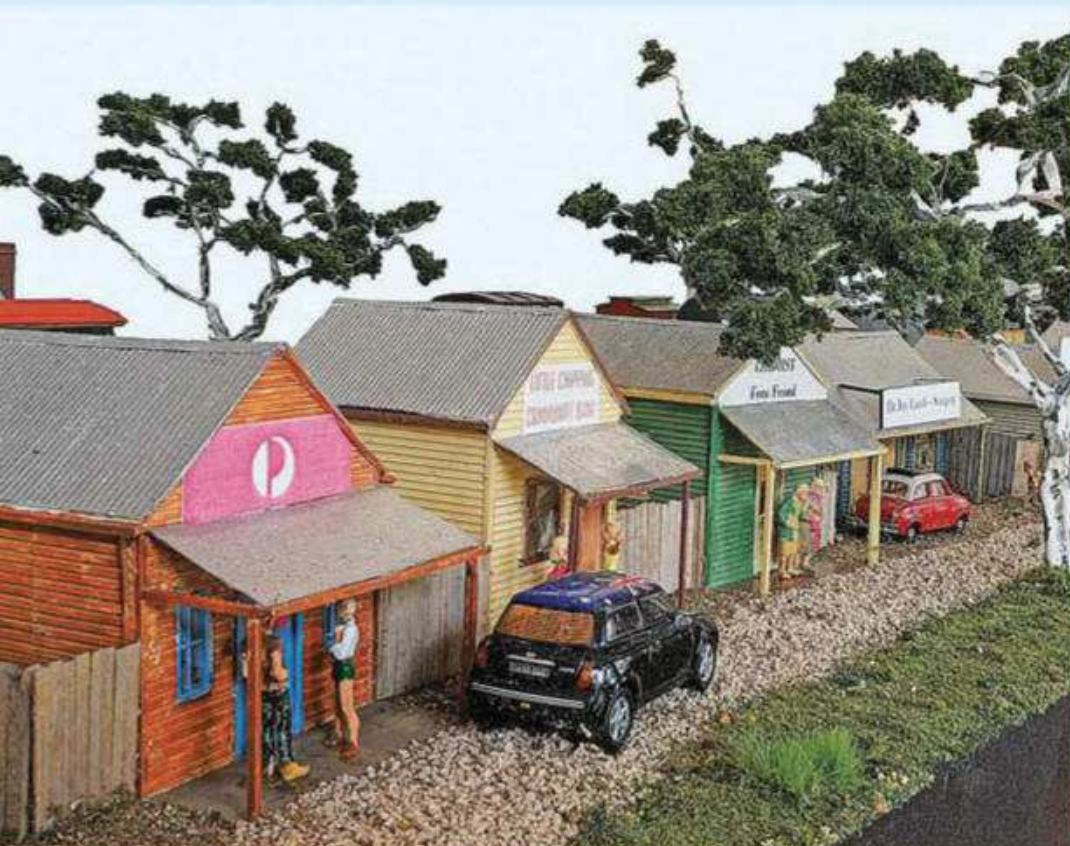
An overhead view of the 'train-table'. The two white handles are used for turning the table. The bolts are there to hold it in place when being transported. The stick is a safety measure to prevent a train coming off the end of the track and also visible is the highly 'complicated' wiring used to select which train is to be run. Photo by Les Ryan



A low-level look at the Massey Ferguson rail tractor and its train. The builders have tried to replicate the overgrown look typical of branch-line track, starting with a ballast mix of sand (from the beach at the end of the street), plaster and photocopy toner. This is then followed by Woodland Scenics products and tea leaves. The siding on the right shows the wagons just fitting under the trees. The flexible limbs allow adjustment of the trees to fit!



The Celtic Cross was made with styrene and sand, following an article in Railway Modeller a few years ago. With the exception of the cyclist, who came pre-painted, Mandie painted the people. The plants are by Noch. The wagons in the background are a mix of kit-built, scratchbuilt and modified r-t-r items. The names of buildings and businesses throughout the layout are a continuation of the play on words that began on 'Twigg'.



The Mini was one of the vehicles purchased while holidaying in Thailand. At exhibitions it tends to attract more interest than some of the trains. The Goggomobil was acquired in Spain. Each of the figures in this scene was painted by Mandie. The buildings are scratch-built using styrene and card. The roadway is surfaced with ballast from Woodland Scenics.

have a speed control and a forward / reverse switch and that is all we need. And we can move them from layout to layout.

Our fiddle yard/'train-table' (the off-stage part of the layout) is transferable between the three layouts. This was where the complicated wiring was so that we could allow for only one track to be live at the one time and for the change in polarity when the table was turned 180°. Shortly before the 2017 Phillip Island exhibition we took steps to greatly simplify the wiring. We now have two wires with a clip soldered to each which attaches to the track.

Buildings

The buildings are all scratchbuilt using styrene with corrugated card for the roofs. The 'glass' in the windows, with one exception because it was too large an opening, has been made using Krystal Klear. If you haven't used it, this is like a white glue that dries clear. The idea is to place some on the sides of each window frame, using a toothpick, and then join these together by applying more Krystal Klear.

Almost all of the buildings have been constructed using plans in AMRM as a basis. We have made some changes to try to standardise doors and windows, my thinking being that if the buildings were built at about the same time, they would have tended to take the same approach.

The station building is modelled on the VR portable building from Gunbower station (AMRM Issue 168, June 1991), the goods shed from Leitchville, Vic. (AMRM Issue 152, October 1988) and the cream shed from Many Peaks in Queensland (AMRM Issue 295, August 2012). The article suggested photocopying the plan and attaching this to cardboard. I decided to make it slat by slat using styrene strips, a very fiddly operation due to the small size of the building. While not Victorian, it did appeal and looks at home on the layout. The platform was made using some North Eastern timber that we had purchased a long time ago with card for the platform surface.

The buildings at the rear of the layout are two cottages built using the plans in AMRM Issue 78 (May/June 1976). The originals were in stone, but we have changed them to weatherboard. The third house is from AMRM Issue 119 (April 1983). Initially we were going to have just the two houses, but when setting out buildings on the layout, I realised a third house would add to this part of the base-board.

My wife Carol suggested we turn the buildings at the front of the layout to face viewers as there was more to see that way. Starting at the trestle end, the first building is the church. I was not happy with the first one constructed. It was based on photos Carol had taken a few years previously when we were in northern Tasmania. It just didn't seem right for the position, so I went through the back

issues we had of AMRM looking for churches and eventually ended up with a building more appropriate for this layout.

In the November 2010 issue of *Railway Modeller*, a magazine I occasionally read, there was an article about making a Celtic cross. I kept the article as I thought this could be interesting. Our thinking went along the following lines; initially the church was Presbyterian, now Uniting, and was constructed in a rather plain fashion by Scottish migrants to the area. The cross was built later. I understand that in the UK such a cross could also be the local war memorial and that is what it is also on *Little Chipping*. It is made from styrene and card and painted a light brown. It was then sprayed with adhesive and sprinkled with sand. The church is named St Moluag after the first patron saint of Scotland. There is reference to him being able to cure madness and Mandie thought that appropriate for this layout considering how difficult it is to operate.

The other buildings are Clover Clothing, Little Chipping General Store, Doctor Ivy Limb, Fern Frond the Chemist, Little Chipping Community Bank, the Post Office, and Thorn Bracken Real Estate. There is a connection between all of the commercial buildings on the three layouts. We started with the word "twig" in the Thesaurus and adopted names that were suitable.

Four of the buildings are based on the plans in AMRM Issue 291 (December 2011) for two buildings at Shackleton and Wooroloo in WA. The real estate office is based on a shop at Orbost in Victoria. The plans for this were in AMRM Issue 137 (April 1986). The bank was built using the article about the bank in Silkwood, Queensland in Issue 223 (August 2000) as the basis. The remaining building, the doctor's, was based on a doctor's rooms in a small town near Noosa that Carol and I saw when we were holidaying in the area some years ago.

Several of the plans had previously been used with the other layouts, the idea being that when two or more layouts are connected there is some consistency in the architecture. One thing all of the buildings have in common is they are small. Being limited in the space that could be devoted to buildings, it is necessary they be small in order for them to fit and be a reasonable representation of a small Victorian town. As a result there have been some very nice building plans published in the magazine that we have chosen not to use due to their size.

The trestle bridge was made by first cutting some scribed timber I had acquired many years ago (from the Model Dockyard) to size to use as the base for the track. The trestles were made using 6mm dowel and $\frac{1}{8} \times \frac{3}{16}$ stripwood. The uprights are about a scale 20" diameter. The other timbers are a scale 10" x 16" which seemed sturdy enough for the job. The trestle bents were positioned so they seemed a reasonable distance apart.

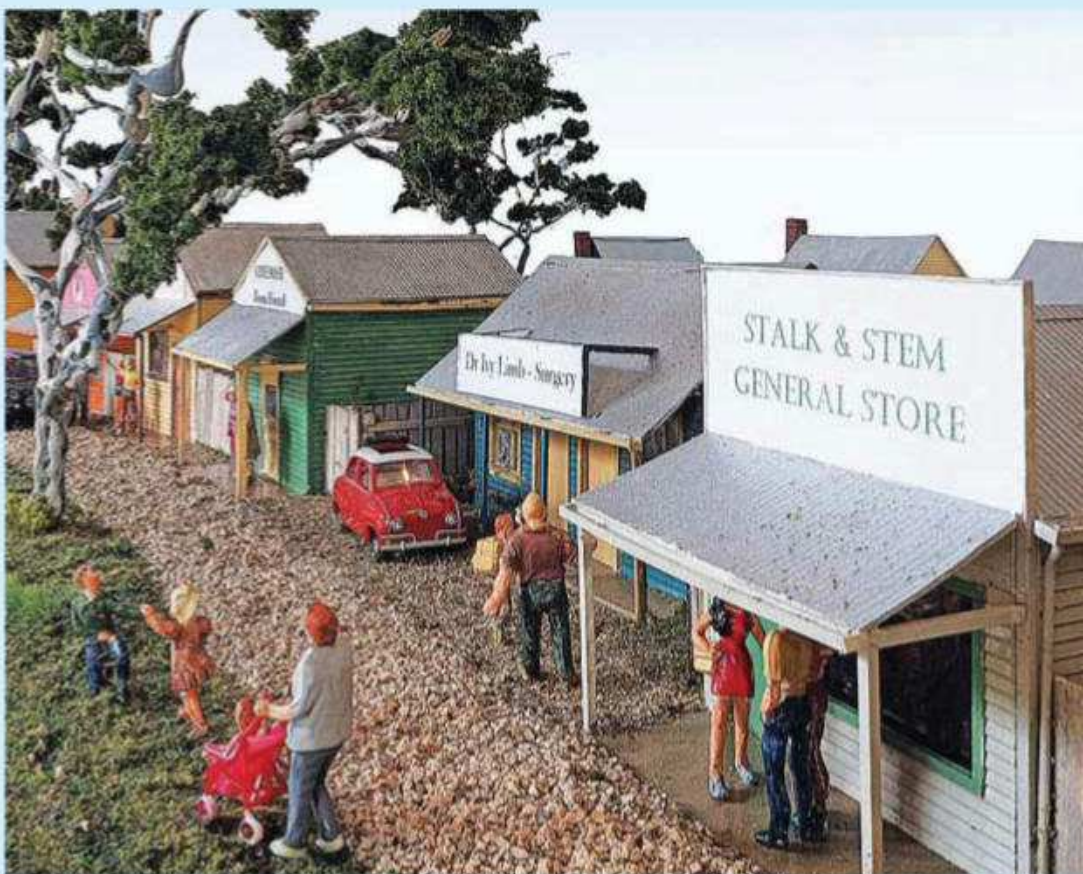


The F class diesel brings its short mixed train into Little Chipping. The XYZ started life as a Z van kit. The sides have been replaced and changes have been made to the roof, though it still needs some detailing to finish. The KQ was built following Bob Gallagher's article, 'Build a KQ . . . or Two' in AMRM Issue 103 (July/August 1980). St Moluag was the first patron saint of Scotland and was reputed to have the ability to cure madness. Mandie thought it was appropriate to name the church after him seeing how difficult it is to shunt the layout!

The rail tractor shunts the yard. It is missing one of its buffers as, when Twigg and Leafy Bay were initially built, a cassette system was used to change trains. There was an accident one day and the buffer was lost. Each of the layouts has the same design of goods shed; a VR 20' shed constructed using Ron Wigglesworth's plans published in Phil Jeffery's article, 'Modelling VR Structures Part 1 – A Small Goods Shed' in AMRM Issue 152 (October 1988).



A look along part of the main street of Little Chipping. The woman with the stroller came pre-painted. The rest of the people were painted by Mandie. The pathway is built of used tea leaves. The roadway and the grassy area were constructed using items from the Woodland Scenics range.





The F class hauls a mixed train across the trestle bridge towards Twigg. The trees were arranged to represent a small forest through which the trains would travel and the ground cover was put in a small section at a time, allowing for some realistic variation.

I built the bridge away from the layout and found when positioning it that the bridge rises slightly as it goes across Myrtle's Creek. This can cause some problems when shunting. We found the name for the creek in the Thesaurus also.

People and Vehicles

Three of the vehicles were purchased a few years ago while we were holidaying in Thailand. The Goggomobil is from Wiking and was acquired in Barcelona at the only train shop I found while we were travelling around Spain. All of the smaller items in the shop were in locked cabinets. An interesting conversation was had with a non-English speaking shop assistant as we got her to understand what it was we were after.

The bulk of the people are from Preiser. Many years ago we bought three boxes of unpainted people. Some finished up on a previous club's exhibition layout. Others have gone on *Twigg* and *Leafy Bay*. More have been painted by Mandie to go onto *Little Chipping*, and there are still some left to use.

There are also a few Langley people who have needed painting, and from Mike Petts Models in England we have acquired two people – Sherlock Holmes and Dr Watson. Every so often you hear stories of large animals in the bush and all sorts of suggestions as to what they are. Holmes and Watson are here to find the Chipping Cat, a large creature that locals claim to have seen, but for which there is little evidence. Finally there are a handful of people from Preiser that were acquired pre-painted.

Scenery

From time to time we hear of people who have returned to the hobby only to

find major changes to what was the hobby when they previously participated. We had a similar experience, only we were still in the hobby! We wanted to have a small trestle, a creek and some scenery back up the valley to track level. On *Leafy Bay* we had the beach and my initial thoughts were to use the same approach.

The first step was to use some of the foam packaging that seems to come with most things these days. This was cut and roughly filed to form the overall contours. For the next step I went to an Arts and Crafts shop and asked for a bag of granulated paper. This mixed with water would make a paste that we could use to shape the scenery. This is what our younger daughter Kylie and I had done to create the *Leafy Bay* beach. The people at the shop had no idea what I was talking about, as did three other craft stores. Even changing the wording to talk about papier mâché didn't help. Another problem requiring a solution.

I could have used plaster, but didn't want to for two reasons. The first was a concern about the extra weight, remembering this is a portable layout, and the second was the potential for plaster to crack with frequent movement.

Our solution was to take a new roll of toilet paper (Carol said to emphasise this was quality paper!) and put this into a container of warm water. The water was then squeezed out and disposed of, as was the centre of the roll. I then spent the best part of an hour tearing the paper into very small pieces. They varied in thickness but it was the size that was important. Once this was done, I gave the damp paper a liberal sprinkling of salt and turned the paper over several times to try to get as much coverage as possible. This

was to prevent any potential mould. I then put some PVA glue into the mix and turned this over and repeated the process a few times.

I applied the paper to the layout with varying thicknesses to form the countryside. For the small area we had to cover, I needed four rolls of paper. It was then left to dry for several days. I used a tube of poster paint to give an earth colour. In retrospect, I should have added some of the paint to the mixture before it was applied to the layout.

For Myrtle's Creek (Myrtle was the wife of the first settler in the area) we started by painting the creek bed brown. Then we sprinkled some used tea leaves and glued these into place. Carol likes a variety of teas which when dried and sifted into different sizes can assist with scenery. Clumps of bulrushes were next glued in place. These came from Busch.

The water in the creek was made using Estapol. We poured a small amount on to the creek in different places and watched these join up and then be absorbed by the scenery. We waited a few days and poured a small amount more. We continued this process once a week for several weeks and eventually we had the creek.

The next stage was to apply the ground cover. For the road we used a light brown, fine ballast from Woodland Scenics. The pathways leading to and from the station came from a mixture of dried different types of tea. The leaves were sifted so only the smallest pieces were used. The bulk of the ground cover came from a mix of two greens and earth from Woodland Scenics. We tried to vary the look across the layout.

When applying the first scenery to any bare section, we painted the area with PVA glue. Then a mixture of the Woodland Scenics ground cover was scattered. After drying and removing the excess, a second quantity was scattered in the particular area and this was affixed using an eye dropper and a mix of PVA glue, water and dishwashing liquid.

Some coarse turf and foliage material from Woodland Scenics was then applied to avoid 'flat' scenery. The larger parts had PVA glue applied and were then fixed onto the layout. The smaller parts were scattered and the eye dropper and diluted glue used, after which some long tufts of grass from MiniNatur were added followed by some Noch wildflowers.

The trees have been constructed using six or eight pieces of multi strand wire as a starting point. The wire is picture hanging wire. For small trees the pieces are about 150mm in length each. For taller trees, 200mm. These are twisted together at the foot of the tree. They are gradually unwound until they become single wires. Depending on how the tree looks I trim some of the branches.

Bark is now added using a hot glue gun. One stick will cover a small tree with two sticks being required for the bigger trees. The branches and limbs of the trees can be moved easily to suit a particular

location on the layout. This flexibility also means they can be knocked and won't break. They are then painted using old tins of Humbrol paint; several shades of brown and grey plus some white. Then we tease out some Woodland Scenics material and attach this using contact adhesive to the branches.

The fences around the buildings have been constructed using two different kits plus some scratchbuilding. We picked up a Bar Mills fencing kit when in Spain. I have since seen these in The Buffer Stop in Melbourne. At one of our club's exhibitions I was talking with the Aus-Scene Models people about their laser-cut timber kits and showed them this kit. There was a fencing kit addition to the range shortly thereafter. Each piece of fencing has been painted with a wash of Tamiya XF-53 Neutral Grey to age the timber. As I constructed sections of fences over a peri-

od of time, the colour varied from section to section.

Trains

We use the same trains as for Leafy Bay and Twigg, with a few exceptions. The Lima B class diesel is too big to shunt the yard at Little Chipping.

The two Powerline coaches are also a little big for the layout. With a platform length of 400mm and the locomotive having to fit also, we have to use smaller vehicles. Mandie won both of the *Spirit of Progress* cars at different exhibitions, which is why we have them for use with the other layouts. We have acquired a VR Casts kit for an ABL coach which is of a more suitable size for Little Chipping along with our existing Steam Era Models BW. However, due to space restrictions, only one coach can go on the layout at a time. With the other layouts we can have two

The Austrains Y class leads the passenger train over the trestle. Passenger trains comprise a coach and a Z van. The van has to be added otherwise the yard becomes almost impossible to shunt. This is because we made the sidings just long enough to be able to make up the required train, but there is no spare space. With varying wagon lengths we have to be careful as to which combination goes into each siding. Just to right of the coach can be seen members of the local historical film society. These are from Langley and are 1:76 scale; the size difference to 1:87 scale people is not noticeable if they are kept separate. They are filming possums (modified squirrels) which are too small to be seen in this photo. The sheep wagon immediately behind the train is an SEM kit. In the siding to the right there is a horsebox, which is the only wagon not named in the timetable. It just gets moved from siding to siding depending on the whim of the operator.



coaches. To add to the coaching stock I have also had a go at making an XYZ van using an SEM Z van as the starting point and constructing new sides. Two of our wagons, an E and an MM, also cannot be used due to their size. The timetable has to be adjusted to allow for their replacements, two four-wheel wagons.

Locomotives used on *Little Chipping* are all diesels and comprise two Y class (an Alco Models brass bought in 1984 and an Austrains), two T class (both Powerline), a VR rail tractor and a Massey Ferguson rail tractor (both built by the late Harry Grosvenor), a Roco F and an M (built from the Lyndon's Trains kit). Our intention when we first started to acquire locomotives was to try to have a range of different coloured locos. Of the nine, including the B, we have seven different colour schemes!

At exhibitions we need five locomotives to be able to run using the timetable. Having some extras allows for a replacement if one develops a problem, as well as being able to use different locomotives on different days. As the layout only allows one coach, we have the option of which one to use each day.

Our rolling stock is predominantly constructed from Steam Era Models kits. There is a small group of scratchbuilt or modified wagons. We have very few ready-to-run items on any of our layouts for two reasons. The first is a lot of what has been available is too big for our purposes. The second is the practice of manufacturers packaging several items of rolling stock together as a multi-pack. While that may be OK for some people, it doesn't work for us. That is not meant to be a criticism of manufacturers; they have invested money and need to recover this as well as make a profit.

My problem is if I want to replace an item on the layout or add a new vehicle, I only want to buy one wagon and not three or more. Small layouts need fewer items of rolling stock. At the time of writing we have, excluding the guard's vans, four coaches and 29 goods wagons and vans. All of the four coaches are different from one another and, of the goods vehicles, 15 are one-off items.

Operation

Little Chipping does connect to *Twigg* and, if we want to, the two stations can be joined for operating at home. When they are connected, the fiddle yard/'train-table' is placed at the 'rest of Victoria' end of the layout. When *Little Chipping* is to be operated by itself, the fiddle yard is attached where *Twigg* would otherwise be.

As mentioned earlier we use a sequence timetable when exhibiting. The timetable was designed for use with one station. This gives the train coming into the station and the makeup of the train leaving. Where there is only one wagon of a particular type on the layout, it is obvious which is required. When there is a selection, such as GY wagons, then the operator gets to choose which one to take.

The incoming rolling stock is placed into one or more sidings and the replacements added to the train. The location in the yard of the required item dictates how much work is going to be required in order to make up the train. The timetable does not specify which siding an item of rolling stock has to be placed in. When making up a new train, it is not unusual to have to move wagons to another siding.

The run-around loop on *Little Chipping* is too small to hold three wagons/vans and a guard's van. This adds to the com-

plexity of operating the layout. The train leaves the station and heads to the fiddle yard. It is then replaced by the next train in the sequence and we start to shunt again.

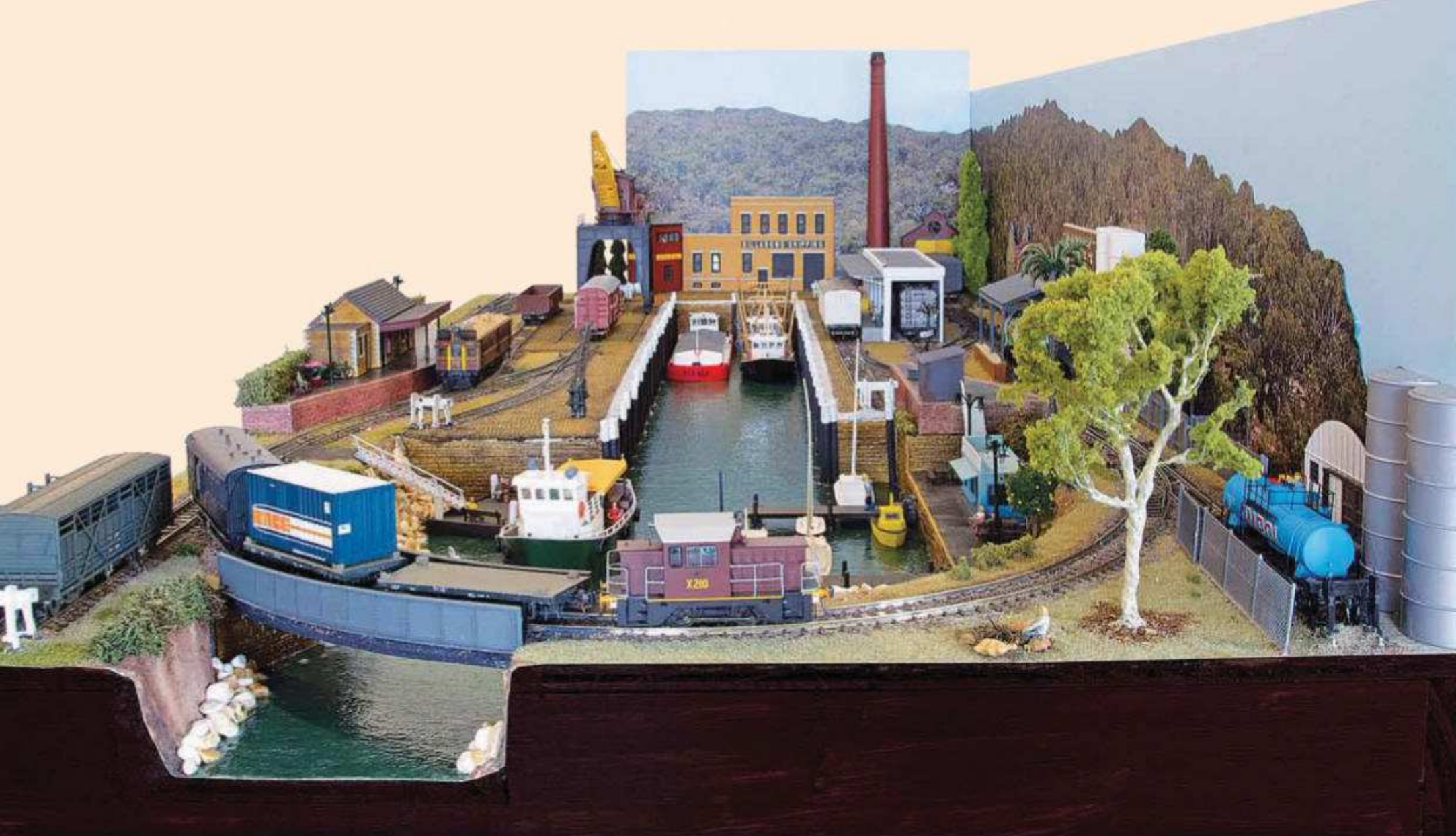
Now to some modellers the idea of shunting does not appeal. They want to run trains. That is how they enjoy their hobby. Shunting is how we enjoy ours. We see each incoming train as a puzzle that needs to be solved.

The timetable requires five trains; four are 'off stage' and the fifth is the one currently in use. Our fiddle yard has a 'train-table'. It operates on the same basis as a turntable only there are five tracks with each one containing a whole train. The baseboard for the train table is 800mm in length with the actual turning table 700mm long. When we first started all those years ago, we put a restriction on train length of 600mm. The timetable is based on 100 trains with most combinations only appearing once, the exceptions being the passenger and cattle trains. At the end of each exhibition, we mark where we have finished. We pick up from this point at either the next exhibition or at home even though we could be running a different layout.

Since we started exhibiting in 1992 we have seen many people attending exhibitions enjoying the larger layouts, but then feeling somewhat overwhelmed at the prospect of building something on that scale. The cost, space and time involved can discourage people. We have tried to show that fun and enjoyment can be had with a much smaller layout; one that can be set up and stored in a small living space. This has been something we have been able to share and hope to continue.



One of the VR's light shunting locomotives, M231, rearranges wagons in the yard. The model is a Lyndon's Trains kit, powered by an SEM Black Beetle. Although the prototype M is a six-wheel locomotive, the model has only the Black Beetle's four wheels, though this is not apparent due to the covering over the side frames. The M class is the only VR red locomotive on the layout. The cyclists are from Preiser and come in a set of three. The third cyclist has been placed on a different part of the layout.



Building Billabong Marina: 3

Maximum Industries/Minimum Cost!

Tom Carlos looks at the reasons for having industries on the layout and how to adapt the same HO scale kit for more than one industry. Photos by the author.

Every model railway needs an industry or two. Running passenger trains is fun, but it's shunting the sidings that makes it even more enjoyable. On a tiny model railway like *Billabong Marina* you may think that there would not be room for many industries, but this is not the case and operating the little layout can be lots of fun.

When the layout was first mooted, I examined a few suggestions. I could model a colliery, but I had one of those planned for the extension. I could model a brewery. Like most blokes, I like beer and have dabbled in a few home brews, but I didn't think it would give me enough variety of wagons – I may be wrong.

I could model a steel works. It would give me a destination for my steel train, but I knew that many of those wagons would not make the 9" (229mm) curves that I would need to use. After seeing a couple of articles for small layouts in overseas magazines based around rivers, I figured that a small harbour would be a good setting. It also gave me the opportunity to include more than just one type of industry.

Choosing the Industries

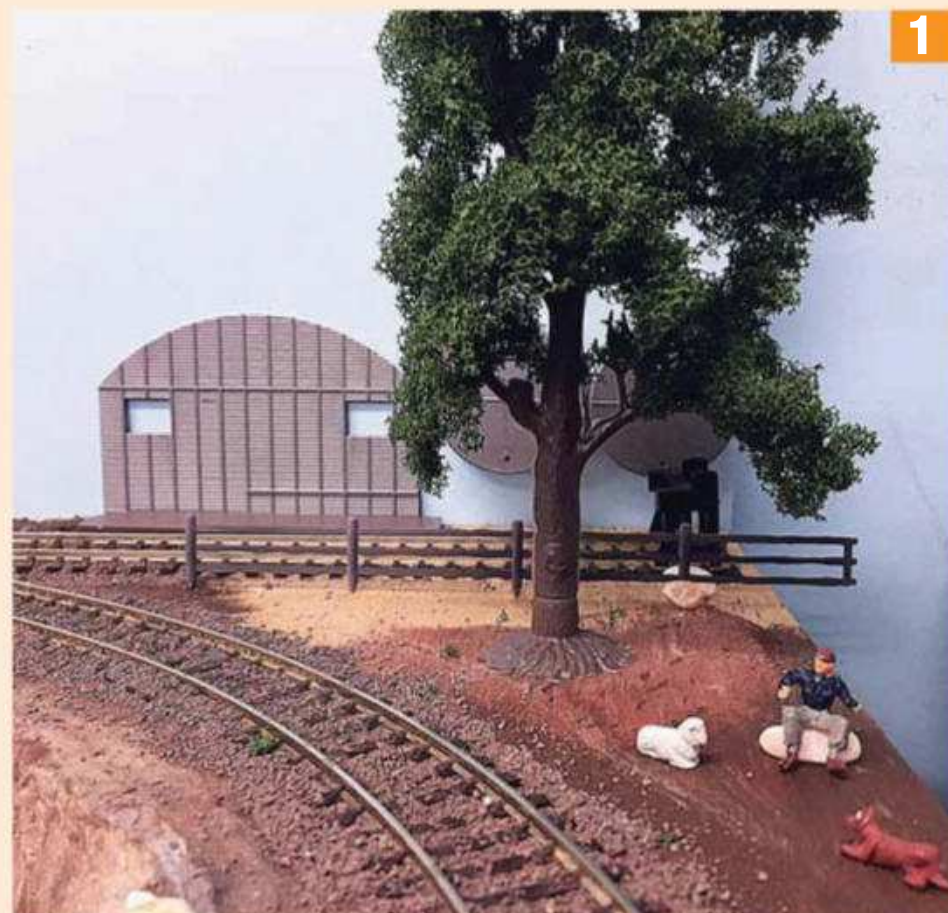
How do you decide what industries to put on a new layout? What influences your decisions? The first thing to consider was which wagons I already had. In the real world of railways, every wagon has a reason for being where it is. It is delivering the goods or maybe being sent to collect goods. I have a similar attitude to my modelling. I like to operate layouts and have a purpose for running trains. The wagons need to have a reason to be there and that thought goes through my mind when planning a new layout. For this layout there is an added condition - can it go around the tight radius curves I needed to include to get it to fit?

The next consideration is which buildings I already had. This

can include other infrastructure/detail kits or vehicles, such as fishing boats. For *Billabong Marina* I wanted my fishing boats to be a feature. I also had a ferry to include.

The Oil Siding

The first industry I wanted to include was for petroleum products. I had a couple of four-wheel rail tank cars and an



1



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old Powerline bogie tanker marked for Golden Fleece. It was not an exact copy of an Australian model, but it fitted the bill. I later added an SDS Models Ampol bitumen tanker, which works as well. S trucks loaded with drums can also be dropped off there.

Did I have a suitable building? Yes. I had two oil tanks from a previous layout that could do the job. This industry would be built from the Walthers Interstate Fuel and Oil kit. The dairy mentioned in part two [*'Building Billabong Marina: 2 What can you do in fifteen minutes?'*, AMRM Issue 330, June 2018 – Editor] was put together from three kits. One of the kits used was this one. I reckon that this is the best value for money kit that I have bought. At the moment it has provided parts for three industries and there are still enough bits left over for more!

For a micro layout you cannot always model the whole building. With the dairy mentioned in the last instalment, only one wall could fit between the rear of the layout and the track. The same circumstance was present with this one as well. I had two storage tanks that would be perfect and could be placed in front of the unloading track. It would make the industry appear bigger.

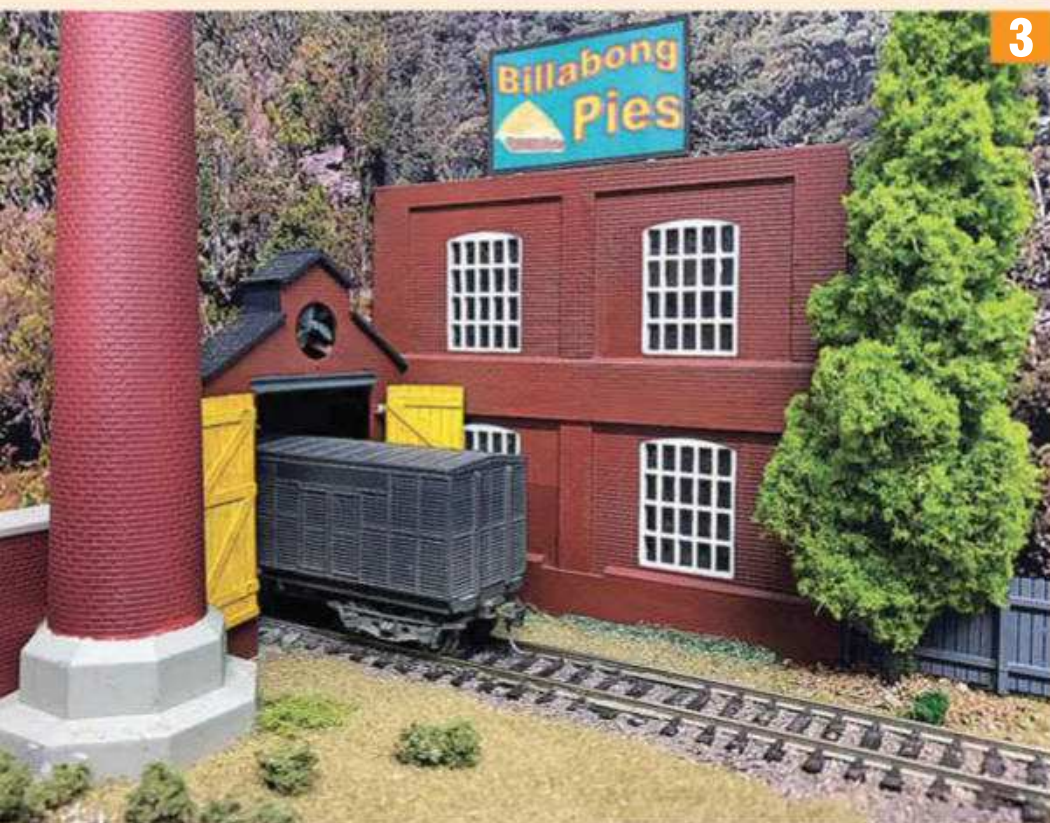
However, by this stage I had worked out a name for my layout and my wife had told me that I should have a swagman camping nearby. Every swagman by a billabong needs to rest under the shade of a Coolabah tree. The only decent bit of real estate for a tree would be where the tanks go. As a result, at first, the area ended up as shown in Photo 1.

To be honest, this arrangement of the oil siding made fencing easier. The ends of the tanks in Photo 1 were fixed with Blu Tack at the right height. While working on the dairy I found that if I cut the tanks in half vertically they fit nicely between the back scene and the tracks. Vertical tanks would stand out more from behind the tree.

Better fencing was sought than the Kibri post and rail shown in Photo 1, so I replaced it with Kibri security fencing [Photo 2].

The end of the building from the Interstate Fuel and Oil was used. The wooden platform was turned around and a couple of doors were added. I did some research into which colour the building should be and white seemed to be a good option. The tanks were painted silver and once the back scene was added, the infrastructure was glued in place [Photo 2].

There was a gap between the building and the dairy fencing. This gap was filled with some more Kibri security fencing, behind which were stacked some 44 gallon drums. At the end of the platform I needed something extra. A small forklift was a place holder for a while, but a truck would be better. A Mini Metals ute was cut into bits and glued into place with a few drums in the back [Photo 2].



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4

Some Rolling Stock

The next obvious industry for a harbour location is a fishermen's co-operative. These are dotted up and down the coast. The fish have to go somewhere off the boats when they come in. The best way for fish to leave Billabong Marina is loaded into Trainorama MRCs or On Tracks TRCs. I eventually found out that the SDS Models MRC refrigerated wagons will also traverse the tight radius curves. After buying a box of SDS Models NRY refrigerated vans, I found that with a little modification these could negotiate the tight curves as well. However, that meant filing away the chassis near the coupler box. I wouldn't say it is an ideal modification. I made it to only one NRY as I have enough of the MRC and TRC vans to make up a complete train. So, I had the wagons for the industry.

What about a building for the fish co-op? I didn't have anything on hand so this would need to be scratchbuilt, so this will be the subject of a future article.

The dairy has already been covered in Part 2. The main idea of this was to provide a destination for my SDS Models BMT milk tanks. Both milk tanks produced by SDS Models will cope with the tight curves but the BMTs need long shank Kadee couplers. To provide some variety, AR Kits MLKs can be used as well. However, these need the coupler boxes filed to allow enough swing for the bogies. Once again, I had the wagons for the industry.

The Dockyard

What should really have been the most obvious were dockside sidings, but it took me a while to think of that! I have a Dapol dockside crane which could load cargo onto a ship. I found a Faller barge somewhere and figured that would be suitable. The barge also would not visually block the view of the fishing boats behind either. What can go in these sidings? Pretty much anything that will make the tight curves. Auscision VLX and Trainorama LX can arrive from interstate. Otherwise, four-wheel wagons, Silvermaz BD opens and AR Kits or Mini Models MLV louvered vans. These wagons can also be used at an unloading platform, near the marina, that can also double as a passenger platform. A bit of wood, brick paper and some furniture created this easily. I had the infrastructure and the goods stock, so these were definite destinations for wagons.

The Bakery

In the far corner of the layout was a siding for which I had no idea yet of its purpose. It could have been an engine shed. Or it could use an engine shed. Whatever it was going to be, it would use the Dapol engine shed – or maybe two. It became the bakery for the sole purpose of being able to add a BWH to the wagon roster. A wheat hopper is visually different from every other wagon. For some reason, they also make great meat pies using Aberdeen grain fed beef! I love visiting the South Coast of NSW and I enjoy eating in restaurants serving local produce, so the thought of shipping beef from one end of the state to the other sort of repulses me a bit. However, shipping freight and making pies are big businesses... and they employ an SDS Models FMW! The industry is there to suit the wagons.

I have seen the Dapol engine shed kit used a number of times as low relief and extreme low relief, so it seemed like a good choice. The plan was to add a door and a platform where the windows are meant to be, to unload the ingredients and load the finished pies. The doors were meant to be fixed closed, with the idea that wagons may go in, but realistically be a substitute for a buffer stop. As this layout has an extension (that is a bit of sarcasm – it's really the other way around) the bakery siding could go into the bakery. This siding now holds up to two wagons underneath the extension. It adds a bit more variety to the layout.

Two walls were used for the bakery and the front of the shed. I had bought two kits so I was able to cut part of a third wall, so that the doors of the bakery were sticking out from the backscene. A new backscene needed to be added to this side as well. This is held in place by a couple of angle brackets. One of these needs to be covered up. To do this I used a Kibri chimney from a brewery kit. (I had planned to use a spare Faller chimney, but I got them mixed up. I had to get another chimney for the brewery.)

It needed a bit more space, so I added a small brick furnace to hide the bracket completely (Photo 3). A fence was added and static grass was applied to the ground. Then, to hide a bit of an unsightly gap between the wall and the backscene, a tall tree was planted. The scene was topped off with a sign produced using Microsoft Publisher, white A4 cardboard and a couple of matchsticks that had been painted white.

This left me with the

two rear walls of the engine shed. I had a gap to fill on the rear backscene behind the fish co-op. The answer was simple. Stick the two end walls together and glue them onto the back scene. This was actually done before the bakery was completed. I trimmed the edges so that they fit perfectly together (Photo 4). It was only then that I realised that there was a part included in the kit for this very purpose. It pays to read instructions, even when you are kit bashing...

This is the rear of an industry that is not served by the railway. What type of industry? It doesn't matter; therefore, I don't have to think of a name for it! However, I feel that I have used one kit for two industries. I know I bought two, but I could have achieved close to the same result with one.

The Shipping Company

This leads me to the last industry. It's a shipping company called 'Billabong Shipping'. I try not to get too creative with the names. If I do, I might have to explain them!

I first thought of a larger building which would cover the tracks to provide a scenic break between the front and the back sections. However, with the 9" (229mm) radius curve the overhang of the various wagons was too much. It would mean another kit bash or scratchbuild. Then I thought of the Cuttings Scissor Co building, which I had used for the dairy. I had used two out of four walls. The front wall was still unused. A quick look and it was deemed a suitable candidate (Photo 5). I made sure that it was painted a different colour from the dairy. It was originally darker, but it was hard to distinguish from the background.

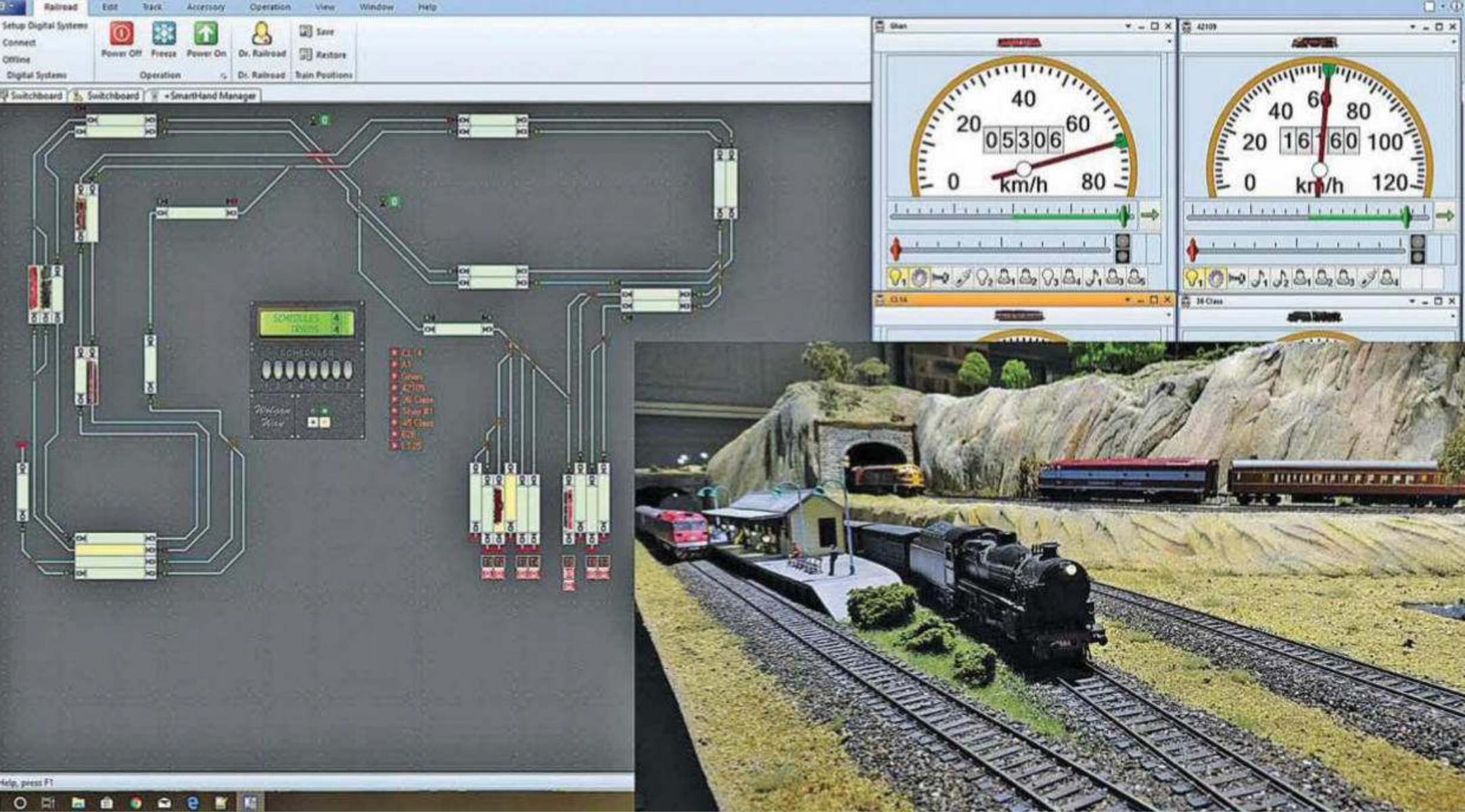
Billabong Shipping has provided me with another industry and a huge difficulty for my operators when a wagon needs to be parked out the front for unloading, as it blocks the easiest way to run around a train. I reckon that would happen at most once in every four operating sessions. This was a case of having a kit and having the wagons. Anything that could end up at the wharf could be used here.

What's Next?

With only three different structure kits, I've been able to produce five industries for my small layout. And in doing so, I've done my best to provide the maximum variety of wagon types to add interest to the trains that operate on the layout.

In the next instalment I will tackle scratchbuilding the fishermen's co-op, which is the main industry on the layout.





DESIGN AND BUILD A LAYOUT

Train Automation

Brian Peacock discusses the possibilities and pitfalls of controlling your layout via computer. Photos by the author.

This is the third in a series of articles on the use of a computer to assist in designing, simulating and automating your model train layout. Although some readers may wish to follow this sequence, the use of a computer to design or even simulate a layout is not a pre-requisite for model train computer automation. You can automate an existing layout or incorporate it as part of building or renovating a layout. In this article, I will cover issues such as explaining what train automation is, how it is done and why you may want to do it.

This article focusses on the train automation software called TrainController. This is Windows software, part of a suite of programs under the Railroad & Co. brand developed by Friewald Software, a German based company. There are several other train automation products available, including:

- **CTI Electronics Train Brain.** This software will control DCC trains and accessories, such as turnouts, from a screen-based panel and on-screen throttles. Although DCC trains can be controlled 'out of the box', most other functions require some programming via the built-in programming language. I noticed that Brendan Jansen in his article about his layout, *Casino*, in AMRM Issue 329 (April 2018) made reference to using this software.
- **Java Model Railroad Interface (JMRI).** The JMRI project builds tools for model railway computer control based on the open source concept. It is built in Java so it will run on Windows, Mac OS X and Linux machines and supports a very wide range of DCC hardware systems. It is free, but a small donation to help defray the costs of keeping the project going is always appreciated by the developers. It has a very active world-wide users' group which is constantly contributing to the further development of the various JMRI products. One product, Decoder Pro, is a tool used by many model railway

enthusiasts, even if they don't use the other tools to automate their layout. Instead of wrangling with complicated combinations of bit patterns to program decoder CVs, Decoder Pro provides a simple interface for programming decoders.

Although some manufacturers do provide their own software interface programs, which work very well, they are limited to their specific decoders and the software may only run on a Windows machine. Like all JMRI products, Decoder Pro will run on Windows, Mac OS and Linux machines. Overall, JMRI should be considered, particularly if you want to just 'test the waters' of train automation or want to minimise the cost of automation. My own personal experience started with JMRI, but as my layout became more advanced I struck a problem which didn't get much support from the Users' Forum and there was no commitment as to when the bug (as I believed it to be) would be fixed.

- **Rocrail** – This is another item of free software supported by Linux, Mac OS, Raspberry Pi and Windows operating systems for controlling model trains. Rocrail seems to have a larger user base in Europe, whereas JMRI is more USA-based.

What is Model Train Automation?

Model train automation is a process by which you can control your layout via computer software. This may be as simple as using a computer screen to change turnouts, as well as control the speed and direction of locomotives. As such, the computer screen replaces a physical control panel and hand-held throttles. However, this concept can be extended to the safe running of multiple trains, on multiple, intersecting tracks running to schedules based on timetables and fast clocks.

One of the major benefits of a software-based control system is that the control panel can be changed relatively quickly, com-

pared with a physical panel, and at no additional cost beyond the actual changes to the layout itself. Another benefit is that everything can be displayed on a large screen: control panel, multiple throttles, locomotive roster and more. Further, complex sequences of actions to be taken by different trains can be established and these actions can dynamically change depending on the prevailing position of nearby trains or other conditions.

How Does it Work?

Essentially, the computer software operates like a very sophisticated hand-held controller. Diagram 1 is a simple illustration of the connections between the computer and the layout. Typically, the computer connects to the DCC Command Station via a USB or serial cable. The computer software sends commands to the Command Station, which then sends the same DCC signals to the layout as if the commands had originated from a hand-held throttle.

Because each new command sent by the Command Station is prefixed by a DCC address, only the corresponding DCC decoder within the locomotive, or decoder associated with a layout device such as a turnout, will respond to that command. Thus, in Diagram 1, if a command such as a speed or direction change for DCC address 3666 assigned to a locomotive is issued, either via the hand-held controller or computer software, then only that locomotive will respond. Similarly, if a command for address 100 is issued by the physical controller or the software, then only that particular turnout controlled by a decoder with address 100 will respond.

Generally, information only flows from the computer (and physical controller) to the decoders on the layout. However, some DCC control systems will handle feedback information, such as train identification, from the layout. One particular type of layout feedback is commonly supported, namely the occupancy status of a section of track or detection of a moving train at a particular point along the layout.

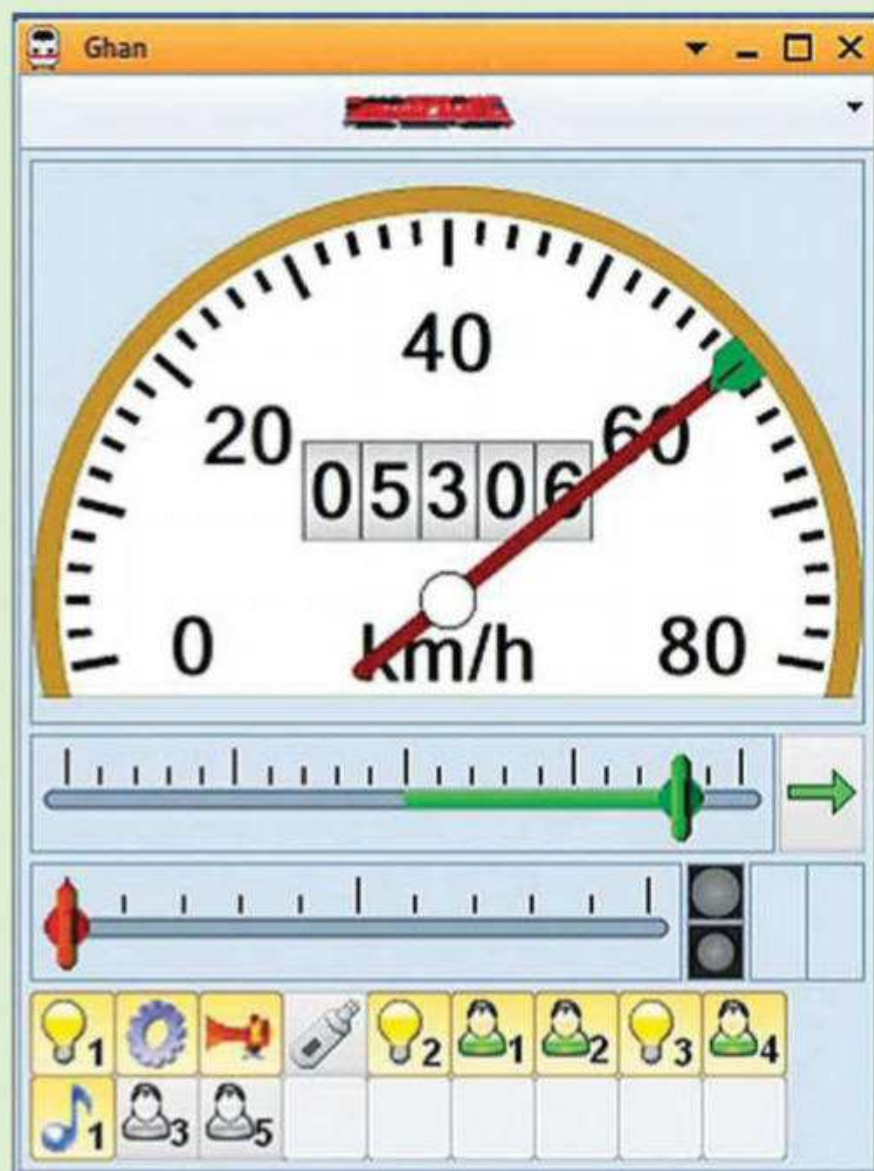
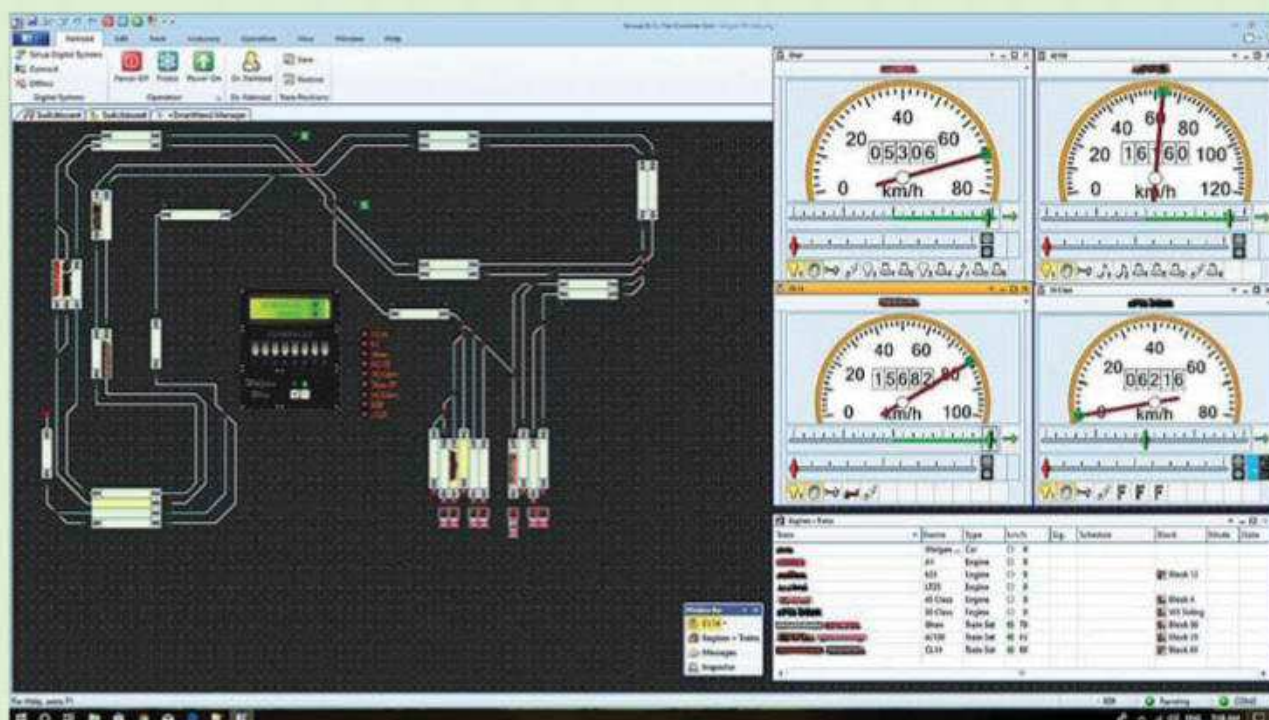
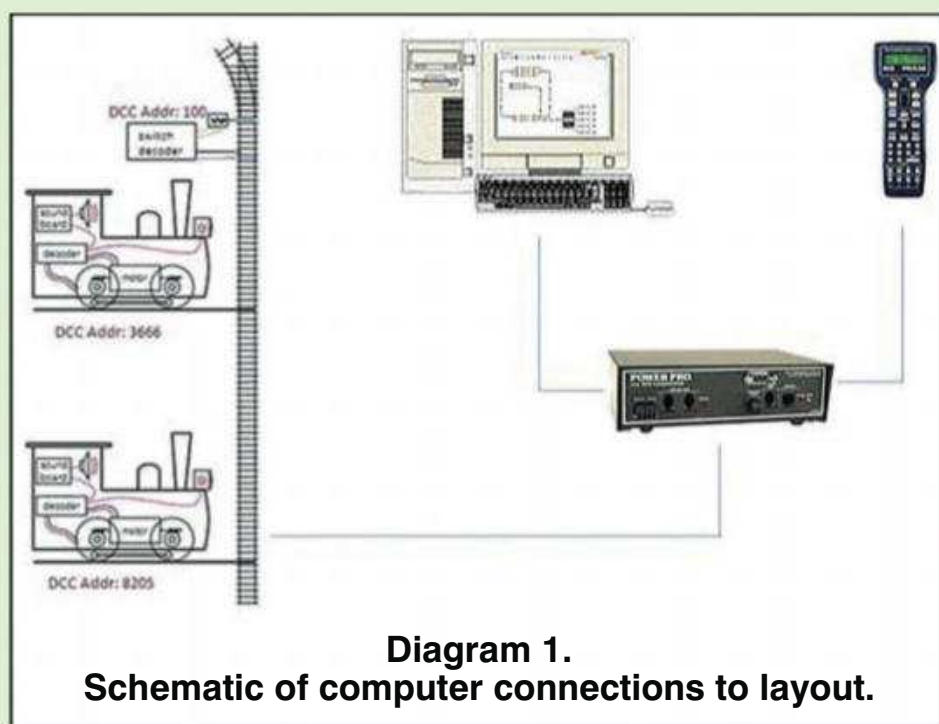
Although you may only want to use a screen-based display to manually control all aspects of your layout, some users will want to go further and automate some or all parts of the operational running of their layout. This includes operating turnouts, signals, routes and trains. Humans use their eyes to see where the trains are and where they are heading, so the big question is: how does the software know where every train is at all times?

Just as a human operator must know the overall structure of the layout, the software also needs to know this. This structure is represented by a diagram that contains blocks and routes and the track connections between them. This main block diagram describes the track layout of your entire layout in rough outline (see Diagram 2). This shows the Switchboard (control panel), screen-based train throttles (Diagram 3) and the train roster together with various information about the state of each running train.

The software manages traffic flow using a blocking system. Blocking ensures that trains do not collide and supports the tracking of train positions. For this purpose, the layout is divided into virtual, logical blocks (representing physical blocks on the layout). Trains are initially assigned to blocks, either manually or automatically when a digital system can report the identification of a train occupying a block. Whenever a block is reported as occupied, then the software checks whether there is an appropriate train in an adjacent block. If there is such a train, then the software indicates that the train has moved to that block.

How Does Software Automation Affect Construction of a Layout?

As noted above, train tracking requires blocks to report occupancy. Blocks on the physical layout are determined by the arrangement of contact sensors, either occupancy (current detection) sensors or



momentary track contacts (reed switch or IR optical detector). Depending on the type of the contact sensors used, it may be necessary to electrically insulate the track section belonging to each contact sensor from adjacent sections. Whether electrical insulation is necessary or not depends solely on the type of contact sensors being used. The software itself does not require electrical insulation of your blocks.

The number and length of the resulting blocks is determined by your operational running requirements. Ideally, the minimum length of a block is greater than the length of the longest train, but the software, in the case where occupancy sensors are used, will handle situations where a train extends over two blocks. In this case the rear of the train must indicate its presence by drawing current, to trigger continued occupancy, even though the front of the train has moved to the next block. In any case, a block cannot extend into a turnout, so the longest train must be able to fit into the length between two turnouts.

Perhaps it goes without saying, but for the software's train tracking process to work smoothly and for the trains to correctly respond to various commands being issued, it is vital that all trains run smoothly with good electrical pickups. Although human operators can make adjustments for occasional faulty train operations, the computer software expects commands to be correctly executed promptly. Intermittent occupancy signals or train decoders reacting too slowly will cause various problems, such as the software losing track of a train which could potentially become a runaway, or a train overshoots a block and could collide with a train ahead of it.

Although this article mainly focusses on DCC layouts, it is possible to automate ordinary DC layouts by operating conventional trains using stationary block decoders. Additionally, it is possible to use these methods simultaneously; i.e. it is possible to run conventional engines and digital engines on the same track - even if your digital system does not support this feature.

Why Do It?

If you have got this far, you now have an understanding of what train automation is and how it works, so you may be wondering why would I do this? Many modellers will consider the operational running of their trains provides their greatest satisfaction in this hobby. One of the huge benefits of DCC is that multiple, digitally controlled trains can easily be operated on multiple tracks and even on the same track.

A human operator is usually not able to monitor more than one or two moving trains at the same time, particularly when the switching of turnouts is also required. Either multiple operators with tightly defined protocols are required or a computer is needed to guarantee the security of train operations at all times. Certainly, it can be a lot of fun to conduct operating sessions with multiple operators interacting with each other, however this type of operating is not always possible. Computer automation is the only way to go to operate a complex layout when you are on your own, perhaps testing a new feature or part of a layout, or just enjoying the running of your layout at any time that suits you.

Levels of Automation to Consider

Firstly, there are several driving modes. If desired, you can control locomotives and trains on the schedule completely manually. In this case the computer reserves the blocks, activates the routes and calculates the block signals. You are – like a real driver – responsible for obeying the indicated signals and speed boards. But it is also possible to transfer the control completely to the computer. In this case, all locomotives and trains on this schedule operate automatically. Finally, it is also possible to share the driver's job with the computer in semi-automatic mode. In this case, a train would be running under your manual control, but the computer is able to intervene to stop conflicting movements with a red signal.

In addition, there are several types of automated operations:

- **Spontaneous runs** – run trains manually, semi-automatically or automatically under full protection, blocking and routing

along paths and routes that are automatically activated by the train itself or manually by the driver during the run. Trains are started ad-hoc, i.e. without specifying destination positions or complete paths in advance.

- **AutoTrain** – run trains manually, semi-automatically or automatically under full protection, blocking and routing by specifying one or more start and destination positions at any time during operation by dragging a train symbol with the mouse from its current position to the desired destination position.
- **Schedules** – run trains manually, semi-automatically or automatically under full protection, blocking and routing according to schedules that can specify multiple start and destination positions, together with other options such as scheduled waiting times and speed limits, all of which are created prior to the operating session; i.e. during configuration of the layout. Schedules can be started manually by pressing a screen button, by start and destination keys, as part of a sequential chain, automatically triggered or by timetables.
- **Manual control** – run trains manually without any protection, blocking or routing performed by the software.
- **Simulation** – if no layout is connected, you can also simulate the described movements on the computer screen. You are able to control the movement of your train, operate your turnouts and track the positions of moving trains on the computer screen. This is very useful for testing before running 'real world' trains.

Basic Features

It was mentioned earlier that the layout is divided into blocks. The train may have to stop, either a scheduled stop for a station or an unscheduled stop because the block ahead is occupied by another train. For realistic operations, the train should slow; i.e. brake in a controlled manner before stopping. The exact locations where trains will start to brake and then stop inside the block are determined by specifying the precise positions via brake and stop markers within the screen-based virtual block. A speed marker determines a point in a block where a speed limit of the subsequent block is applied.

In addition to changing the speed of the train, additional operations can be performed; e.g. toggle the headlights of the passing train or to open a crossing gate, etc. If it is desired to perform operations without changing the speed of the train, action markers can be used. In the block shown in Diagram 4, a train travelling from the left to right will brake 500mm from the beginning of the block (as indicated by the orange marker), coming to a stop at the 700mm point. Likewise, a train travelling from the right will brake at the 200mm mark, slowing over the next 300mm and coming to a stop at the 500mm mark.

Pushing the Envelope

The following are brief details about just some of the more exciting possibilities to whet your appetite.

It is possible to specify an individual delay for each scheduled stop. Such a delay is applied after a scheduled stop has ended so associated operations are executed before the train is set in motion. Examples of additional operations include playing an announcement, the noise of closing doors or the whistle of the guard.

It is possible to specify the trains which are affected by the waiting time. In this way it can be specified, for example, that passenger trains are stopped during execution of the schedule while freight trains pass without stopping.

Operations such as turning on or off locomotive functions (e.g. headlights, steam and whistle) can be assigned to any block of a schedule. These operations can optionally be performed when the train enters the block, reaches a brake indicator or has to stop, starts again after a stop or the block is released after the train has left the section.

'Cars' represent vehicles of your model railway that are not equipped with a motor. Examples are passenger carriages or freight vehicles. Cars are mainly used for trains that change their formation during operation and to accomplish the following tasks with these trains:

- The maximum speed of a certain locomotive will vary and depend on the pulled cars (e.g. fast passenger train vs. slow freight train, both pulled by the same engine at different times).
- The same locomotive will be directed to different tracks according to the cars it is currently pulling (e.g. passenger train may go to the platform track while a freight train pulled by the same locomotive at another time may not go there).
- Trains will be directed to different tracks according to their current length.
- Trains will always be able to stop in the middle of a block (e.g. a platform) even if they pull trains of varying length.
- The tonnage of trains will be simulated realistically according to the scale weight of the cars currently contained in the train.

A train 'set' is composed of a couple of locomotives or cars. Train sets can be created, arranged and dissolved at any time during operation of the layout. Train sets are also used to accomplish realistic multiple unit operation, i.e. operation of trains that contain more than one engine.

Cars can be installed with function-only decoders to provide additional functions such as lighting in passenger cars. The digital address of this decoder is assigned to each function that it supports.

For each vehicle it is possible to specify an individual maintenance interval and an optional operation that will be automatically performed when the maintenance interval expires. It is therefore possible to specify a certain schedule (maintenance schedule) which automatically directs each vehicle to a certain track of your layout when the maintenance interval expires.

It is possible to restrict the operation of turnouts, signals, accessories and routes under certain conditions. For example, it is possible to check the type of train that is following another train. If the first train is a freight and the system determines that a passenger train is following, then the freight can be directed to a siding so the faster passenger train can pass unimpeded.

Support for the control of auxiliary equipment (e.g. cranes, machines, working models, lighting, etc.). All extended accessories can also be integrated into automated processes.

Support for critical sections when trains travelling in opposite directions share several blocks, thus preventing a 'deadly embrace' scenario. A train may enter a critical section only if it is sure that it can leave the critical section on the other side.

Full support for turntables and transfer tables.

Specific support for smart gates and crossing gates including control of multi-track railway crossings.

Ease of Use and Support

The documentation for TrainController is extensive, as you would expect of a commercial product. The user manual for top level versions of TrainController runs to 412 pages. Even the manual to describe the changes from Version 8 to the recently released Version 9 is 78 pages. The user guide is well-written with helpful examples to explain not only how the feature works, but also how it could be used.

Although the developer has not produced any videos, Ruud Boer has produced an extensive series of videos, initially based on Version 8 of TrainController, but the last ten videos focus on new features in Version 9. Once again, these videos are highly recommended. In addition, Friewald Software hosts a very active user forum in both English and German. I used this

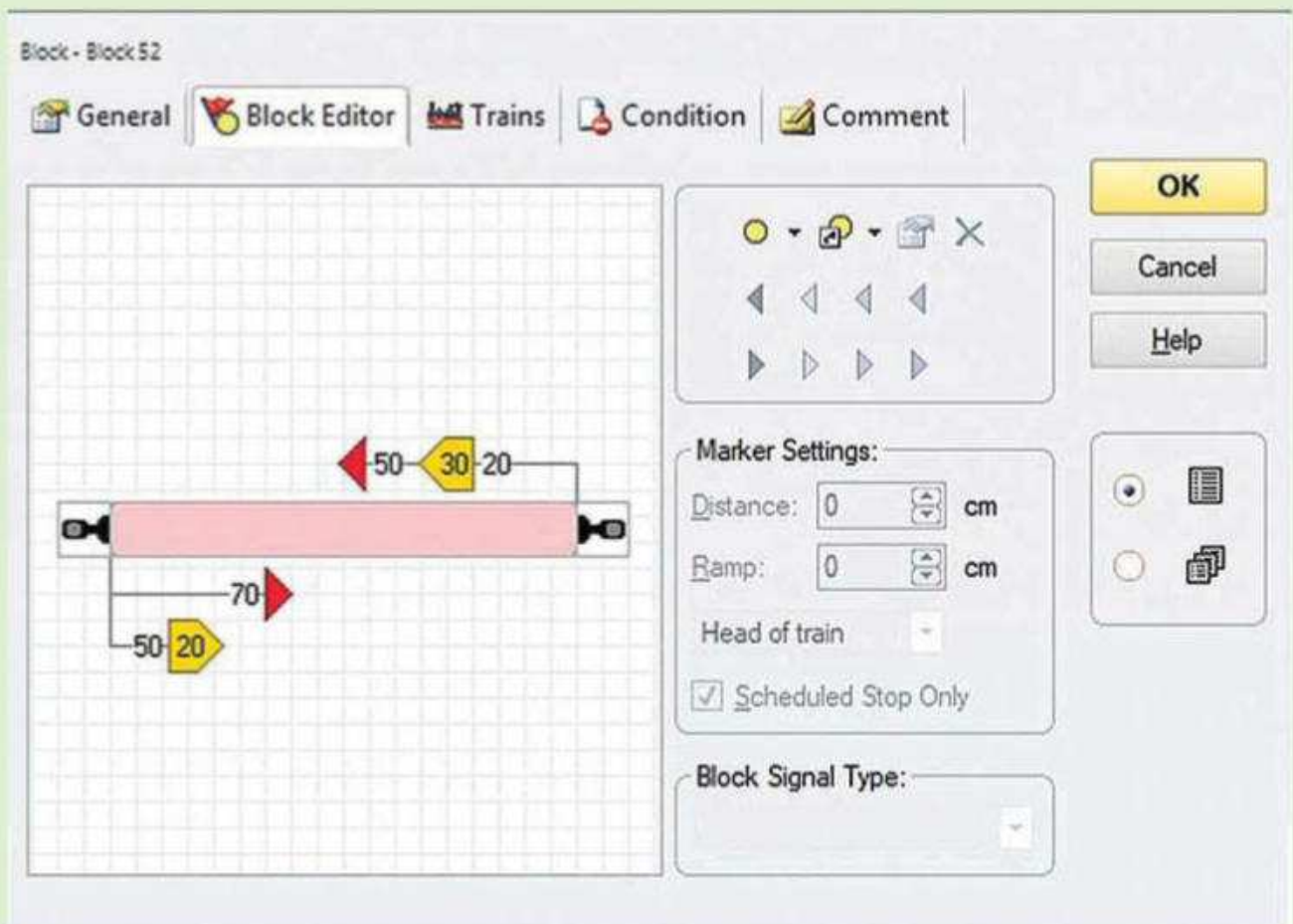


Diagram 4. Using the software to set up the parameters of a virtual block.

forum a couple of times when seeking assistance with an issue and I found the other users were both knowledgeable and helpful.

Variants and Cost

TrainController is offered in three variants:

- **'Bronze'** provides a low-cost entry into computer-controlled model railways. It is primarily designed for users with small to medium size layouts and average requirements. Novice users, who are not familiar with TrainController, may consider starting with Bronze. The reduced functionality of this variant makes it easier to identify and to learn the basic functions of the software. It is well suited for users who are looking for an easy to use program that covers the standard tasks of model railway control, such as switchboard operation, routes, block securing, hidden yard control and shuttle trains. Bronze also provides an excellent entry for modellers with little experience with model railway computer control.
- **'Silver'** is primarily designed for advanced users with upmarket requirements and owners of layouts of all sizes.
- **'Gold'** is the top-level version and is primarily designed for users with demanding requirements and who want to operate their layouts with complex operations.

TrainController ranges in price from \$185.00 for Bronze to \$865.00 for Gold. If you want to use the +SmartHand software that provides full-function support using smartphones and tablets via Wi-Fi, then that will cost an additional \$52.00.

Conclusion

Although the term 'Model Train Automation' is often used, you can see that, in fact, you can still maintain much of the control when running your trains, but with the knowledge that the computer will ensure full block protection, thus preventing that expensive crash that we all dread. You can have complex operating sessions with few, or no, other assistants. Therefore, perhaps a better term would be 'computer assisted model train operations'. TrainController is extremely rich in functionality and works very well, but only you can determine whether this is worth this level of investment. Alternatively, perhaps shareware software such as JMRI or Train Brain may meet your needs at a lower cost.



Build a VR MU Louvred Van

Peter Ennis converts an SEM wooden U/HD van kit into a very unusual van that has been almost forgotten in the history of the VR. Photos as credited.

Before I could build a model I was in a dilemma regarding the detail of the van ends as, unfortunately, the only photograph of this van that I had seen was the one below from PJV's web site [Photo 1]. Some years ago I was lucky enough to be talking to a fellow modeller about kit bashing an MU van and that the lack of

detail of the ends was hindering any progress. He told me that his belief was that the end sections were partly louvred like the sides, but that for some reason the louvre panels were fitted in the lower section, rather than the top section as on the sides. With the lack of any conflicting or confirming information, I have chosen

that premise as my guide to completing MU418.

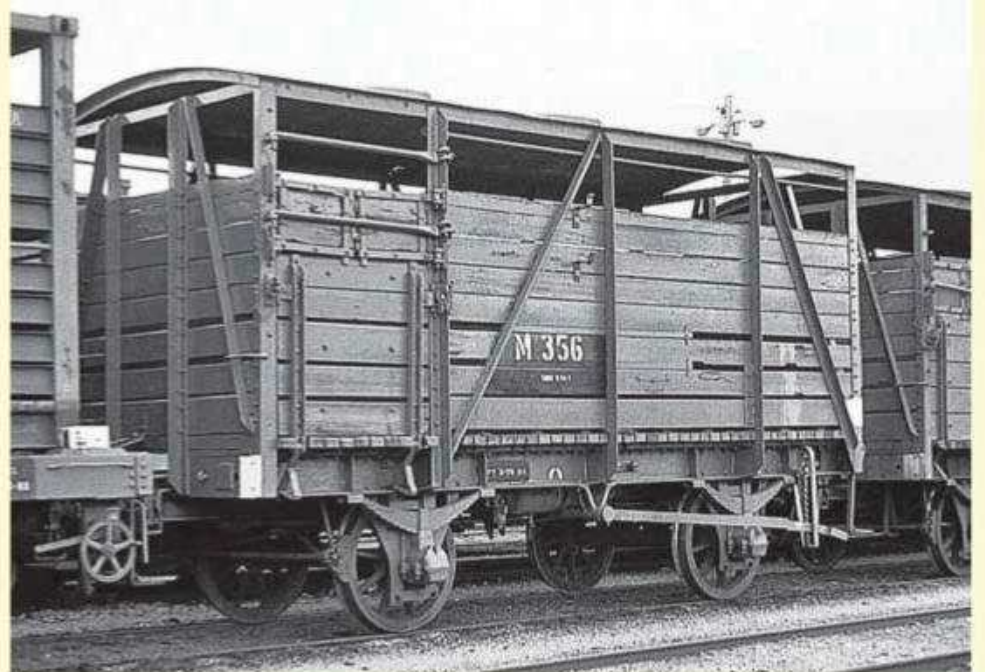
When I first came across this wagon, I thought I would just convert a wooden U van. Then I realised the axle spacing is 11', not the U van's 10'6". To further complicate the situation, each louvred panel is 3" longer than the U van kit sections.

Prototype History

The MU wagon code was 'unearthed' by Peter J Vincent in 1992 during one of his forays into the VR Rolling Stock Register. Fifty of these wagons were built in the early 1930s by converting M class cattle wagons to louvred vans. The reason for the work appeared to be connected with the autocoupler conversion project underway at that time. Peter surmises that they were a temporary replacement for other U vans being removed from service to be fitted with autocouplers.

Fifty wagons were converted at Newport Workshops, which entailed the wagons being fitted with temporary closed in panels and wooden louvred sections on the sides and ends. The MU code chosen is logical, a U (louvred) version of the M cattle wagon. It was a very short-lived conversion though; the records indicate that all of the wagons were converted back to their original form as M cattle wagons by 1934.

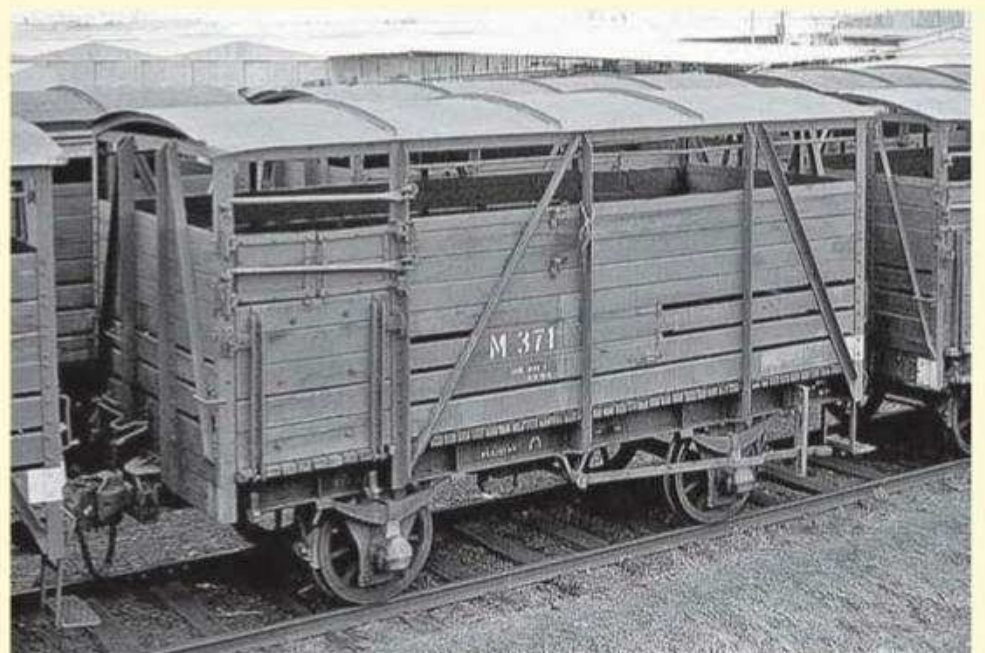
Because this was a temporary conversion, the MU louvred vans retained their original M class cattle wagon number: 323, 325, 326, 327, 328, 329, 331, 333, 334, 338, 345, 346, 350, 352, 353, 356, 359, 360, 361, 362, 363, 366, 369, 371, 374, 375, 376, 377, 378, 379, 381, 382, 383, 386, 387, 389, 390, 395, 396, 397, 398, 400, 401, 403, 406, 410, 411, 415, 417 and 418.



An ex-MU, M356, photographed at Bendigo on 8 April 1979, included to show the details of the handbrake arrangements. Image from the Rob O'Regan collection: www.robx1.net



A photograph of MU418 at an unknown location, taken some time between 1930 and 1934, from the Darren Hodges collection. This is the only known photograph of an MU van. The original image can be found on Peter J Vincent's website at: <http://www.pjv101.net/cd/pages/c243m.htm>.



More details of the handbrake arrangements from another ex-MU, M371, photographed at Brooklyn on 30 April 1977, also from the Rob O'Regan collection: www.robx1.net.

Construction

Normally, I build the underframe first. However, in this case, because we will be fixing styrene sheet onto the internal surfaces of the sides and ends, dimensions will vary. So I recommend building the body first.

Before tackling the sides and ends this is the one occasion where you should definitely read the instructions first. The task is more laborious than complicated.

Because these wagons were a temporary conversion, and to reduce conversion costs, the doors were located in the cattle wagon configuration of opposite corners to each other.

We only use six panels from each side of the kit. I used both kit sides, but you may choose to make the MU panels from one side only and use the spare side to make a 1970s HD Ways and Works van with some louvred panels covered over with plain sheeting.

Remove one U van side from the sprue and file off the locating lugs and styrene injection points on the inside surface to allow the side to lie flat on the work surface.

Referring to Drawings 1 and 2, make the panels 'A'; on the wagon side measure in 2'7" from each end and mark a vertical line with a pencil. Score with an Exacto knife on the off-cut side of the pencil line. After several passes use a firm grip, but not excessive force, to snap off the new sections. You may decide to use a razor saw, as that will achieve the same result.

Clean up the fracture line with a file forming two rectangular sections 2'5½" wide. That fine a dimension is rather difficult, so make it by eye to just under 2'6". Clean up the fracture lines on the ends of the kit side and at the same time making sure the ends are at right angles to the base.

To make panels 'B' and 'C' measure in from each end 2'5" and mark a vertical line with a pencil, score as before with your knife and snap the sections off. Clean up the fracture edges with a file and reduce the width to 2'3½".

We are lucky as the U van had nine louvred panels on the side allowing us to cut the removed sections in half, leaving four full louvred sections that we can now file to a new height of 3'3".

On each of the louvred panels, with extreme care, file off the original vertical spacers and any other external features such as door hinges etc. Assemble with outer sections in place and the rest in order. When placed together the louvred section should measure 14'1" in length.

From 0.020" styrene make five spacers 3'3" x 6" and dry fit the louvred panels with the spacers lined up with the 0.020" spacer fitted between each panel to form the new louvred section 15' in length. If the louvred section is longer than 15', check measure each panel and adjust by filing off small amounts from the panel sides until the overall length is 15'.

Glue all of the sections together with the louvred section face down on the workbench so that all of the panels and spacers will be in the same plane. By gluing the sections together face down any variations will only show on the internal walls of the van, which won't be seen after final assembly.

When gluing multiple sections of any kind together, as you add each section use a rule as a base to form a straight edge so the louvres will all line up and no panel will be higher or lower than the next. When the glue has cured clean up the edges with light file strokes.

On the lower section of the louvred panels glue in place a 0.010" styrene strip 6" wide, 15' long, for the full length, protruding 2". Now remove the second side from the sprue and repeat the whole process!

From 0.040" sheet styrene cut out the two new van sides. Referring to Drawing 1 as a guide, dry fit the louvred panel in place before gluing, to make sure the overall length is 20' and height 7'.

Once again, when gluing the two sections together, glue them face down to keep the two panels in the same plane, as the 0.040" styrene sheet is slightly thinner than the kit side. Because we have glued in place a 2" protruding strip under the louvre panels we have to place spacers

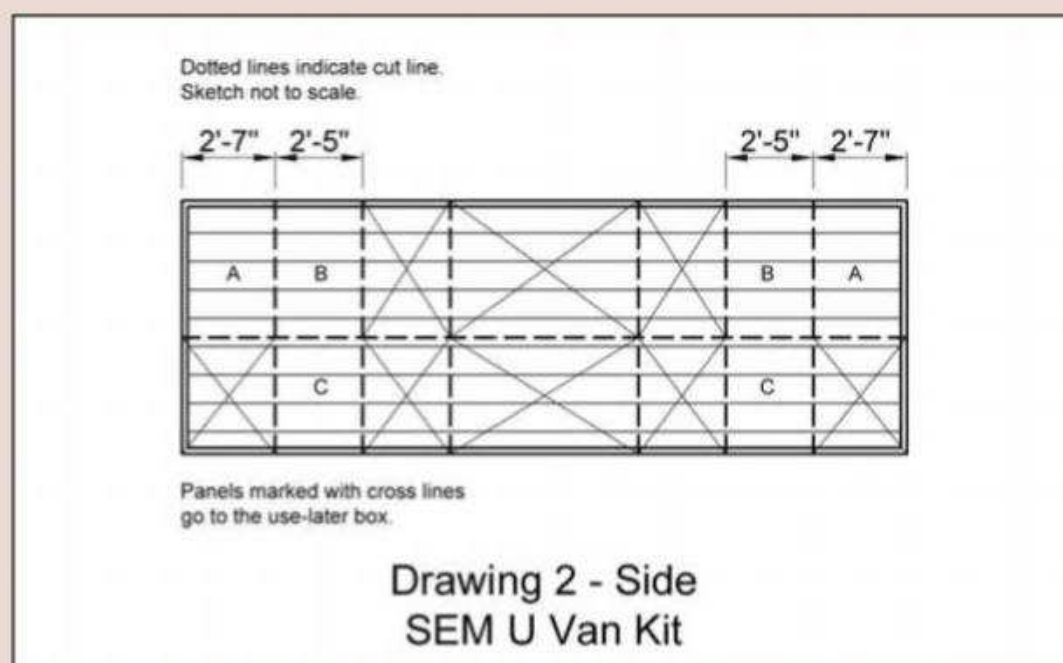
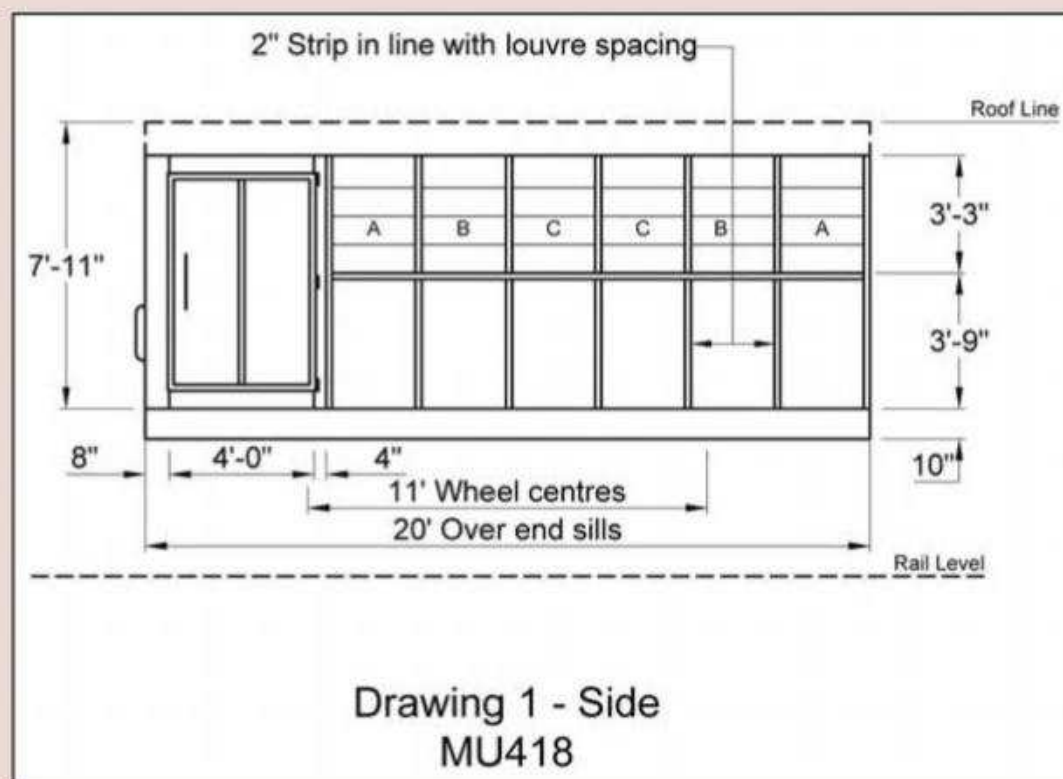
Materials Required

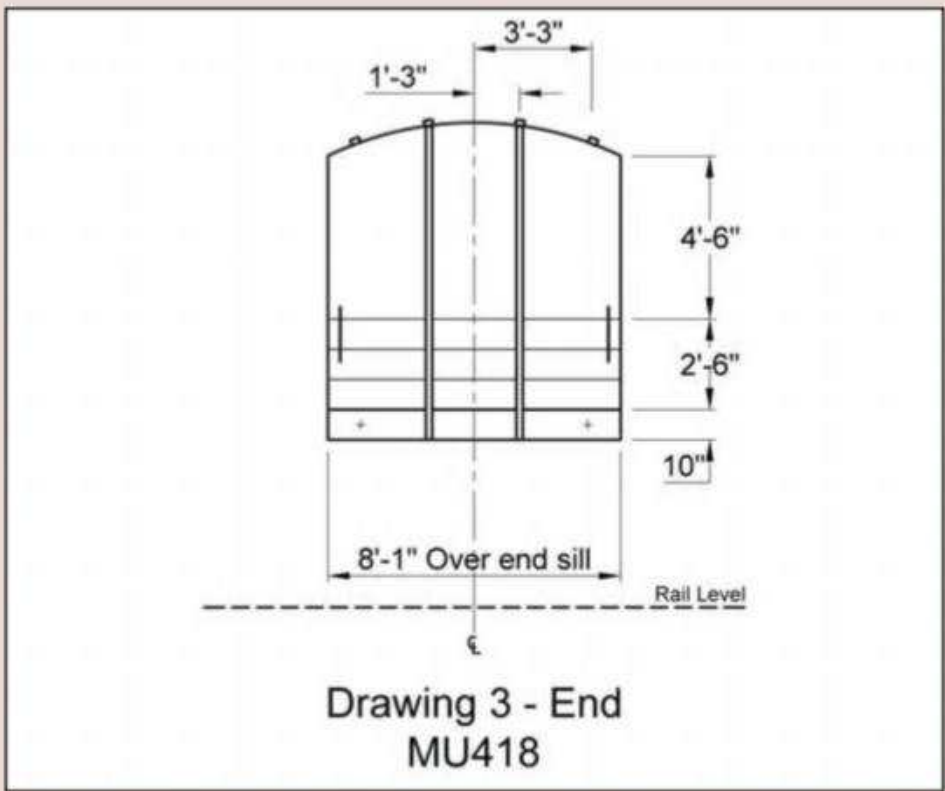
Commercial Components Required

- SEM (R22) U/HD Wooden Louvre Van kit
- SEM 11' wheelbase underframe
- SEM (E4) brake lever kit
- SEM (M6) imperial decals
- SEM split spoke wheel and axle set
- SEM U van roof detail kit
- Styrene sheet: 0.005", 0.010", 0.020" and 0.040"
- Evergreen:
 - Item No.8102 (2" strip styrene)
 - Item No.8103 (3" strip styrene)
 - Item No.218 (1½" styrene rod)
- Kadee No.58 couplers
- Model Etch (ME30) Waybill Clip
- Brake rigging and handrail wire: 0.010" and 0.007"
- Styrene glue (Testors), super glue
- Corrugated iron sheet (wagon roof)
- Paint:
 - Humbrol Matt 160 Brown (the 1930s era VR wagon colour was a deeper brown than the russet red applied after 1950).

Tools Required

- Exacto type modeller's knife
- Modeller's razor saw
- 4" hand smooth file
- 4" Engineer's square
- Alligator pliers
- HO scale rule
- No.76 and 2mm drills with a suitable drive.





under the side sections when fixing together.

Stating the obvious, however, before fixing the louvred sections in place make sure that when placed back to back the louvres are facing outwards with the door position, when viewed from the side, on the left end of each side.

The next step is to fit the internal backing sheet to the side. Before proceeding file off any lumps and bumps. From 0.020" sheet styrene, make up two sections 20' x 7' and glue onto the internal wall of each side. I have added these sections purely to assist in keeping the wall components together during the life of the model. Place the completed sides back to back to make sure they are both the same length and height.

Referring to Drawing 3, the next step requires us to reduce the width of the van ends, because the M class cattle wagons were 5" narrower than the wooden louvred U vans. Remove one end from the sprue, file off the locating lugs and styrene injection points on the inside surface, plus the moulded external handrails, so as to allow the side to lie flat on the work surface.

To remove the outer louvred panels we cannot use a razor saw because the saw blade is wider than the amount we wish to remove. So, just above the buffer beam and clear of the end support, drill a 2mm hole that will allow removal of the louvred section without damaging the components to be retained.

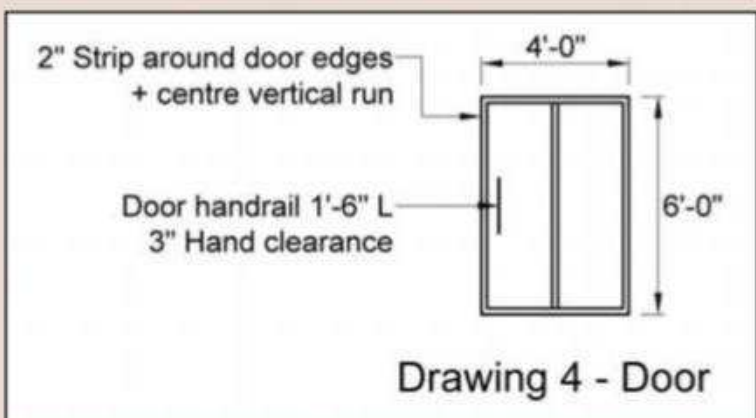
Use the razor saw to cut just above the buffer beam, continuing until the saw cut runs into the 2mm hole previously drilled. From the drilled hole to the top of the outer louvred panel score with an Exacto knife until you can snap out the louvre panel. Clean up the saw cut and snapped edges with a file.

From the removed louvred panel section cut out one new panel with three fully intact louvres measuring 3' x 2'6". Repeat the process for removing the louvred panels on the other side of the van end.

From 0.040" sheet styrene make up two rectangular sections 3' x 5'6".

Because of the two vertical end braces we will not be able to fix the new sections in place with the same method as the sides.

For the ends we lay the end down, with the inside section on the workbench surface, then fix



the louvred panels in place. When fixing into position place temporary 0.020" styrene sheet 'packers' underneath to keep the panels in the same plane as the louvred sections.

Once the glue has set we can remove the central louvred section. In this case we leave the lower three louvred sections in place. To do this, once again we drill a 2mm hole on each side of the inner louvred panel, allowing clearance of the drill so we do not damage the three lower louvred slats or the end braces. Using a razor saw cut down towards the drilled holes, cutting close to, but not damaging the end braces. With an Exacto knife score between the two holes, well clear of the three lower louvred sections that will remain. Clean up the rough edges from the saw cuts and lower fracture line.

From 0.040" styrene sheet make up the new central section 2'3" x 5'6". Fix in place with the temporary 0.020" styrene 'packers' underneath.

Once the glue has cured add a sheet of 0.020" styrene to what will be the internal end wall of the van end to assist in strengthening the various sections once they are joined together. The strengthening sheet must remain clear of the buffer beam, otherwise it will be visible when the van body is fitted to the underframe.

Repeat the entire process for the other end. On the new ends mark the centre line and the side height on the edges. Scribe with a pencil the curved profile of the roof (14'11" radius) then file the ends to this line checking that both ends match. If you take your time you can achieve an even curve of the roof by scribing the line by eye.

Using 0.040" styrene, extend the vertical end post timbers to the new end height. The extension pieces are 4" x 2" timbers, around 6" long, once the glue has set file to the curved end profile.

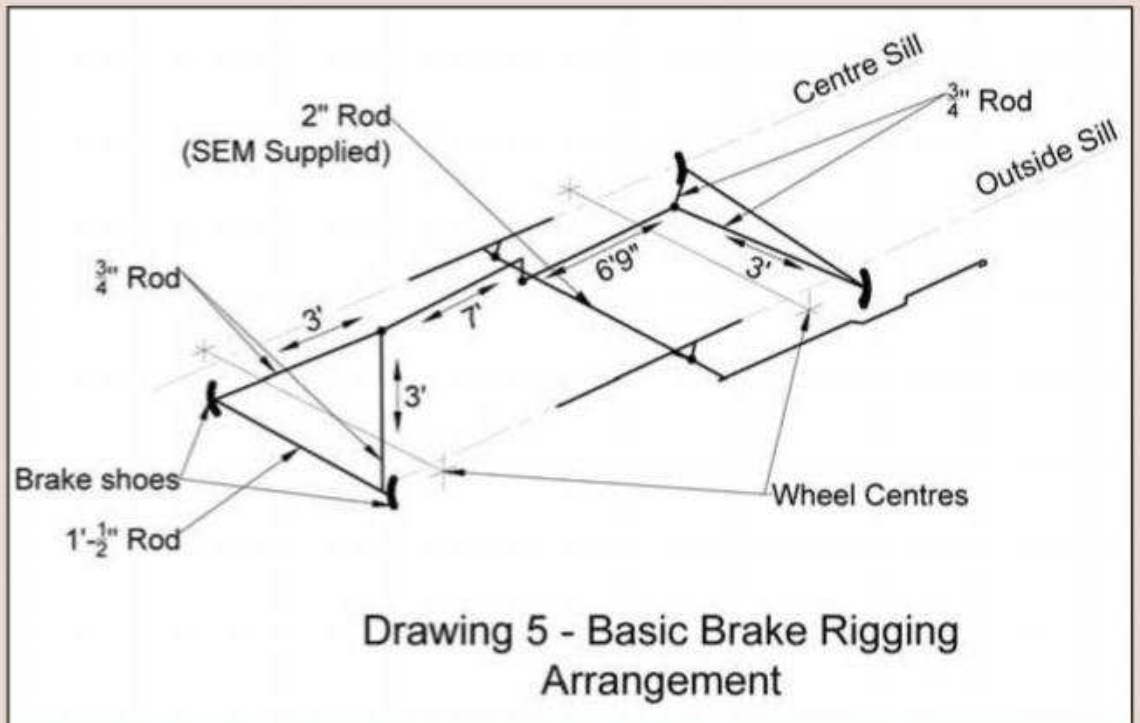
The inner sections of the kit are bevelled to assist in assembly. Using the remaining kit side and end sections as a guide bevel the inner edges of the styrene sheets that have been added. Assemble the sides and ends to form the rectangular box shape of the van body.

Underframe Construction and Brake Rigging

Follow the SEM instructions and assemble the underframe, except for drilling the hole for the coupler box self-tapping securing screw.

Previously, the inner walls of the van had been fixed to 0.020" styrene sheets to strengthen them. The increased wall thickness will affect the fit of the SEM underframe/floor. The 11' wheelbase floor is narrower than the U van kit underframe, therefore on each side fix in place a strip of 0.040" styrene up to 6" wide and file evenly from both sides until the underframe fits into the van body easily, without applying excessive force.

Note the position of the air reservoir and actuator on the underframe when dry fitting the underframe into the van body, as the air reservoir dictates the location of the lever hand brake. The hand brake lever, when fitted, is at the opposite end from the door and, unfortunately for us, it is on the other side in the photograph. So be a little cautious before fixing permanently into the



van body. When happy with the fit, fix the underframe into position. Refer to the two photos of M wagons (both were converted to MU and back again) to show the brake lever arrangement.

Replace the kit supplied wheel sets with SEM split-spoked wheel sets. I used Kadee No.58 couplers. However, if you are running a large number of wagons fitted with buffers, longer shank couplers will be required to allow the wagons to negotiate sharp curves when coupled together.

Dry fit your assembled coupler into position; remove any sections of the van end that foul the coupler box and then drill a 2mm hole for the securing screw. Secure the couplers to the van and check the height with a Kadee coupler gauge.

These days, the degree of detail expected on a model has increased, mainly because of the quality of r-t-r models and, as a result, modellers scratchbuilding and kit-bashing have had to lift their game also! I now fit basic brake rigging to represent what an observer would see if they were standing trackside and I leave it at that. There is no point modelling what can't normally be seen.

Referring to Drawing 5, between each brake hanger I fit a 1½" diameter rod, to represent the rod that keeps the shoes aligned with the wheels when the brakes are applied on the prototype.

The handbrake rod triangular supports, referred to in the SEM instructions as "plummer blocks" on the U van kit, are fitted on the side sills. On the MU wagons one 'plummer block' is fixed to the centre sill with the other on the handbrake side, attached to the side sill. On the non-handbrake side remove the 'plummer block' from the side sill and re-attach it to the centre sill. Referring to the SEM instructions fit the lever hand brake in position.

Continuing to refer to Drawing 5, using 1½" rod, make up and fix into position the brake rigging. Fit the SEM buffers supplied.

I added some lead to bring the weight up to 30g, as these wagons when completed are very light. If adding lead weight as I did, secure the weight well to prevent any movement later on. To secure the weights in position, use the inner roof supports to locate the weights.

Adding the Roof

From 0.040" sheet styrene make up three roof supports with the same curved profile as the ends. These three supports are fitted within the wagon body to support the roof and prevent the sides from warping over time. The exact dimensions of width and height of these supports will vary as the internal size of your van will vary depending upon the thickness of the wall strengthening and if you added lead weights to the van. Fix these internal supports in place.

Along the top of the wagon sides, below the roofline, run a section of Evergreen 2" strip styrene along the complete length of each side.

From 0.005" sheet styrene make up a roof section 20'6" x 9'6" and secure in place. Once the glue has cured, file the edges of the roof flush with the 2" strip running along the complete length of the wagon body. Similarly trim the end overhang of the styrene roof flush with the ends of the wagon.

Cut out a section of the corrugated iron material 20'4" x 9'3" for the roof cladding. Then gently bend to the roof profile by using a round pencil to form the roof curvature before fixing in place using Superglue with an even overhang on each side and end. Fit the SEM U van roof battens in place with Superglue. These battens give an otherwise plain roof a degree of detail.



Completing the Body

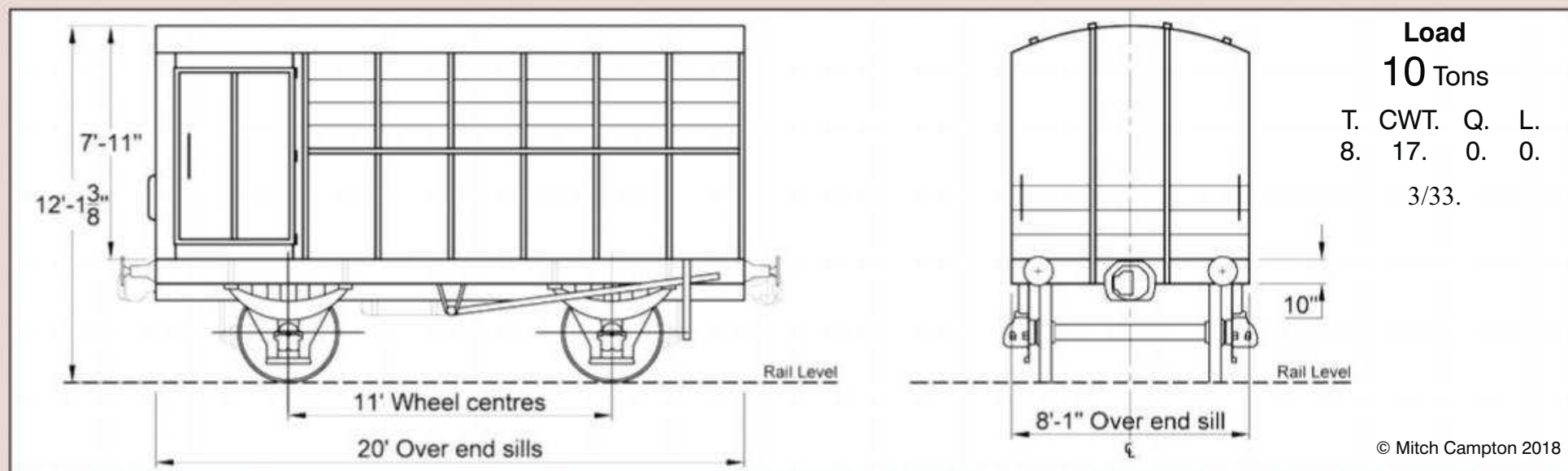
Referring to Drawing 4, use 0.010" styrene sheet to make up the two doors and fix them to the van sides. Around the door perimeter and down the vertical centre of the door, attach 2" strips of 0.010" styrene. Attach small sections of 0.005" styrene to represent the door hinges.

In line with the vertical timber sections between each louvre, continue the vertical 2" x 0.010" styrene strips down the van sides, to represent the metal strips that were fitted to secure the metal cladding to the inside uprights. Fit the Model Etch waybill clips to the middle of the wagon side. Interestingly, double clips were fitted, which was rather odd as most single-load wagons had one clip only.

Paint the wagon Humbrol Matt No.160 Brown, which is a good representation of the wagon colour the VR used in the 1930s. Decal the wagon using the photograph of MU418 as a guide to the location of the wagon details. Finish the wagon body off with a spray of Testor's Dullcote.

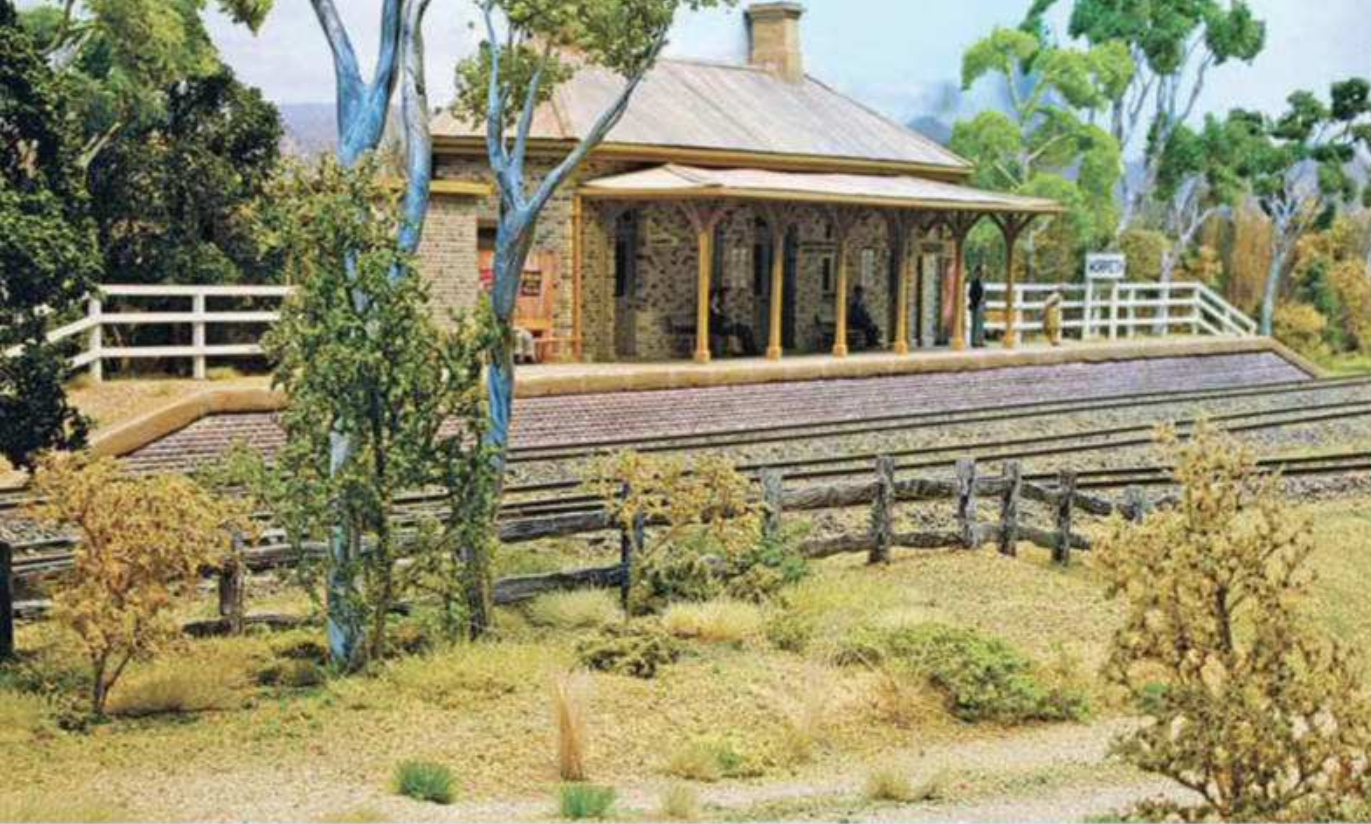
Operation

It would be fair to say this wagon would not fit into most modellers' preferred timeframe, as most seem to model the post-WW2 era. However, in keeping with the philosophy of 'it's my railway and I'll run what I like!', I have assumed that due to the general shortage of wagons one MU remained in service until the early 1960s. As the VR used them as ordinary louvered vans during their short life as MU vans, this model will be used similarly, conveying perishable and general goods traffic wherever the Department requires.



Building Lightweight Aluminium Benchwork

Trevor Hodges constructs lightweight, easily portable baseboards. Photos by the author.



Around 2003 I built a small, portable layout (more a diorama than a layout) to test the feasibility of working in a new scale. I'd switched from HO to O (1:43.5) about two years prior to starting the layout, but up to that point I'd only built some rolling stock kits and scratchbuilt a locomotive in my new scale. The time had arrived to move beyond a couple of lengths of flexitrack on a plank. *Queens Wharf* [Described in *AMRM Issue 276, June 2009 – Editor*] was 3m long and 600mm wide and in its first iteration had no fiddle yard, so trains were confined to the scenic portion of the layout. This didn't matter

too much, as it was really just an exercise to see if I could hand-build 32mm gauge track and construct some buildings in my new scale. The layout wouldn't survive long enough for its diminutive size to matter. Boy, was I wrong!

Portability

From the start I decided that, while *Queens Wharf* may be small, I wanted it to be portable so I could take it to train shows and display it. While I'd built a number of home layouts in HO I'd only been involved in helping build one other portable layout. This was built as a model railway club project and had been constructed from timber. The segments of this layout each weighed a ton and no thought had been given to transport prior to construction starting. While the club decided to sell this layout after showing it a couple of times, I'd learnt some valuable lessons concerning what I would aim to avoid if I ever built a portable show layout of my own. These lessons were:

I'd organise transport first and build the layout to fit.

The layout segments would be small enough to be manoeuvrable on my own.

At each stage of construction I'd work to reduce the overall weight of the segments by substituting heavy materials like timber with light-weight stand-ins.

Queens Wharf

When I was in the planning stages of building *Queens Wharf* I decided that using aluminium in the benchwork would be one way to reduce the weight of the layout segments. The design of the layout's benchwork was inspired by the structure of an aircraft wing: a series of ribs with holes drilled in them (to reduce their weight as much as possible) strung together by long, light spars which are then wrapped in a skin of some type of sheet material, often canvas or aluminium in the case of an aircraft wing. In the case of *Queens Wharf*, the ribs were 4" x 1" pine, the spars were lengths of aluminium angle and the skin was provided by the fascia and backdrop, which were 6mm thick MDF.

There was nothing particularly new or inventive in the design of the segments themselves. I was really just making two 1.5m x 600mm ladder frames that would be bolted together in the centre to give me a 3m long diorama that would be available for track and scenery. However, I substituted 1.7mm thick, 25mm x 25mm aluminium angle for the pine that would normally be used to run the length of each segment in a traditional wood ladder frame (Photo 1). The cross beams or ribs of the ladder were pieces of 4" x 1" pine, the corners of which sat in the open channel formed by the lengths of aluminium angle.

I drilled several large holes in each rib or cross beam, to lower the weight and allow the passage of wiring, and screwed these into position, evenly spaced along the length of the frame, using the aluminium to form a box structure. I then ran pieces of 6mm MDF along the front, back and one end to give me a fascia and a low backdrop. The MDF was clamped into position and two rows of countersunk holes were drilled through both the MDF and the webs of the aluminium. I bolted the aluminium and



1

One of the modules for Queens Wharf under construction.



2

A Queens Wharf module assembled into a rigid three-sided box, ready for track to be laid.

MDF together with short countersunk bolts. The 1.7mm thick aluminium used lacks the rigidity needed to support a layout on its own, so the MDF fascia and backdrops provided stiffness to the layout segments, preventing them from sagging in the middle. The end plates, which act as the mating faces between the layout segments, were 4" x 1" pine and the outside ends each received a short length of 2" x 1" pine to act as a stiffener. This arrangement resulted in a three-sided box when the layout was assembled ready for track to be laid (Photo 2).

When bolted together in the centre the two segments were held in alignment by two pairs of pattern maker's dowels, which I purchased from the UK. They are essentially two metal disks (one male and one female) which can be let into the end timber of the layout segment and secured with small woodscrews. Once the two sections of layout are brought together these dowels provide extremely accurate layout alignment. The sections of layout still need to be bolted together and I carried out this operation by installing a T-nut into one side of one of the end plates and drilling a matching hole in the other to allow the shank of a bolt to pass through. I find this arrangement to be superior to using a bolt and a separate, loose nut because the T nut is driven into the timber on the inside face of the end plate and as such it is held permanently in place and can't be mislaid when the layout is being packed and moved.

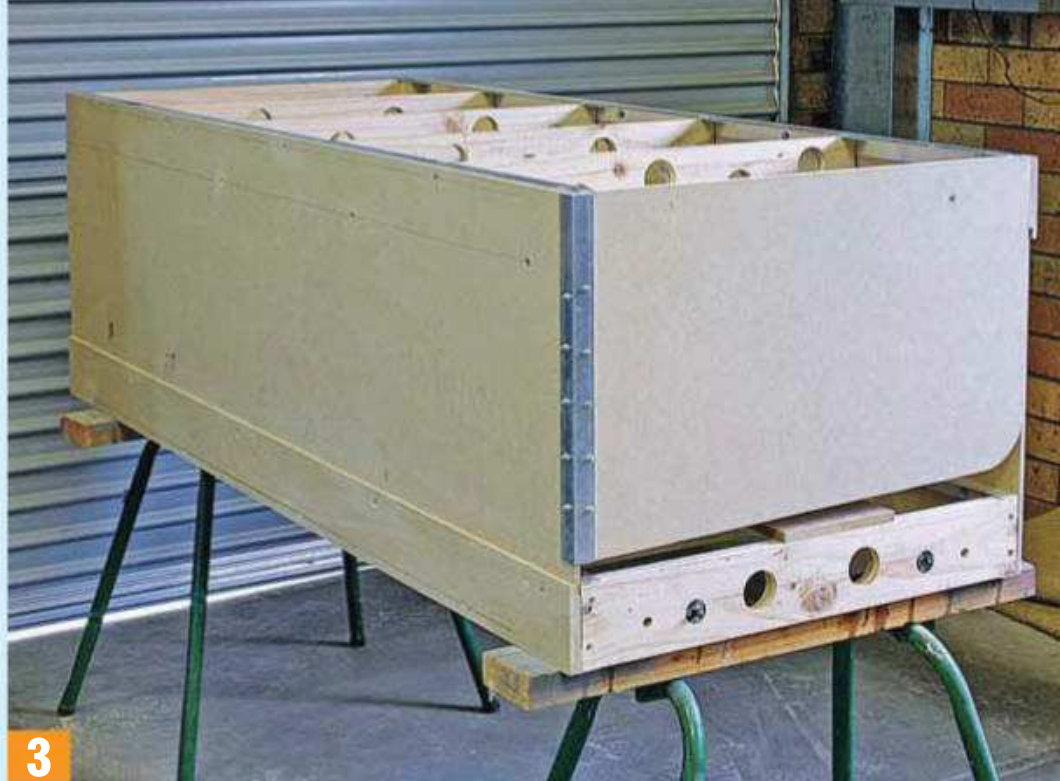
To allow *Queens Wharf* to be transported in the Toyota station wagon I owned at the time, I built the layout so that the two segments could be 'nested' to reduce their overall volume. The secret of the nesting was to use two pieces of 6mm MDF for the fascia on the front of the layout. The inner piece was about 10mm narrower than the front piece. By making sure these two pieces were flush at the bottom edge they formed a trench running the entire length of the front of both segments. A small 2" extension to the top of the backdrop allowed it to slot into the trench when the layout was packed for transport (Photo 3). One half of the layout was turned upside down and formed the lid of the box when being transported.

Morpeth

Over the next decade the 'temporary' diorama, *Queens Wharf*, acquired a fiddle yard, a dedicated lighting rig, several buildings and a skin of scenery. However, after ten years I decided to declare my change of scale to be permanent so it was time to move beyond my little test diorama and I designed a new layout (*Morpeth*) which was approximately 6m long and varied in depth from 500mm to 720mm. It was built in three sections to fit into a dedicated, enclosed trailer I'd purchased specifically to transport the layout. I paid for this using the money I'd raised selling off all my HO stock on eBay.

Having over ten years to cogitate over the design of *Queens Wharf's* benchwork provided me with ample time to develop a number of enhancements to the original design with the aim of reducing the weight of each segment even further. On *Morpeth* I decided to replace the pine crossbeams with beams made up of 3mm ply and aluminium angle, which were manufactured in batches. For each beam I cut two pieces of aluminium angle to length and a matching strip of 3mm ply (Photo 4) to act as a spacer between these. The ply spacers had five or six pre-drilled 25mm holes running down their centre to allow for the passage of wiring and, when combined with the aluminium angle, produced a cross beam that was the same width as a 4" x 1" piece of timber.

I continued to use pine for the mating 'plates' at the end of each segment. I'd found that a piece of 4" x 1" with dimensions of about 90mm x 20mm was a good depth for the layout segments, as it allowed enough clearance for Tortoise switch machines. I used construction adhesive between the aluminium and ply in the assembly of these cross beams and clamped them while the glue set up (Photo 5). After the glue had set I came back and drilled 1/8" holes through the web of the aluminium and the ply and used blind or pop rivets to add some mechanical fastening to the cross beams. I assembled the ladder frames using 2m lengths of aluminium to act as the spars in the same manner they had been employed in *Queens Wharf*. These were held in position with more pop rivets. The two rivets at each joint were



3 The two *Queens Wharf* modules assembled for transport with one half of the layout turned upside down to form the 'lid' of a protective 'box'.



4 A crossbeam for *Morpeth* under construction. Two pieces of aluminium angle cut to length, 'sandwiching' a 3mm ply spacer which has had five 25mm holes drilled along its length, to lighten the timber and allow a convenient route for the of wiring along the baseboard.



5 Four crossbeams under construction with the aluminium channel glued to the ply. When the glue sets 1/8" holes will be drilled through the web of the aluminium and the ply and rivets used to secure the aluminium to the timber.



6

While the basic design of the Morpeth and Queens Wharf modules is the same, the substitution of aluminium and ply for timber results in a considerable weight saving.



7

The pattern maker's dowels inserted into the 4" x 1" pine endplates for easy alignment. The two holes are for the bolts that secure the modules together.



8

◀ Short lengths of 2" x 1" pine added to the corners of the modules for strength and to ensure the endplate/side girder interface isn't overstressed.

▼ Angled timber corners to the endplates where the modules to be joined are of different widths.



9

offset at a 45° angle in an attempt to reduce twisting of the frame when fully assembled.

The layout segments for *Morpeth* have a similar look (Photo 6) to those I made for *Queens Wharf*, but the ply and aluminium crossbeams made a significant difference to the overall weight. The main reason I continued to use 4" x 1" pine for the end plates of each layout segment was to provide something solid into which I could install the pattern maker's dowels (Photo 7) that I used to align the layout segments and the bolts that hold the segments securely together. I reinforced the corners of each segment with short lengths of 2" x 1" pine, adding much-needed strength and stability to the structure (Photo 8). By providing a greater surface area for the insertion of screws these corner braces also ensure that the end plates don't get ripped out of the end of the aluminium angle.

The length of all three layout segments is the same, however the width of the centre section is approximately 200mm narrower than the two outer segments. The reason for this is explained by the fact that the tracks fan out at each end of the layout and this required the ends to be wider than the middle. However this change of width left me with the problem of what to do about transitioning between the different segments. I didn't want two hard, ninety degree corners sticking out in the middle of the layout. I decided to 'clip' the corners of the two larger layout segments at 45° using two bespoke pieces of timberwork to replace the standard end plate (Photo 9). These adapted endplates allowed for a softer transition between the segments. I cut a V slot in the top and bottom web of the aluminium angle about 300mm from the end of the segment and formed a 45° bend in these. I then drilled countersunk holes in the aluminium at appropriate spots and installed the angled end plates. I also rein-



10

The angled timber ends inserted into angled aluminium girders at the interface between modules of different widths.



11

Two modules for Morpeth assembled with MDF fascias and backdrop fitted.

forced the bend with a short length of pine with one end trimmed at 45° (Photo 10).

I again used MDF (Photo 11) to provide the fascia and back-drop. However, I didn't need to nest the segments of the layout because I wasn't trying to fit the layout into a station wagon. This saved on weight as the front fascia was only one thickness of 6mm MDF rather than the two required to form the channel. The risers that hold the track base in position were manufactured using more aluminium angle (Photo 12). To make a riser I would cut a piece of aluminium angle to length and then cut two (or in the case of a wide riser three) more shorter lengths to hold the track bed at the required height. I pop rivetted these three sections together then clamped and rivetted the riser to one of the cross beams. Anyone who has any familiarity with L girder

benchwork will find this part of the building process quite familiar. However, in this instance the wooden risers are replaced with aluminium (Photo 12).

Conclusion

Using aluminium in layout benchwork construction is only slightly more difficult than using wood on its own and it produces a significant weight reduction, an important factor in the construction of a portable layout. I cut the aluminium angle using a mitre saw fitted with a blade designed for making such cuts in aluminium. Making the cuts with a power saw makes construction just as fast as working with wood, but you must wear proper eye protection.

The benchwork of my first portable layout, *Queens Wharf*, pro-

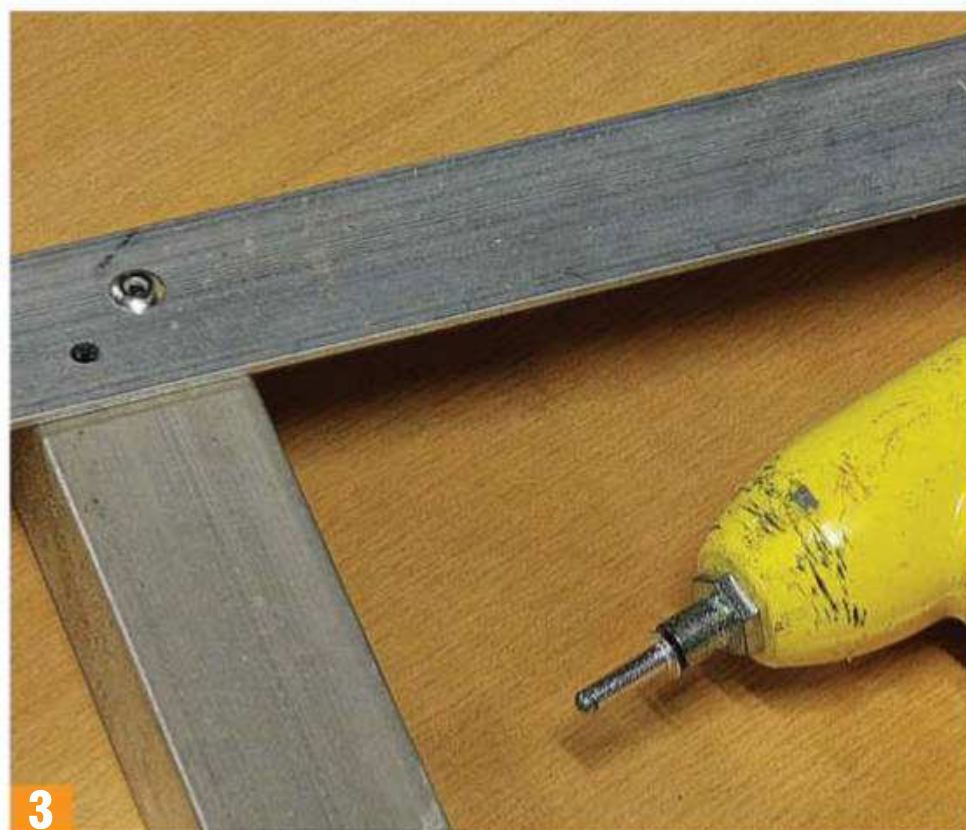
Cutting and Securing Aluminium

While it's no more difficult to work with aluminium than wood in the construction of benchwork, the first topic that should be mentioned is safety. Never attempt to cut aluminium (or any other metal), using power tools, without wearing safety glasses.

It is possible to cut the fairly thin-walled aluminium I worked with in the construction of *Morpeth* with a hand hacksaw, however a mitre saw is a more practical option if you're contemplating making more than a few cuts. If you do use a mitre saw then you will also need to acquire a saw blade designed for cutting aluminium.

The main difference between a blade designed to cut aluminium and wood is the number of teeth [Photo 1]. As can be seen in the photo, blade A (designed for cutting wood) has 70 teeth while blade B (a blade especially designed for aluminium) has 100 teeth. Aside from the number of teeth this blade has slightly less rake or angle on the carbide tips of each tooth. I occasionally apply a little wax to the side of this blade in use to help lubricate the cuts and the residue of this can be seen on the side of the blade. I purchased the wax stick I use from a hardware store.

The aluminium you work with will need to be secured. I used a mix of construction adhesive and pop (or blind) rivets to secure the aluminium on *Morpeth*. The pop rivet 'gun' I used in this project [Photo 2] cost less than \$20.00 at a large hardware store chain and I bought the pack of 1000 rivets from the same source. To pop rivet aluminium you bring the two work pieces together, drill a hole (1/8" or 3.3mm) through both of the pieces in the spot where you want them to be held and 'pop' a rivet into this hole. The rivet is placed in the gun as shown [Photo 3] and the short 'head' of the rivet pushed through the hole you've drilled. You pump the handle a few times and the longer 'nail'-like section breaks off. I assume the name pop rivets comes from the sound they make as this break occurs, a little 'pop'.





12

▲ The aluminium angle risers that hold the track base in position fitted to the base of the module.

► The Morpeth modules are assembled and tracklaying has commenced.

duced layout segments that were as rigid as any I'd ever produced from wood. However, using pop rivets on *Morpeth* has resulted in this new layout having some twist in the frames, even after the MDF is bolted into position front and back. To reduce the possibility of twisting when the segments are being moved, they're always carried by two people. In spite of the slight twist that can occur if the layout is lifted from a corner, there is very little if any sag in the middle of the segments. I would estimate that any sagging is equivalent to a similar sized, traditional wooden frame. While the tendency of the segments to twist slightly might lead to damage of the scenery, I've never found this to be the case because I don't use any plaster in my scenery. Plaster is heavy and rigid and if it chips or cracks it will show white through the scenery.

To create the landforms on *Morpeth* I used extruded foam and paper towel as a scenery base. The foam is glued to the layout segments with construction adhesive and thus provides a degree of cross bracing and thus reduces the twisting in the frames. As such the scenery is a good deal more flexible and doesn't seem to suffer at all from the minor twisting that does sometimes occur when the layout is being moved. Track alignment has always been very good, mainly because of the pattern maker's dowels, although my O scale wheels are possibly a little more forgiving than those in smaller scales might be.

GALLERY



Modelling the Railways of South Australia

The SAR 3'6" (1067mm) narrow gauge network was once quite extensive, serving the less populated areas of the state in the far south-east, north, the western section of the Yorke Peninsula and the isolated network on the Eyre Peninsula. The architecture, locomotives and rolling stock retained a more 'English' appearance than those serving the post-Webb broad gauge areas of the state, right through to the end of the steam era and well into the 1980s, by which time most of the network had closed, save the isolated lines on the Eyre Peninsula and the preserved Pichi Richi Railway in the north. Despite the picturesque nature of the railway system, it remains very much a minority modelling interest, with most items still needing to be scratchbuilt, though there are some kits available

from 'cottage industry' suppliers, as well as the growing availability of 3D printed parts.

Examples can be seen here of models in the three most popular scales used by modellers in South Australia, HO (1:87), S (1:64) and 1:24 scales. With a small, but dedicated, following, the narrow gauge railways of South Australia have inspired some very fine modelling, some of which can be seen here via Gavin Thrum, who has provided some photographs of some of the narrow gauge models that were on display at the 2017 MRSA convention. One can expect that the narrow gauge fraternity will also have a significant presence at the 2018 convention, which is scheduled to take place on Saturday, 1 September.



◀ The ambiance of the narrow gauge lines was very much rural and lightly trafficked, something captured very well with this scratchbuilt diorama constructed in Sn3½ scale by Gary Norwood. It depicts Glencoe, once the terminus of a short branch from Wandilo on the Wolseley to Mt Gambier line in South Australia's far south east. This little-used branch was closed when the Mt Gambier narrow gauge lines

were gauge-widened in the 1950s. The diorama displays two four-wheel vehicles, a scratchbuilt Cc two-plank open wagon carrying an LCL container, and a V van built from an End Of The Line Hobbies kit. Closer views of the two vehicles can be seen below.



A collection of some of the different types of water tank wagons used on the isolated Eyre Peninsula system (and on the rest of the narrow gauge system as well) were displayed by Peter Knife, modelled correct gauge on HOn3½ gauge track. As Peter models the isolated Eyre Peninsula system, he models the 3'6" gauge track using 12mm gauge (HOn3½), unlike some HO modelers of the SAR narrow gauge who use HOn3 (10.5mm gauge) to preserve the apparent difference in gauge when mixed narrow and broad gauge tracks are modelled using 16.5mm standard gauge to represent the SAR 5'3" gauge tracks. The wagons were assembled from styrene and homemade castings and are finished in the early SAR dark grey livery, lettered with custom made decals.



This HOn3½ model of narrow gauge sleeping car 'Coonatto' was scratchbuilt by Kevin Ryan. The prototype was built at Islington Workshops in 1915 for the Broken Hill Express, along with sisters 'Nilpena' and 'Alberga'. These three vehicles were the largest and most luxurious carriages used on the SAR narrow gauge system. 'Coonatto' remained part of the consist of the Broken Hill Express until the line was standardised in 1970, then transferred to Port Lincoln in 1973 where it was altered internally and repainted green for departmental use. It is now preserved by the Pichi Richi Railway.

As the broad gauge lines were modernised, some of the prolific broad-gauge Y class four-wheel open wagons were converted to run on the 3'6", fitted with strengthened and sealed door panels to make them suitable for the conveyance of bulk grain. Geoff Brooks scratchbuilt this model of YY5806 in styrene. It runs on HOn3 axles from Steam Era Models and has been detailed with copper wire brake rigging. It is fitted with Kadee No.714 couplers, which are widely used among SA narrow gauge modellers.



A very distinctive SAR building, on both the narrow and broad gauge networks, was the concrete phone box. This 1:24 scale version was constructed in cast plaster, styrene and brass by Scott Taylor.



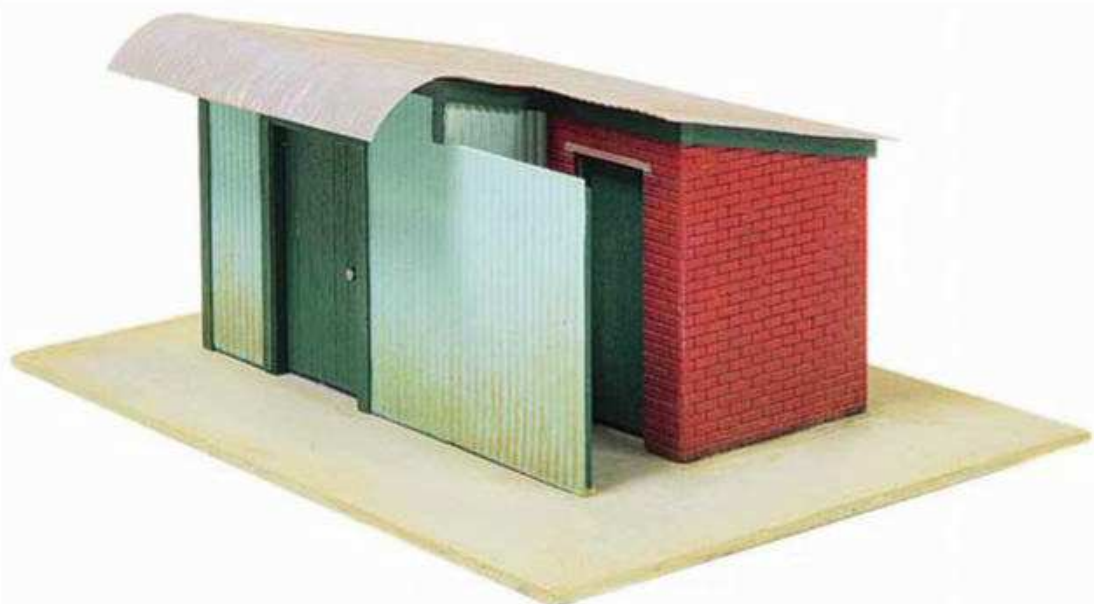
If you want models of SAR narrow gauge steam locomotives, most still have to be scratchbuilt. Adrian Crimes displayed this almost complete HO scale model of a Wx 2-6-0, which he is scratchbuilding in brass, nickel silver and a little styrene. All wheels and axles were supplied by Steam Era Models. A small can motor and flywheel sit in the tender with a drive shaft through the cab, driving the gearbox through twin universals. The boiler is almost all solid brass, so will give the tiny locomotive some good traction for its size.



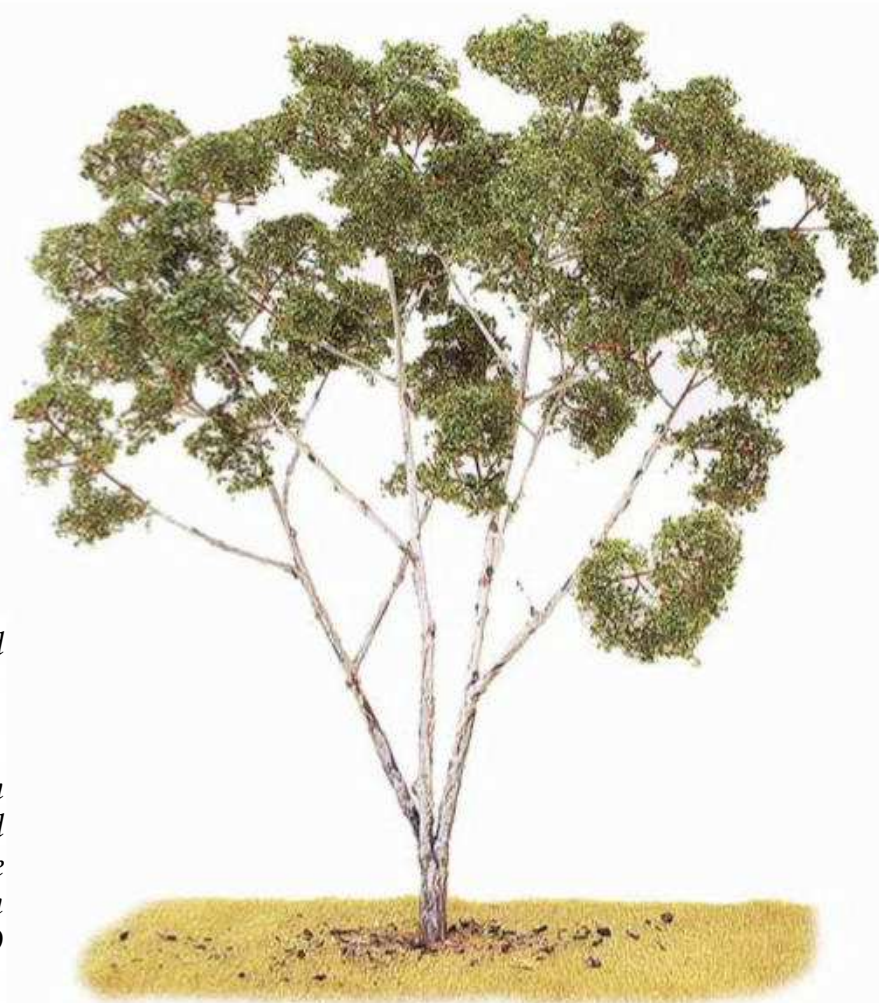
Some samples of the 1:24 scale SAR 'chopper' couplers made from cast metal and 3D-printed parts by Scott Taylor.

This HOn3½ model of Port Lincoln Division allocated T class locomotive No.209 was built from a BGM brass and whitemetal kit by Phil Knife for his brother, Peter, for use on Peter's HOn3½ layout, 'Minnipa' which was most recently featured in AMRM Issue 296 (October 2012).





This wash house and toilet building was scratchbuilt in Sn3½ scale from MDF, card and handmade corrugated iron by Gavin Beaumont.



It wasn't just trains and buildings on display. This tree was constructed by Fran Thomas using a cutting from a Nandina Domestica plant, enhancing the trunk and branches with Selleys No More Gaps, then painting it with acrylic paints. Foliage from the Heki range was added to create this very typical South Australian Eucalyptus tree, standing about 250mm high, a reasonably sized tree even in O scale.

Modelling narrow gauge subjects in large scale (1:24) results in spectacularly sized models that can be well detailed, but are not as overwhelming in size as a standard gauge model would be in the same scale. This model of Port Lincoln Division refrigerated van RN6480 was scratchbuilt from timber, styrene and some 3D-printed parts by Scott Taylor.



Another 1:24 scale model from Scott Taylor was this station shelter, constructed from timber and styrene.



Another of Peter Knife's HOn3½ scale vehicles is this model of Port Lincoln Division carriage No.69. Built in 1887 as a standard 'Short Tom' passenger carriage, it was converted to a composite brake carriage by the addition of a guard's compartment and side loading doors in 1930 and transferred to the Port Lincoln Division, where it served until condemned in 1965. This model was built using modified castings produced by the builder and is painted in the distinctive Port Lincoln Division green colour scheme.





The Austrains NSWGR 30 Class Tank Locomotive

*James McInerney adds detail, weathers and fits a DCC decoder to an Austrains r-t-r HO scale steam locomotive.
Photos by the author, unless otherwise indicated.*



The photograph that provided the inspiration for the weathering applied to 3067, captured at Eveleigh in May 1962 by David DeDear and reproduced on the inside front of Train Hobby's 2007 publication, 'Locomotive Profile New South Wales Railways "30" Class 4-6-4 Tank Locomotive' and reproduced here with the permission of Train Hobby Publications.

The 30 class prototype information and the review of the model as it comes from the manufacturer, normally included in an 'On the Workbench' article, can be found on p.52 of the last issue (AMRM Issue 330, June 2018) – Editor

As mentioned in my review of the Austrains 30 class tank locomotives in AMRM Issue 330 (June 2018), the model is close to perfect, but there is always something that can be done to make a good locomotive even better.

Modifications

As per the review of the Austrains 30 class printed in AMRM Issue 330 (June 2018), the only things I had found to be missing from the model at the time of the review were the front and rear top lamp irons which, I assume, were not modelled to allow for the fitting of the head-

light on the lit versions. Making them was not difficult; I filed a curve into one end of a section of 0.010" x 0.030" brass strip, cut it a scale 9" long, then soldered it to another 0.010" x 0.030" strip, a scale 6" from the end, which was also rounded slightly. The rear 'leg' was left about 3mm long and, in the case of the front lamp iron [Photo 1], it was superglued into a suitable hole drilled at an angle into the top of the smokebox, after the front handrail knob was shortened at the rear to make room for it.

The top lamp iron for the bunker [Photo 2] was constructed the same way as for the front lamp iron and superglued into a likewise suitably sized hole drilled in the rear of the bunker.

I also made a new piston tail rod for the left hand cylinder out of some spare brass rod, as the original has disappeared somewhere along the line (no need to panic if a detail item has fallen off a model and can't be found, as most can be remade from simple materials). The prominent moulding seam on the chimney was also gently sanded off for the photos, even though I eventually replaced the standard Austrains chimney with a Ray Pilgrim (Signals Branch) 3D printed version, mainly for the modelled bolts on the 3D printed version, as the standard item's shape is perfectly acceptable.

One fairly important error in the Austrains model that I completely missed in the original review is that the cab roof is a scale foot too narrow for the majority of the period these locomotives were active. Research indicates that the width of the cab is correct for most, if not all, of the S class as they were originally delivered, but that the cab roofs were extended, plus rain strips and handrails added from the 1920s and that all the surviving tank locomotives had the modified roof post World War 2. I wish I had noticed that before I weathered my model...

Remove the cab roof handrails. Gently pull one end out and clear of the roof, then pull the other end out. Using a sharp knife, cut the rainstrips off the edges of the roof. Keep them safe for reattachment later. Cut two strips of (scale) 6" x 2" styrene strip and glue them to the edge of the cab roof. When this is set and secure, fill any gaps or other imperfections with putty (Tamiya Putty), then smooth the cab roof off when everything is dry. Once the roof is smooth and square, check that the roof is the right width (it is 8'9" over the rainstrips, so it should be 8'6" wide over the roof extensions).

When all is square and dimensionally correct, glue the rainstrips removed earlier back onto the edges of the cab roof. Form new cab roof handrails from 0.020" brass wire and fit (the holes in the ends of the cab will need drilling out). The end of the handrails should be a gentle semi-circular curve, not straight like mine are!

A modification that is specific to 3067 is removing the locomotive numbers from the tank sides and bunker rear and replacing them in the correct position for this locomotive, slightly lower down. As far as I can tell, 3067 was unique in this, all the others I have seen



Captured galloping along on the four-track Woodville Junction-Maitland section near Sandgate in September 1965, the prototype 3067 displays an interesting weathering pattern (the most recent repaint has worn so much that the remains of the previous repaint, with the lining in a different position, is showing through that more recently applied). This would be an interesting challenge to reproduce in miniature. This photograph, also captured by David DeDear, appeared on p.2 of Train Hobby's 'Locomotive Profile New South Wales Railways "30" Class 4-6-4 Tank Locomotive' and is likewise reproduced here with the permission of Train Hobby Publications.



The new front lamp iron and the replacement piston tail rod have been fitted. The tank-side numbers (and part of the lining) have also been removed to allow replacement with brass etched numbers in the correct location.



The new top lamp iron has been fitted to the bunker and the rear numbers have been removed. This photo was taken long before the author found out about the underscale width cab roof.



3

A 3D printed replacement chimney has been fitted, then the paintwork was 'touched up' and new numbers and lining have been added. Neither the DCC equipment nor the extensions to the cab roof had been fitted at this stage.

photos of have them in more-or-less the same position as the straight-out-of-the-box model. I removed all three of the painted numbers by gently rubbing them off with a cotton bud dipped in Metho (unfortunately I also removed a section of lining, but that was replaced with decal strips later).

Painting

Then I sprayed some self-etch black over the new lamp irons and new piston tail rod, plus the

wheels and side rods, to get rid of the shiny metal (and over the cab roof and new handrails if you are widening the cab roof). I never bother to dismantle models for painting; it is much simpler to place it on a section of track that is powered, mounted on a section of timber, so the driving wheels can turn. Then gently and carefully spray the self-etch paint in the appropriate places. The turning wheels ensure that all parts are covered with paint. In this case, as I didn't want overspray above the footplate, I used a

section of card to mask the upperworks while I sprayed.

When the paint had dried, I added new AM Models brass etched numbers on the side tanks and a decal for the rear bunker numbers. Then I used sections from a WAO sheet (obtained from Casula Hobbies) of NSWGR red locomotive lining to apply the missing lining on the cylinders and steps (and replace the sections accidentally rubbed off while removing the numbers). I roughly measured the length of line needed, cut them off the sheet, soaked them and then applied to the appropriate section of the locomotive. Many would be quite happy with how the locomotive looks now [Photo 3], but as far as I am concerned, weathering is a must!

Weathering

As always, before I weather a locomotive, I consult photographs of the real thing. Luckily, there are some very good colour photos of 3067 (and many other 30 class locomotives) in Train Hobby's excellent publication *Locomotive Profile New South Wales Railways "30" Class 4-6-4 Tank Locomotive*.

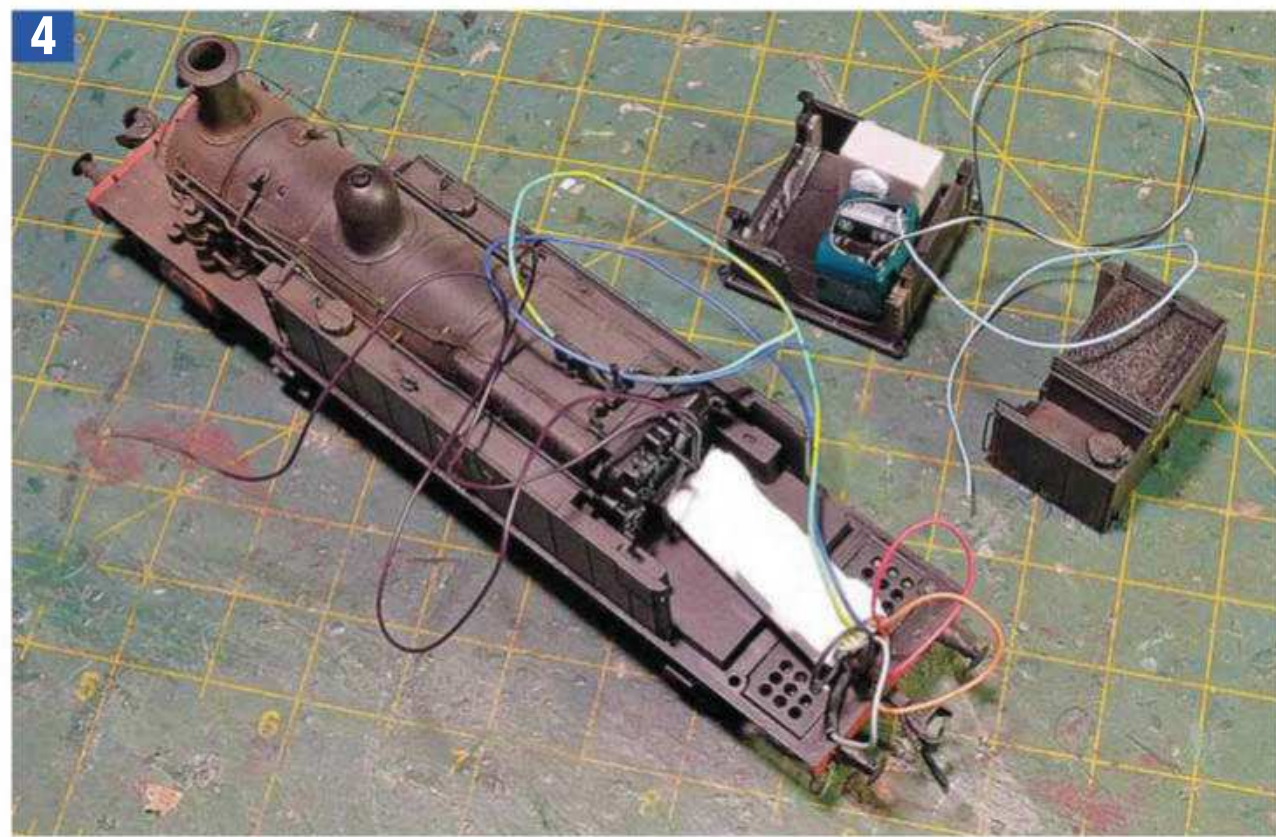
Unfortunately, of the five images of 3067 in the book, two of the most useful show her unlined, as she was circa 1969! I decided to base my weathering scheme on the image of 3034 on the inside front cover (reproduced, with the permission of the publisher, in this article). The real weathering artist might like to have a go at reproducing 3067 as she was in September 1965, with worn paint allowing the lining from the previous overhaul to show through, as shown on the photograph on p.2 of the book (also reproduced here with the permission of the publisher).

As usual, I start with sprayed acrylic paint, heavily diluted in Isocol alcohol, 'dusted' onto the model. After sealing the decals with flat clear, a little Tamiya XF-52 Flat Earth was sprayed in various places; lightly over the wheels and motion, more heavily over the top of the boiler and tank tops, cab roof, bunker and bunker rear, then even more heavily over the smokebox and front footplate. It doesn't matter if a bit of overspray gets on the tank and cab sides, that just adds to the effect. A light spattering of Tamiya XF-1 Flat Black was then sprayed across the top of the locomotive, concentrating on the cab roof.

When that had all dried, I brushed various shades of rust coloured Bragdon weathering powders over the smokebox, front footplate and tank fronts and a bit of grey on top of the firebox. Once the weathering was complete (but before I found out about the underscale width cab roof) I fitted the DCC equipment (I prefer to weather with the loco still DC powered, it makes it much easier to get the driving wheels to turn on the paint stand with DC).

Fitting the DCC Decoder

The model is designed to be DCC ready, so provision has been made to fit a small decoder (Zimo or Loksound) and speaker in the cab and



The decoder was placed lengthwise on the floor of the cab, projecting into the bunker, which had the existing slot enlarged to fit the decoder. The speaker and 'keep alive' module were Blu-tacked under the cab roof.

bunker but, as the Austrains instructions comment, modifications will have to be made! However, I prefer to use a Soundtraxx Econami for my NSWGR steam locomotives and incorporate a 'stay alive' module. I fitted an Econami, TCS KA4 Keep-Alive module and a Sugar Cube speaker into the cab, as shown in photos 4 and

5. They all will fit, but it will take up most of the space in the cab and bunker. Once painted black, however, and with Andlan crew members mounted, it isn't all that apparent that the cab is full of 'stuff'!

The standard Econami comes with US sounds, which are okay for most NSWGR steam locomotives,

but the 30 class retained their British-style single-note whistle, rather than the Nathan five-chime whistle fitted to most post WW2 NSW steam locomotives. Luckily, Soundtraxx have produced a special chip for the British market (available in Australia from Gwydir Valley Models and MRRC at Blacktown), loaded with typical British whistle



Once the decoder wires were shortened and soldered to the terminal in the bunker, the bunker was reattached. All that now remains is to clip the cab back in place and start programming and testing. When all was satisfactory, the speaker and 'keep alive' module were painted matt black and crew installed in the cab doorways.



The extensions to the cab roof, formed from 6" x 2" styrene strip, have been fitted. Any resultant gap or other imperfection has been filled with Tamiya Putty and then smoothed off and the new handrails, formed from 0.020" wire, have been fitted. The locomotive is now ready for touching up of the paintwork. The two Andlan Models figures that will make up the crew are also being prepared for painting.

Some suggestions for adjusting the standard Econami DCC chip to make the model sound and behave more like a 73t NSWGR 30 class steam locomotive. I made my adjustments using DecoderPro, though it can be done manually by adjusting individual CVs, if one wishes.

Sounds

Whistle: Default – CV120 = 0

Chuffs: The 30 class, like most NSWGR locomotives, has two cylinders, so it should have four beats per one revolution of the driving wheels. Mine sounds about right when CV114 = 114!

Exhaust: Medium – CV123 = 1

Air pump: Most British locomotives are vacuum braked, so the default with the UK sounds chip is no air pump sound. To enable the air pump - CV124 = 1

The dynamo sound, if your locomotive is not electrically lit, as well as the bell should be turned off. Dynamo – CV133 = 0. Bell – CV130 = 0.

I also turn down the 'rod clank' sound (CV135 = 11) as I haven't heard any 30 class that was so badly maintained as to have noticeable rod clank while coasting.

I found that there was a noticeable improvement to the sound, using the small 'sugar cube' speaker I fitted, if the Equaliser was modified to the 'small speaker' setting, using CV225. Experiment to find which setting best suits the speaker you fit.

Control

I like a lot of momentum in my locomotives, after all, in real life the 30 class weighed 73t and didn't start and stop like a slot car! In the case of this locomotive momentum was set using CVs 3 and 4 (CV3 = 50 and CV4 = 100). That gives it good acceleration for shunting, along with a reasonable length 'coast' when the throttle is closed. I stop the locomotive on the brake, which I have standardised on all my locomotives to be operated by F7 (CV1.275 = 7). In the case of this locomotive, setting the

independent brake rate to 83 (CV117 = 211) gives a smooth, but prompt, stop, which is particularly important when shunting, which is this locomotive's main function on my layout.

I have also enabled the 28-point custom speed table (CV25 = 16) and adjusted the speed table so that speed step 30 is the normal top speed while shunting. With the settings I use to smooth out the starts and stops, I find that starting the speed table on 11 (CV67 = 11) gives the smoothest and most reliable starts. How the speed curve is set after that is up to the individual owner's preferences. I create a linear speed slope up to speed step 17 (CV83), levelling off at 122 for the rest of the speed steps. This gives a reasonable speed for shunting in the lower steps, but also allows the locomotive to have a gallop with a suburban train should the opportunity arise!

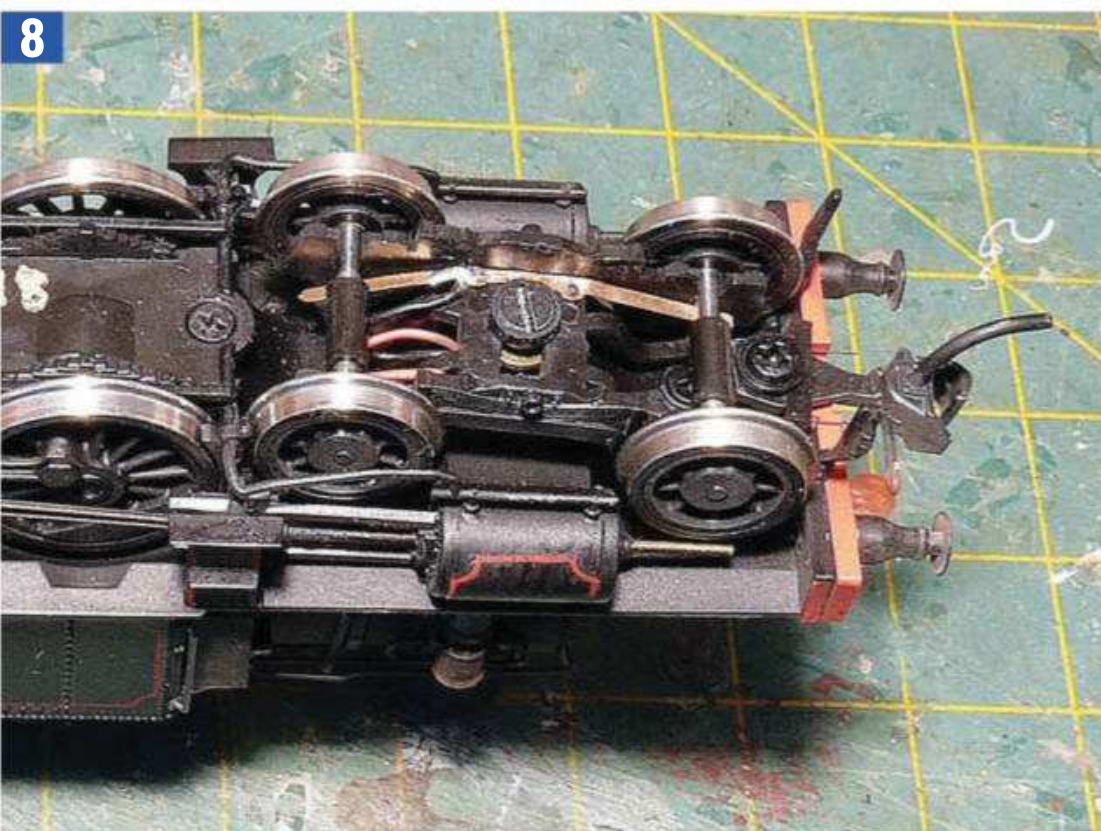
To fine tune the low speed operation I set CV209 = 150, CV210 = 9 and CV211 = 80.

I also set the Throttle Sensitivity to 33 (CV 2.511 = 33, plus the Attack Time Constant and Release Time Constant to 182 (CV2.509 and CV2.510 = 182), this has the effect of causing the chuffs to die away quickly when the throttle is closed, as they should, particularly during shunting.

My driving technique while shunting is to open the throttle to speed step 30, using the left buttons on my NCE controller, letting the locomotive accelerate according to the momentum settings, then when I want to stop and reverse direction, I merely push the reverse button. The locomotive then coasts (without chuffing) on the momentum settings, gradually losing speed. To stop exactly where I want it to, I then apply the engine brake (F7). Then to proceed in the opposite direction, either to place vehicles in another road, or to couple/uncouple, I just release the brake and the sequence starts again. Once the technique is mastered, shunting is a simple matter of reversing and braking and the throttle is not touched until the locomotive finishes the job and then the throttle is returned to zero.



A before and after comparison. The rear bogie has been modified whereas the front bogie is standard. The rear bogie can now swing noticeably further on curves.



A closer view of the modifications to the front bogie. The pickup wires have been moved back from the centre of the bogie, away from the pivot. With the moving of the wires and a slight lengthening of the slot, the front bogie also has more freedom of movement from side to side.

sounds and the default whistle is about as close to a 30 class whistle as one is likely to get without recording an actual 30 class!

See the sidebox for some of the 'tweaks' I have applied to the decoder to make the locomotive sound more like it is supposed to and to accelerate and decelerate smoothly and with a bit of momentum, as one would expect a 73t locomotive to do.

I have uploaded a short video to YouTube of the locomotive in action, as it was after 'chipping', but before the cab roof was extended and the Andlan crew recruited. It can be seen at: <https://youtu.be/WOtnQDrkZGY>

Improving the Bogie Swing

There has been discussion on the net with some reporting problems with derailment of the bogies. Brian Ayling has posted a page (<http://users.tpg.com.au/bdayling/austrainsc30.html>) on his experiences, concluding that the springs are too strong and that the ends of the springs foul the bogie slots, preventing smooth swinging of the bogies. He also noted that the bogie pins are too short for the standard underscale bogie wheels, allowing the bogie to lift off the track under certain circumstances. As I was also having the occasional derailment on parts of the layout where the curves were particularly tight, I slightly shortened the springs and fitted thin brass washers between the springs and the tops of the bogies.

Even after these modifications I was still having problems with the bogies derailing on the inside curve of Peco curved points. On examination I noted that the pickup wires were soldered to the middle of the pickups, right in the middle of the bogies, thereby preventing the bogies from swinging as far as the slot should allow (Photo 7). To allow more bogie swing I carried out the following modifications:

- Remove the wheels from the bogie frames (they just pop out with a gentle pull)
- Unscrew the bogie pivot screw and place screw, bush, washer (if fitted) and springs to one side
- Unsolder the pickup wires from the pickup strips
- File the solder off the pickup strips so they are smooth and bump free
- The front bogie slot didn't go all the way to the pickup strip. I carefully elongated it with a round file
- Reattach the bogies to the locomotive
- Carefully resolder the pickup wires to the pickup strip as per Photo 8
- Pop bogie wheels back into bogies.

This has completely solved the derailment problems I was having and the locomotive now tracks smoothly and without problems.



► The fireman's side of the finished model, complete with Andlan fireman figure keeping an eye out for hand signals from the yard shunters.

▼ The locomotive is complete, chipped, weathered and crewed. This photo makes an interesting comparison with Photo 2 and highlights how much more realistic a weathered model can be.



▼ The completed locomotive, hard at work shunting in Lambing Flat's New Yard.





SAR/ANR/AN 830/NSWGR 48 Class Locomotives, r-t-r in HO scale by Auscision Models, PO Box 1791, Castle Hill 1765. Website: www.auscisionmodels.com.au. Price: \$335.00.

Prototype

If Sir Topham Hatt (Thomas the Tank Engine's Fat Controller) had seen the plucky little 830 and 48 class locomotives operating, I am certain that he would have said that they are "Really useful engines". This class of little branch line locomotives have demonstrated over and over that they are wonderful, versatile locomotives. These plucky little South Australian Railways (SAR) and New South Wales Government Railways (NSWGR) locomotives have operated across Australia.

They have worked on broad gauge, standard gauge and narrow gauge tracks and were equally at home on light branch lines and the main line. They have hauled all types of trains from passenger trains to branch line goods. We're told that a pair of 830s once pulled *The Overland* from Adelaide to Taillem Bend after a couple of their bigger brothers failed! A really useful engine indeed!

In 1959, the NSWGR placed an order with A.E. Goodwin for units of the Alco DL531 branch line loco-

motive design for the NSWGR system which became the 48 class, eventually the most ubiquitous class of diesel locomotives in NSW with 165 members. The first of the class was delivered in September 1959 and the last in October 1970. There were four versions of the loco: Mark 1; Mark 2; Mark 3 and Mark 4. The main visual differences are the air reservoirs each side of the fuel tanks on Mark 1 and 2 locomotives and a larger fuel tank on the latter two versions.

In parallel to the NSWGR decision to order the DL531, the SAR let an initial order for ten DL531 from AE Goodwin which became the 830 class. The first was delivered in December 1959 and further orders grew the class to 45 members, including a locomotive purchased from the Silverton Tramway (originally ST27 then 874).

Most of the locomotives were built between 1959 and 1963, but there were two subsequent deliveries, the first in 1966 with two locomotives, 871 and 872; and the last in 1969-1970 with six locomotives 847-849 and 868-870. The obvious numbering disconnects can't be explained by the authors, but we're sure there was a reason!

These locomotives were significant contributors to both the SAR and NSWGR as they were literally

able to operate everywhere. They essentially displaced steam traction from both systems. Post SAR/ANR/AN/NSWGR ownership and into the modern era, many have found new private owners but, sadly, the operational life of these workhorses is likely to be drawing to a close as most are well over 50 years of age.

So far, three 830 class have been preserved including one undergoing restoration to operational status. Eight 48 class have been preserved so far comprising seven Mark 1 and one Mark 2 version. Hopefully a few more of these very useful locomotives will have a preservation retirement. For readers who want a more comprehensive history of the prototypes, we refer you to *830 Class* in AMRM Issue 100 (Jan/Feb 1980) and *830* in the *Modelling the Railways of South Australia* Convention notes. The NSW 48 class has been extensively covered in *48 Backbone of the Railways* by R.G. Preston (Eveleigh Press 2005).

Model

This review only considers the SAR/ANR/AN 830 and NSW 48 class models. The other variants offered by Auscision Models are not reviewed, but it can be assumed that they are mechanically identical and of similar accuracy

and build quality. Auscision have delivered 36 versions of the 48 class and 11 versions of the 830 class. At the time of writing this review, the Auscision web site is showing that 26 versions of the 48 class and seven versions of the 830 class are now sold out. By the time this review appears, one can safely assume that even more will be sold out, so best hurry up if you are seeking one of these models!

Both authors had been eagerly awaiting these models, as they offered options that were not available from other previously released models of the 830 and 48 classes. They jumped on the 'early bird' special and ordered a selection of 830 and 48 class locomotives. When Auscision announced the option with an ESU sound chip for \$100.00 extra, they jumped at that too as it was definitely a bargain!

The models arrived as you would expect, in individual locomotive packs. They come in a shrink-wrapped sturdy cardboard pack with inner/outer plastic blister packaging which holds the model securely. The model is wrapped in a fine plastic sheet as additional protection. The footplate handrails have small foam inserts to protect them from damage.

Included were two, double-sided, A4 pages of instructions. These comprised two pages of exploded diagrams and two pages largely related to the features, maintenance, important handling instructions and the on-board DCC decoder (for those fitted with DCC sound). One very important warning relates to the use of your DCC loco on a 12V DC system that uses a pulse type controller. For those with one of these controllers, Auscision warns that it may do significant damage to the electronics that is not covered by warranty. For those with these DC systems, you really need to read this section!

Available online (Auscision website: 830 or 48 class product pages) is a comprehensive set of advanced instructions regarding the decoder. It is very detailed and highly recommended to be downloaded, especially if you have purchased a DC version and wish to migrate to a DCC loco. For DCC users, it contains easily understood instructions for manipulating the various configuration variables (CVs). More on this later...

We are very impressed with



these models. Detailed? Yes, they are! There are lots of details, especially if you are prepared to get the magnifying glass out! From the rails up, the bogies are very finely detailed. The sand pipes are a little odd looking, but are flexible and don't impede bogie swing. The tank has many fine details for the various components. The bottom of the tank is also where you find the three light switches for DC operators. For DCC operators, they all need to be in the ON position. The pilots have good pipe detail and uncoupling levers. Metal handrails everywhere, plus well-defined MU stands and, on the 48s, sprung buffing plates as well.

Inside the cab are two nicely defined control stands as well as two crew members. The detail on the control panel, visible through the cab windows, is really quite impressive! The detail of the steps and the footplate chequer plate is very good. The footplate accurately represents the blank section at each end at the front of the hoods representing the plate steel welded to the locomotive frames.

Another nice touch is the SAR destination board frames at each end of the 830 class versions. On the body itself, all the doors have very fine door handles which emphasise the need to handle these models carefully lest some of this beautiful detail is damaged. The engine vents are well done and the radiator fan (non-operating) can be seen through the fine mesh. On the roof, the detail continues with lifting rings and fine cast detail.

From a dimensional perspective, they compare well with the prototype dimensions (Table 1). An outline drawing shows the height (over the exhaust stack) of a SAR locomotive as 14'0" for a standard/broad gauge loco. Using a Kadee coupler height gauge, all couplers measured correctly.

The SAR/ANR/AN versions of the 830 class all exhibited crisp and opaque painting of the models. The Alco builder's plate on each



The 830 class box and packaging. Other than the illustration on the box lid and the box colour scheme, the 48 class packaging is identical. All the variations have the same box lid illustration, so if purchasing from a hobby shop, check the legend on the end or open the lid to ensure you have the variation you actually want.

side of the cab seemed to be partially rubbed off. That said, you had to pick up the magnifying glass to see that! At 500mm range you can clearly discern it as a builder's plate.

Comparing photos of each 830 class version with the models compared well for the ANR and AN versions. Initial thoughts on the 'mustard pot' SAR versions were that they were too yellow, but looking at photos from different sources convinces us of the model's accuracy. The photographic record of the 'mustard pot' livery indicates that it varied considerably. As an example, two similar (online) photos of 842 separated by two months in 1976 appear to be different colours demonstrating how colour is very subjective, depending on lighting, sun angle and the effects of weathering.

Auscision have made a good

representation of the South Australian liveries. The number fonts used on the 'mustard pot' 830 are correct for the SAR/STA era. The fonts used on the ANR and AN versions also appear to be correct for those respective eras.

Similar to the 830s, the 48 class also exhibited crisp and opaque painting of the models. The

Indian red and chrome yellow stripes and chevrons were clearly defined. The NSW coat of arms plate adorns each end and is clearly identifiable as such. The two-tone red/silver on the pilots represents the prototype well. The window frames, mirrors and exhaust stack are nicely picked out in silver. The front handrails, MU stands and



A view of the cab area of ANR red/silver 863. The cab detail, such as the control stand, is clearly visible through the cab windows. The different versions have different details, as appropriate to the prototype, such as the destinations board frame on the SAR 830 and buffing plates on the NSW 48.

Table 1		
Dimension	Prototype	Model (HO scale)
Length (over headstocks)	44'3"	44'6"
Width (over cab)	9'0"	9'0"
Width (over mirrors)	9'9"	9'9"
Height (over stack)	14'0"	14'3"



Three of the colour schemes available for the 830 class for the 1960s to 1990s era.

horns are also neatly picked out in silver.

Of note though is that the era modelled needs to be considered. The Fletner vents were only added in 1975 (Preston, 2005) which will affect the era that the individual models and those modelling pre-1975 should remove the vent for complete accuracy.

One aspect that the authors didn't like relates to the hand-brake chain and servicing the model. To remove the body, a selection of screws needs to be undone, but the main impediment is that the hand-brake chain needs to be cut or the handbrake lever removed so that the side frame then becomes separate from the body. This seems to be fraught with potential for damaging this fine detail.

Noting the previous comment regarding operating the DCC sound versions on DC, these models have only been tested on DCC. Given our observations, we expect that the DC version will run very well. Under DCC control (NCE system) and speed step one, the models

Table 2			
State	F7 (Front)	F9 (Rear)	Comment
State one –	Off	Off	
State 2 – Push once	Number boards on, White markers on	Number boards on, White markers on	As in leading end mainline running
State 3 – Push twice	Number boards on, Red markers on	Number boards on, Red markers on	As in yard shunting, both ends
State 4 – Push third time	Red markers on only	Red markers on only	As in trailing end of a light engine movement
Matrix of Function 7 (front) and Function 9 (rear) settings. For example, short hood leading for mainline running would be: F7=State 2; F9=State 1; resulting in white front markers and number boards ON and rear lights OFF. If changing direction, then select the appropriate F7/F9 combination.			

moved off very smoothly and just crawled along effortlessly. There is built in momentum which one author found pleasing, while the other thought that it was too much. Acceleration through the speed steps is also very smooth.

Using an Accutrack II DCC Speedometer, the model's scale speeds were 0.9 to 66mph. When operated in consist, the models ran at very similar speeds throughout the speed range. The authors did

not notice any gear train noise.

The models were operated through Peco medium radius points with no issues. Testing through small radius points was not possible, but it is likely that they would also be fine. Very surprising was their pulling power. They were tested on a gradient of about 1 in 38 with a 900mm radius turn through the grade. A single locomotive hauled 20 (empty) bogie coal hoppers (Hi-Rail NSW BCH bogie coal hoppers) with a brake van, an estimated scale load of 408t, without any noticeable slipping. To put that in perspective, the SAR imposed a load limit of 300t (through load) between Mile End and Tailern Bend in the Mount Lofty Ranges for a single 830. This section of track had a ruling grade of 1 in 45.

Turning the sound on is when the magic of these models comes to life. Function 8 (F8) starts the loco with a convincing 'start-up' sound sequence. As you accelerate, the corresponding increase in engine revolutions is very impressive. There is also a nice 'brake squeal' on stopping. Pressing F8 again initiates a 'shut down' sound sequence of the locomotive. The

authors found the as-delivered sound level too loud, though they disagreed on the severity. The sound level can be changed by adjusting CV63 or, alternatively, F15 will mute the sound by 50%.

The lighting functions are the authors' favourite feature. As expected, there are directional headlights. Pressing F6 will dim the headlight. The lighting of the number boards and marker lights though are very 'cool' straight out of the box! These lights are operated through a matrix using F7 and F9. Table 2 provides the selection of options available which makes operating the models feel very prototypical. One caution though, Auscision and ESU have a logic circuit to make these lighting options work and this circuit utilises some of the sound channels. For example, brake squeal is lost when both ends of this lighting matrix are activated.

Reprogramming can be as simple or complex as desired. The default standard loco address is the usual '3' which is easily changed to the appropriate locomotive number. Considerable customisation is available in the sounds. There is a



The long hood end of 4821 in pre-1978 Indian red.

selection of six prototypical horns available. The default horn is the Westinghouse/Wabco single A/B which is suitable for the Mark 1, 2, and 3 versions of the 48 class (4801-48125). The instructions provide the appropriate value for CV48 to alter to your preferred version of horn. Usually the F4 function is for dynamic brakes, but as these locomotives didn't have dynamic brakes, that function has been mapped differently when used 'in consist' with dynamically braked locomotives. Another section of the manual to read! The on-line manual offers considerable detail for changing CVs for these and many other functions.

In summary, the authors are very pleased with these models. They certainly have the look and sound of the prototype. The lighting functions are very impressive and inspire prototypical running. While this has been achievable previously through advanced programming of decoders, as far as we are aware this is the first time that this has been delivered in a ready-to-run locomotive in Australia. The authors feel that this is a new level of standard within the Australian market.

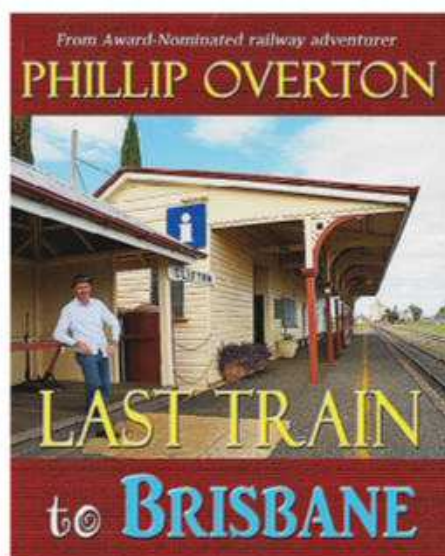
Aside from individual preferences in sound volume, the only significant dislike with the model is the aspect of the handbrake chain and damaging that feature. The same feature was available on a competitive model, but was able to be removed and replaced, albeit with some difficulty. Aside from that aspect the authors highly recommend these models. Otherwise, the only other thing missing is a big belch of black smoke as the power is applied with the throttle! Well done Auscision!

Dan Carmody/Peter Madsen

REVIEWS

The products covered in the Review pages have been supplied or made available by the manufacturer, producer, importer or retailer listed in each product heading. AMRM welcomes access to new product lines for inclusion in the Review pages and requests items be addressed to the Editor at Australian Model Railway Magazine, PO Box 345, Matraville 2036. Readers are reminded that the prices quoted in the reviews are those applicable at the time of going to press. Those using the prices as a guide to purchasing products by mail order should always add extra for postage, or contact the supplier for the additional cost for mail order.

Editor



Last Train to Grafton and Last Train to Brisbane by Phillip Overton. Self-published by the author using Blurb: au.blurb.com. Available via the author's blog site: phillipoverton.blogspot.com. Price: \$24.99 (per copy).

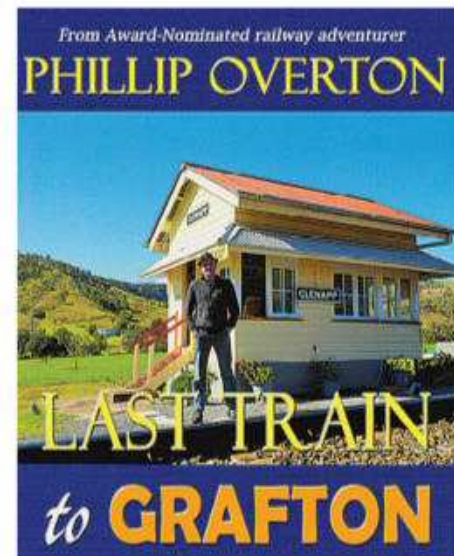
These two 54 page, full colour, 205mm x 255mm volumes record some of the remaining railway architecture in the areas covered by the books, narrated by the author's poems inspired by what he saw. The *Last Train to Brisbane* volume covers some of the sights to be seen in the south west of Queensland, encompassing Gympie, the Mary and Brisbane Valleys, along with Warwick and surrounds. *Last Train to Grafton* covers the far north coast area of NSW, including the Murwillumbah and Dorrigo branches, as well as the still-used mainline to Brisbane through the Border Ranges.

The photographs are of excellent quality and show many details of the buildings and infrastructure as they were when the books were published (2017). Some of the photos are visually quite stunning, capturing the atmosphere of the scenes with great artistic flair. From the modeller's point of view, as most of the lines covered are out of

use and feature obsolete infrastructure, the images aren't terribly useful for assisting in building and detailing models for a working model railway, but they do give lots of inspiration for scenic cameos that may not necessarily need to have working trains incorporated.

The text consists of brief details of the scene, accompanied by the author's poetry inspired by what he saw. My expertise definitely does not extend to literary criticism, but I enjoyed reading the poems and they certainly conveyed a very effective 'word picture' to go with the images.

While aimed more towards the general reader market than towards the modeller, the books are definitely worth perusing and, if your modelling interest is the modern era and



extends to the picturesque, but no longer used, railway relics of the past, these books could be a quite useful addition to your reference library.

James McInerney

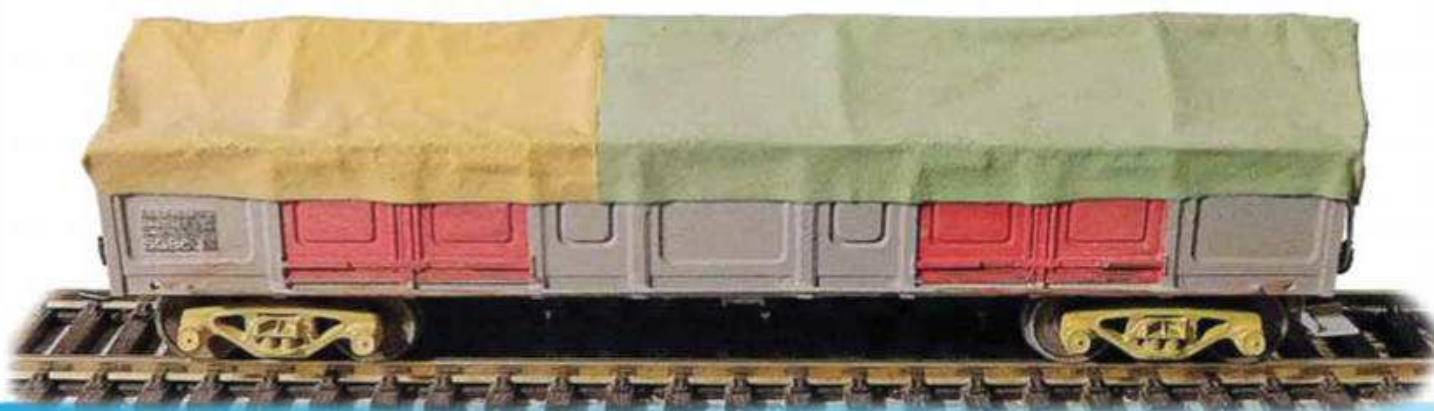
RECENT RELEASES



Casula Hobbies have received the first in their range of HO scale r-t-r NSWGR HG four-wheel brake vans, a special run of vans in turn of the 20th century purple brown, as some were painted when used in passenger service in the first decades of that century. This was a very limited run commissioned for attendees at 'The 2018 Workshop on Modelling the Early Days of the NSW Railways' which took place in July 2018. While this batch completely sold out, the balance of the run (in mid-20th century condition) is still expected to arrive in time for release at the AMRA (NSW) Liverpool exhibition on the October long weekend.



Traction Scale Models have released an O scale 3D printed kit for the Ballarat SEC single trucker (Meadowbank-built version) through I-materialize (most components) and Shapeways (headlights, interior doors and controller handles). The kit comes in two major parts, the roof and the body, and there is also a separate sprue with life guards, controllers, motorman's doors etc. The model is designed to be powered by a Q-Car (USA) Brill 21E truck.



Orient Express Reproductions have released their r-t-r HO scale SAR F class 4-6-2T, marking another milestone in the history of Australian model railways, the first China-manufactured r-t-r steam locomotive for South Australia. Illustrated is F176, fitted with a flanged chimney and oil burning equipment. Also available with oil burning equipment and a flanged chimney is F188, while F245 can also be had as an oil burner, but with a stovepipe chimney. The rest of the range are coal burners, featuring F236 with a stovepipe chimney, F171 with stovepipe and white wheel rims, F240 with flanged chimney, F170 with flanged chimney, white wheel rims and red lining, as well as F255 in 'as preserved' condition with a flanged chimney, white wheel rims and red lining.

Casula Hobbies have released the latest in their range of HO scale r-t-r NSWGR R type passenger carriages, the CR composite first/second class car, along with the Mansard-roofed EHO passenger brake van. The CR is available in both post-war Tuscan and russet and post-1954 Indian red, while the EHO is available in either plain Tuscan or Indian red.

Strath Hobbies expect to add new HO and Sn3½ scale kits to their existing range of SAR prototypes at the Modelling the Railways of South Australia convention on 1 September 2018. In HO scale there will be the SAR SLX/ANR ALHX bogie closed van, SAR SGBC/OBn bogie open wagon, '1938' VW bogie louvered van and a new range of SAR steel cars, consisting of the 500, 600 and 700 class cars. In Sn3½ there will be '1938' VW bogie louvered van and the OBn bogie open wagon. The multi-piece urethane kits are complete except for paint, glue and couplers. Strath Hobbies kits are also available through the End of the Line Hobbies website, which continues as an online business, even though the hobby shop outlet in Victor Harbor closed in June 2017.

Thanks Bob Comerford!

After eight years of quiet, unsung, but extremely effective assistance to AMRM, volunteer proofreader, Bob Comerford, has put his red pencil in the drawer and taken a well-deserved 'retirement'. From late 2009 until last issue, Bob checked every article, review and news item once it was laid out and his attention to detail definitely showed in the final result. The standards of excellence in production values that AMRM currently reaches is definitely the result of the quality of work put in by our 'behind the scenes' volunteers, such as Bob, to make sure that the magazine that you read is as perfect and free from 'typos' as possible. As mentioned in these pages recently, Bob's position in the proofreading process has been filled by Louise Smithers, who is carrying on the fine tradition of excellent proofreading that Bob so capably fulfilled in the past.

Bob remains an active modeller and his activities can be followed on his blog: trainsinshed.blogspot.com. AMRM wishes to publically thank Bob for his excellent work for the magazine and to wish him a long and happy retirement.

The Trainman Expands and Moves

It is good to hear of a hobby shop that is expanding its business! Due to the ongoing success of The Trainman in Coffs Harbour, the business has had to move to bigger premises and split the retail outlet from the 'preloved', repairs and parts section. The new retail outlet is at Toormina Post Office, Shop 46 Toormina Gardens Shopping Centre, Toormina (south of Coffs Harbour) where the range of Hornby, Bachmann, Austrains, SDS, Southern Rail, Eureka, and Peco, plus plastic kits from Airfix and Revell, can now be purchased.

The repair and spare parts facility, display layout *Davidstown* and 'preloved' trains are now at 1 Palm Trees Drive, Boambee (on the other side of Sawtell Rd from Toormina) and is open 10am-6pm Monday-Friday and 9am-1pm Saturday. As well, the proprietor, Paul Baker, runs 'by appointment' clinics on Friday nights on many aspects of the hobby.

Bob's Models and Hobbies is Also Moving

West Ryde institution, Bob's

Models and Hobbies, is moving to Seven Hills. As of 20 August 2018, Bob's Models and Hobbies will be trading from Unit 34, M2 Industrial Park, 6 Abbott Road, Seven Hills.

Paul Rogers RIP

We sadly note the death of Paul Rogers in March 2018. For most of his life Paul was a dedicated railway historian, his field of interest being NSWGR rolling stock. For decades he assisted with the preparation of articles, not only for the *Australian Model Railway Magazine*, but also other historical journals. For AMRM, Paul was always keen to prepare notes and research issues at the drop of a hat, so to speak. His efforts definitely helped this publication reach and maintain our current high standards.

150 Years of the Railway at Goulburn

Mark your diaries for the weekend of 25/26 May 2019 when the Goulburn Loco Roundhouse Preservation Society Inc. (GLRPS) are celebrating the 150th anniversary of the arrival of the railway into Goulburn in 1869.

The GLRPS are the custodians of the Goulburn locomotive depot where a range of locomotives and items of rolling stock are exhibited in and around the historic roundhouse. Additionally, there are other items of heritage machinery and equipment relevant to the depot's history. A significant part of the town's history, the 42 road circular shed with its 90' turntable was built in 1918 and continues to operate today. The roundhouse comprises a fascinating workshop, complete with a large wheel lathe, machine shop, sheet metal shop, and blacksmiths forge, where numerous machines have been returned to working order. There are many items, both on display and part of the infrastructure of the depot, that can provide useful reference material for modellers of the NSW railways.

At this stage, initial planning for the celebration includes a steam-hauled train starting from Sydney, visiting dignitaries, a display of photographs and memorabilia, a tree planting and the burial of a 'time capsule'. The planning committee comprises four local historians, three of whom are retired railwaymen, so the event should be of great interest to both general enthusiasts and modellers.



Bob Stack

New Products

HO Scale

Bergs Hobbies, in conjunction with Wood N Iron Structures, are releasing a kit for a standard NSWGR 6'

timber opening. This will be followed by a standard NSWGR road overbridge.

Broad Gauge Models advise that they are still in possession of a few



Some more samples of the revised ex-Austrains HO scale r-t-r NSWGR end-platform 'American' carriages, the first batch of which left the factory in August. SDS Models expect them to arrive in Australia in September, well in time for release by the AMRA (NSW) Liverpool exhibition in early October. Shown here is the CCA in double-buff lined post-1954 Indian red, an 'improved end' HFO with low semi-elliptical roof, also in post-1954 Indian red, plus the Westinghouse advertising carriage.



Incomplete factory samples of the HO scale, r-t-r, Phoenix Reproductions (Eureka Models) private owner Maitland coalfields non-air coal hoppers. The first batch of these models is expected to arrive in time for release at the AMRA (NSW) Liverpool exhibition on the October long weekend.

SAR 500B 4-8-4 steam locomotive kits that were ordered, but not claimed, and all attempts to contact the persons ordering have been unsuccessful. If you have ordered a 500B kit and not claimed it yet, please contact BGM as soon as

possible, otherwise the unclaimed models will be offered to other purchasers on the wait list.

Orders for the VR D³ class 4-6-0 steam locomotive kits have now closed and the models have been commissioned from the manufac-

turer. The delivery date will be advised when it is received from the manufacturer. Orders are still open for the VR N/SAR 750 class 2-8-2 and SAR 620 class 4-6-2 kits.

Also now available are VR steam locomotive detailing parts, such as headlights, brake hoses, marker lamps, brake wheels, smoke box door wheels, plus hand rail knobs and wire. These are surplus parts from those produced for BGM's locomotive kits.

Eureka Models report that assembly of the next run of their r-t-r NSWGR 38 class 4-6-2 steam locomotive has begun in China, with delivery in Australia now expected in March 2019. The r-t-r NSWGR RH four-wheel cement hoppers and the steel hopper version of the LCH four-wheel coal hoppers are still on schedule to be released at the AMRA (NSW) Liverpool exhibition in October.

Tooling for the r-t-r NSW TAM twelve-wheel sleeping and CS composite sitting carriages is expected to commence before the end of 2018, with delivery in Australia now anticipated in mid-2019.

The last corrections to the r-t-r VR K class 2-8-0 steam locomotive tooling have been completed, so everything is now on schedule for a mid-2019 delivery.

Lyndon's Trains expected to release a urethane kit for a Victorian Railways WW bogie workman's sleeping car at the AMRA (Vic) Caulfield exhibition in August, along with re-releasing the VHWA ballast wagon (with hungry boards) which has been out of pro-

duction for some three years. Some new details parts will be available as well for the VR/SAR modeller, including a ratchet brake stand, four-spoke VR brake wheels, wagon stirrups, plus cast brass VR IZ buffers, as well as standard freight and passenger car buffers.

In development is a kit for another workman's sleeping car based on the old ABC end-platform cars.

For the narrow gauge enthusiast working in HOn30 a third Queensland cane bin kit in etched nickel silver has also been released, joining the currently available 6t bin and the 4t Moreton Mill bin. Polyurethane kits of the Innisfail Tramway H and C wagons are also now available, complete with bogies.

Expected to be ready for release in October will be Lyndon's first sugar cane locomotive body kit, based on E M Baldwin's *Bli Bli* 0-6-0 diesel. The cast polyurethane body will come with a sheet of etched detail parts, including grilles, visors and handrails.

On Track Models are to release an upgraded version of their r-t-r NSW 82 class Co-Co diesel electric locomotive. Some of the improvements include: new MU cables and new air hoses, a speaker enclosure with factory-fitted speaker and new internal dynamic brake grid baffles. A new five-pole motor is being fitted as the Mashima MH1830 motor is no longer in production (this new motor will also power the 80 class). A new main circuit board has been designed by ESU, allowing independent light functions with DCC. Artwork is currently at the factory for the revised models and this will include some FreightRail units and the new Pacific National colour scheme. The first samples of the revised models are expected to arrive in time for display at the AMRA (NSW) Liverpool Exhibition on the October long weekend.

Ozrail Model Trains are expecting to have their latest batch of r-t-r SAR/AN/ANR C/ACAA/ACAY cattle wagons available for purchase by the time you read this.

Phoenix Reproductions have advised that assembly of their r-t-r (ex-Eureka Models) VR S bogie flat and E bogie open wagons has started with delivery expected by the end of 2018. The r-t-r NSW NTA rail tank cars are now expected some time in 2019.



Manufacturer-assembled samples of the revised SEM HO scale VR T van kits, in both 'long' and 'short' versions, expected to be available by the time you read this. The 'short' T van remains a 'kit-bash' kit, with the purchaser still required to modify the sides and roof to suit the short version of the van.

SDS Models reported, at the time this item was prepared, that painted samples of their r-t-r 'candy' SRA 81 class locomotives were expected "shortly" and running samples were expected around the time AMRM went to print. Production of the models is expected to begin October 2018.

Responding to customer demand, SDS have asked their factory to quote for the production of a model of preserved NSW 'American' end-platform set, DUB Set 63. Set 63 was formed in 1971, utilising five carriages from the original Set 63 and four from Set 69. Originally used on Gosford commuter trains, from the mid-1970s it was regularly used on tour trains. It will be modelled in 'as preserved' condition, so will require new body shells and a high semi-elliptical roof moulding.

Signals Branch, Ray Pilgrim's online shop on Shapeways, has added some more 3D printed station architecture items to the range. Now available are awning framing sections; three-post main awning and two-post gable sections (based on the VR's Wodonga station), along with sets of NSWGR station signs denoting 'Station Master', 'Waiting Room', 'Ladies Toilet' etc. These signs are available in a basic set of eight and a large set containing 21 signs. These can be viewed and purchased from the Signals Branch online shop on the Shapeways website.

Steam Era Models report that the latest SEM kit to get an upgrade is the VR T van. Kits for both 'long' and 'short' versions of the four-wheel van, as well as the bogie TP, have been unavailable for the last twelve months. As the T van was only the third injection-moulded VR kit produced by the then BGM, way back in the early 1980s, the opportunity was taken, before injecting another run of mouldings, to upgrade the tooling to improve the kit and bring it up to contemporary standards.

All the moulded-on handrails have been eliminated and new holes have been provided in the ends for locating the etched brass handrails. The corners of the body are now mitred, which simplifies assembly and allows fully detailed sides and ends. The roof still features battens moulded integral to the surface, but separate battens are also provided. If modellers want the improved

appearance of separate battens, which includes the drainage gap underneath each batten, they can carve off the moulded battens, sand the roof smooth and attach the new moulded, separate parts in place.

All kits now include a small panel of etched brass for the handbrake, shunters' steps, foundation brake rigging and handrails. One handrail locates on the top face of a part of the end bracing and, as it wasn't possible to mould these holes, a template/jig has been included on the etch to simplify drilling them out. The improvements have also resulted in a completely revised instruction sheet. The 'long' T was expected to have been released at the AMRA (Vic) Caulfield exhibition on 25-26 August 2018, with the 'short' T and the bogie TP vans to follow a few weeks after that. SEM expected that all would be available by the time you read this.

Southern Rail advise that their r-t-r QR 2300 class diesel electric locomotive is in production, but that a last-minute correction to one set of handrails has delayed shipping while new etches are prepared and painted. The revised schedule should see the models arrive in Australia in late November 2018. Pre-orders for the models have been very strong, with all the 12mm (HOn3½) gauge units and most of the 16.5mm gauge sound-equipped units already allocated. Southern Rail are arranging for additional decoders to be shipped to allow more DCC-fitted units to be made available.

It had been hoped to have the production run of the r-t-r South Maitland coalfields LL non-air, privately owned four-wheel coal hoppers, as well as the ready-to-place stock race and sanding tower from the Lineside range, available at the Liverpool exhibition, but unfortunately, unexpected delays in China have caused arrival of the models to be put back until after the exhibition. As with the QR 2300 class, pre-orders for the non-air hoppers have been very strong and some boxes are likely to be sold out by the time the production run arrives. Despite the delays to the production run, it is expected that a full range of factory samples will be available for viewing on the Southern Rail stand at the Liverpool exhibition.

The factory-fitted DCC sound units across the range are proving very popular, with most of the sound-fitted SMR 10 class 2-8-2T



Trainbuilder have announced another vehicle type added to their HO scale r-t-r, brass construction, VR 'special' passenger car project, the V&SA joint stock sleeping cars. Shown here is a manufacturer's sample of 'Baderloo', fitted with 'The Overland' name board. The joint stock sleeping cars will also be produced in the form they later took when used on the 'Train of Knowledge' after being replaced on 'The Overland' by the air-conditioned carriages. The project is expected to be delivered towards the end of 2018 or early in 2019.

steam locomotives now also sold out. As with the QR 2300 class, more decoders are being sourced to convert some of the unsold non-sound models to meet the ongoing demand for sound-equipped units.

O Scale

Broad Gauge Models are currently taking orders for their On30 kit of the Powelltown Tramway's Baldwin-built 2-4-0, *Little Yarra*.

Model O Kits has acquired all the remaining On30 and O scale stock from The Railcar. The items taken over will be added to the Model O Kits website as time permits. As a consequence of this acquisition, permanent additions will be made to the range of items normally stocked, particularly of On30 track, scenery, plus lineside detail, as well as scratchbuilding materials and components, to add to the existing comprehensive range of scratchbuilding and scenery materials carried for all scales.

Currently available is the full range of Evergreen styrene, a large range of Mt Albert Timber products (HO and O Scale), Micro Engineering (On30 and O Scale), K&S Metals, miniNatur, Woodland Scenics, plus Xuron and Proedge tools. Also available are ESU and TCS WOW decoders, as well as Circuitron Tortoise point motors.

Model O Kits has also just taken delivery of the full range of Minerva Models (UK) O scale products. This, added to their range of Dapol, Heljan, Slater's and Peco products, means they are now able to provide one of, if not the, largest range of British prototype/sourced items in Australia.

This diversion into overseas prototype products has not distracted from Model O Kits'

Australian prototype activities with the development of the NSWGR 13 class 4-4-2 tank locomotive kit progressing well with the first factory-assembled sample expected in October, along with the production run of the NSWGR TRC refrigerated wagons.

Signals Branch, Ray Pilgrim's online shop on Shapeways, now has available sets of NSWGR station signs denoting 'Station Master', 'Waiting Room', 'Ladies Toilet' etc. These signs are available in a basic set of eight and a large set containing 21 signs. These can be viewed and purchased from the Signals Branch online shop on the Shapeways website.

Publications

Eveleigh Press, AMRM's book publishing wing, advise that, after four years of intensive work, *The Steam Tram in Australia and New Zealand* is nearing publication. Written by Bruce Macdonald and Richard Horne, the book covers all known steam tram lines in both countries, both urban and rural. Many of these systems described in the book would make ideal subjects for a model railway, such as the Parramatta-Redbank system in Sydney, which served a number of industries, as well as providing a passenger service, while running from the centre of Parramatta to wharves on the Parramatta River. This book includes numerous previously unpublished photographs, drawn from private collections far and wide and enhanced with care and respect, to clearly illustrate the traffic the lines carried and the environment they traversed. The book is expected to become available in November 2018.

Compiled by James McInerney

SCMRA ACTIVITIES

For all activities contact Eastern Division representative
Graham Windmill on (02) 9626 0351.

29-30 Sept, 1 Oct	SCMRA/AMRM stand at the Sydney Model Railway Exhibition at Liverpool. If you can assist give your name to Graham Windmill 9626 0351
10 November	Open Day by SCMRA and EMRCI at Epping Creative Centre, 26 Stanley Rd, Epping. 10.00am–4.00.00pm. Layout operation. Scenery clinic at 11.00am. Free sausage sizzle lunch. Details Trevor Moore 9876 3522.
9 December	Family Christmas BBQ and visit to Valley Heights Railway Museum. Contact Graham Windmill 9626 0351 with numbers by 1 December.
12 January	Open Day by SCMRA and EMRCI at Epping Creative Centre, 26 Stanley Rd, Epping. 10.00am to 4.00pm. Layout operation. Getting Started clinic at 11.00am. Free sausage sizzle lunch. Details Trevor Moore 9876 3522.
9 February	Meeting and DCC layout operation at home of Marcus Ammann, 2.00pm to 5.00pm

EXHIBITIONS

LIVERPOOL – NSW. September 29-30 & October 1, 2018. Sydney Model Railway Exhibition, Whitlam Leisure Centre, Memorial Ave, Liverpool. 9.00am–5.00pm (Sat & Sun) & 9.00am–4.00pm (Mon). A\$17/S\$12/C\$9/F\$43. Australian Model Railway Association NSW Inc. Phone (02) 9153 5901, Fax (02) 9153 5905. president@amransw.asn.au or www.sydneymodelrailwayexhibition.com

SUNBURY – VIC. October 20-21, 2018. Sunbury Model Railway Club Exhibition. St. Anne's Church Hall, Riddell Road, Sunbury. 10.00am–5.00pm (Sat), 10.00am–4.00pm (Sun). 0427 047 411.

WAGGA WAGGA – NSW. November 3-4, 2018. The Wagga Wagga Model Railroaders Inc annual Model Train and Hobby Exhibition at Wagga Showgrounds, Kyeamba Smith Hall, Bourke St. 9.00am–5.00pm (Sat), 9.00am–4.00pm (Sun). Adults \$10, Seniors \$8, Child \$5, Family \$20, Children under 5yrs free. David Edger 0418446337 or rotoreggie@bigpond.com

PHILLIP ISLAND – VIC. January 12-13, 2019. Phillip Island & District Railway Modellers Exhibition, Cowes Cultural Centre Thompson Avenue, Cowes. 10.00am–5.00pm (Sat), 10.00am–4.00pm (Sun). Adults \$7, Concession/Child \$5, Family for 2 adults and up to 3 children \$20. Martin Murden murden@bigpond.com

BELMONT – VIC. January 26-27, 2019. Corio Model Railway Exhibition. Corio Model Railway Club Inc. South Barwon Civic Centre, Reynolds Road, Belmont. 10.00am–5.00pm (Sat), 10.00am–4.00pm (Sun). \$10, \$5, \$20. Ray 0419 329 793.

ARARAT – VIC. February 16-17, 2019. Alexandra Oval Community Centre, Waratah Ave, Ararat. 10.00am–5.30pm (Sat), 10.00am–4.00pm (Sun). Stuart 0438 545 233. Grampian Model Railroaders Inc. www.gmrinc.org.au

STAWELL – VIC. July 13-14, 2019. SES Hall Sloane St, Stawell. 9.00am–5.00pm (Sat), 9.30am–4.00pm (Sun). Stuart 0438 545 233. Grampian Model Railroaders Inc. www.gmrinc.org.au

SEMINARS & CONVENTIONS

BEENLEIGH – QLD. October 13, 2018. Modelling the Railways of Queensland Convention, Beenleigh Events Centre, 9.00am (Sat). www.qldrailheritage.com/mrqc

ARMIDALE – NSW. November 17-18, 2018. New England Convention, Armidale Bowling Club, Dumaresq Street, Armidale. 8.30–5.00

(Sat), 8.30–3.30 (Sun). Attendance by pre-registration only. Warren Herbert 02 6732 5711.

www.newenglandmodelrailwayclub.com

OPEN DAYS

EPPING – NSW. November 10, 2018. SCMRA and EMRCI at Epping Creative Centre, 26 Stanley Rd, Epping. 10.00am–4.00pm (Sat). Layout operation. Scenery clinic at 11.00am. Free sausage sizzle lunch. Trevor Moore 9876 3522.

EPPING – NSW. January 12, 2019. SCMRA and EMRCI at Epping Creative Centre, 26 Stanley Rd, Epping. 10.00am–4.00pm (Sat). Layout operation. Getting Started clinic at 11.00am. Free sausage sizzle lunch. Trevor Moore 9876 3522.

TOOWOOMBA–QLD. September 22-30, 2018. Carnival of Trains, Toowoomba Model Railway Club Inc. Toowoomba Showgrounds, Glenvale Road. 10.00am–4.00pm each day. Entry Gold Coin Donation. Secretary (07) 4638 0397. Facebook: Toowoomba Model Railway Club Inc.

SALE DAY

BRISBANE – QLD. October 20, 2018. AMRA Qld Branch Inc. club premises, 20A Murphy Road Zillmere 9.00am–3.00pm. Table sales, layouts running, sausage sizzle, etc. Entry by gold coin donation. Bruce Meiklejohn 0433 440 031. For bookings and/or table hire. bruceian58@gmail.com

BRISBANE – QLD. November 20, 2018. Buy and Sell Nights. Union Pacific Model Railroad Club Clubrooms, rear of Holland Park Sports and Community Club, 49 Abbotsleigh St, Holland Park. Registrations from 6.00pm (Tues). Sale commences 8.00pm. Free entry, refreshments available. No bookings required for sellers. 0439 435 366. sec_upmrc@bigpond.com

EPPING – NSW. November 24, 2018. Model Railway Market Day organised by the Epping Model Railway Club. Epping Creative Centre, 26 Stanley Road, Epping. 10.00am–1.00pm. Ring Mike 0408 817 554 to book a table.

FESTIVAL DAY

BURWOOD – NSW. October 7, 2018. (Burwood Festival Day) TT scale layout (part sections only owing to hall being unavailable). Trust heritage train travel films. 10.00am–5.00pm (Sunday). Free admission (donations welcome). Burwood Uniting Church, Burwood Road (between railway station and Burwood Westfield). 0433 373 352 BH only.

Advertisements on Brick Walls

I read with interest Graham Watson's *Beyond the Fence* article, [*Advertisements on Brick Walls*, *AMRM Issue 331, August 2018–Editor*] on evocative, faded advertisements that can still be found on brick walls of old shops, pubs and other buildings, particularly in country towns. Replication of such advertisements can be a challenge, as it is difficult to reproduce their faded appearance and also the way in which the bricks show through. Placing of decals on your model presents difficulties, as the edge of the decal can generally be detected. Also, although the advertisement can be weathered, it is still difficult to reproduce the fading and the appearance of the brickwork.

I have found an inexpensive way of reproducing faded signs. Select the advertisement of your choice and photocopy it. Then cut it out as accurately as possible. Place some brick paper in the hopper of your photocopier and the advertisement on the plate and press the button. Voilà – a perfectly faded advertisement with the brickwork showing through. This, of course assumes that the modeller is using brick paper. I doubt if stiffer brick card would pass through the photocopier, but this may be worth investigating. The only serious problem that I encountered is lining up the adver-

tisement with the plane of the bricks and getting the advertisement to appear on the part of the brickwork that you require. A degree of trial and error is needed here, although the way the paper is eventually applied to the building can be modified to take into account the exact position where the advertisement is needed.

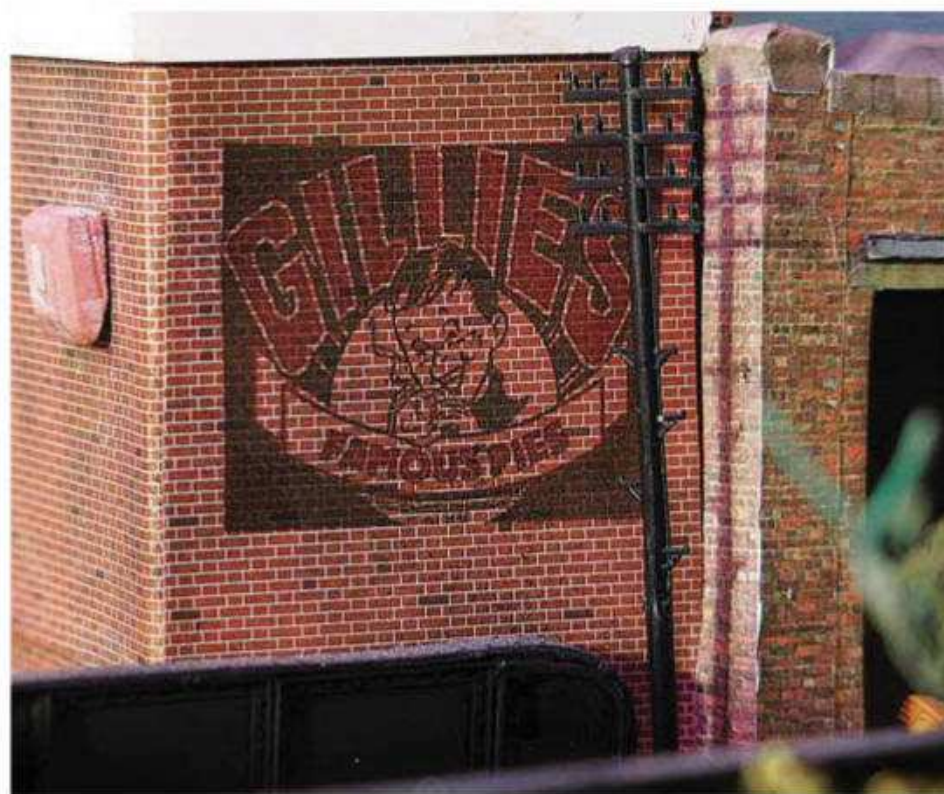
Jonathan Majer
Hillarys 6025

X200 Class Inspiration

While looking through some old back issues of AMRM I came across Peter Clark's article *An Update on New South Wales Rail Tractors* in Issue 204 (June 1997) containing lots of interesting information and photographs of these small machines. There are two photographs of X202 on the Yass branch line; one photo shows two flat wagons loaded with cable drums and an HG brake van being hauled by X202. The second photo shows X202 and the HG running 'horse and cart' past a two-dome 10000 gallon rail tank car.

Now that IDR models have released their X200, SDS have released many versions of the Tulloch 10,000 gallon RTCs and the release of Casula Hobbies' HG brake vans is pending, these (and many other) scenes can be recreated in miniature.

It is always worth leafing through back issues of AMRM (and



One of the advertisements constructed by Jonathan Majer, as described in his adjacent letter, using artwork that appeared in Phil Jeffery's *'Beyond the Fence – Gillies Pies – a Postscript'* from AMRM Issue 323 (April 2017). We will be seeing more of Jonathan's suburban themed HO scale layout in the next issue of AMRM.

many other railway publications, such as the ARHS's *Australian Railway History* and *Railway Digest*), when seeking inspiration for modelling projects and potential uses for the many models that the market now provides.

Darryl O'Brien
Cootamundra 2590

Small Layouts

Thank you so much, finally an article on a model railway that does not take up a half a house or half a garage! I really appreciate it. Even American books only seem to contain rather large layouts. I really enjoyed reading about *Philden* on pages 18–23 of AMRM Issue 331 (August 2018). Through the pages of AMRM could I please encourage others who have small layouts to let us know about what they have built.

I am sure that I am not the only one who would enjoy seeing more small layouts, rather than just the bigger ones we seem to see most of the time.

Gary Beauglehall
Murray Bridge 5253
In that case, Gary, you should enjoy this issue as well! – Editor.

Signs on Buildings

I read with interest Graham Watson's article *Beyond the Fence: Advertisements on Brick Walls* in AMRM Issue 331 (August 2018). I have attached a photo [see sidebox –Editor] I took on 11 October 2016 at Moonbi in the Northern Tablelands of NSW. Although not on any railway line, the building is adjacent to the New England Highway and appears to have been repainted quite recently.

MAILBAG

Australian MODEL RAILWAY Magazine welcomes letters on any pertinent model railway subject for inclusion in Mailbag. Letters should be sent to Mailbag, SCR Publications, PO Box 345, Matraville 2036, emailed to amrmagzn@tpg.com.au or faxed to (02) 9661 4323. All Mailbag contributions must include the writer's name, address and phone number to permit verification. Contributions without this information will not be considered for publication.

Editor



The Bushells sign on the side of a building at Moonbi, referred to by Garry Kahler in his adjacent letter. The size and architecture of the building would make a very interesting model for any scale or era.

The building was in use previously as a general store, but is now unoccupied.

Garry Kahler
Moss Vale 2577

Corrugated Iron Roofs

Phillip Overton's *Philden* layout (AMRM Issue 331, August 2018) shows what can be done in a small space, and it looks pretty good but, like many others, Phillip appears to have fallen into the trap of leaving off the all-important ridge capping when modelling corrugated iron roofs.

Corrugated iron has been for many years an important part of the Australian scene, both in the bush and the cities, and many just model the corrugated iron sheets meeting at the roof peak or ridge. This wouldn't work in real life, as such an arrangement would allow the entry of rain water. On full-sized buildings this ridge is covered by 'ridge capping', which in its simplest form is a long strip of galvanised sheet iron, about 12" (300mm) wide, folded along its middle and run along the ridge to cover the exposed ends of the roof sheets, thereby preventing rain water getting in at the ridge of the roof.

This form of ridge capping would probably be used on sheds and farm outbuildings, but for houses, station buildings and just about all other buildings with corrugated iron roofs, a slightly more sophisticated ridge capping is usually used. This is 'rolled ridge capping' which has a roll of 2" or 3"

(50-75mm) in diameter formed along its peak. Walk down any street in any Australian town or city and look up at the house roofs and, if they are corrugated iron,

they will all have some form of ridge capping, generally the rolled pattern.

On most model railway layouts, we view them from above and so the buildings' roofs are very much in our eyes, and the absence of roof capping is quite noticeable. To represent roof capping on model railway buildings, all that is needed for the simple pattern is a strip of paper of suitable width, folded along the middle and glued over the ridge, then painted the same colour as the rest of the roof. For the fancier pattern, a length of plastic rod glued

to the ridge first, then covered with the strip of paper, would give the correct effect.

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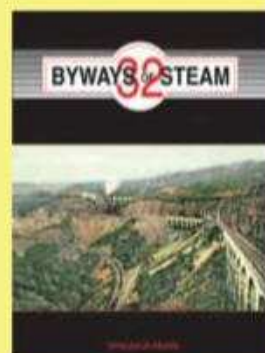
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BYWAYS OF STEAM 32

Byways of Steam 32 includes coverage of the Steam Locomotive Depots at Wallerawang, Mudgee, Eskbank, Dunedoo and Coolah as well as essays on Ken Groves, the 26 class saddle-tank locomotives and Goulburn driver R K. Brown.

Byways of Steam 32 is scheduled for release in time for a December sale. This mammoth 232 page volume returns to the normal coverage of steam depots, locomotives and steam locomotive drivers.

- **Steam Locomotive Depots in NSW:** Wallerawang, Mudgee, Eskbank, Dunedoo and Coolah. In these essays, rail historian Ray Love covers the steam locomotive depot scene after the crossing of the Blue Mountains with the completion of the great Zig Zag into Lithgow. Commencing with the first depot opened, Wallerawang, Ray describes the history of the construction of the depot, the building of the infrastructure and the steam operations up until the time of closure. Interspersed throughout the detailed text are photographs and track diagrams.
- **Kenneth Thomas Groves.** Ken joined the Railways in 1943 and rose through the ranks of a steam engine crewman until he was a driver capable of handling the mighty 38, 57, 58 and AD60 classes. Stephen Halgren briefly describes Ken's career illustrating his work with photographs from Ken's collection.
- **An Eye for an 'I'.** Most rail historians have a favourite locomotive and author Ian Wallace unashamedly favours the Dübs-built, NSW R I class, the 2-6-2 saddle tank engines, reclassified as the 26 class in 1924. Ian has dug deep in many photographic collections to cover this 20 strong class that saw sterling service in NSW.
- **Out Of Goulburn.** In 1954, a 24-year old Keith Brown commenced work on the NSW Railways at Goulburn depot. From his 'My Railway Life' story, the essay covers the many tasks performed in a large railway locomotive depot in the post WWII period, when steam was still king.



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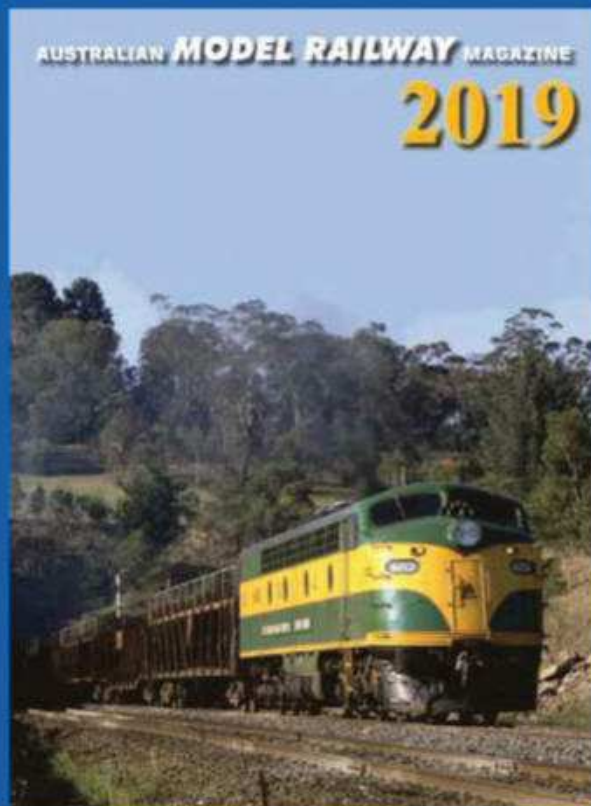
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The 2019 diesel calendar features 4201 on the cover in 1980; Freightlink No.7AD1 north of Alice Springs; the *Indian Pacific* at Sodwalls in 1994; QR container train with English Electric locomotives 1281 and 2354 in 1965; SCT freight at Bogan Gate hauled by SCT001 & SCT015 in 2009; ANR ZA1 at East Tamar, Launceston in 1989; NSW 8010, 8045 and 4526 hauling a freight at Sodwalls in 1990; BHP-Billiton 4393 leads 5637 on an empty ore train through the Chichester Ranges; Patrick Freight hauled by CLP12/CLP13/GM27 & GM43 in the Adelaide Hills near Balyarta in 1969; Tully Sugar locomotive No.9 with a rake of empty bins in 2014; V/Line P12 heads a H set with P17 trailing north of Tarnet; 8005 & 8109 with empty cement hoppers north of Cullen Bullen in 2011.



The 2019 steam calendar features Silverton Tramway Company W22 in the locomotive depot in 1965; NSW 3636 climbing the grade east of Brewongle with W88 *Relief Central West Express*; VR N428 with empty rail wagon in 1966; QR AC16 class 2-8-2 locomotive 223A near Toowoomba in 1968; SAR narrow gauge Garratt 401 at Crystal Brook in 1969; Standard Goods 5263 on the Toronto Branch; WAGR W class Beyer-Garratt at Donnybrook in 1971; Pacific locomotive MA4 taking water at Scottsdale in 1970; SAR T44 Hawker to Quorn goods service in 1969; NSW 3315 on No.13 *Glen Innes Mail* at Black Mountain in 1966; PB14 412 approaching Vulture Street in 1967; VR R719 approaches Ararat in 1966; Beyer-Garratt 6015 east of Borenore in 1967.

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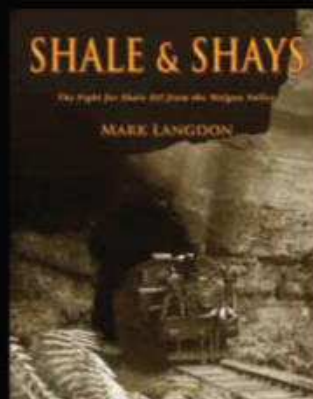
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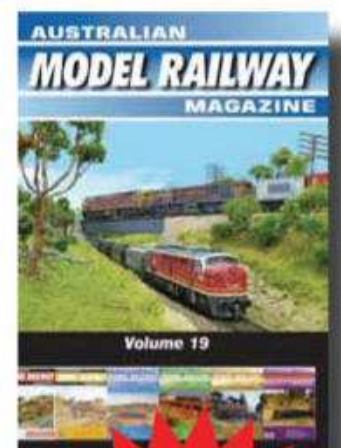
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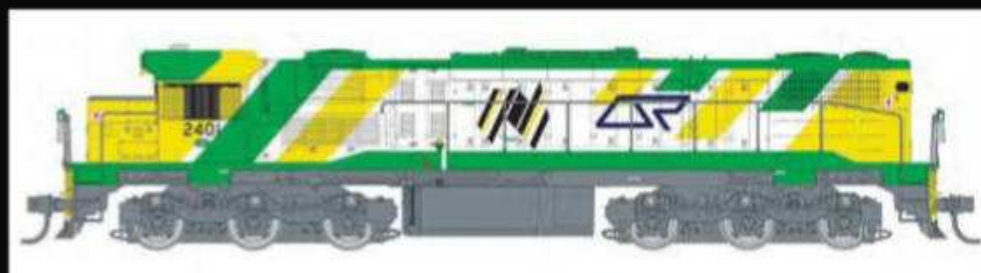




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