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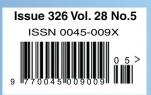
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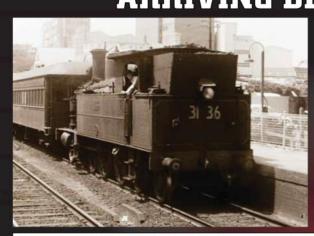
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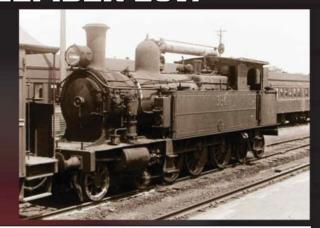




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MAGAZINE

Editor: James McInerney Issue 326 Vol.28 No.5

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ON THE COVER: Class leader, S300, hauls an up passenger train over the level crossing at the entrance to Doentoa yard on Ian Denny's large HO scale home layout recreating part of Victoria's Western Line during the 1960s. Turn to p.18 for more about this fine layout, featuring photos by John Dennis.



AMRM Crew

The Dream Layout

So, you have been building or obtaining locomotives and rolling stock for a while and plan for that dream layout, a 'big' dream layout. You have read many books on the topic, you have your own ideas of what you want and your enthusiasm is boiling over. You

Having gone through most stages of this dream, and in no way would I ever dissuade anyone from striving for their dream, I would temper enthusiasm on a few issues. Also keep in mind that the planning is maybe the most enjoyable part of the dream and noth-

ing is ever lost through too much planning!

Only those who dream can identify the important aspects of their thoughts; the topic, the size and the operation. The size will always be constrained by the available budget. Train room and layout building can be expensive, so try for an estimate before commencing. Do not be surprised if the shed alone goes into five figures. But in every instance strive for the largest space possible. Then look for the issues that books and those with experience will offer; aisle widths, length of run between stations, track height above ground and many more. Try to find some friends who will work with you and also act as devil's advocates with your dream. 'Yes' men are pointless in the planning. Experience has shown that very few modellers have all the answers.

Look around you at exhibitions. Ask as many questions as possible. Try for invites to those who have a layout the size planned. Seeing someone else in the process is an eye opener. Everyone has a slightly different process in the construction of bench work and track laying. In setting the dream, be realistic in estimating how long it will take you to accomplish the dream. When a time is determined, double it! As previously mentioned there are plenty of books on the topic of layout building; read, read and read. Be realistic in the train room; insulation and dust proofing may seem a waste of money, but both will provide an enhanced room for the models and cut the maintenance tremendously.

Take time to seriously consider the manner in which the empire is to be run; alone or with a group, train running or a shunting challenge. Are automatic couplers to be used? If so, what process is planned? Keep in mind permanent magnets above or below the track can create unanticipated uncoupling. Electrical magnets under the layout are always in the wrong positions. Hand uncoupling with tools or devices needs the train to be within easy arm's reach. The electrics are also a dilemma. Big layouts are brilliant with radio control DCC, but this can be expensive. Likewise DC is a brilliant controlling process, but for large layouts masses of wiring is needed. Do you have the skills and the patience?

One of the most important factors in planning a layout is how long it will be in operation. A decade? Try something small. Fifteen to twenty years? Seems a long time, and it can be, but having a feature to share with like-minded friends on the Friday night or weekend or later in retirement is an experience hard to beat. But if this is to be the case,

how easy will it be to maintain the layout?

Are you aiming for eye-height baseboards? You may be young enough to balance on a ladder or chair with the layout construction, but how dexterous will you be in ten years' time? Avoid at all costs having hidden track inaccessible to anyone other than the doublejointed. In ten years you may not be able to get down on the ground, let alone twist your body in a strange shape to clean the track. Try not to have points or uncoupling situations outside comfortable reach. And this also means limit the high structures in the scenery foreground. You may smile, but it is always the tall structures, including trees, that are inadvertently destroyed in the heat of operation.

In my endeavour for that dream layout I took a lot of counsel, accepted some and rejected others, often to my own detriment. I did not realise that repair and maintenance can take as much time as running the layout. It is always good to have the layout run

properly when friends arrive. Continual stoppages are an embarrassment.

Reading through these points may be seen as an endeavour to put some off the dream. Never! It can be the culmination of all the time spent building and collecting, but if these words can help someone reduce the frustration brought about by poor planning, construction and maintenance practices, well and good. The dream is worth pursuing.

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The Annual Membership Fee for SCMRA is \$60.00 from March to February and the Joining Fee is \$20.00, which includes the membership data pack. Applications must be received by the first of the odd month to meet our mailing list deadlines. For applications received between the 2nd September and the 2nd January the Half Annual Fee is \$30.00 plus the (\$20.00) Joining Fee (does not include October issue of AMRM). All fees are GST Inclusive.

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DIVISIONAL REPRESENTATIVES

New South Wales:

Graham Windmill, Ph. (02) 9626 0351

David Brown, Ph. (03) 5986 2363 email: cigam@netspace.net.au

Editor James McInerney **Editorial Assistants** Alan McKenna, Phil Knife **Production Assistants** Margaret Llewelyn Jade Bromberek, Bob Comerford **Chris Jones, Pete Grant** Office Manager Melissa Cullen Subscription and Sales Coordinator Karen Baldini Illustrators Jonathan Llewelyn, Ian Thorpe John Casev Design Grahame Davis Computer Programmer . Webmaster Peter Knife Roger Johnson Draughtsmen

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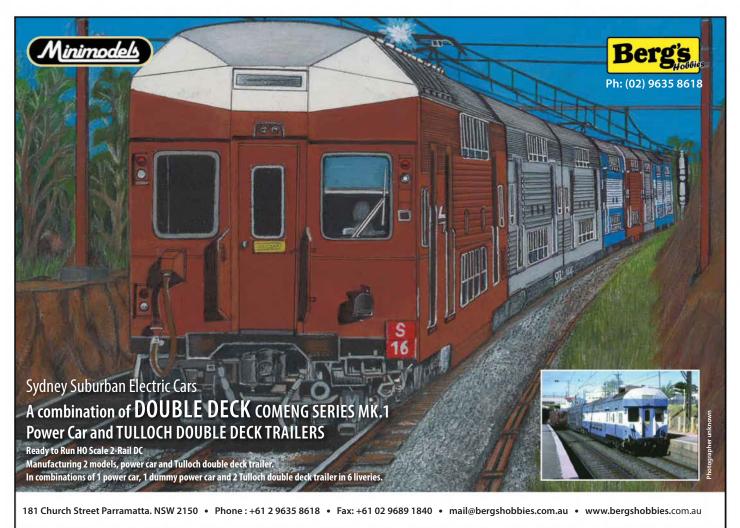
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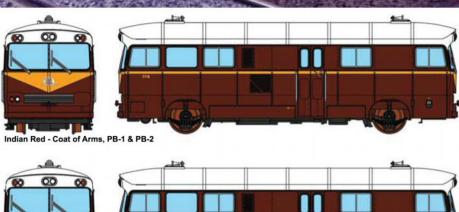


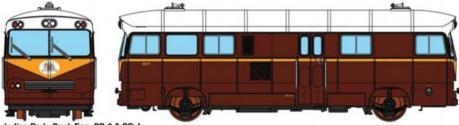




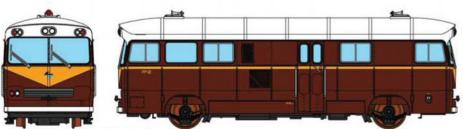




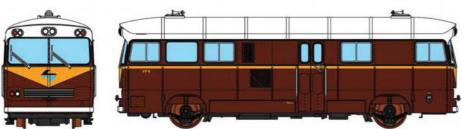








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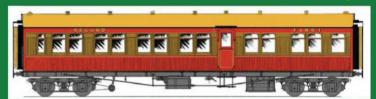
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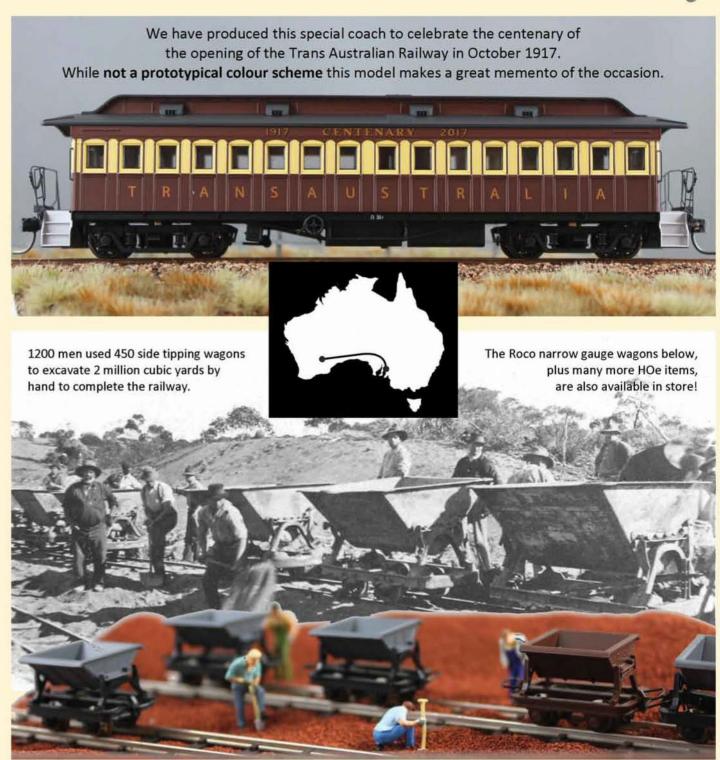
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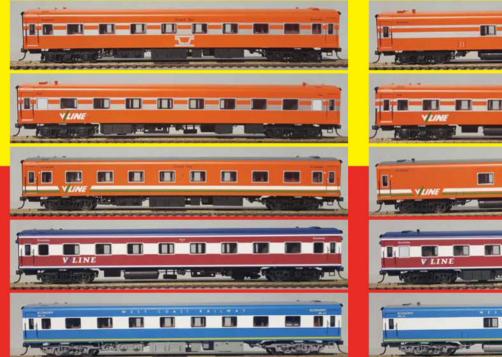


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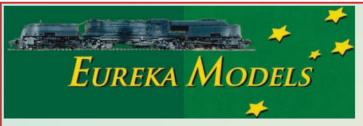




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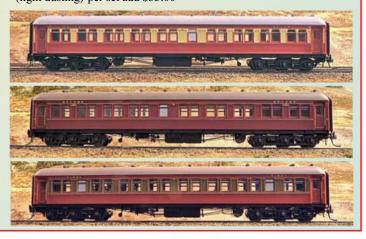


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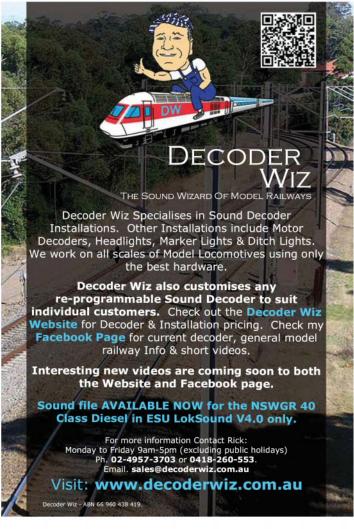


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Pack B Gabled 1008, 132, 432, 215, 326, 370



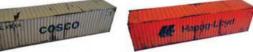


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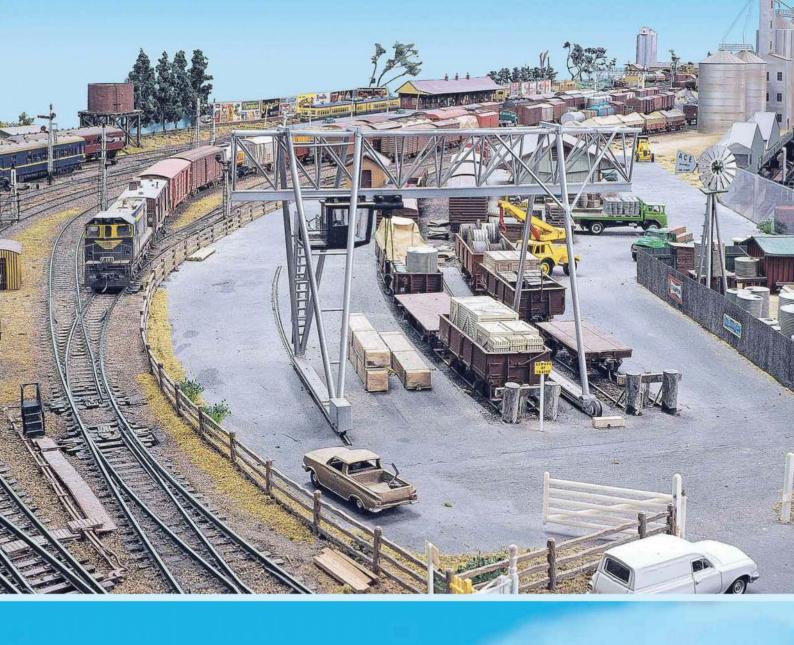


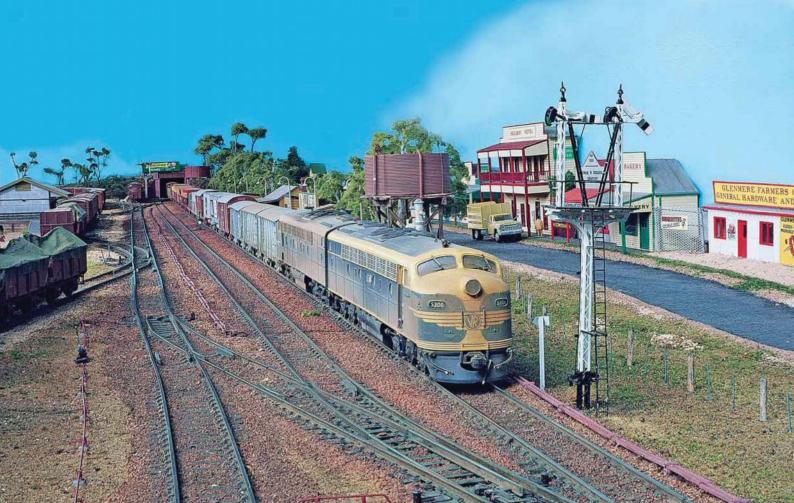




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- ▲ Steam locomotive K163 rides the turntable at Doentoa locomotive depot as a trio of N class slumber in the roundhouse.
- ◀ A Y class shuffles wagons in the marshalling sidings at the Melbourne end of Doentoa yard.
- ▶ With a clear road ahead, S306 and S303 race through Glenmere with a Melbourne-bound 'Jet'.

Doentoa

Ian Denny describes his large HO scale home layout depicting a "fictitious place out west, past Ararat".

Photos by John Dennis.

The Victorian Western Line to Serviceton and Adelaide was always of interest to me, with single-line operation with crossing loops, mainline stations, small town stations and branch lines. The attraction of an interstate passenger train, The Overland, local passenger trains and railmotors, combined with fast interstate goods trains and intrastate goods trains, all of which had a mix of four-wheel and bogie wagons in their consists, provided me with an opportunity to run a broad selection of trains. There were also plenty of livestock and grain trains running in the 1960s, together with a roster of steam locomotives and the new modern diesel electric locomotives, plus many of the trains were double headed.

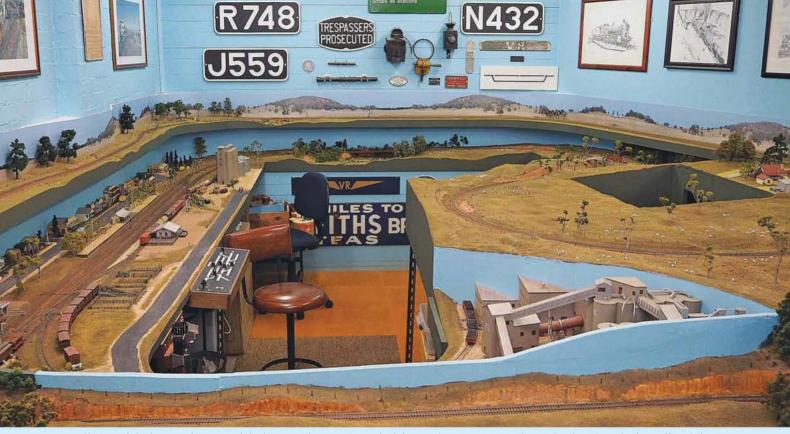
The layout is built in a 21' x 28' (6.4m x 8.5m) garage and takes up most of the available room apart from a small workshop area on one side.

In the Doentoa (pronounced 'dough, en, toe, uh') yard there are storage roads opposite the main station and sidings for the oil facility, grain handling, stock feed, goods shed and livestock yards. A loco depot, with turntable, coal stage and loco shed, is located at the end of the main yard. The main station has a railmotor dock to service the branch line to Mitre. Mitre is a small branch line terminal station which has a goods shed, stock race, grain siding and a turntable with limited locomotive servicing facilities.

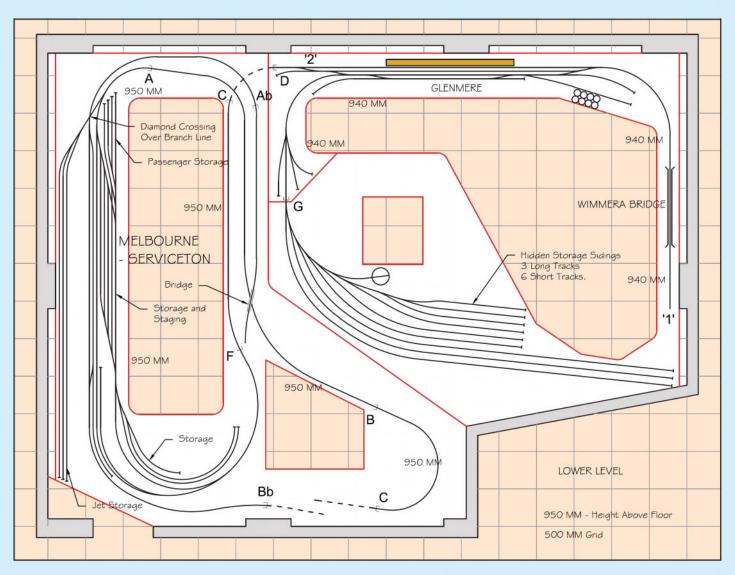
The climb out of Doentoa takes the mainline to the top of the hill where Westbury Loop is located. Here trains can be crossed and each loop can hold a train equal in length to two locos and 19 bogie wagons, or two locos and eleven The Overland cars. Down the hill from Westbury the mainline travels to the small town of Glenmere, which has a three-track yard, station and platform, a goods shed, a stock race for cattle and sheep, and a grain handling facility. In addition, there is a siding that leads to the cement works which has four roads, one of which doubles as an entrance to the hidden nine-road storage sidings below the layout.

From Glenmere the mainline travels through a short tunnel, across country and then into another tunnel that takes the line under Doentoa and into the main storage sidings and hidden crossing loops. This storage/crossing area, where trains are reversed for operating purposes, represents what would be Serviceton/Adelaide or, from the opposite direction, Melbourne/Geelong. Grain trains usually start from Melbourne or Geelong, travel around the layout, reverse and then head back. Cement trains leave Melbourne empty, go to Glenmere, shunt at the plant and then return to Melbourne.

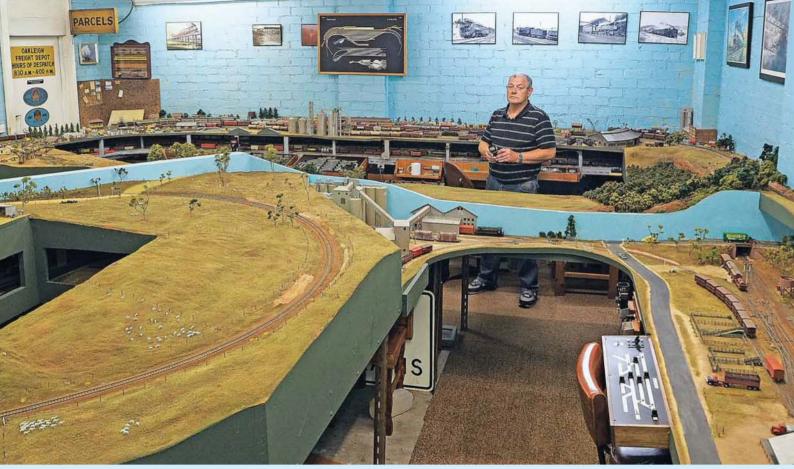
When the morning pass from Melbourne arrives at Doentoa, some of the cars are shunted off the train and the diesel loco is changed over for either a steam locomotive or a smaller diesel loco. The train then heads further west stopping at Glenmere before reaching the arrival storage sidings where the train is reversed for the return journey. When the train arrives back at Doentoa the cars are shunted back



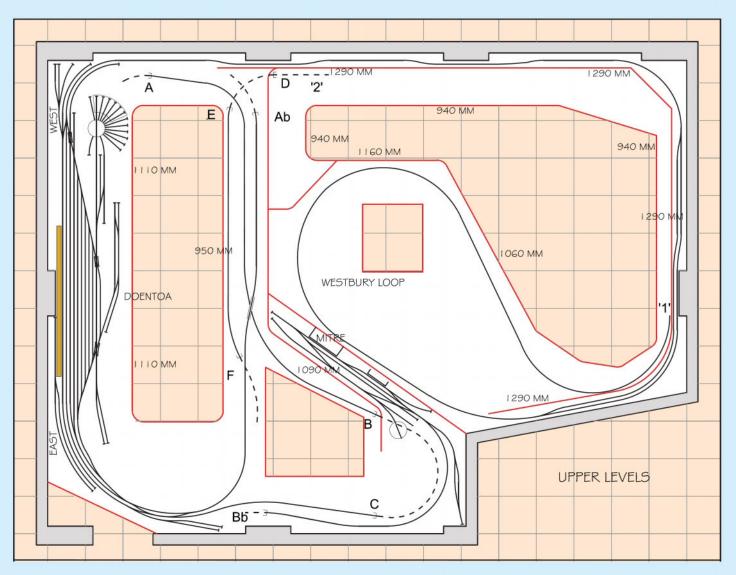
An overall view of the 'country' section of the layout. Glenmere is on the left, Westbury Loop is on the top level against the far wall and the cement works is tucked into a corner in the right foreground.



Page 20. October 2017



Builder, Ian Denny, operates Doentoa station, which occupies the section against the far wall. The branch terminus, Mitre, is just out of picture to the left. The cement works and the Serviceton end of Glenmere can be seen in the right foreground.





▲ Even in a large layout, fine detailing makes a difference, such as the point rodding at Glenmere station shown in this image.

▼ Branchline locomotive, Y157, shunts four-wheel wagons loaded with cement containers at the cement works at the Serviceton end of Glenmere.



◀ A rake of Way and Works wagons is stabled in a siding at the down (Serviceton) end of Glen-

mere.

▼ A view of the coal unloading facility at the cement works at Glenmere. Despite being clearly marked as captive to Morwell-Wangaratta briquette traffic, a one-off I wagon converted to a hopper wagon is on test, a long way from 'home'.

onto the train and the loco is changed for the run to Melbourne.

Because the layout has been constructed as a full loop, trains can also continue through the hidden yard and travel back to Doentoa. This is an operational benefit that allows a more free-flowing running night when a few friends are busy running numerous trains around the layout.

Building the Layout

I was fortunate to be given a large amount of Dexion angles and fittings, so this was used to construct the framework as it was quick and easy to work with. The track bed is mostly 12mm chipboard with 50mm x 25mm pine used for the risers. The Westbury Loop section of the layout and the approach from Doentoa is built on a 200mm wide shelf that sits

At A Glance

Scale: 1:87 (HO) 16.5mm gauge

Location: Western Victoria, somewhere on the Western Line – west of Ararat

Period: 1960 to 1969

Layout type: Mainline with crossing loops, based on VR prototype making a large continuous circuit, run as point-

to-point, with branch line

Layout size: 21' x 26' (6.4m x 7.9m)

Baseboard: Built on Dexion framework with a 12mm chipboard track bed

Track: Main line is Peco code 100 and branch line is Peco code 75 with some

Shinohara code 70

Scenery: A mix of scrap wood and cardboard formers covered with flywire and plaster bandage, or Chux dipped in plaster

Control: DC block control with transis-

tor throttles

Locomotives: R-T-R brass and plastic,

whitemetal and brass kits

Rolling stock: Scratchbuilt, kit-built,

kit-bashed and r-t-r

Builder: Ian Denny, with assistance

from friends





▲ A view of Glenmere looking towards Doentoa (and Melbourne) as R748 on a passenger overtakes a T class on a goods.

▲ The wheat season is in full swing as steam locomotive, N 480, is captured shunting GY bulk grain wagons at the Glenmere grain siding, while trucks queue waiting to dump their loads of grain at the silo.

above the wider bench below where Glenmere is located.

Track

Peco code 100 flexible track and points are used on the mainline. Most of the points are large radius Electrofrog, with a few Insulfrog and small radius points, and they are fitted with Peco point motors driving micro switches which change the LEDs on the control panels. Yard points are controlled by wire rods running under the baseboards to the edge of the layout and are operated by hand. The branch line track is a mix of Peco code 75 and Shinohara code 70, with Peco code 75 points which are hand operated. Most of the branch line track is laid on cork, with the newer sections laid on Trackrite underlay.

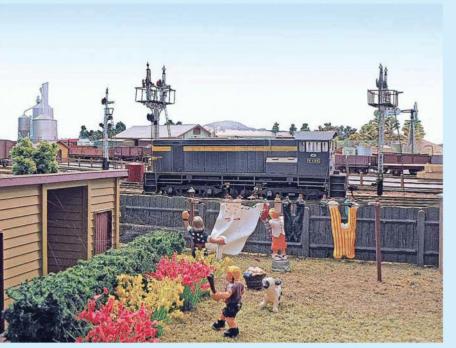
Electrics

The layout is controlled by DC block control with each section powered through a rotary switch. There are two mainline controllers, one branchline controller and each controller has its own

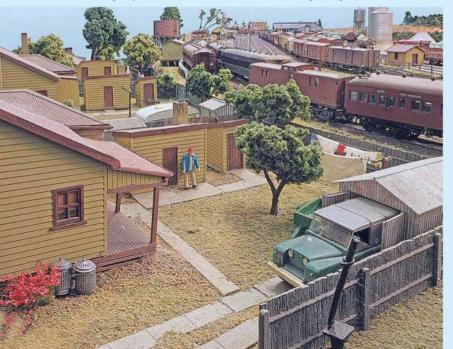




▲ The VR's very first mainline diesel locomotive, B60, departs Doentoa station on a Melbourne-bound passenger. The 280hp Walker railcar, rostered for the connecting service to the branch-line terminus at Mitre, will depart shortly afterwards, once the mainline passenger train has cleared the section.



▲ It is washing day at Doentoa as Y121 rumbles past light engine.



power supply, enabling it to operate any section on the layout via the rotary switches. Glenmere and Doentoa loco depots have their own dedicated controllers for local operation and can be operated without affecting the mainline. The system has been designed so that mainline controllers can also operate these sections as required. The Peco points' live frogs are controlled by Peco micro switches which also control directional LEDs on the panels so that it is easy to identify which way the points are set. Some visitors to the layout cannot understand how I can cross trains in the loop without changing controllers or having a DCC control system. While I can accept that DCC is a good control system, I can happily admit that I have enough trouble operating the TV remote. I am very pleased to acknowledge that the DC system operating Doentoa has been working brilliantly since the 1980s. I turn on the power, choose the controller, set the points and the block switches for the road and away the train goes. The transistor controllers were home built in the 1980s by an electrical genius friend.

Signalling

There is a mix of semaphore somersault and coloured light signals on the layout, following VR prototype. The lattice/semaphore signals are a mix of Trainbuilder signals with replacement scale sized ladders, PSM signals and Heritage Models lattice signal kits. While the semaphore signals are not automated, the blades can be set by hand for a photo shoot. Westbury Loop is controlled by two-aspect distant signals and three-aspect arrival and departure signals, all of which have been retrofitted with LEDs. At the time of construction, prototypical searchlight signals were not commercially available. An indicator board is located on the wall above the loop so that operators can easily confirm the status of signals and points and when a train is occupying a section.

Scenery

Many common scenery techniques have been applied to the layout. To create the undulating ground I used scrap wood and strip cardboard formers which were crisscrossed and stapled with flywire, then covered with either plaster, plaster bandage, or Chux Superwipes dipped in plaster. I also glued layers of Caneite or expanded foam together and when the glue had set, shaped them with a rasp to achieve the correct contour and then covered them with overlapping plaster bandage or Chux Wipes in plaster. Ground cover is mostly Woodland Scenics using various ground foam colours and textures blended to look appropriate for the Victorian western countryside.

The trees on the layout are a collection from several sources. Some of the trees are made from Woodlands Scenics sprues covered with Woodlands tree cover. There are also some pre-made trees that I was given by a friend. In one lot there was a bag of 50 trees and while their quality was not as good as the Woodlands Scenics versions, they look OK in the background. The same person also gave me a bag of 53 good quality architectural model trees and these look better in the foreground, so with careful placement I have achieved a good balance. In addition, the daughter of one my regular visitors has given me a selection of gum trees that have been made from tea tree twigs and Woodlands Scenics foliage, but it is amazing how what at first appears to be a lot of trees, seems to dis-

■ A view of the backyards of the railway residences at Doentoa. In those enlightened times, the VR provided departmental residences for many of the staff employed at the station and surrounding area.

appear very quickly into the landscape when they are placed on the layout. You can never have too many trees...

I have also used Woodlands Scenics Realistic Water to make the creek and applied some Noch tussocks around the waterways. I have just started experimenting with a static grass applicator, so there will be few scenery enhancements to come. The cuttings and embankments have been formed from plaster with erosion marks scribed into the faces, painted in dark and light ochres and then finished with various washes.

Structures

The layout has a mixture of scratchbuilt, kit-built and kit-bashed structures. The Doentoa B box is based on the signal box at Fairfield with some modifications to suit the Doentoa location. It is constructed from Evergreen clapboard, Ratio windows and a corrugated laminated roof. The loco shed was constructed by me to suit the Roco turntable, while the grain and cement silos were made from modified Walthers Cornerstone kits. The shop fronts along the main street in Glenmere are low-relief structures, kitbashed from Structorama kits, and the houses were made from the leftover rear sections of those kits.

Locomotives

Among my roster of steam locomotives is a collection of brass from The Model Dockyard, BGM, Alco, plus a couple of white metal and brass kits. This covers the A², E, J, K, N, R and Y class locos. The diesel roster is made up from r-t-r models by Auscision, Austrains, Trainorama and a couple of PSM diesels. This covers B, F, S, T, X and Y class locos. The branch-line is serviced by a PSM Walker railcar and a Steam Era Models DERM. I also have three SAR 930 class Alcos and two CR GM class locomotives which are not strictly prototypical for the Western line in my era, however I like these locos and they most likely would have travelled on the Western line for their delivery run.

Rolling Stock

Originally the backbone of the fleet was predominantly Steam Era Models (formerly BGM) injection-moulded kits, complemented with Broad Gauge Bodies kits. There are also a number of kitbashed and scratchbuilt wagons in the collection. In more recent years, the fleet has expanded to include r-t-r wagons from Auscision, Trainorama and SDS. In keeping with my time period, many of the wagons are four-wheelers with some 'modern' bogie stock. Being an interstate line there is also a number of SAR wagons plus a handful of WAGR, Commonwealth Railways and NSWGR bogie exchange wagons for the fast freight trains. The passenger stock includes Steam Era Models W cars and kit-bashed E cars, G&E Models CW cars, Auscision E cars, Austrains PL cars and an eleven-car rebuilt Lima The Overland set.



▲ Doentoa has a major locomotive depot, complete with all the facilities required to service the needs of the steam locomotives working through the depot, including this impressive model of a coal stage, where K192 stands in readiness for its next assignment.

Conclusion

Over the last 30 plus years I have gained enormous enjoyment designing, building, wiring and scenicking the layout, and of course the many hours of running my collection of trains. I am also very fortunate to have a select group of friends who have helped me from the start with the design concept, construction and wiring. In particular I would like to thank and recognise Jim Leppitt for his

help in the electrical design and the major wiring workload, the design and manufacture of the six control panels and the construction of the transistor controllers, plus the many hours of work on the layout. Also to Graeme Pantlin for his help in the layout design and guidance and to Andrew Barkla for his woodworking skills, particularly the control panel installations around the layout. Thank you also to John Gilbert for his input into the lay-

▼ A view of the loco depot at the Serviceton end of Doentoa yard, looking across towards 'B' signal box.

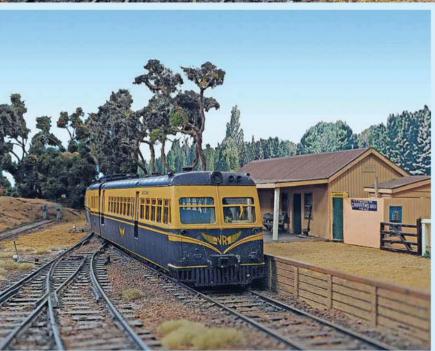




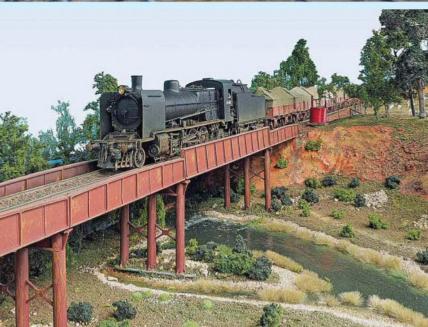
out and for assisting me with the writing of this article and a thank you to his daughter Sam for the numerous gum trees that she has made for the layout.

My friends and regular visitors join me to run their own trains, as well as my own, on the layout and we have all enjoyed many hours of fun together operating *Doentoa*. I thank them very much for their contribution and many hours of work.

So now it is back to some layout maintenance and then lots more train running.



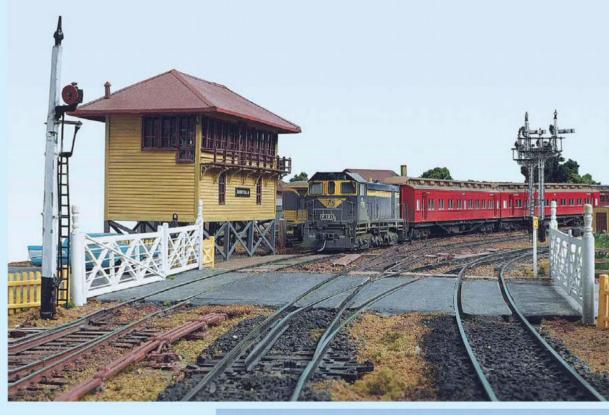
▲ A busy few minutes at the junction of the Mitre branch and the mainline at the Melbourne end of Doentoa as a heavy steel train, led by B83, S310 and T345, is held at the down home to allow the passenger service from Mitre, a 280hp Walker railcar, to enter the yard.



◀ A quiet scene at Mitre station, looking towards buffer stops, as the 280hp Walker railcar waits for departure time.

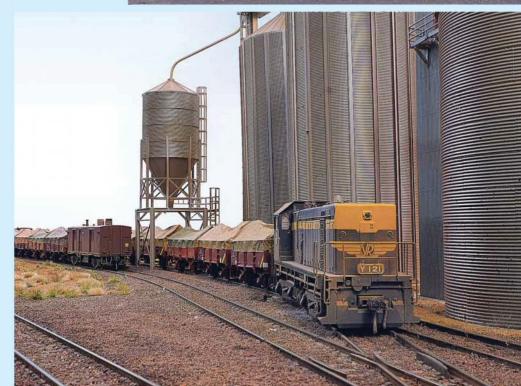
■ Mikado, N480, wheels a down empty grain train across the bridge over the Wimmera River in the Glenmere-Westbury Loop section.

▶ The level crossing gates are closed against road traffic at the Melbourne end of Doentoa as Y121 shunts a rake of E carriages in the yard.



▶ The local garage at Doentoa appears to be doing a brisk trade.





Y class locomotive, No.121, shunts fourwheel grain wagons at the silos in Doentoa yard.



IN THE LOOP

Taken at the Flood

Trevor Hodges ruminates on layouts and layout planning and wishes it to be known that he apologises to the Bard for his chosen title! Photos by the author.

he first model railway layout I built as an adult was more grown than designed: it started as a loop, extended into a folded figure of eight that turned a corner, merged and grew into a second layout and was soon dismantled because of a major flaw in the track arrangement. No matter how much fiddling, adjusting and cursing I applied, I couldn't persuade my favourite locomotive to ascend a curved grade light engine, let alone towing a wagon or two. With hindsight the grade would have been at home on a cog railway in the Tasmanian wilderness, but at the time it was very frustrating. However, there were other, broader reasons I decided to pull that first layout down and start again, after having learnt some salutary lessons. These reasons had little to do with track and trains and a great deal to do with my rising expectations, brought on, no doubt, by the things I'd learnt building it. In addition to housing a layout, the shed where I built this layout was also where I did my modelling and it only took one season of cold winter evenings trying to work in an unlined garage to convince me I needed to do something to address the cold and draughty conditions. The layout was in one corner of the shed against an unlined, wooden frame wall with no direct lighting. This location meant the layout was viewed through a gloomy pall that threw my paltry efforts at scenery into an even duller light.

At about the same time I was building this layout, a friend asked me to help him carry out some renovations to his home (to better accommodate a growing family). We knocked down a wall to enlarge the living space and put up a new ceiling in a bedroom that had been damaged by some local wildlife that had taken up residence in the roof (but had since been removed and excluded). He had a mate who was a plasterer by trade and, while we did all the heavy remodelling, this friend installed the plaster board. I watched in awe as he powered round the room on short stilts seemingly throwing up the boards and slapping on the joint compound. By the end of the second day of watching and helping out I thought to myself "I could do that!" As pay-back for helping him rearrange his walls and ceiling, my friend helped me line my shed.

His plasterer mate loaned me the adhesive, joint compounds and other materials I needed, so all I had to buy was the plasterboard. I wouldn't say the job of lining the garage was easy, and our progress was far slower than with his friend the plasterer doing the job, but by the end of the second weekend my garage was lined and the joints sanded down ready for paint. The light, sky blue paint I applied to the walls brightened things up considerably even without lighting. I had some new light fittings installed and the impact of these improvements did far more to improve the realism of the scenery on my next layout than anything I did in terms of modelling. I insulated the ceiling and walls of the shed as we worked and this made working in the shed far more comfortable all year round, although I never did manage to completely block out the draughts (and spiders) that came in around the edges of the roller door. While this shed was now a lined garage it remained a garage, so the roller door remained in-situ.

Eight years of very enjoyable layout construction, modelling and learning was undertaken in that shed. Over those years (my late 20s and 30s), as my life and career ebbed and flowed through a number of different relationships and living arrangements, this shed, and the modelling undertaken in it, gave my life some measure of continuity. However, it should be acknowledged that all structures have to be sited somewhere and, in this case, it was built in the backyard of my (extremely tolerant) mother's home. I can't quite remember the argument I used to persuade her to let me build the shed in her yard, especially as I wasn't living with her at the time, but I'm sure it involved her being able to park her car inside so that it could be protected from the elements. This parking arrangement lasted about two years, until the shed was lined. After that the car was consigned to a carport further down the driveway. In spite of all the time and money invested in getting the shed to a state where it was suitable to be occupied by both a layout and its human operators, I don't recall that this layout (Trundlemore, AMRM Issue 225, December 2000) ever qualified for a formal, drawn plan. I'd learnt many lessons from my previous layout building experience, however one that still hadn't sunk in was the need for a scale plan before construction commenced. This is doubly ironic nowadays because I don't scratch myself without a drawn, scaled and colour-coded plan! I even draw plans for modelling friends and acquaintances, but Trundlemore's development could best be described as 'organic'.

I'm sure architects have some specific term for *all* the elements that need to be considered when designing a building, but in layout design terms I tend to think of this as the 'full context' of a layout. By this I mean all the things that impact on any given design,

not just a trackplan, no matter whether this is a detailed, scale plan drawn with CAD software or a doodle scratched out on the back of an envelope.

Firstly we have the 'explicit' or direct components of the design – in our case this would include a trackplan, curve radii, the trains, grades, the models we want to use, historical/geographical theme and all the other things we tend to think of when we refer to a 'trackplan'.

Secondly there are site issues – the size of the available space to build the layout in, its location, aisle width, materials availability, costs, access to electricity, lighting, budget etc.



How things used to be done. The unlined shed at the author's mum's place with a layout that just grew 'organically'.

Finally there are the human considerations – the fact is that the trains don't operate themselves. The size, shape and needs of humans have to be considered when you design a layout. Our bodies, lives, relationships and work/careers shift and change over time. It's sensible to be conscious of this and plan for it in our layout design, especially if we would reasonably expect the layout to survive for ten or more years.

When I offered to begin writing In The Loop just over three years ago I was in the early planning stages of a new home layout. In fact, I seem to remember pitching the idea of the column to AMRM's (then) Production Manager on the basis that the process of building this layout would most likely provide the material for many of the columns I'd write. However, before I'd advanced beyond assembling more than a few pieces of basic benchwork my whole life seemed to turn upside down; both my parents passed away within the space of three months, a promotion at work meant I sold the house the layout was to be built in and a new home building project didn't advance beyond the planning stages. For me personally it's impossible not to consider these life changes as the 'full context' of the layout design process: I didn't get to build that layout and could not have foreseen the cascading series of events that would impact on my life.

Now I'm settled in a new home with a new, larger layout space and because of this I have no intention of building the previously planned layout (it never got much beyond the benchwork stage anyway). I'm eager to explore the possibilities of this new space, not impose a design on it that had been developed for a space I no longer own. However, I'm convinced that the time invested and resources allocated in getting ready to build that layout were well spent. If I'd sat around waiting for absolute certainty I wouldn't have built a single layout over the past twenty-five years. There is a time in the affairs of men... In the past week I've come full circle and accepted a quote from a builder who I've asked to fix a hole in the roof of the shed that sits in the yard of my recently acquired home. After this he's going to line the walls of a layout space on the second storey of the shed and, soon after that, I intend to start building a layout more than likely based on the yard and station of the NSW town of Muswellbrook.

As I've contemplated at length what sort of layout I'm going to build in this new space, what's been brought home to me very forcefully is how my priorities have developed and changed in the twenty five or so years since I started building *Trundlemore* in that shed in the backyard at my mum's place. In the early 1990s I was like any beginning layout builder: all I was interested in was getting trains running. These days running trains is still a pleasant prospect that I'm very much looking forward to, but the comfort and needs of future layout visitors, operators and myself are far higher on the priority list than they were then. Actually, I'd be surprised if the comfort of prospective layout visitors even entered my head when I started *Trundlemore*. When someone visits this new layout I want them to see it in a well-lit, climate-controlled room

with plenty of space to move about, and possibly with somewhere comfortable to sit to recover from having to climb the stairs to reach the layout. Let's face it, none of us is getting any younger, including

I've finally learnt the lesson about drawing a layout plan though. In fact, I've drawn more than one and currently I'm up to version 3.7. As yet, however, these are still all speculative because the room is not ready and, until it is, these plans are very much drafts. A stud wall with plasterboard is a good 75mm thick and I've learnt from hard-won experience that 75mm matters when

planning a layout, and 150mm matters even more because if you have a stud wall installed on one side of the layout room, chances are you'll have another one on the opposite side. When the room is fully prepared I'll take a set of precise measurements of the available floor space, put these into my layout design program and draw a detailed, scale plan to test out some ideas regarding the layout I might build. The emphasis here is on the word scale. While there's no need to resort to CAD software to draw a trackplan, at some point it's advisable to invest the time to develop a scale plan and there are plenty of free or relatively cheap layout design programs that are a great way to ensure the plan is to scale. I use a simple little non-CAD based program called TRAX3 from UK author Jeff Geary. You can source a copy from the Internet. It's far too easy to fudge a plan when it's not to scale. Fitting in that extra turnout leading to the coal mine in the corner is easy when the curves that lead to it are 400mm radius (in HO) and the turnout is drawn only half its scale length. It's far easier and very much cheaper to make changes to a plan on paper or a computer screen than to make them with wood. However, while I may have a handle on the trackplan for my new layout, this is only part of the design story.

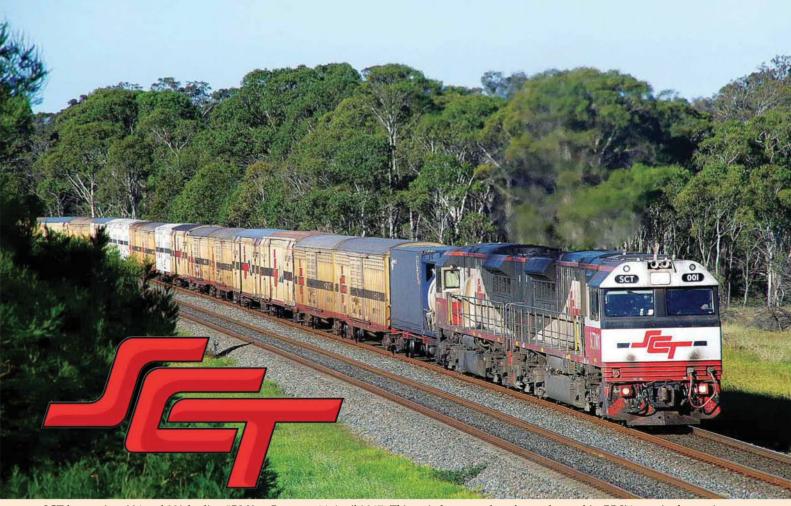
The full context of my layout build was made apparent to me in the most dramatic terms several weeks ago in the shape of Tropical Cyclone Debbie, which crashed ashore on the north coast of Queensland in April 2017. I live well south of the region affected directly by the cyclone's destructive winds, however I live far enough north on the NSW coast to have between 400 and 500mm of rain fall in my area in the space of three days. The reason my builder is fixing a leak in my shed roof is because the room I plan to build my layout in saw several bucket-loads of water drip onto the floor and from there down into the workshop below during this rainfall. In addition to this I was flooded in for three days and for half this time the power was off. In my experience there's not much point in lining and painting a room if all your hard work is going to be saturated in the next heavy downpour. While I'd prefer that my shed didn't have a leaky roof, I'm happy that this particular site issue emerged before I lined the walls, built a layout and got trains running. The builder is going to completely reclad the roof on the side of the building where the roof leaks and make absolutely sure I won't face this issue again any time soon. What I faced in the recent floods in Northern NSW and Qld was a minor inconvenience compared to the people who had homes inundated and were then faced with the task of cleaning up. However, if I ignore this leak in a rush to get trains running and save some money, I'll face a much bigger issue down the track.

As I was thinking about a title for this column the line from Shakespeare's *Julius Caesar* came to mind, but with a slight twist: there is a time in the affairs of men which, taken at the flood, leads on to a better layout. While the flood reference was a little too literal for comfort, I've come to believe that it's far better to grasp the modelling and layout building opportunities on offer than wait around for the 'ideal' time to build. If I'd waited till I had a dedicat-

ed room in a house or shed on a block of land I was pretty sure I'd never sell, I'd never have started the last four layouts I've built or helped to build with friends. However, in spite of urging you to grasp the nettle and start building a layout sooner rather than later, I'd also advise that it always pays dividends to plan with the full context of the layout you are going to build in mind. This context will be different for every layout and layout builder, but a little careful planning is more likely to produce a layout that will hold your attention until it is complete than one that is rushed at in a haphazard fashion.



How things are done now. An 'in progress' shot of the result of forward planning and design priorities that now include creature comforts for the inhabitants!



SCT locomotives 001 and 002 leading 5BM9 at Bargo on 14 April 2017. This train has a number of new, clean, white PBSY vans in the consist.

TRAINS WORTH MODELLING

SCT East Coast Operations

Chris Jones describes the locomotives and vehicles used by SCT on their recently-introduced east coast services. *Photos by the author.*

Established in 1974, SCT has been operating trains for more than 20 years with key operating routes between Melbourne-Adelaide-Perth and Parkes-Perth. SCT has reinvigorated van load traffic and primarily operate trains as a key part of their warehousing and distribution supply chain logistics business.

In January 2017, SCT operated their first east coast service between Melbourne (Altona) and Brisbane (Bromelton) using their flagship SCT class locomotives. SCT operates three or four return services per week, utilising the train numbers MB9/BM9. Each service operates direct between the two capital cities, with the exception of a short stop at Wodonga (Barnawartha) for a quick drop-off and pick-up of wagons in both directions.

SCT have been running freight to and from Brisbane for many years now, with a train consist form (X2010) dating from 1994 showing loaded ABFX, VLEX and RLUY vans running general freight to

Acacia Ridge behind triple 44 class. In more recent years, Aurizon (formerly QR National) hauled ABSY and PBGY vans for SCT between Melbourne and Acacia Ridge, usually placing them at the front of their interstate intermodal container service MB7/BM7. The task of moving from seven to fourteen vans, a combination of closed and louvred types, about three times per week, commenced in February 2010 and ceased in January 2017. This 'hook and pull' service, provided by Aurizon, allowed SCT to springboard into their own east coast operation at the beginning of 2017.

Operational Trends

At start-up in January 2017, a typical SCT east coast service comprised two SCT class locomotives (marshalled back-to-back), a PQKY container wagon with an in-line fuel tank container, and 15-20 vans comprising ABSY, PBGY and the new PBSY types.

By the end of March 2017, train sizes began to increase with two or three PQQY articulated five-pack skeletal wagons beginning to appear on each service, often in the middle of a north-bound service and towards the rear of the southbound service. South-bound services are usually grouped into destination blocks with Perth- and Adelaide-bound freight leading the consist and any vans for Barnawartha being placed on the rear of the train, behind the container wagons. All container wagons are grouped together as a block to assist in shunting activities at each terminal. The PQQY wagons primarily carry refrigerated containers, especially the SCTR 200 and 300 series types, which are designed for maximum utilisation of both the SCT well wagons and PQQY five-packs. Van traffic increased on average to 20-25 wagons per service, with some services occasionally having up to 40 vans in the consist. Although not common on the services, 80' container wagons, such as the PQIY and PQDY classes, do make semi-regular appearances hauling containers, while PQDY56 has been employed in moving transformers between Wodonga and Brisbane on an almost weekly basis. Well wagons (PWWY/PWXY) and refrigerated vans (ARBY) have made very rare appearances on the east coast. SCT do not utilise crew cars/relay vans on the east coast, however former Bluebird PDAY001 operated on the maiden journey from Melbourne to Brisbane, carrying VIPs.

On occasions the train has been heavily loaded and has required triple SCT locomotives. Trains hauled by a single SCT loco have run, along with instances of two trains being amalgamated for the return journey, resulting in a triple-header.

The current operating timetable (ARTC, issued 7 May 2017) has the train operating in a predictable freight pattern of departing the capital city in the evening and arriving in the other capital city in the very early morning, about 30-36 hours after departure. The shunt at Barnawartha is timetabled for about an hour around midnight. For those who wish to see the train (in daylight), the timetable favours those between Goulburn and Newcastle for trains travelling both north and south. Each north-bound train turns around within 24 hours to head back south to Melbourne.

The Equipment and Modelling the Train (in HO scale)

SCT Locomotives: This fleet of 15 AC-traction locomotives were built by EDI/Downer Rail in 2007-2008 at Cardiff Workshops in NSW. They are designated as model GT46C-ACe and are capable of hauling 1500 tonnes on 1 in 40 grades. They primarily run as back-to-back pairs on east coast services.

Both Auscision and Railmotor Models do exceptional HO scale models of these locomotives.

PQKY: A fleet of 25 was built at Meishan China in 2014 and three of the 60' container wagons (7006, 7010, 7012) are dedicated to east coast operations, running immediately behind the locomotives. On the southbound journey the fuel container is adjacent to the locomotives. Regularly, the non-fuel container spot on the wagon is filled by a blue painted Cronos 40' container, although at times various SCT containers have been placed on the PQKY wagons.

Currently no model of a PQKY is available, however an Auscision CQBY wagon could be painted red and would be a close substitute; alternatively, an Auscision SCT-painted PQFY could fill in. An AWM SZ Cronos tank container could be used as a near-enough fuel container, although the addition of the in-line fuelling components will make it look more authentic.

The blue Cronos 40' container is due to be released by Auscision in late 2017 and Auscision have also released 40' SCT containers.

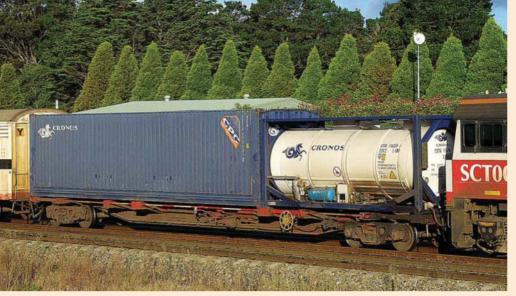


▲ Well-lit by the afternoon sun at Mittagong on 9 May 2017, this image of SCT014 highlights the weathering patterns seen on these white, red and black locomotives.

▼ This image of SCT003 at Bargo on 11 May 2017 shows distinctive stains on the fuel tank and a grimy 'bow wave' on the bottom of the cab.



SCT Timetable					
	Northbound	7MB9	2MB9	3MB9	4MB9
		Saturday	Monday	Tuesday	Wednesday
DEP	Laverton	2000 Sa	1815 Mo	1815 Tu	1815 We
ARR	Barnawartha	0016 Su	2231 Mo	2233 Tu	2232 We
DEP	Barnawartha	0130 Su	2322 Mo	2323 Tu	2325 We
DEP	Goulburn	0846 Su	0553 Tu	0554 We	0553 Th
DEP	Chullora	1144 Su	0940 Tu	0940 We	0940 Th
DEP	Broadmeadow	1456 Su	1307 Tu	1307 We	1307 Th
ARR	Bromelton	0302 Mo	0328 We	0328 Th	0328 Fr
		ueve in			
	Southbound	2BM9	4BM9	5BM9	7BM9
		Monday	Wednesday	Thursday	Saturday
DEP	Bromelton	1930 Mo	1925 We	1930 Th	0435 Sa
DEP	Broadmeadow	0821 Tu	0821 Th	0821 Fr	1801 Sa
DEP	Chullora	1206 Tu	1206 Th	1206 Fr	2143 Sa
DEP	Goulburn	1539 Tu	1542 Th	1541 Fr	0119 Su
ARR	Barnawartha	0020 We	2318 Th	2203 Fr	0732 Su
DEP	Barnawartha	0120 We	0018 Fr	2310 Fr	0835 Su
ARR	Laverton	0525 We	0453 Fr	0325 Sa	1235 Su

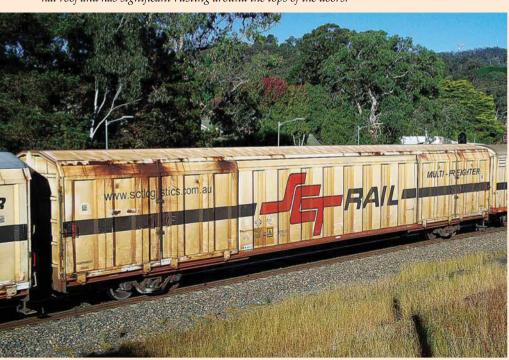


▲ Container flat PQKY7010, loaded with fuel tank CXTU116205 and a commonly-seen Cronos blue 40' container, head a south-bound 3BM9 service (a postponed 2BM9, due to Easter Monday) on 19 April 2017 at Mittagong NSW.



▲ Container flat PQKY7010, with fuel tank CXTU116205, leads a north-bound 3MB9 at Bargo on 10 May 2017. The white SCT container (SCT40204) was a rare sight, this 'slot' usually features a standard blue Cronos container.

▼ Van PBGY0150 heading north at Mittagong on 21 May 2017. This vehicle still has the original roof and has significant rusting around the tops of the doors.



PBGY: Built between 2006 and 2009, by both QR Redbank and Gemco in Perth, these 162 vans form a major part of the east coast operation (along with the ABSY vans). These vans have doors at the far ends, with some showing significant rust staining around the tops of the doors. In 2016 PBGYs started having the roof painted either grey or black, which was likely maintenance-related.

Railmotor Models has produced a model of the PBGY with the original white roof.

ABSY: Despite being built in the 1970s for the Commonwealth Railways, SCT operate more than 120 ABSY vans, which were built as VFX and later coded ABFX. The ABSY vans have upgraded 70t Ride Control bogies fitted which allow heavier axle loads when compared to the original 50t bogies. Most ABSY vans have a resheeted corrugated roof, although a handful remain in service with the original roof. Auscision has produced a model of the ABSY van in SCT livery.

PBSY: A small fleet was built in 2016 in Meishan China, with the 29 vans arriving in Australia around the time of the start-up of the east coast operation. The PBSY vans look similar to the PBGY, with the main exception of the doors being centrally mounted and opening to the left. At the time of start-up, the noticeably cleaner (newer) PBSY wagons stood out amongst the PBGY and ABSY vans, which had a good covering of desert dust.

There are no current r-t-r models of these vehicles.

PQQY: Built in batches in 2014 and 2016 at Meishan China, these 17 articulated five-pack container wagons are the primary means for moving containers on the east coast service. They are 77.67m in length and are optimised to carry five SCTR 48'+ refrigerated containers. The PQQY wagons primarily carry SCTR containers, although general/dry containers are also moved from time to time.

No models of PQQY wagons are currently available r-t-r.

SCTR: All SCT refrigerated containers are coded SCTR, with number series in blocks of 100. The initial containers starting at 001 were 40'+ refrigerated items, as are the current 100 series containers. The 200 and 300/400 series containers are 48+ with some of the newer containers named after SCT employees.

Auscision is producing a 46'6 version which will closely represent the 200 and 300/400 series container. The Auscision containers are due in late 2017.

SCTDS: Although not common in large quantities on the east coast, the dry 48' containers do make an appearance on the PQQY wagons. Numbered 4801-4866, Auscision has announced a 2017 release of these containers.

PQDY: These 80' container wagons are former FCW/VQDW wagons introduced by the Victorian Railways. The original Aligned bogies have been replaced with 70t Ride Control bogies; SCT currently operates a fleet of ten. The normal load-

ing for these is two SCTR 40'+ refrigerated containers, although PQDY56 has been used to carry transformers on 40' flat racks.

SDS Models have produced an excellent 80' NQJW which could be used as a reasonable fill-in. We can only hope that they will produce a VQDW in the near future.

PQIY: These wagons are essentially a modern build of the PQDY wagon, with 40 being built by Gemco Perth around 2009.

There is currently no suitable r-t-r model available.

PWWY: 40 well wagons were manufactured by Bradken Mittagong in 2008 and these are normally used for double stacking west of Adelaide and Parkes, although they have made rare appearances on the east coast. Auscision has announced a model of the PWWY for 2017-2018. A small fleet of twelve PWXY well wagons built in Meishan China in 2015 are very similar to the PWWY wagons, though no r-t-r model is available of these wagons.

Typical Consists

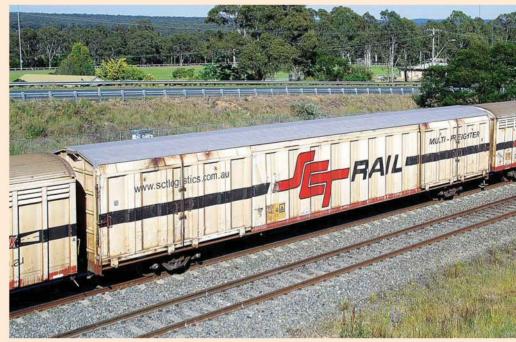
Table 1 on the following page shows the consist of a northbound service (7MB9), recorded on 20 May 2017 at Mittagong.

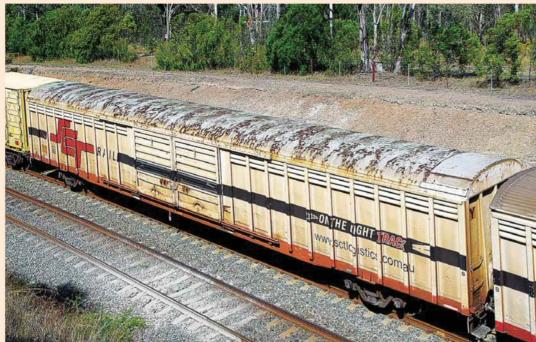
Table 2 on the following page shows the consist of a southbound service (3BM9) recorded on 18 April 2017 at Mittagong.



▶ PBGY0097 at Bargo on 22 January 2017, showing the dark grey/black roof now becoming common on this type of vehicle, attached to one of the last Aurizon services to haul SCT traffic. For modellers who want to add that little bit of extra detailing to their trackwork, a good example of one of the Main South's infamous 'mud-holes' can be seen adjacent to the wagon on the up line.

▼ PBGY0144, with a light grey roof, heads north on an Aurizon service at Bargo on 22 November 2016.





► Hauled as part of an Aurizon service, ABSY4472 displays a badly rusted, but original, roof skin at Bargo on 22 January 2017.



▲ ABSY2819 displays a new corrugated metal roof at Bargo on 22 January 2017, photographed as part of the same Aurizon train as ABSY4472.

▼ Only a few months old and still very clean, PBSY0028 heads north at Bargo on 11 May 2017.



▼ SCTR390 loaded on a PQQY five-pack container wagon at Bargo on 11 May 2017. The slim fuel tank under the refrigeration unit allows the container to fit inside a 48' well wagon.

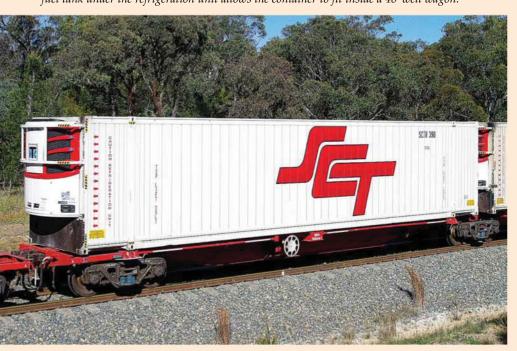


Table 1 Class Number Origin Destination SCT 2 Melb Bris SCT 8 Melb Bris **PQKY** 7012 Melb Bris **PBGY** 115 Melb Bris **PBGY** 148 Melb Bris **PQDY** 56 Bris Barna **ABSY** 2657 Bris Barna **PBGY** 43 Barna Bris **PBGY** 153 Barna Bris **PBGY** 59 Barna Bris **PBGY** 126 Barna Bris **ABSY** 3089 Barna Bris **PBGY** Bris 38 Barna **ABSY** 2477 Barna Bris 50017 **PQQY** Melb Bris **PQQY** 50008 Bris Melb **PQQY** 50010 Melb Bris 4437 **ABSY** Melb Bris **ABSY** Bris 3109 Melb **PBGY** 128 Melb Bris **PBGY** 156 Melb Bris **ABSY** 3088 Melb Bris **ABSY** Bris 2658 Melb **PBGY** Melb Bris 147 **ABSY** 2488 Melb Bris **PBSY** Bris 6 Melb **ABSY** 4458 Melb Bris **PBGY** 35 Melb Bris **ABSY** 2449 Melb Bris **PBGY** 97 Melb Bris **ABSY** 2443 Melb Bris **PBSY** Melb Bris 9 **ABSY** Melb Bris 2669 **PBGY** 135 Melb Bris **PBGY** 113 Melb Bris **PBGY** 44 Bris Melb **PBGY** 150 Melb Bris ABSY 4476 Melb Bris **ABSY** 2798 Melb Bris **PBGY** 20 Melb Bris **PBGY** 82 Melb Bris Train mass: 2800t. Length: 1124m.



Five-pack PQQY50008 south-bound at Mittagong on 19 April 2017, loaded with five SCTR 48'+ refrigerated containers. The first four containers are in the 300 series and the fifth container with the smaller logo is in the 200 series.

Table 2				
Class	Number	Origin	Destination	
SCT	9	Bris	Melb	
SCT	6	Bris	Melb	
PQKY	7010	Bris	Melb	
ABSY	4487	Bris	Perth	
ABSY	4431	Bris	Perth	
PBSY	26	Bris	Perth	
PBGY	64	Bris	Adel	
PBGY	37	Bris	Adel	
PBGY	57	Bris	Adel	
PQQY	50008	Bris	Melb	
PQQY	50012	Bris	Melb	
PQDY	39	Bris	Melb	
PQDY	17	Bris	Melb	
ABSY	4485	Bris	Barna	
PBGY	130	Bris	Barna	
PBGY	107	Bris	Barna	
ABSY	2506	Bris	Barna	
ABSY	4453	Bris	Barna	
ABSY	4488	Bris	Barna	
ABSY	4458	Bris	Barna	
PBGY	44	Bris	Barna	
ABSY	4410	Bris	Barna	
PBGY	132	Bris	Barna	
PBGY	137	Bris	Barna	
PBGY	127	Bris	Barna	
Train mass: 950t. Length: 695m.				



▲ PQDY56 conveys a load of transformers from Wodonga to Brisbane at Mittagong on 21 May 2017.

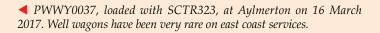
▼ PQDY39 with an SCTR 100 series 40'+ refrigerated container and two 20' Cronos containers at Mittagong on 9 May 2017. The Cronos containers were not common loading at the time the photo was taken.







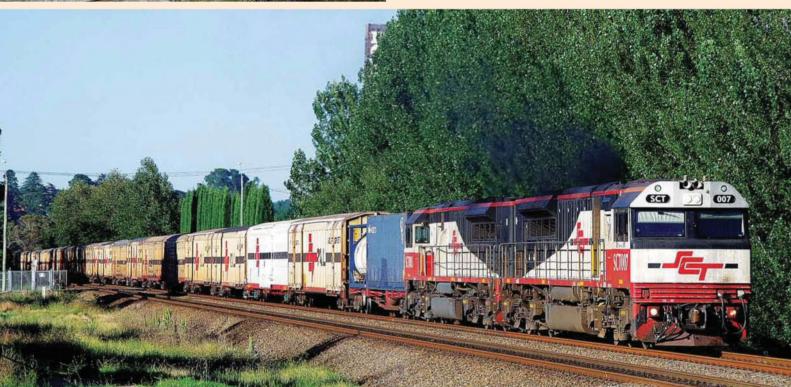
▲ PQIY0037 with a pair of early SCTR 100 series containers, displaying heavily faded logos, at Maldon on 10 May 2017.

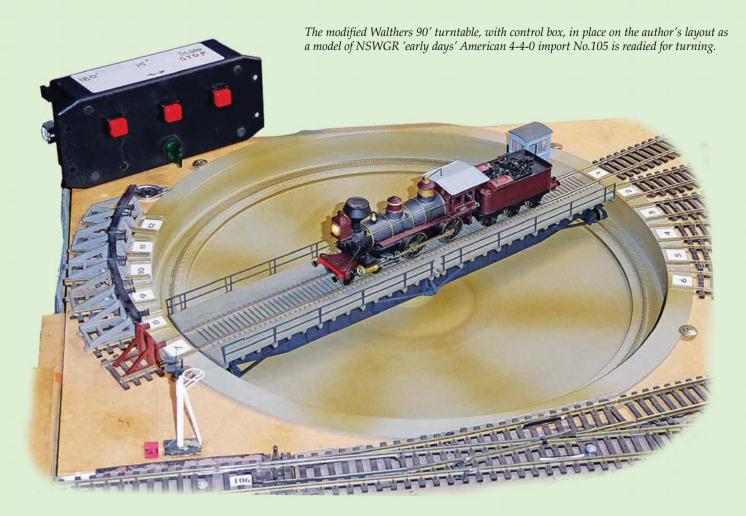




◄ Container SCTDS4845 brings up the rear of a southbound BM9 service at Aylmerton on 18 May 2017.

▼ SCT locomotives 007 and 005 lead 4MB9 through Bowral on 23 February 2017. The new, very clean, PBSY van (third vehicle in the train) contrasts with the more heavily weathered older company vehicles.





Arduino Controller for a Turntable

Jack Child adapts a stepper motor and Arduino controller to drive a turntable. Photos by the author.

Parts Required

- Arduino UNO ATMEGA 328P (or clone). A board with solder connections at i/o points is preferable.
- DC Stepper Motor 28BYJ-48 + ULN2003 Driver Module (internet < \$5.00)
- SPST toggle switch
- Three push-button switches (N.O.)
- 9V DC plug pack (6 9V regulated works well)
- Utility Box (HB6014 Jaycar works well)
- 1m of 6-wire cable
- Misc jumpers and headers
- Bracket constructed from 60mm x 90mm x 1.5mm aluminium
- 2mm x 135mm drive shaft
- Silicone or Neoprene tubing 1.8mm (inside diameter) x 25mm
- A copy of the source code used for this controller is available on request from the author via email: jack. child@starbytes.com.au

The flood of small 5V 'stepper' motors on internet shopping sites, along with the inexpensive Arduino computer boards, has opened many possibilities for model railway applications. With Arduino-clone boards selling for as little as \$5.00 and the stepper motors for \$2.00 (with driver) one can afford to use them for all kinds of projects and experiments.

The 28BYJ-48 stepper motor is produced in the millions for vent controls in air conditioners and other industrial applications. With a 64:1 reduction gear it supplies sufficient torque to operate scale model points and with the gears removed works well as a turntable drive. I converted a ready-to-place, off-the-shelf Walthers HO scale 90' turntable, but the principles will work just as well with any turntable, be it purchased or scratchbuilt.

Adapting a Stepper Motor to a Walthers 90' Turntable

The Walthers 90' motorised turntable can easily be converted to stepper motor operation with Arduino controlled indexing. This can probably be done more easily than implementing an indexing scheme for the DC motor supplied with the turntable.

I have removed the DC motor, first reduction gear and drive shaft. By installing a longer drive shaft and mounting an Arduino-driven 28BYJ-48 stepper motor at the end of the shaft I now have a smooth-operating, quiet, and programmable indexed drive system. One switch controls direction, while three push buttons command the table to move 15°, 180°, or in single increments of 12.8arcmin (all are configurable through the Arduino software). The single-increment mode is used to reset the indexing as required, or to stop the turntable when it is in motion.

I've had reasonable success with the 90' Walthers turntable. With the several turntables I've already converted, I've found that careful initial construction is extremely important. It is essential that the worm and main worm gear operate freely without binding. If the gears or table bind then that problem must be addressed before proceeding, as any binding will invalidate the indexing. The worm gear/worm meshing can be adjusted by rotating the main bearing in the middle of the table. It is slightly off centre so that by rotating it the backlash in the worm can be adjusted. Also, ensure that the rotating section is securely



A turntable with the original motor, gears and driveshaft removed and the new 135mm driveshaft installed using the existing bearings.



Removing the unnecessary reduction gearbox from the stepper motor. The front plate of the motor is opened by bending the tabs out, then remove the three reduction gears and the output shaft from the motor.



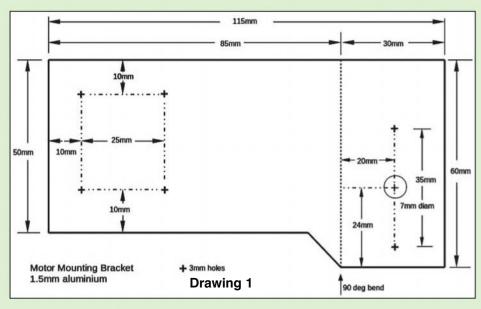
retained by the brass rings and does not wobble.

If you are beginning with a new kit then set aside the DC motor, motor worm and gear, driveshaft and the motor mounting brackets. If modifying an already-built turntable, then remove the motor, brackets, driveshaft and motor worm and gear [Photo 1].

Press the worm from the DC motor onto the new driveshaft and insert the shaft from the left into the right-hand bracket. Install one retainer ring on the shaft inside the left-hand bracket and the other on the outside of the left-hand bracket. The worm should be centred directly between the two mounting posts,

above and below the worm gear as seen in Photo 1. At this point the shaft should turn freely.

Next we need to remove the gears from the stepper motor as it is much too slow for the turntable, which already has a huge reduction due to the large gear. Remove the front plate of the motor by bending the tabs out (or remove with your Dremel). Remove the three reduction gears and the output shaft from the motor. The red lines on the front plate in Photo 2 mark the location of the motor shaft. Carefully drill this hole out to about 5.5mm. Slide the inner bearing plate out of the motor case and remove the three gear shafts, then replace the inner plate.



■ After the inner bearing plate is slid out of the motor case and the three superfluous gear shafts removed, the inner plate is replaced. The modified outer plate is reinstalled in the motor case, but turned over so the original inside of the plate is now the outside, then the plate is soldered in place. A 25mm piece of silicone tubing is secured over the splined shaft inside the motor with Loctite.



RUNNING REPAIRS

Fix that Broken Detail

Stewart Mayne repairs broken brake hoses on the Auscision B class locomotive bogies. Photos by the author.

While doing a Lima B class repowering project using a pair of Auscision B class bogies,



The repaired brake hose is on the left hand side of this bogie sideframe.



The rear of the repaired bogie side frame. The modified pipe is on the right hand side.

the pipe work on the outer axles kept snapping off. After a couple of repairs I decided that there had to be a better way. This is what I came up with.

I drilled a small hole in the top of the brake shoe hanger, where the original moulded pipe had snapped off from parallel to the bogie sideframe. Next, I found a small length of black DCC decoder wire that looked reasonably close to the original moulded pipe in size. I glued one end of the wire to the lower brake hanger using a tiny bit of super glue on a pin. Next I threaded the wire through the hole I had just drilled, adjusting the curve until it matched the original ones. Secure with another tiny bit of superglue on a pin and there you are; a flexible hose that should never break off again.

Make a Painting Handle

David Foulkes constructs a useful tool to assist when painting wagons.

Photos by the author.

ost four-wheel wagons running on Australian railways were painted the same colour all over and can represent a challenge when it comes to painting them by air-brush. Where to hold it while the paint is applied and how to apply the paint in the area where the model was held while the first Now flip the outer plate over and re-install in the motor case. Use solder to secure the plate to the motor body. Apply a bit of Loctite to the end of a 25mm piece of the silicone tubing and slide it on to the splined shaft inside the motor [Photo 3].

Next, fabricate a mounting plate for the motor to the measurements in the drawing, bending the plate at a 90° angle (away from viewer) along the dotted line [Drawing 1].

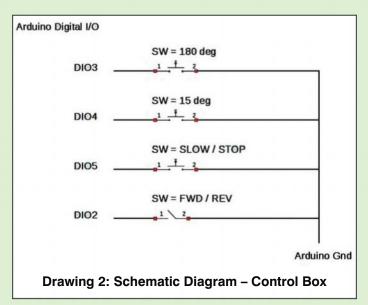
Mount the bracket on the turntable gear housing so that the left side of the bracket is flush with the plastic housing and the distance between the edge of the housing and the inner side of the motor bracket is 32.0mm [Photo 4].

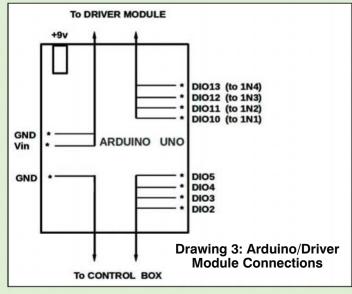
Slide the silicone tubing onto the brass shaft and attach the motor to the bracket. Attach the driver module to the gear housing with silicone and it's finished!

The control box is very straightforward. I used the HB6014 from Jaycar for mine. The six wires in the grey cable connect to the stepper motor controller. Four of the wires connect the Arduino digital I/O pins 10-13 (configured as output) to the stepper driver and two provide power from the Arduino to the stepper driver. The push-button switches have been arranged left-to-right: 180°, 15° and slow/stop [Drawing 2]. These are configurable, although the 15° movement is likely the only one which might require change. The toggle switch is used to control the direction of turntable movement. The four switches are connected to Arduino digital I/O pins 2-5 (configured as *input-pullup*). The Arduino has been mounted on the outside to facilitate cable installation.



The stepper motor is secured to the bottom of the turntable using the bracket constructed to the plan in Drawing 1. Now all that remains it to install it on the layout, wire it up and program it.





The author's painting handle, simply constructed from a length of timber, some 0.010' brass sheet and a couple of pinpoint axles. The overspray of VR wagon red shows evidence of use

PAINTSHOPS

bit was painted? Shades of Brer Rabbit and the Tar Baby! I've seen handles that are used to paint bogie vehicles which attach using bogie fixing screws and also handles that attach using the screws used to retain the couplers, but many Australian models have a gearbox for the handbrake that is installed directly under the coupler draft gear, which makes that method somewhat impractical. I was wondering how to overcome these drawbacks when I hit upon the idea of grasping the model by the axle bearings.

My handle is illustrated in Photo 1 and was constructed from a short length of wood, a piece of 0.010" brass, two 25mm pinpoint axles and a short wood screw. Fortunately for me, I have loads of 25mm brass pinpoint axles

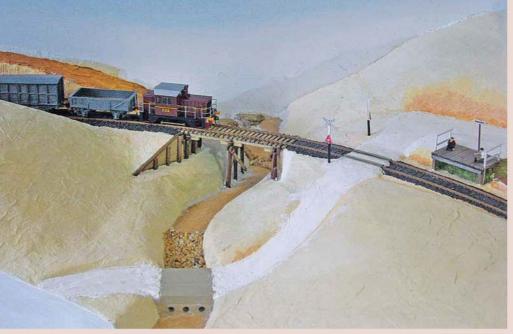
lying around, but very little precision is required for this application; they could easily be made from lengths of brass rod simply filed to a point at each end. Take care to ensure that the fixing screw is located centrally between the two axles and then the flexibility of the brass will allow the handle to adjust for any wheelbase of a typical four-wheeled vehicle.

To use the handle, the wheelsets are removed from the model and then the W irons are flexed to allow the axles of the handle to be installed in their place. Having painted the model, I just stand the handle up in a 25mm diameter hole bored in a length of 90mm x 45mm pine, as shown in Photo 2, where it can sit until the paint is dry. Too easy!



Two painting handles in use, ready for the wagons to be sprayed. Mounting them in holes drilled in a piece of scrap wood makes the entire process of painting and drying a 'hands off' process.

already!



The complete timber trestle bridge in place on the layout with scenery construction in progress. It may only be a small, simple timber bridge, but it can make a good focal point for an attractive scene on any layout. Photo by the author.

Materials and Tools Required

Model Timber Sections

There are several options that could be considered:

- 1. HO scale timber sections, e.g. Northeastern or Kappler scale lumber cut from North American spruce. This is produced in various scale sizes for building model railway structures, etc. and is the most suitable and easiest material to use. It is light coloured with an absorbing surface and can be stained to give a natural weathered appearance.
- 2. Small timber sections from Spain(?) produced for building model ships. These are a dark coloured, dense, harder wood which does not absorb stain well. I used some of these because my nearest local supplier of Northeastern scale lumber did not carry the full range of sizes I needed. Sections of 4mm diameter were used for 14" piles and sanded down in size for 12" piles.
- 3. Standard dowel rods are available from hardware stores for 14" piles use 4mm size. Clover House Pole Packs of HO scale 14" piles (ten pieces, 305 mm long) and ³/₁₆" and ¹/₈" diameter dowel rods, equivalent to HO scale 18" and 12" piles respectively, may be available from some mail order suppliers.
- Balsa wood is generally too soft and lacks sufficient strength in small sections.

Other Materials Bolts

- trestles: Grandt Line 5099 3" nut, 4½" flat washer (100 per packet).
- transoms: Grandt Line 5066 11/4" nut,
 3" iron washer (175 per packet).

Steel strapping for pile tops and wing wall capping: 0.8mm or 1mm wide styrene strip 0.005" thick.

Track spikes: Shinohara HOn3 spikes or another brand, e.g. Peco, as preferred/available.

For staining the timber: Raven oil - black or other dark colour as appropriate (obtainable from bootmakers/shoe repairers).

Methylated spirits.

PVA glue: (Aquadhere or similar craft glue).

Paint: Tamiya Flat Earth (XF52) acrylic or Rust (e.g. Polly S 500068) as preferred.

Self-adhesive clear tape: both single-and double-sided are useful.

Note: Northeastern scale lumber, Grandt Line HO scale nuts and bolts, as well as other special items, can be obtained from various mail order suppliers, such as Casula Hobbies and Model Railroad Craftsman, both of which advertise in AMRM.

Tools

- Razor saw.
- 90° mitre box or NWSL *The Chopper* 49-4.
- Steel scriber.
- Tweezers.
- Small set square.
- Steel rule/straight edge (marked in millimetres).
- HO scale rule.
- Mini drill.
- 0.6mm or smaller drill bits.
- Craft knife.
- Small files.
- Sandpaper or equivalent in various fine grades.
- NWSL *The True Sander 57-4* (desirable but not essential).



A Bridge For Your Model Railway: 2 Building a NSW Timber Trestle Bridge: Part A

Michael Gourlay scratch-builds a NSWGR timber trestle bridge. Photos by James McInerney, unless otherwise credited.

Preparing to Build the Model

In the first article of this series (AMRM Issue 281, April 2010, pp30-37) I outlined various aspects and types of railway bridges, using examples mainly from the NSW railway system. This was followed by general discussion about choosing a bridge for your model railway taking my own layout, *The Camjong Line*, as an example. In this second series of articles, I describe how to build a simple timber trestle bridge.

The Model Site

The Camjong Line is built in sections to allow it to be dismantled and moved to another location if that is ever required. In the last corner section before the track enters the fiddle yard the line follows a 90°, 2' (610mm) radius curve on a rising 1 in 60 grade, emerging from a cutting on the left to cross a creek, passing a small platform similar to those on the Kurrajong line, before disappearing into another cutting. The countryside is generally forested, or will be when I find time to work on it.

The only prototype from the Camden, Kurrajong lines etc., for crossing the creek in this type of situation, is an embankment with a concrete culvert, as found on the Kurrajong line. However, I did not think this would be very interesting, since the embankment would block the view up the creek. The latter would have to be modelled up to the backboard anyway, because it could be seen by viewers from their 'helicopter' vantage point in front of the layout. The concrete culvert was also not a very challenging project.

So, with a bit of geographical licence, I decided to build a timber, two-span transom-top trestle bridge instead, potentially transforming the location into a little bit of the Dorrigo line. The type of bridge

modelled represents the simpler type of timber trestle bridge constructed on lightly trafficked 'pioneer' lines in NSW in the early 20th century. A plan is readily available from Data Sheets for such a structure with 14' (4.3m) and 10'6" (3.2m) openings (spans). The larger size was selected as appropriate for my layout site. For the two-span bridge there are three timber trestle piers. The two at the sides are about 8' (2.4m) high with no diagonal bracing and there is a central pier about 15' (4.6m) high, with bracing.

Outline of Building Process

The model is built from HO scale timber sections and scribed timber sheet with glued joints and plastic bolt heads and strapping.

The model bridge can be constructed in three ways:

- the bridge can be built as a complete unit on a small sub-base, placed on the baseboard in the correct position and the track laid over it;
- the bridge can be built into the model in a similar way to how it would have been built on the prototype and the track laid over it;
- the bridge can be built as a free-standing structure and inserted under the already-laid track.

I chose the second option.

The track formation had been built up on a flat-topped baseboard using pine blocks and particle board with a gap left for the bridge. The creek bed was formed in polystyrene foam. Cork underlay was laid along the location of the track bed [Photo 2].

The model bridge was built in the creek bed with the top of the girders level with the top of the underlay. Flexible track was laid across the completed track bed and over the bridge, the sleepers having been removed from the section of track crossing the bridge. The sleepers were replaced by the larger timber bridge transoms and the rails secured to them using model spikes. The timber abutments were built after the track was laid



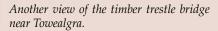
Another shot of the completed two-span timber trestle bridge in place on the layout, before much progress was made on the scenery, with Es Davies' 20 class steam locomotive and CCA composite passenger car crossing.

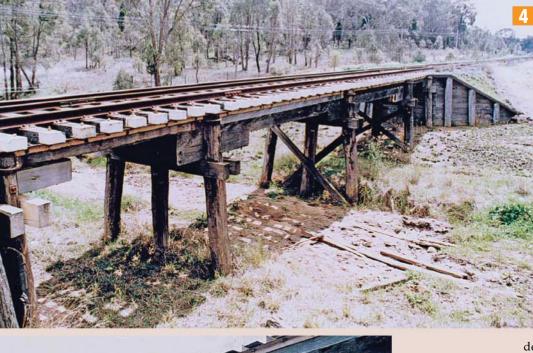


The track formation ready for the bridge to be constructed in the gap cut out of the baseboard. A start has been made on gluing in the foam pieces that will later be carved as a base for the scenery. Photo by the author.

A four-span transom-top timber trestle bridge, photographed by James McInerney near Towealgra, NSW, between Merrygoen and Dunedoo, on 13 September 1985. This bridge has 14ft single girder spans at the ends and two double-girder 24' openings in the middle.









Detail of the piers, wing walls and girders of the bridge near Towealgra.



Detail of a pier and the underside bridge near Towealgra.

of the girders and transoms of the

because the downstream river banks had not been completed when the track was laid.

Since this may be the first bridge many modellers are building, I will describe how to build a structure for a straight level track (Part B) and then indicate how to deal with a track on a grade and/or a curve (Part C).

Description of Structure

To build this bridge you will need a copy of Lineside Data Sheet P3 - NSWR *Timber openings* 14'0" *and* 10'6" – *c*1902 produced by Data Sheets and obtainable directly from the publisher, as well as from hobby shops and mail order suppliers specialising in Australian prototype items. A typical structure of this type is shown in Photos 3 to 6.

Data Sheet P3 is drawn to a scale of 1:87.1 or 3.5mm to 1' (HO scale). As it is dimensioned in prototype feet (') and inches ("), these are used in this article. The plan includes not only the two options for span length, but also two options for the abutments - full height wing walls or dwarf wing walls. Essentially this bridge is formed from three basic units:

- Pile bents (piers) formed from three piles joined together at their tops by two horizontal capwales – if the piers are over 8'6" high, diagonal braces are fitted.
- Superstructure formed from three girders with transoms on top - the ends of the girders are supported by corbels which rest on the capwales of the pile bents.
- Wing walls formed from capped timber sheeting held in place by piles.

The piles forming the pile bents are notched (cut out) to support the capwales and the latter are notched to locate the corbels. The whole structure is bolted together and steel straps are used around the tops of the piles and to join the capping on the wing walls.

The drawing includes a list of timber components giving prototype size and the quantity required of each item for each unit. The number of bolts and straps required must be counted from the drawIt should be noted that the girders for the end spans are longer than those for the intermediate spans on the Data Sheet drawing (P3), though this is not true of every timber bridge.

Preparations for Building the Model

Preliminary

Prepare a customised, simplified plan for your bridge:

- 1. Specify the number of spans, their length (14' or 10'6"), the type of wing walls and the height of the track above the ground or waterway.
- 2. Draw up a full-size, simplified plan of your bridge to show what it will look like and to check that it will fit in the available space, etc. Figure 1 shows a simplified plan for a timber trestle bridge with five 14' spans, 12' high embankment and full height wing walls. To simplify this task photocopy portions of the Data Sheet plan, such as the wing walls and trestles, as many times as necessary, cut these up and stick them on the simplified plan. This plan need not be pretty, but it should be accurate with respect to sizes and locations of the basic units of the structure.
- 3. Protect both the original Data Sheet plan and your simplified plan with sheets of plastic film or laminate them, to avoid damaging them, so that they can be used again.

Estimating Timber Quantities

Northeastern HO scale lumber is available in 11" (280 mm) lengths in packets containing several pieces. Kappler HO scale lumber is supplied in 12" (305 mm) lengths. The number of pieces in each packet varies with their size, but for the sizes required there are seven to ten pieces per packet.

The following sizes are needed:

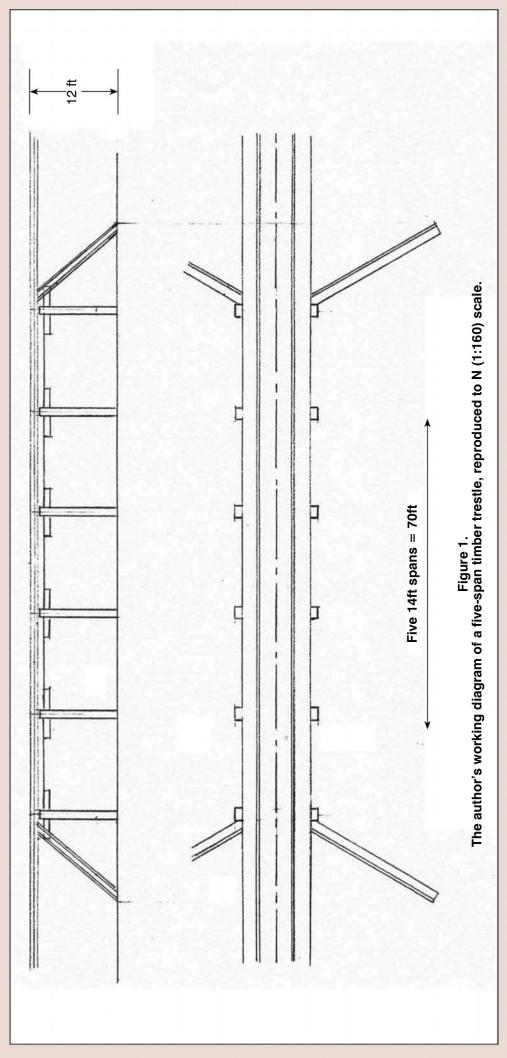
- 12" x 12" (girders and corbels).
- 12" x 6" (capwales and capping).
- 10" x 6" (transoms and braces correct size 10" x 5" is not available commercially).
- 9" scribed timber sheeting for wing walls.

For piles use 4mm wooden dowel rods or equivalent:

- 14" (4mm) diameter (trestle piles).
- 12" (3.5mm) diameter (wing wall piles).

Quantities required will depend upon the number of spans modelled and the height of the bridge above the waterway or flood plain it crosses. Buy more than is needed to allow for wastage, etc. Surplus material will always be useful some time.

To be continued...



Lineside at Liverpool 2016



▼ An unusual prototype in any scale, let alone N, the New South Wales N Scale Group's 'South Creek' layout, based on St Mary's in Sydney's outer western suburbs, sees an AD60 class Garratt hauling a coal train through the station. Beyer-Garratts did not haul traffic on the Main Western line over the Blue Mountains for very long, as the engine brakes were found to be inadequate, so this scene captures an all but forgotten 1950s era moment.

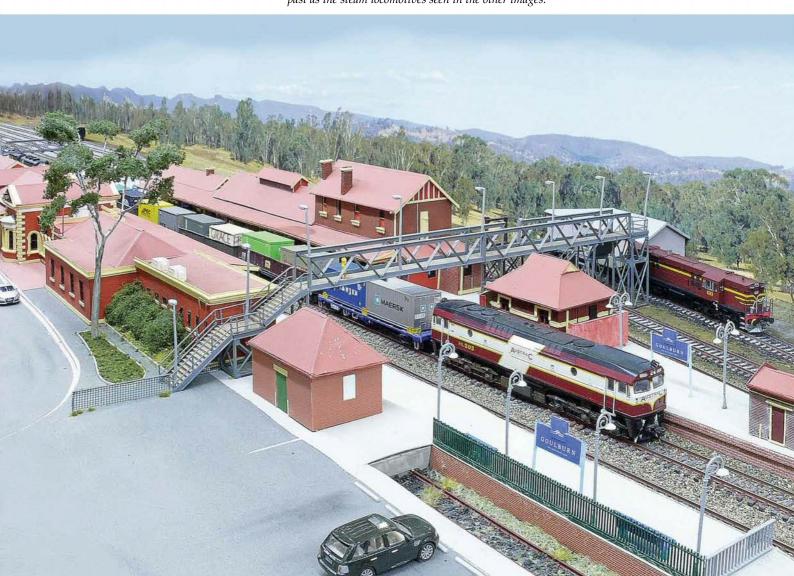


AMRM's editor, **James McInerney**, managed to spend a few moments 'lineside' at the 2016 AMRA (NSW) Liverpool exhibition and grabbed a few shots of scenes that particularly caught his eye. With the 2017 Liverpool exhibition coming up on the October long weekend (30 September-2 October), we can now anticipate further opportunities to view similarly attractive scenes on this year's crop of exhibits.

Steam era scenes on Geoff Small's 'Oddwalls' HO scale layout. Geoff has made a specialty of exhibiting very nicely detailed small layouts and 'Oddwalls' is no exception, channelling a mainline aspect that could be any number of locations in NSW. On the left we see a DJH kit-built 53 class locomotive hauling a rake of Way & Works vehicles in a scene reminiscent of the Main West in the 1950s, while the right-hand view shows a 50 class double heading a 35 class on a goods train, evoking the Short North in the late 1960s.



▼ Set in a more recent era than the other two layouts depicted here, the Guildford Model Railway Group's HO scale rendition of Goulburn station on the NSW Main South line plays host to a wide variety of trains from many eras. Here we see an early 21st century post-privatisation scene with Austrac-liveried HL203, previously government-owned 42203, heading south on a mixed load of containers and rail tank cars. Scenes such as this are now as much a thing of the past as the steam locomotives seen in the other images.



Reviews

NSWGR High Elliptical Roof EHO Brake Van in HO scale by SDS Models, PO Box 804, Winston Hills 2153. Website: sdsmodels. com.au. Price: \$130.00.

William Thow's first essay at a bogie brake van, in 1890, was the HA, a 46'0" composite vehicle which provided lavatory accommodation for passengers travelling elsewhere in a non-lavatoryequipped train. Most of the van was devoted to a guard's compartment and a luggage compartment, with several side windows to provide illumination within. From 1906, the lavatory and passenger accommodation were removed, and the vans were recoded to HO. Six further vans, with three full passenger compartments and coded HS, were added to the fleet in 1891, and all except HS432 lost their passenger accommodation from 1906. These vans were in the Thow mould, with Mansard roof, 2AA bogies, LNWRstyle panelling and drop lights.

When the use of lavatoryequipped carriages became widespread from the early 20th century, a new design of brake van was instituted, more functional in that it only provided for the guard and for luggage. Built on a 52'4" underframe, like the BX Express Lavatory car, the new EHO had a body length of 52'9", body width of 8'6", width over guard's lookouts of 9'6", and a height to the top of the Mansard roof of 12'11/2". It rode on 5'9" wheelbase 2AA bogies spaced at 39'6" centres, with spoked 3'01/2" wheels. A central compartment was provided for the guard, and this was flanked on each end by two large luggage compartments, each with a capacity of 6t, one of which also contained dog and coffin compartments against the end wall. Access was granted via a pair of outward-swinging doors in the centre of each luggage compartment.

As built, the EHO van was fully panelled in the LNWR style and painted in Thow's favoured purplebrown hue. The first entered service in 1908, a batch of thirteen Mansard-roofed vehicles, followed by another seven in 1910. When thirteen more were built in 1910, the roof profile was changed to the Low Elliptical type, almost flat across the top portion. This apparently did not find favour with Ernest Lucy, the new CME in 1911, so the next two batches, each of ten vehi-



Specially lined for use on the non-airconditioned 'South Coast Daylight' circa 1955, EH0626 was the only extended letterboard EH0 to receive full post-1954 double lining.

cles, were built with a High Elliptical profile, similar to the contemporary LFX, CX and BX cars, which raised the overall height to 12'41/2". A major aesthetic change followed in 1913, when ten vans were built with an Extended High Elliptical profile roof, 4" higher than before, the better to match the profile of the M- and T-series 72'6" cars then coming into service. The general appearance of the cars earned them the nicknames of 'elephant vans' and 'loaf of bread'. This series also marked the change to the longer wheelbase 2AD bogie (7'0").

The appearance of the 1913 series must have caused ruminations in the CME's mind, because the subsequent vans, while retaining the very high roof profile, had the sides raised by the provision of a narrow letter board, thus better matching the 72'6" cars. All these 'extended' roof EHOs had canopy roof ends, again to match the 72'6" stock. The twenty-four vehicles, built in three batches in 1914, 1921 and 1925, were the last of the type built, bringing the total to eightyeight EHO vans built over almost two decades. They became the standard mainline passenger brake van, a position they retained until the introduction of the larger MHO/ VHO types from 1925. Even then, they were very commonly used on

all manner of passenger, mail and mixed trains throughout the state until the end of loco-hauled trains.

Modifications were many: the LNWR-style panelling gave way to matchboarding, itself later replaced by Masonite or plywood, in most cases deleting the delicate cutunder (tumblehome) at the bottom of the sides. Gas lighting (fitted to all except the last two of the vans as built) was replaced by electric lighting, and permanent electric marker lights, three on each end, were fitted. A very few vans had their mushroom ventilators replaced by torpedo types. In the 1970s, many of the survivors had their outward-opening double doors relaced by single siding doors with one central window, and some vans also lost their standard guard's lookouts, replaced with prismatic lookouts. In the late 1960s, a few vans had improved accommodation for the guard, with a separate entrance vestibule which eliminated the perennial draughts of the original arrangement. Four were fitted with steam heating, but records indicate that the rest gained electric radiators from 1947, though this equipment appears to have fallen out of use by the 1970s.

In the 1970s, conversions to

other types multiplied, IHO, EHX, ETP, ATP, EPT and EDH, which are not relevant to the type of EHO modelled by SDS. However, four of that type were rebuilt to SKB luggage vans in 1975, which involved removing the guard's compartment and fitting single sliding doors to the luggage compartments. The vans so modified were 628, 645, 1985, and 1986, which gained new numbers 2551, 2552, 2554 and 2556 (2553 and 2555 were from an earlier design of EHO).

After Thow's departure, the standard colour for passenger stock (which included passenger brake vans) became Venetian or Tuscan red. Roof colour was navy dressing, a yellow ochre shade, which soon weathered to dull dark grey. The EHO vans received a single buff line along the top of the sides, and the guard's doors were lined out in buff, but otherwise they were unadorned. The code and number were applied to the guard's lookout in standard shaded letters and numerals (2" for letters and 3" for numerals) and the word 'GUARD' was applied to that worthy's entrance doors.

The single buff line at the top of the sides was often omitted in later days. EH0626, one of those modelled by SDS, was specially painted



Reproducing the appearance of the class in the post-WW2 period is EH0722 with tongue and groove siding, top buff line (and lined out guard's doors) and a weathered roof.

about 1955 with standard double buff lines along the sides for service in the scratch set which replaced the HUB set on the South Coast Daylight Express when its HUB set was re-allocated to the Central West Express. Indian red replaced Tuscan red about this period, and when Malthoid was used on roof repairs, it was painted with Aluminoid paint (silver), although the canvas-covered canopy ends retained the navy dressing finish. Again, both soon weathered to dull grey.

SDS have modelled the vehicles from Contracts 36/13 and 6/20 and Shop Order 2690, the twenty-four final vehicles, all of the Extended High Elliptical roof type with canopy ends. They are modelled in their post-World War 2 condition with matchboard siding or, in later cases, Masonite siding. See the SDS website for details of the various offerings, which cover the gamut of liveries and variations of



the last thirty years of operation of these EHO vans. The models are in ABS plastic, with POM bogies and details, as well as wire and etched details. All dimensions are accurate and the models roll freely. They are fitted with Kadee No.158 couplings. The tooling is exemplary, with sharp detail, all the small fittings are present and the decoration is first-class – the code and number

are clearly printed and easily decipherable, and the lining is fine and crisp. Colours are accurate and the fully lined EH0626, in particular, looks splendid.

There is little to criticise on these fine models: the only caveat I would have is the lack of a belt rail, which was a feature of these vans in their matchboarded condition, but which was omitted from those

clad in Masonite. This is particularly noticeable on EH0626, with its horizontal buff bands. No NSW railway of the post-World War 2 era can do without one or two ... or three. I look forward to SDS's promised fully panelled version, which will allow more accurate modelling of the pre-WW2 era.

Ian Dunn

Country Branch Lines Victoria Part 10-Western Region: Patchewollock, Yaapeet, Yanac, Bolangum a photographic profile compiled by Neville Gee. Published by Train Hobby Publications, LPO Box 5123, Pinewood 3149. Ph: 03 9499 9194. Price: \$42.00.

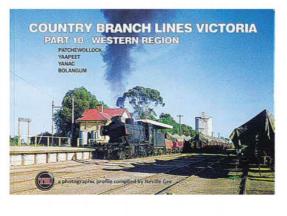
This book is yet another in this very useful series depicting VR branch lines, compiled by Neville Gee by coordinating images from various photographers over a time span of several decades. The book covers the transition period from steam to diesel and then the sad general decline of VR branch line operations on the four lines covered.

The four lines are the wheat country branches to Patchewollock, Yaapeet, Yanac and Bolangum in the far west of Victoria. Although primarily a pictorial book, each branch line has a prefaced brief history from build to current use, whether still open or now abandoned. Most of the system has now gone, but the Patchewollock branch as far as Hopetoun and the Yaapeet branch were converted to standard gauge in 1995. They are still open, carrying grain and, until recently, mineral sand, which was loaded at Hopetoun to be carried to Hamilton (Vic) for processing.

Brim, Patchewollock and Rupanyup, all featured in the book, have since had their silos painted with murals and are now part of the painted silos tourist experience of western Victoria.

The book depicts each line separately, following its rise and decline with photographs ranging through railmotors, enthusiast specials, lengthy goods trains to engines running with van attached (known as a 'Bona', from the code used in the days when the telegraph was the only means of long distance communication between stations).

Depicted on pages 19 and 20, north of Hopetoun, are views of Railmotor No.58 and diesel locomotive Y127 passing over track almost buried in sand. To reduce the amount of sand blown by the wind over these track sections, 'sand fences' were provided, the remains of which can be seen in the photo. Sand fences were basically corrugated iron fences, similar to suburban boundary fences, built beside the line to reduce the wind



speed and therefore drop the sand at the fence base and not on the track. The photographs show that they sort of worked, except in very dry conditions where their effect was minimal and the local fettlers still had to shovel the sand off the rail. A sand fence (and accompanying sand drifts) would make an excellent scenic feature on a layout, though one would have to be careful not to cover the tracks completely!

As one thumbs through the book it is difficult to pick out a particular photograph that stands out, as there are so many excellent and useful views that depict yards, station buildings and the like, all of which would be

of benefit to someone wishing to base a model on the area depicted.

Some that stood out to this reviewer include the photograph on page 39 of a K class steam locomotive-hauled weed spraying train in action (known as the Weedex) and on page 15, Railmotor No.58 being refuelled by a road tanker at Hopetoun. This refuelling procedure was then a regular routine, despite most enthusiasts assuming that refuelling from a road tanker is a more modern occurrence. I was also taken by the quite rare shot on page 23 depicting a short wheelbase U van with a corrugated iron roof.

My favourite photograph, however, is on page 17, taken from the top of the wheat silo, depicting Hopetoun station and yard showing the station building, yard layout, wheat silo, bulk wheat storage shed, goods shed and, across the road, the Shell oil depot. The elevated position of the photographer has neatly captured the station environs in near plan form for the modeller. All one has to do now is build the model!

Pictorial books of this nature are fantastic for showing the pattern of the now long-gone nature of train running on rural branch lines, as well as the details of essential infrastructure that has long ago succumbed to the dreaded bulldozer.

In other words, a good book for prototype railway enthusiasts and modellers alike. This publication is well worth the modest financial outlay needed to purchase it and, if you are like me, you will certainly enjoy it!

Peter Ennis

Reviews

TS6 Diesel Refuelling Station, ready-to-place in HO scale by Southern Rail, PO Box 427, Salamander Bay 2317. Ph: 0418 282 564. Website: www.southernrailmodels.com.au. Price: \$145.00 (plus \$16.00 p&p).

Once, moving on land meant that you walked. Then came horses, the best animal for the job. Just like their masters, they needed to be fed, watered, stabled and their err... 'waste' removed. When a faster horse, the steam railway, spread across the land, their stables evolved into a fascinating drama that we all grew to love. Speed on the main is awesome but brief, whereas visiting Loco at Broadmeadow, Mayne, Mile End, Seymour, East Perth, Burnie, etc., well, what an experience! All continuous hustle, bustle and noise, but organised and tidy, in a male way. Increasing dilapidation towards the end of steam seemed to increase the aesthetics.

With the diesels, beloved by accountants, the stabling is still there, still interesting, but different. More clinical, even antiseptic. Southern Rail's new Diesel Refuelling Station is a case in point. It could belong in a hospital, immaculately white, extensively stencilled, under a green shade roof. According to Southern Rail, it is based on the fuelling point at Canberra, situated opposite the platform at the western end of what was the goods shed. From photographs of the real thing, it appears to be a reasonably well-proportioned replica, but not having any measurements of the prototype prevents any comment on how close to scale are the model's dimensions.

The ready-to-place building comes in a colourful, sturdy box which has an 'HO Scale' label and a contents picture on the top. The building is reasonably well-protected by shaped-foam inlays, but that's all. It arrived with a ladder broken off, a light standard loose in the box, plus one roof support post and a pipe pulled out of the base, as well as some diagonal bracing pulled away. Annoying (though how does one armour a fragile building against the postal service?), but all easily and quickly fixed with a spot of superglue. No information or instructions are included, apart from a stark warning sheet about care when removing from the box.



x 11' high (HO scale dimensions) round-roof, rectangular white structure containing a tank and plant room, mounted on a 47' x 18' x 9" plastic base, sitting on 9" thick blocks on a 56'6" x 47' plastic 'ground'. The separate green roof clears a Clyde diesel cab loco by 3'. You have a building, sitting on a ground base 200mm long, 140mm wide and 3mm thick, with a track centre parallel to and 55mm in from a long side. Cut a card this size and see if it fits into your layout space.

Details include: tank plumbing bits and lifting lugs on top and a drain centred near the ground on the tank end, an 11' high vertical sliding door at the plant end and a small, gabled, hopper-like roof structure (sand?) accessed by ladder and walkway. The ladder has an anti-climb cover to deter illegal use (railfans, graffitists?). Detail near ground level includes: several cabinets; painted photo-etched grilles for the plant room (not shown on the box photo); some sand piping; a short, coiled red hose; a small light; and 15 applied

stencils. One of these stencils states '4800 ltrs' in foot-high tankside letters. The box photo has '54800 ltrs'. Typical early diesels (NSW 42 and 44 classes) had 6800L and 5500L fuel capacities respectively. Curious... Southern Rail have noted on their Facebook page that this is a factory assembly error (it should be '54800 ltrs') and are working on getting replacement decals made. — Editor.

Hand assembly on the sample supplied is fair, typical of short-run factory-assembled structures, i.e. a bit wonky in places, with some misaligned parts. The building base for example is 3mm askew on the ground plate. Scale too is a little inconsistent. A 6' HO figure placed on the base fits, if looking a little small, but the safety railing on the top platform is 5' high in HO (nor-

mal practice is around 2'9"-3'), the ladder width and rungs 2ft (1'3" – 1'), the tank plumbing 9in dia., the metal roof supports not vertical and 10" square, i.e. more like S scale, and the dummy light looks N scale. The detail is overall a little heavy. Paint is OK and the numerous glue joints discrete. From a foot away, it looks pretty good.

Is it worth \$145.00? For that you get a drop-in, well-finished building that would probably take 25+ hours of thinking about/building and \$50+ for plans, materials, parts, paint and decals to build. So, if it fits your era and you are happy with a clean, modern fuelling station, then buy it. And you will then have an extra 25 hours available to get on with some other layout-completing project...

Bill Cooper



NSWGR ARX/NPAX/NGCX/NGUX Bogie Cement/Wheat Hopper in HO scale by SDS Models, PO Box 804, Winston Hills 2153. Website: sdsmodels.com.au. Price: \$198.00 (triple-pack).

When the need for more cement hoppers arose in the late 1960s, rather than convert more BCH-type wagons, as had occurred previously, the opportunity was taken to utilise the latest design and materials techniques. The result was a stubby, inverted-teardrop-shaped hopper, with vertical ends, still with gravity unloading.

A single order for fifty vehicles was built by Commonwealth Engineering in 1968-69. They were numbered 33301 to 33350 and fitted with low-hung, clasp brake XCH bogies, from which the outer brake shoes and hangers were removed in the 1970s. Bogie wheelbase was 5'6" (1.68m), wheel diameter 3' (920mm) and the bogies were set at 27'6" (8.38m) centres. The wagons featured three circular filling ports. each with a hinged lid, arranged along the wagon centreline. Gravity discharge was via four equally spaced floor hoppers with horizontal sliding doors. The length over headstocks was 37'6" (11.43m), width at the waist of the hopper 9'9" (2.97m) and height 13'3" (4.06m).

Initially, they carried cement product within NSW and were generally marshalled within mixed goods trains. However, with the introduction of the pneumatic-discharge PRY type from 1978, gravity discharge of cement product was phased out due to dust complaints. The NPAX wagons, as they

NSWGR ARX 33313 33 13 33 13 34 134



nad become, were then used to carry calcium oxide, superphosphate and later wheat and barley, and recoded NGUX and NGCX. For a period, they were captive to the Narrabri to Werris Creek wheat service, operating in block trains of 24 vehicles.

The SDS model captures well these unique and attractive hoppers. The main components are moulded in ABS plastic, with bogie and other details in POM. Wire and etched details round out an excellent representation of the prototype.

All dimensions are accurate and the model rolls very freely. Full brake rigging and underfloor detail, so visible on this type of wagon, is fitted. The walkways are etched brass. Semi-scale metal-tyred wheels are fitted — all samples were in gauge and ran truly. The models are sold in packs of three, and the packs cover a range of

numbers and eras – see the SDS website for details of what is available.

These are excellent models of a characterful prototype and should find ready homes on any post-1969 NSW model railway.

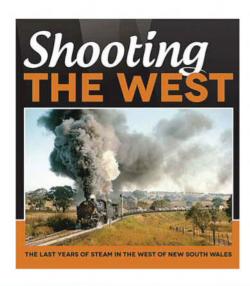
Ian Dunn

Shooting The West created by Malcolm Holdsworth, published by CADECO. Distributed by PEMS, PO Box 7124, Kariong 2250. Mob: 0411 139 312. Website: shootingthewest.com. au. Price: \$80.00.

Shooting The West is the latest volume in a series that began with Northern Exposures, which was reviewed in AMRM Issue 309 (December 2014), and Lenses South, reviewed in AMRM Issue 319 (August 2016).

Carrying on the theme, this latest full-colour, 156 page, A3-sized volume covers the western area of NSW, starting with the Main Western line west of Lithgow (with a few bonus pre-electrification shots on the Blue Mountains to the east) and encompassing the branches to Mudgee (and beyond), Cowra, Forbes and the far west past Dubbo.

The format is familiar from the earlier volumes: superb photographs with informative and accurate captions, interspersed with essays on various aspects of steam working in the area during the 1960s and early 1970s. As with the earlier volumes, the Introduction gives an overview of the steam activity timeline and, most usefully for the modeller, how many and what classes of steam locomotives were allocated to the various depots during that time. The subsequent chapters, grouped according to area, give, through photos and text, a fascinating insight into what was happening in those areas at the time. Also, as with the previous volumes, there are chapters of personal reminiscences of various train-related activities carried out by the writers, such as rail journeys and train chasing Continued on page 50



Reviews

Continued from page 49 escapades, including a very amusing, but far too close, brush with the Constabulary!

The images, of course, are the centrepiece of the book and, as with the previous volumes, they are absolutely amazing, both in quality of reproduction and content. My personal modelling activities are very much anchored in the west and there is plenty here to inspire! Preparation of the review coincided with my construction of a 53 class locomotive in HO scale, so I was particularly primed to notice images that included the 53 class, as one can never have enough references if one wishes to construct a good model. As the west was a prime haunt of the 53 class, there are plenty of photos to inspire. such as those on p.45 and p.93, but it is the images of the 36 and AD60 class locomotives that really stand out. The image of 3675 at Bathurst on p.65 is magnificent, capturing not only the 'drama' of steam, but also providing a superb quide to detailing and weathering a convincing model. I may have to detail and weather another 'pig'!

It is not only the images of the locomotives that are useful to the modeller, there are so many photos that capture useful details of the train consists, as well as the surrounding infrastructure and scenery.

This book is a magnificent record of the last decade of steam on the west and must appeal to enthusiasts of the area in any scale, from 1:1 on down! In fact, I would go as far as to say that anyone who claims to model the western area of NSW in the 1960s and does not have this book on their shelves (and consult it regularly) will seriously handicap their ability to produce an authentic model...

James McInerney



NSWGR JHG/UHG/NVJA/NVUF Goods Brake Vans in HO scale by SDS Models, PO Box 804, Winston Hills 2153. Website: sdsmodels.com.au. Price: \$125.00 each.

The 100 brake vans in this group were built by Clyde Workshops, the first two prototypes (34001 and 34002) in 1969-70 and the remainder (34003-34100) between 1972 and 1977, initially coded JHG except for the last three, which were built as UHG, and painted in Indian red with chrome yellow lining, white lettering and roof and rhomboidal 'NSWR' insignia in black on yellow. They were the first caboose-type brake vans built since the fourwheel CHG type, a quarter of a century earlier. The 8'6" (2.59m) wide plywood body was mounted on a 36' (10.97m) steel underframe and 6'6" (1.98m) wheelbase 2SA bogies with 3'1" (940mm) disc wheels. At each end was a 5' (1.5m) open verandah, with steel safety railings, and covered by the main roof which was of the high elliptical profile and brought the van up to an 11'9" (3.58m) height above rail. Tare mass was 20t and there was capacity for 3t of freight.

One side door on each side pro-

vided access to the guard's area, while double swing doors in the ends of the body provided access to the verandahs. Two side step boards were provided at each end of each side, and a two-step ladder under the side door. The standard NSWGR handbrake spider was mounted underneath, and the vans were electrically lit, with permanent end marker lights on the corner posts of the verandahs and on the headstocks. They were built without buffers and had automatic couplers. Vans from 34014 onwards had heavy drawgear with a noticeable, extended draught box. They were recoded NVJA under the fourletter system introduced in 1979.

The UHG variant was introduced to run on Hunter Valley unit coal trains to destinations without balloon loops. Twelve vans were given strengthened underframes and an extra air pipe to supply pneumatically operated discharge doors on coal wagons. In service, they were marshalled at both ends of a train. They were fitted with 2AT (later ATA) bogies on 3'0½" (927mm) wheels and became NVUF in the four-letter system.

With the removal of guard's vans from freight trains after 1983, these vans had a short life and were rapidly scrapped, although a very few lasted to become service vehicles of various descriptions.

The SDS model, based on prototypes from 34014 onwards, is constructed of ABS body and underframe, with POM bogies and POM, wire and etched details. A feature of the model is switchable, illuminated red marker lights, via pick-up from both bogies. The models roll well, with the pick-ups not creating noticeable drag. All the salient features are present: the end safety rails, the brake gear, handrails at the guard's doors, coupler

release levers, Kadee No.158 couplers, metal disc wheels, brake shoes in line with the wheel treads and flush glazing. The finish is a pleasing 'eggshell' red, with the white roof also 'eggshell'. Underframe and running gear are in matt black. SDS have produced a wide range of variants (see their web site for details), some of which may have already sold out. Some variants were very specific in their workings and modellers will need to be aware of this.

This is another quality model from SDS, and should usefully find its way onto any 1970-1983 period model railway.

Ian Dunn

NSWGR 'Crookwell' station building and generic Australian house, ready-to-place in HO scale from Scenecraft by Bachmann. Samples supplied by Hearns Hobbies, 295 Flinders St, Melbourne 3000. Ph: 03 9614 3603. Website: hearnshobbies. com. Prices in text.

Scenecraft by Bachmann produce a very large range of ready-to-place lineside buildings and equipment for the British market in N, OO, O and G scales, as well as a small range in HO for the European market. They are now expanding into the Australian market with these two ready-painted, resin-cast buildings, which are available from Bachmann outlets Australia-wide, as well as Melbourne's Hearns Hobbies, who provided the samples for review.

The station building, marketed as "Crookwell Station", is based on the 'small' A5 building still standing at Crookwell, the terminus of the now closed branch north from Goulburn in southern NSW. There

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



were once quite a few of this type of building on the NSW system, mainly on branch lines. Without checking my references I can't remember them all, but this type of building was constructed at Finley (the first example to be constructed), Tumut, Manilla, Barraba and between Junee and Narrandera. I expect there are others as well. The other building, marketed as "Australian House", is a generic building, typical of the sort of small, weatherboard and corrugated iron structures found all over Australia, I have been informed that these buildings are a limited run of 500 pieces each and are exclusive to the Australian market.

Each model is packed in a colourful cardboard box, well protected by shaped foam inserts, so they should be pretty safe from AusPost's parcels handling steamroller if purchased by mail order. Both models are complete and ready-to-place on the layout, with the exception of the station building's finials, which are packed separately for safety during transport. It is a matter of a few seconds' work to glue them on with superglue once you have them out of the box, though the gaps for them on the model are larger than necessary, but this is not particularly noticeable after they have been attached. However, if you then want to place the model back in its box after fitting the finials, you will need to slice away a section of the foam insert to accommodate them.

The house has a scale footprint of 30'6" (9.3m) x 20'6" (6.25m) and stands 14' (4.25m) high at the gable of the roof; a small building, but not unreasonable for a structure of this type. The station building's footprint scales out at 42' (12.8m) x 14' (4.25m), while the height to the top of the gable is 16'6" (5m).

My first impression upon opening the box was that the station was too small and the proportions weren't quite right, and checking the dimensions of the prototype A5 building confirmed that impression. The prototype building has a footprint of 49'3" (15m) x 17' (5.2m) and a height of 15'6" (4.75m). Is this a problem? I prefer 'signature' buildings, such as station buildings, to be to scale, but I suspect that the main market for these models will be quite happy with it; it is finished, painted, looks like the real thing and can go straight on the layout!

Which brings us to the general appearance of the buildings. Both are very nicely assembled and painted and definitely look the part. The station building's colour

scheme had me intrigued at first; it appeared to be a combination of the off-white with green trim scheme that the real building sported during the 1970s and 1980s, with aspects of the traditional NSWGR 'stone' colour scheme. However, a quick search of the

internet revealed that it is very similar to the scheme that the real (preserved) building carried when under restoration in the 2000s, before it was recently repainted in a very nice version of 'stone'.

While it is painted in a colour scheme that full-sized A5 buildings never carried while in Departmental use, I don't think this will worry too many potential purchasers and, if it does, repainting it into an authentic scheme would not be that difficult. The house is superb; wearing an overall white with silver roof scheme that is so typical of this type of house from the 1960s on. I particularly liked the representation

of the very necessary for Australia 'gauze door' (to keep the flies out), on both the front and rear of the building.

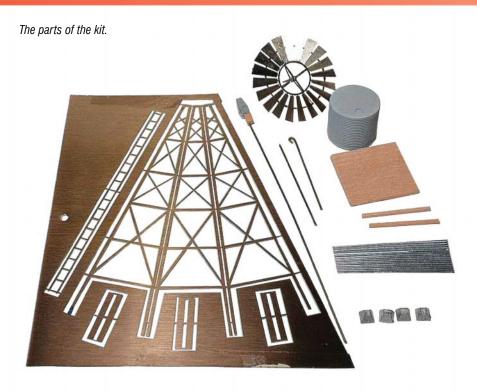
The station building is available from Hearns Hobbies for \$72.95 and the house will set you back \$56.95. As far as I am concerned, this is great value for an assembled and painted model building, especially ones as well finished as these. Indeed, the house has already found a place on Lambing Flat and I am hoping that Bachmann will be adding to the range in future!

James McInerney





Reviews



Generic Australian Wind Pump kit in HO scale by Oz Kit, produced by Anton's Trains. Ph: 02 9634 3475. Website: antonstrains.com.au. Price: \$69.50.

For more than a century, one of the most iconic symbols of the drier parts of Australia was the wind-pump. Consisting of a simple metal structure supporting a wind turbine connected to a water pump and discharging the pumped artesian water into a storage structure of some kind, be it a simple small tank right through to a substantial dam, the wind-pump is found right across Australia.

A recent release from Oz Kit (part of the Anton's Trains/Uneek empire!) is a very nice multi-media kit to enable construction of one of these classic Australian country structures. The kit is neatly packed in the usual plastic bag with card 'header' and contains all the parts needed to construct the model, including a pre-assembled and complete turbine. It also contains some pretty basic instructions that can be a little hard to follow at times.

I had great difficulty working out from the instructions how the working platform is constructed (the only guide from the instructions was "glue brass platform sections as shown on photo). Unfortunately, the photo wasn't a great deal of help! Luckily, the

RECENT



Austrains released their latest HO scale r-t-r VR wagons, the J series fourwheel cement hoppers, at the AMRA (Vic) Caulfield exhibition in August.



Lyndon's Trains has released an HO scale urethane kit for the VR departmental four-wheel HZC flat wagon, used for the transportation of couplers.



Train Builder has released their ready-to-place HO scale VR infrastructure items, including the 20000 gallon water tank, 6t derrick crane, plus 'tall' and 'short' post crossing gates illustrated here. The full list of items released can be seen on the Train Builder website and they are available direct from Train Builder via mail order or at selected exhibitions.

internet came to the rescue and I was able to locate some useful photos online that pointed me in the right direction. It seems that incomplete kit instructions have been the bane of kit assembly since the first caveman bundled up some rocks and sold them to his mate as a hunting kit!

Construction of the model is quite straightforward. The main structure of the mast is nicely etched and is easily bent up to shape using a scale rule and piece of wood to keep it all straight. While the instructions suggest that the etch can be glued, I can't see that being very strong in the long term, so I soldered the structure, including running a bead of solder along the bent edges as well, for strength. A predrilled section of thin ply is provided as a base and this definitely helps with assembly, making it quite easy to keep everything properly aligned. The turbine blades can be made to spin freely by simply placing a slice of plastic insulation from a suitably sized wire over the shaft where it exits the rear of the bearing casting on top of the mast and securing with a drop of super

As mentioned above, I had trouble working out how the working platform is supposed to go

together. After studying some photos off the internet (google "Australian windpumps"), I bent two of the platform parts etches over and soldered the two halves together, then cleaned it up and soldered the first one to the mast. A second one was soldered to one of the other sides, then the bent to length ladder was soldered to the remaining side. Then I used some 12" x 2" scrap timber from my box of bits to make a working platform around all three sides of the mast.

The entire structure fits together very nicely and doesn't take long at all to complete. The next step will be to prime it, then paint it a weathered silver, which appears to be the most common colour scheme. Finally, a little weathering will bring up the detail, after which it will go on the layout!

Regardless of my comments regarding the instructions, this is another excellent model from Oz Kit which makes up into a delightful model that will make a nice scenic feature on any Australian layout based in the drier country areas and is suitable for any period from the 'early days' to the current time.

James McInerney



Comrailmodels continue to expand their range of 3D printed HO scale models of Commonwealth Railways locomotives and rolling stock. Shown here are three samples from the pre-airconditioning era 'Trans'; a painted and decaled D dining car, a partially complete BRP sleeping car and an M bulk mail/luggage van. These cars were used on the 'Trans' from the opening of the line in 1917 until replaced by the air conditioned Wegmann cars in the early 1950s. Some were then 'cascaded' to the narrow gauge and used on the 'Ghan' until the narrow gauge line via Oodnadatta was closed in the early 1980s. The M vans lasted on the 'Trans' until well into the 1950s, after which they were adapted for other uses. Also shown are completed samples of some of the rolling stock available; a CE cattle van, formed during the 1970s by joining two old 35' cattle wagons on a single 70' underframe, and a BPA ballast plough, converted using old underframes, also during the 1970s. The models are available from the Comrailmodels Facebook site and are available in two levels of quality/price; polyamide or resin. Purchasers will need to source their own bogies and decals (suitable bogies are available from SEM and decals from Signs of all Kinds).



Other Side Of the tracks Ah, nice doggy Bob Stack Modellers mixing up their scales

Metro Hobbies Melbourne Withdraws from the CBD

Due to the construction of the entrance to one of the new Metro Tunnel stations where the building occupied by Metro Hobbies' Swanston St store now stands, requiring the compulsory acquisition and demolition of the building

by the Melbourne Metro Rail Authority, the Swanston St store has closed.

Metro Hobbies will, however, continue to trade from their Station Street, Box Hill, store and orders taken at the Swanston St store will now be processed at the Box Hill store.



Casula Hobbies have announced their intention to expand their HO scale r-t-r range with the NSWGR HG four-wheel goods brake van, MLK bogie milk van and E wagon locomotive water gin illustrated here by factory drawings. Release of the production runs are planned for mid-2018.





In Memoriam

George Gregson, the sales manager for the Victorian Branch of the Australian Railway Historical Society, a position he held for over 25 years, has passed on at the age of 70. George was a familiar face at Victorian model railway exhibitions and book fairs where he promoted and sold the books published by the ARHS.

Colin Pike

William Hoare passed away on Saturday, 26 August 2017 at the age of 90. Bill, a long-term resident of Bendigo, was a staunch HO scale modeller of the Victorian Railways and an active scratchbuilder. Bill, with his close friend Bob Gartside, promoted this interest at exhibitions, the culmination of their work being Leanganook, which was featured in AMRM Issue 227 (April 2001). Along with his late wife, Bill was a big supporter of the hobby in Bendigo, being one of those who financed the setup of the local model railway society. Bill had a 'wicked' sense of humour and a broad welcoming smile, traits, along with his generosity, for which he will be long remembered.

Bob Gallagher

Gosford Hobbies Changes Hands

Central Coast (NSW) institution, Gosford Hobbies, changed hands on 1 July last. After 16 years in business the previous owner opted for retirement and the business has been sold to Ross Mews. Ross intends to expand the modelling area of the store, including the model railway section, maintaining current lines, but greatly expanding the Australian outline items stocked, not only in HO scale, but also O and the narrow-gauge scales as well. Opening hours are unchanged and most of the original staff are continuing under the new regime.

The current store website is still in operation, but has been a little neglected during the changeover. A new 'platform' is under development that links in-store stock items to the 'shopping' area of the website, which will greatly assist those who wish to shop by mail order. Until this is up and running, Gosford Hobbies suggest that a phone call to Dale Smith on Tuesdays or Saturdays will elicit the most up to date news on the current state of model railway stock.

New Products

HO Scale

Austrains are now expecting to be able to release their r-t-r NSWGR 30 class 4-6-4 tank locomotive in March 2018. Once the 30 tank has cleared the factory, work will ramp up on the NSWGR 30T 4-6-0 steam locomotive. The variants to be made available have expanded from the initial announcement: the model will now be available with the choice of short (saturated) and two long (superheated) smokeboxes (the 'drumhead' version carried by most of them and the 'built up' version carried by the last nine to be superheated), as well as a choice of either bogie or sixwheeled tenders.

With the release of the r-t-r four-

wheeled VR J type hopper at the AMRA (Vic) Caulfield exhibition in late August, Austrains has confirmed that the related four-wheeled FJ flour hoppers are scheduled to be released at the 2018 Caulfield exhibition

There is one major class of NSWGR four-wheel wagon that has yet to be produced r-t-r to current standards, the U/K/RU family of related vehicles. Austrains has announced that the production of r-t-r U and K open wagons, plus the RU grain hoppers and, as a bonus, the UT coal tippling wagon, detailed to the standard of their 'ultimate' S wagons, will be their next project, due late in 2017/early 2018. The release of the U hopper wagon will fill a particularly large gap in the NSW steam era wagon fleet, as these once ubiquitous NSWGR vehicles have never previously been available commercially, in either kit or r-t-r form.

Broad Gauge Models, at the time this item was prepared, were still on schedule to release their kit of the SAR 500B 4-8-4 steam locomotive at the *Modelling the Railways of South Australia* convention in early September, just after this issue went to press. The re-run of the DJH-produced VR D³ 4-6-0 steam locomotive kit should follow shortly after, with the VR N/ SAR 750 2-8-2 due early in 2018.

Eureka Models were expecting the first air-freighted batch of their r-t-r NSWGR 40 class locomotives to arrive in early September, with the balance of the run, sent by sea freight, expected to arrive towards the end of September/early October 2017. The r-t-r NSWGR 72'6" AB dining car, ACS composite sleeping car and MAL sleeping car were being assembled when this item was written and the production run is expected in late October/early November 2017. The Chinese factory has also advised that the tooling for the NSWGR 38 class locomotives was being tested, with injection of the plastic for the production run scheduled for later in 2017, putting delivery in Australia some time in mid-2018.

Ezi Kits have released a whitemetal locomotive kit for the NSWGR J(131) 'Little J' class 2-8-0, as rebuilt with a Belpaire boiler from 1901.

Lyndon's Trains have released kits for the cement containers that rode on VR KCC wagons. Each kit con-



SDS Models have announced their intention to re-release the HO scale r-t-r range of 'American' end-platform cars acquired from Austrains. Some of the models will be upgraded, where necessary, such as the CCA shown in the artwork reproduced here, which will have the position of the guard's sliding door corrected and will have the belt rail detail between the door and the car ends added to represent the cars not covered by the original Austrains release. Several colour schemes will be produced and the cars will be fully lettered, including the distinctive '1st' and '2nd' plates carried by many of them. The production run is expected in 2018.

tains two containers and a decal set. Also released is a kit for the VR HZC four-wheeled auto coupler transport wagon. In development is a kit for another version of the ubiquitous VR 'bug hut' workman's sleeping accommodation vehicles.

In conjunction with The Buffer Stop in Preston East, Vic, and marketed exclusively under the shop label, is a new variant of the VR F code horsebox and a VR 6t yard crane. In development for release under the Buffer Stop label is a VR ABC combined passenger/guard (with ticket office) carriage, a CM parcels van and 'Tait' suburban carriages.

Stocks are running low of the VR CV passenger guard's van kits, with only 20 kits still in stock when this item was prepared.

In partnership with Badger Bits, a new 'Cane Train Range' is being produced in HOn30. The first items to be released are Moreton Mill 4t and 6t cane bin kits, both types produced in etched nickel silver with four wagons per etch. The kits include wheel sets. These will be followed by whole-stick cane trucks and locomotives, the first of which should be Moreton Mill's EM Baldwin 0-6-0 diesel *Bli Bli*.

Matt's Ballast has added 'Cootamundra' ballast to their line of ballast colours. This light coloured ballast is much used on main and branch lines in the southwest of New South Wales.

On Track Models displayed the finalised factory-painted samples of their Victorian 'Sprinter' railcars at the AMRA (Vic) Caulfield exhibition in late August. The factory has informed On Track that production of the models was under way and that the projected dispatch date from the factory was mid to late September 2017. The time frame appears to be a bit tight for release of the models to occur at the

AMRA (NSW) Liverpool exhibition, but one never knows...

SDS Models report that their non-powered versions of the old

Austrains Neo NR class locomotives were expected to have been shipped from the factory in China around the time this issue went to



A manufacturer's sample of the Mechanical Branch Models HO scale NSWGR 20000 gallon overhead water tank kit, available in limited quantities direct from the producer via their webpage. The kit includes etched brass and etched nickel silver, cast urethane and 3D printed parts and assembly jigs are also provided as part of the kit. This water tank type, and a limited range of other sizes of the standard cast iron water tank, should be available from the Mechanical Branch Models stand at the AMRA (NSW) Liverpool exhibition on the October long weekend. The components of the kit, such as pipes and valves, channels, I beams and angles, are also available separately; very useful for scratchbuilding a wide range of steel structures. Also likely to be available at the Liverpool exhibition is a range of locomotive numbers, nameplates and signal box nameboards. adding to the existing range of etched brass signs, which can be viewed on the website. The next project is to be an etched brass kit for an SKG, an 'early days' four-wheeled horsebox, some of which remained in use as W&W vehicles well into the 1980s.

AMRM News

the printer and should be in Australia in early October 2017.

Southern Rail is currently offering a sound upgrade of V/Locities and have, during stocktaking, also located some extra 'Gem' liveried V/Locity sets (VLO18, VLO19 and VLO31) hitherto thought to have been sold out.

Despite some last-minute tooling changes that have slightly delayed the project, the production run of the SMR 10 class 2-8-2T should be finished in time to allow air-freighting in of enough locomotives to enable release of the model at the AMRA (NSW) Liverpool exhibition.

Factory-painted samples of the C35 grain hoppers (XGAY/WGSY/WGBY/BGSY) have arrived in Australia, but the production run will not be finished in time to allow release at the Liverpool exhibition, as originally planned (they should arrive around a week after the exhibition).

The 48' high cube container project has run into a major set-back due to an unrelated dispute with the factory originally contract-

ed to produce them. The tooling has been completed and is in the process of being transferred to a reliable factory for completion of the project. No amended delivery date has yet been specified.

An issue has been reported with the Explorer/Endeavour railcars where on some models the chassis at the end of the body has drooped slightly. If you have suffered from this problem, please contact Southern Rail direct (email: info@southern-railmodels.com.au), with your name, contact details, the model's product code and an indication of which vehicles are affected.

The QR OLO/OVO rail tank car project has also been delayed, due to some last-minute colour scheme changes caused by new information coming to light as the decoration files were being finalised. Unfortunately, this caused the planned production slot to be missed and another has had to be booked.

Trainorama have released another batch of their r-t-r Victorian S class Co-Co diesel locomotives. Now available are S300, S302 and S311

in West Coast Railway blue, white and yellow; S317 in VR blue and gold and S306 in V/Line orange and grey.

N Scale

Gopher Models are planning to release plastic injection r-t-r models of the NSW 42, Commonwealth Railways GM, plus the VR S and B class locomotives by Feb 2018. They will be limited run models: 42 class - original NSWGR Indian red and yellow (red lined – 300 units), 'austerity' PTC Indian red and yellow (no red lining - 200 units); GM class - CR maroon and silver (500 units); S class - VR blue and yellow (500 units); B class - VR blue and yellow (500 units), Bernie Baker 'Streamliners' - silver, black and orange (200 units). These colour schemes/numbers will not be repeated if a second run eventuates as any future runs will feature new colour schemes and numbers.

O Scale

Model O Kits have received the factory-assembled pilot model of their NSWGR D59 class 2-8-2

steam locomotive kit from DJH. Required corrections have been conveved to the factory and the electrical set-up has been reviewed to ensure an acceptable DCC-ready condition. At the time this item was being prepared the tooling was being modified and production of the kits was about to commence. Once the kits have been packed and assembly instructions completed, the expectation is that the kits will be dispatched some time in October 2017, with the factoryassembled r-t-r locomotives to commence arriving in November.

The injection-moulded S wagon kits are now available and can be supplied either as individual wagons or in ten-packs. Of the other wagon kits in the range, the K and U four-wheeled open wagons, along with the KF flat wagon version, are now back in stock. The four-wheeled LV louvred van and CW cattle wagon kits are expected to be available again by October 2017. New production methods and sources of supply have enabled a substantial reduction in retail prices for the kits.

Also now available are the laser-







cut post office and church building kits. Limited stocks now remain of the ready-to-place 1967 F100 ambulance vehicles.

The kits for the NSWGR LFX and BX Express Lavatory (dogbox) compartment carriages, as well as the LHG 50' goods brake vans and 442 class Co-Co diesel locomotives are still expected to arrive later in 2017. It is hoped that samples of the passenger cars will be available in time to be displayed at the AMRA (NSW) exhibition at Liverpool on the October long weekend.

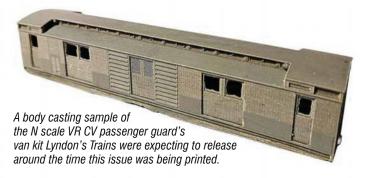
Publications

Eveleigh Press advise that No.31, the next book in the *Byways* of Steam series, is now on hand. This 216 page volume covers the railways and industry of Lithgow and the Lithgow locomotive depot that was opened in 1924.

On the heels of this will be *Byways of Steam 32*, hopefully in time for a Christmas 2017 release. This follow-on 234 page volume covers the steam locomotive depots opened shortly after the NSWGR negotiated the Blue Mountains,

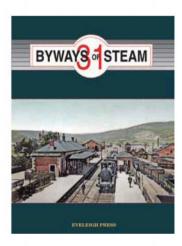


Transit Classics have received a photograph from the manufacturer, SPTC, showing progress on the pattern car for their O scale Sydney PR1 tram project.



including Wallerawang, Mudgee, Eskbank, Dunedoo and Coolah. Also included is a rail enthusiast's affection for the NSWGR I class (post-1924 26 class), some of the photographic work of engine driver and author Ken Groves and the 1954 activities of a young RK Brown when he joined the NSWGR to become a train driver, every boy's dream at the time!

Compiled by James McInerney



DIARY

SCMRA ACTIVITIES

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

30 Sept-2 Oct SCMRA/AMRM stand at the Sydney Model Railway Exhibition at Liverpool. If you can assist

give your name to Graham Windmill 9626 0351.

11 November Open Day by SCMRA and EMRCI at Epping Creative Centre, 26 Stanley Rd, Epping. 10.00am

to 4.00pm. Layout operation. Free sausage sizzle lunch. Scenery clinic at 11.00am. Details

from Trevor Moore 9876 3522.

25 November EMRCI Model Railway Market Day at Dence Park Epping, 10.00am–1.00 pm

10 December Family Christmas BBQ and visit to railway attraction. Western Districts Live Steam, Fairfield

Showground. To be confirmed. Contact Graham Windmill 9626 0351 with numbers by 5

December.

13 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 from Trevor Moore 9876 3522.

10 February Running session at home of Tim Stewart, Berowra Heights. HO NSW layout based on Mudgee

in operation.

EXHIBITIONS

LIVERPOOL – NSW. September 30 & October 1-2, 2017. Sydney Model Railway Exhibition, Whitlam Leisure Centre, Memorial Ave, Liverpool. 9.00am-5.00pm (Sat & Sun), 9.00am-4.00pm (Mon). \$17/\$12/\$9/\$43. Australian Model Railway Association NSW Branch Inc. Phone (02) 9153 5901. Fax (02) 9153 5905. liverpoolamra2017@gmail.com or www.sydneymodelrailwayexhibition.com

BURWOOD – NSW. October 7-8, 2017. TT scale layout. Burwood Uniting Church, Burwood Road (between railway station and Westfield Shoppingtown). 10.00am-5.00pm (Sat), 12.00pm-5.00pm (Sun – Burwood Festival Day). Peter 0458 043 985.

SHEPPARTON – VIC. October 21-22, 2017. G V Rail Club Shepparton Exhibition. McIntosh Centre, Shepparton Showgrounds (300 metres from the rail-

way station). Adults \$9,Children (4-16), \$4, Family (2x2) \$20. Max McDonald, Secretary, (03) 5821 8089. **SUNBURY – VIC.** October 21–22, 2017. Sunbury Model Railway Club exhibition, Memorial Hall, Barkley St, Sunbury. 10.00am-5.00pm (Sat), 10.00am-4.00pm (Sun). (Melway map 382 E4.) Mark 0407 880 604

GOLD COAST, CARRARA – QLD. October 28-29, 2017. The 8th Annual Miniature Trains on the Coast, Model Train and Hobby Show, Carrara Indoor Sports Complex, Nerang Broadbeach Road, Carrara. 9.00am-5.00pm (Sat), 9.00am-4.00pm (Sun). Adults \$9, Concession \$7, School children \$5, Family \$25. Children under 5 free. Miniature Train Club Gold Coast Inc. Den 0419 654 630 or

showmanager@mtcgc.club.au.

WAGGA WAGGA - NSW. November 4-5, 2017. The

Wagga Wagga Model Railroaders Inc is holding their annual Model Train and Hobby Exhibition at the Rules Club Wagga, cnr Fernleigh and Glenfield Roads. 9.00am-5.00pm (Sat), 9.00am-4.00pm (Sun). Adults \$10, Seniors \$8, Child \$5, Family \$20, Children under 5 free. David Edger 0418 446 337 or

rotoreggie@bigpond.com

MILANG – SA. November 25-26, 2017. Model Railway Show at Milang Institute, Coxe Street, Milang. Adults \$10, accompanied children free. 10.00-4.00pm (Sat & Sun). Many milangrailway org. 311

Sun). www.milangrailway.org.au WARRNAMBOOL – VIC. January 13-14, 2018. Warrnambool Model Railway Exhibition St. Joseph's Primary School Hall, Botanic Road, Warrnambool. 10.00am-5.00pm (Sat), 10.00am-4.00pm (Sun). Lindsay Bamford 0448 605 211 or David Shalders 0422 164 747. PO Box 1221 Warrnambool. lbamford@ansonic.com.au

BELMONT – VIC. 27-28 January 2018. Corio Model Railway Club Exhibition. New venue: South Barwon Civic Centre, Reynolds Road, Belmont. 10.00am-5.00pm (Sat), 10.00am-4.00pm (Sun). Adults \$10, Children \$5, Family \$20. Ray 041 932 9793.

KYNETON – VIC. March 10-12, 2018. Macedon Ranges MRC Annual Exhibition. Sacred Heart Collage, Cnr New and Beggs Street Kyneton. 10.00am-5.00pm (Sat), 10.00am-5.00pm (Sun), 10am-4pm (Mon). Brian 0427 047 411.

GLEN WAVERLEY – VIC. June 9-11, 2018. Waverley Model Railway Club Annual Exhibition, Brandon Park Community Centre, 654 Ferntree Gully Road, Glen Waverley. 10.00am-6.00pm (Sat) 10.00am-5.00pm (Sun) 10.00am-4.00pm (Mon). Adults \$10, Children \$6, Family \$25. exhibitions@waverleymrc.org.au

Continued on page 58

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BYWAYS OF STEAM 31

Eveleigh Press, Australian MODEL RAILWAY Magazine's associate publisher, is releasing another book on railway operation. All AMRM retail outlets are invited to participate in the sale of the book that will offer modellers and prototype enthusiasts alike, an insight into the days of steam. Two well-known and highly respected authors are again involved in the publication. Although a book on prototype operation, all subject matter relates to modelling, especially the operation of a prototype based model railway layout.

Byways of Steam 31 is scheduled for release in late August and features 216 pages with two essays based on Lithgow, once seen as the Birmingham of NSW, the industries were so prominent.

The Industries and Railways of the Lithgow Valley. Mark Langdon, fresh from his coverage of the Wolgan Valley in *Shale and Shays*, has researched the rise of Lithgow as an industrial centre, including numerous mines and industries and the various rail links in the valley, west of the Blue Mountains. The expanded text is accompanied by many previously unpublished images of the period, including some wonderful panoramic photographs of the valley. These are accompanied by another superb Dean Oliver drawing showing the location of the industries and mines and the rail lines.

Steam Locomotive Depots in NSW: Lithgow. The feature essay in this volume is Ray Love's coverage of this steam locomotive depot, which was built in 1924, replacing the depot at Eskbank. The expanded facilities at Lithgow covered the locomotives which worked over the mountains, including the 'Big Engines' and

those that worked to Bathurst and Mudgee, on the branch line. Interspersed throughout the expansive text are stories from railway enginemen, the result of many hours of recorded interviews by the author. Lithgow was an extremely important depot for the NSWGR; the task of transporting goods and minerals over the Blue Mountains being an onerous task and important one for the economy of the state of NSW.

216 pages, 248mm x 184mm soft cover

BYWAYS OF STEAM 31 is \$50.00 from your local stockists or mail order, plus postage, from

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TRADE ENQUIRIES WELCOME

BYWAYS F STEAM

DIARY continued from page 57

FORUMS

THORNBURY – **VIC**. November 12, 2017. The Victorian Model Railway Society's Prototype Modellers Forum. Thornbury High School. Details and registration forms available at http://www.vmrs.net/.

SEMINARS & CONVENTIONS

ZILLMERE – **QLD.** October 15, 2017. Model Railways for a Day. Thinking about a Layout. Building & Scenicking a Layout. Operating a Layout. A great day just for you. Presentations, Hands on, displays. mrqc2016@gmail.com www. qldrailheritage.com/mrqc

EXPOS

DIAMOND CREEK – VIC. March 31 & April 1, 2018. Yarra Valley MRC Easter Train Expo 2018. Model trains, railway memorabilia and more. Community Bank Stadium, 129-163 Main Rd Diamond Creek Vic 3089. 9.30am-5.00pm (Sat), 10.00am-4.00pm (Sun). Entry \$10 Adults, \$5 kids, \$25 Family. Facebook @eastertrainexpo2018

OPEN DAYS

TOOWOOMBA — QLD. September 16-24 2017. At Toowoomba Model Railway Club Inc. Model Railway Display and Museum Building Toowoomba Showgrounds, Glenvale Road, Toowoomba. Gold coin donation. 10.00am-4.00pm each day. info-ddmrc@ddmrc.com.au

GLEN IRIS – **VIC**. September 24, 2017 Australian Model Railway Association, Victorian Branch Inc, Clubrooms, 92 Wills Street Glen Iris. Melway map 59 Ref J8. Open 10.00am-4.00pm (Sun). Free entry. Clubrooms (03) 9885 7034.

EPPING – NSW. November 11, 2017. SCMRA and Epping Model Railway Club. Epping Creative Centre, Dence Park, 26 Stanley Road, Epping. 10.00am-3.30pm. Layout, clinic and sausage sizzle lunch. Trevor (02) 9876 3522 ah or

contact@eppingmodelrailway.org.au for details.

CARINA – QLD. November 25, 2017. All Gauge Model Railway Club. At Clubhouse in Zahel Street, Carina, Brisbane. 9.00am-5.00pm (Sat). Adults \$5, Families \$10 (2 adults, 4 children), Pension card holders \$4, children (under 12) \$2. Thomas will be there for kids to drive!

ARUNDEL – **QLD**. January 21, 2018 The Gold Coast Model Railway Club will be holding an Open day at 18 Kendor Street Arundel. Starting at 10.00am (Sun). A Buy 'n' Sell will also be operating on these days.

SALE DAY

TOOWOOMBA – **QLD**. September 24, 2017 at Toowoomba Model Railway Club Inc. Model Railway Display and Museum Building, Toowoomba Showgrounds, Glenvale Road, Toowoomba. 10.00am-4.00pm. info-ddmrc@ddmrc.com.au

GOLDEN BEACH — **QLD**. October 7, 2017. The Caloundra and District Model Railway Association, Arts Centre (North Street) opposite the Oaks Oasis Resort. 8.30am-1.00pm (Sat). Items including locomotives, other rolling stock and scenery items. A Thomas layout for children to operate will be there. Free Admission. Sale Table Bookings. (07) 5491 9213, (07) 5479 0339.

BRISBANE – QLD. November 21, 2017. Union Pacific Model Railroad Club at Clubrooms, rear of Holland Park Sports and Community Club, 49 Abbotsleigh Street, Holland Park. Registrations from 6.00pm, Sale commences 8.00pm (Tuesday). Free entry, refreshments available. sec_upmrc@bigpond.com or 0439 435 366.

EPPING – **NSW**. November 25, 2017. Model Railway Market Day organised by Epping Model Railway Club. Epping Creative Centre, 26 Stanley Road, Epping. 10.00am-1.00pm. Ring Mike 0408 817 554 to book a table.

FESTIVALS

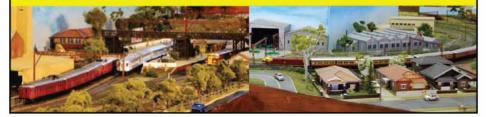
MURRURUNDI – NSW. 21-22 October, 2017. Murrurundi Model Train Festival. Starting at Murrurundi Bowling Club with the Annual Rose Show, then at different locations around town. 9.00am (Sat & Sun). A full day's entertainment with food, fun, and enjoyment for the whole family. Colin 0438 078 563 or colinstanford8@gmail.com

LAYOUT FOR SALE

by Epping Model Railway Club

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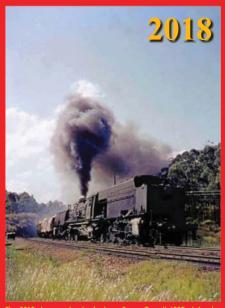
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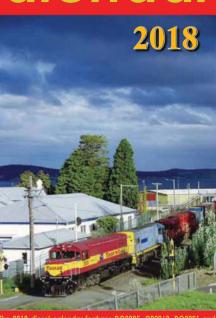
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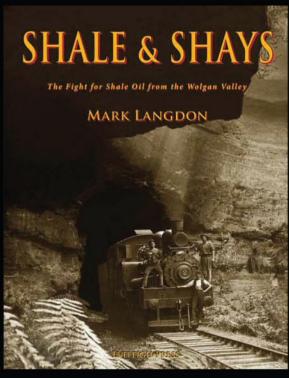
MARK LANGDON'S

SHALE & SHAYS

The Fight for Shale Oil from the Wolgan Valley

A fresh look at life working in the shale oil industry in the Wolgan Valley

Mark Langdon, an upper Blue Mountains resident and trained historian, presents a fresh look at the exhilarating shale-oil mining days of 1906-1932 in the Wolgan Valley in New South Wales. Researched from existing company and government documentation and newspaper reports of the day, the book begins with the story of the Commonwealth Oil Corporation's inception, financed and run from the London offices, continues through the building of the works at Newnes and the railway to Newnes Junction, and rounds out with the final days in the 1930s, when the fate of Newnes resided in the hands of the Commonwealth



Government and National Oil Pty Ltd. The work includes the decline of the C.O.C. and John Fell's becoming the owner. The problems faced are covered in detail, as is the life of the miners and residents living in the valley.

Special attention has been given to the railway – locomotives and rolling stock – including exhaustive research detailing the building and use of the railway that carried the precious shale and oil to the main N.S.W.G.R. Western Line at Newnes Junction and then on to Torbane in the west and to the Sydney export seaboard. Each vehicle type built specifically for and purchased by the COC is covered, with a history and photos and a scale drawing of each vehicle type included. The work is rounded out with superb maps and a Phil Belbin painting.

The book is 279×215 mm portrait, of 300 pages in size and includes three- and four-page fold-outs and gate-folds to best display the many pictorial images sourced. While most images are black and white, a number of available colour images have been used. Some of these images had been hand-coloured by the original photographer.

Now available, the rrp of Shale & Shays is \$78.00 plus post and handling (\$11)

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Mailbag

Mackay, Qld

The review of Ted Payne's Vantage Point Queensland in AMRM Issue 325 (August 2017) contains the following: "...such as that on p.44 showing Mackay steam depot in 1968 and, on the next and subsequent pages, images showing the old station, seemingly plonked in the middle of an urban street next to the river."

Unfortunately for modelling inspiration, this is incorrect. Ted's photograph on p.50 shows the east end of Mackay railway station on the Sunshine Route mainline between Brisbane and Cairns. In the background is Hamlet Street which is a kilometre from the Pioneer River. The rail line on River Street shown on p.46 and p.48 goes only as far as the Bulk Sugar Terminal at Mackay Harbour.

Nevertheless, the review is correct; Queensland was an interesting and exotic place in the 1960s.

Paul Hemsworth Montmorency 3094

Not being all that familiar with Queensland, our reviewer has mistaken the verandahed industrial building in the background of the image on pgs 46/47 for a QR station building. Notwithstanding this misidentification, the scene would still make a great basis for a model! – Editor.

Google Streetview

I've recently observed that Google can be of value to railway modellers looking for current information on a particular building or location. Google provides a quick means of getting helpful

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

2018 MODEL RAILWAY CLUB LISTING

The annual model railway club listing will be published on our website in January 2018. All submissions must be received before 31 December 2017 and must be made by an official of the club. Send details including club name and address, phone number (if available), secretary or contact person, meeting days and times, specialty and website and email details to:

Club Listing – AMRM
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Be on time or else your club will
MISS OUT!

images; Google Earth/Google Maps, with Streetview, provides access to on-the-ground images of most built-up areas. Depending on the images captured by the Streetview system, you may be lucky enough to obtain a picture of any building you want, provided it is close to a street.

As an example, attached are two images of a railway station (Bomaderry, terminus of the NSW South Coast line) showing the street view from Streetview, and the aerial view (useful for track layouts) from Google Maps. The print facility on

Google Earth/Google Maps is not great, but reasonable pictures can be obtained simply by photographing the computer screen with a simple compact camera or clicking the Prt Scr button on your keyboard and getting a screen grab. Streetview is also a handy way of scouting a location to look for interesting prototype buildings and structures, provided of course they are on a street.

Warren Miller Denistone 2114



Google Maps and Streetview images of Bomaderry station, the terminus of the NSW South Coast line, as mentioned in Warren Miller's letter.



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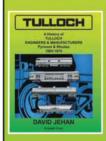
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TULLOCH

A History of
TULLOCH ENGINEERS &
MANUFACTURERS
Pyrmont & Rhodes
1883-1974

by DAVID JEHAN



Robert Tulloch arrived in Sydney from the Orkney Islands in 1877 and managed to get a job as a boilermaker with the Atlas Foundry and Engineering Company, branching out on his own in 1883, when he started Robert

engineering dynasty that was to contribute much to the development of Sydney, New South Wales and Australia. The company started operations in Pyrmont, where it operated from 1883 to 1915. It was from this location that Robert and his staff supplied structural steelwork for the Queen Victoria **Building, the Centennial Hall of Sydney Town** Hall, the Eveleigh Carriage Works, Sydney Central Station, Anthony Hordern and many other notable Sydney buildings and the railway bridges over the Nepean River at Penrith and the Manning River at Mt George in northern NSW. At Pyrmont too they entered the railway rolling stock business. In 1915 the company moved to Rhodes where it diversified into many fields including the manufacture of steel tube and fittings, garden tools, The foundry produced many items for industry and domestic use, including many tons of cast iron pipe for the Sydney water system. They also opened their own timber mill with tramway in northern NSW and operated their own timber tramway into the hills for timber getting. During WWII they contributed to the war effort with components for the Australian Cruiser tanks and construction of oceangoing lighters for the US and Australian Armies. The company finally closed in 1974 after ninetyone years of operation.

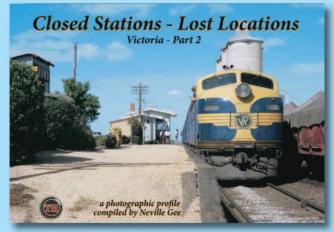
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BYWAYS OF STEAM 32

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The next volume of *Byways of Steam* will include 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.

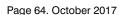
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Eonnectivity

A COHERENT CONTROL SYSTEM STARTS WITH THESE KEY COMPONENTS

PL-11 Side Mounted Turnout Motor

Clips directly into a Setrack OO/HO Code 100 Turnout (left or right hand). No holes to drill. Can also be used to operate OO/HO Streamline Turnouts.



PL-10 Standard Turnout Motor

The PL Series of motors is tried and tested for over forty years. Simple, reliable and great value, they are the heart of any layout operating system. Also available:

PL-10W Motor for Low Amperage

PL-10E Motor with Extended

PL-10WE Low Amp Motor with

L-39 Screw Terminal Block

Operating Pin

Extended Operating Pin

PL-34

Wiring Loom

Makes wiring the PL-10 Motors quick and easy. Just pushes onto the motor terminals, while the other ends are tinned and ready for a PL-39 Screw Terminal Block – no soldering needed!

PL-50 Switch Module Unit

Enables switches to be connected and wired up without any need for soldering.

PL-51 Switch **Module Extension** Extend the PL-50 to any size required.

Lever Type Switches

A range of switches all designed to fit into the Switch Console and Turnout Switch Module.



PL-26 Passing Contact Changeover

Provides the short burst of current required to operate the PL-10 Turnout Motor, Levers available in Red, Yellow, Black and White.

PL-22 Single Pole On-Off Simple, reliable on/off switch.

PL-23 Single Pole Changeover Switches the current from one device to another.



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