

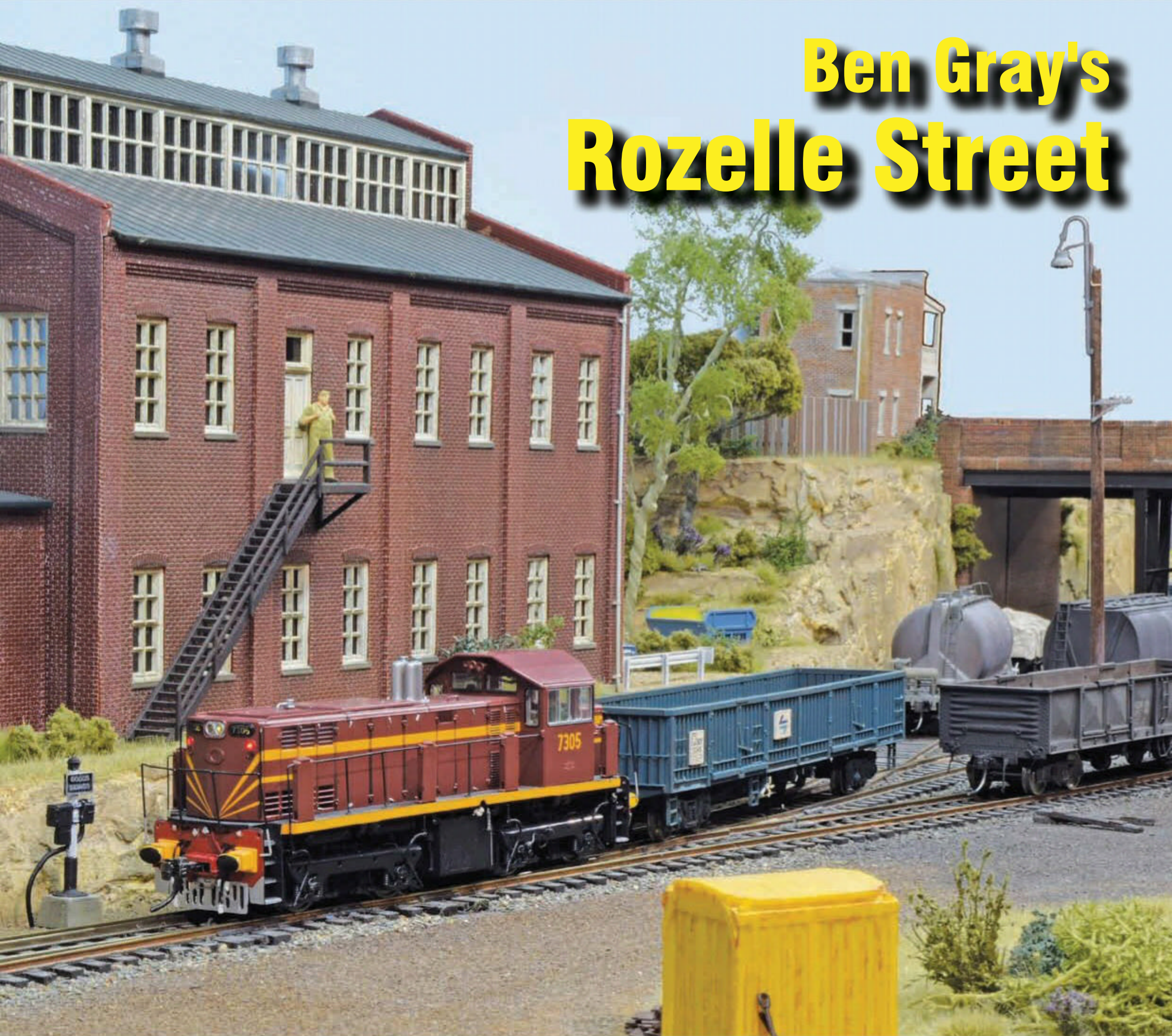
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OCTOBER
2021

MODEL RAILWAY

MAGAZINE

Ben Gray's Rozelle Street



Build an LPG terminal • Marmalake
Location to model: Esperance fuel sidings
Domestic containers
Reviews • Mailbag • AMRM News

Issue 350 Vol. 30 No.5

ISSN 0045-009X



9 770045 009009



Victorian Railways D3 Class Locomotive



GAUGE
H0
1 : 87

Image by David De Dear
Courtesy of Train Hobby Publications.

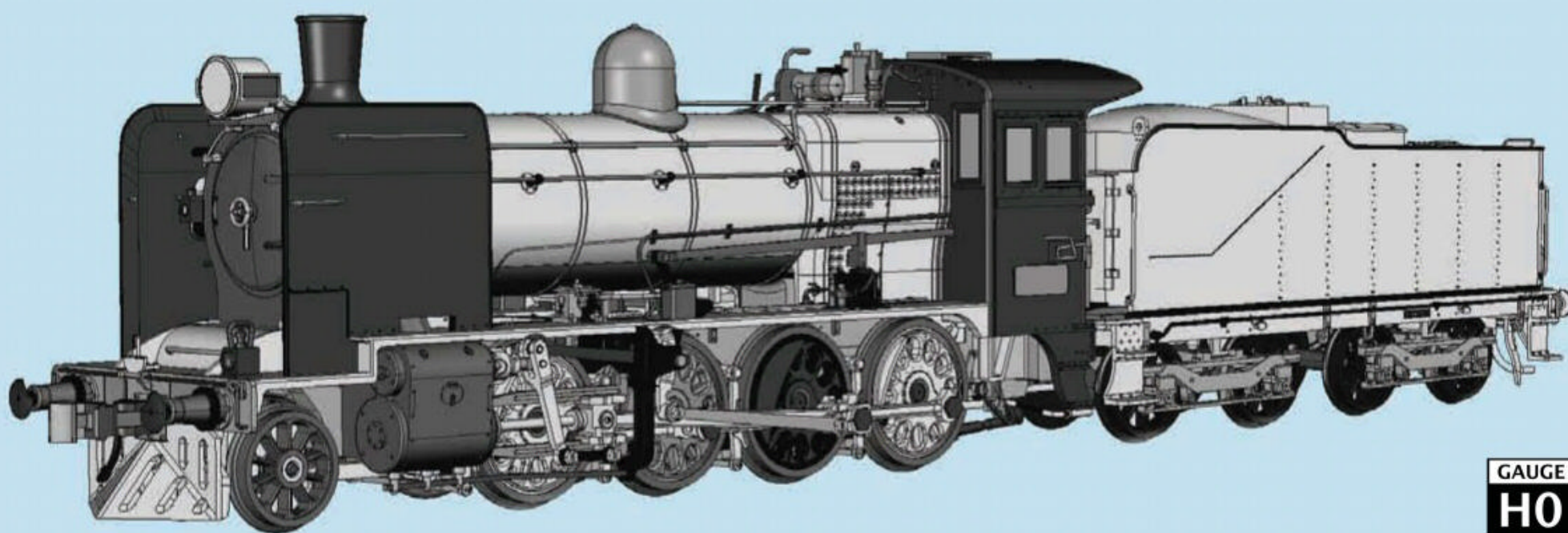
Due to arrive Mid-2021 our Victorian Railways D3 4-6-0 locomotive.

Featuring a diecast metal boiler, metal footplate, metal chassis and metal connecting rods. All wheel electrical pickup and a switchable keep alive capacitor for fault free DCC operation. Working headlight with red/white marker lights for realistic lighting control. Genuine Kadee scale head whisker coupler is fitted to the tender and a scale sized swivelling knuckle and three link coupler is fitted to the front buffer beam.

Available in either DC control @ \$660.00 per model or DCC + Sound @ \$799.00 per model.
See www.phoenixreproductions.com.au for the full range of running numbers.

DCC - SOUND
ESU LOKSOUND
V5.0 Sound Decoder

Victorian Railways K Class Locomotive



GAUGE
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After a thorough evaluation by our engineering team, the VR K class model is being upgraded to the same standards as our D3 model. Fortunately, the D3 and K class share the same tender type, so the engineering changes are limited to the engine unit only. We expect running samples mid-year and pending production availability we anticipate delivery Late 2021.

Phoenix Reproductions Pty Ltd - ACN 626606255

PO Box 804 Winston Hills NSW 2153 Australia - Email: sales@phoenixreproductions.com.au

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Victorian Railways D3 Class Locomotive with Flare Top Tender

GAUGE
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SDS Models have undertaken the production of two dedicated, and era specific, running numbers from this period. The engine units are based upon the Phoenix Reproductions model mated with our own low sided tender. These models are being produced concurrently with the Phoenix Reproductions units and should be available Qtr1 2021.



21

Victorian Railways APL / BPL / BCPL Passenger Carriage

AUSTRAINS
NEO



The twin packs of PL cars have sold out, but new smooth sided single packs are available now.



SRA 81 Class Locomotive

The SRA 81 class model is in production.
First to arrive are the earlier single door variants.



FULL THROTTLE
DIESEL

21

Arriving
Early 2021



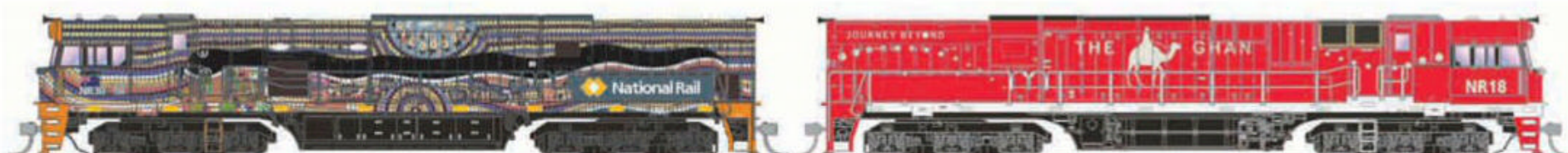
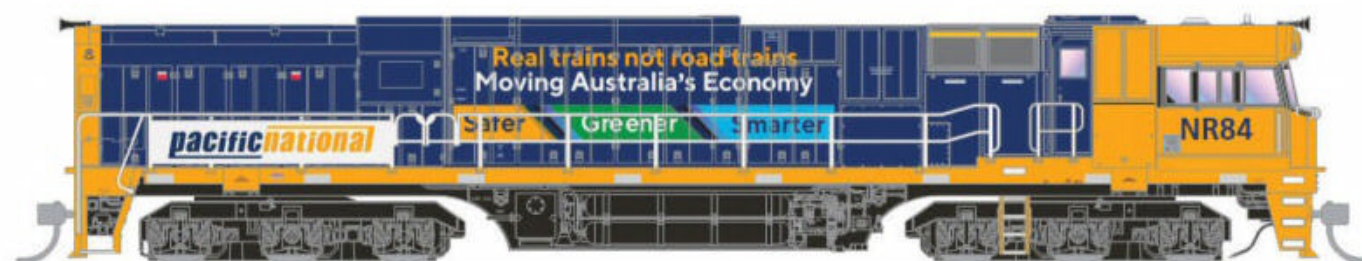
NR class Locomotive



FULL THROTTLE
DIESEL

21

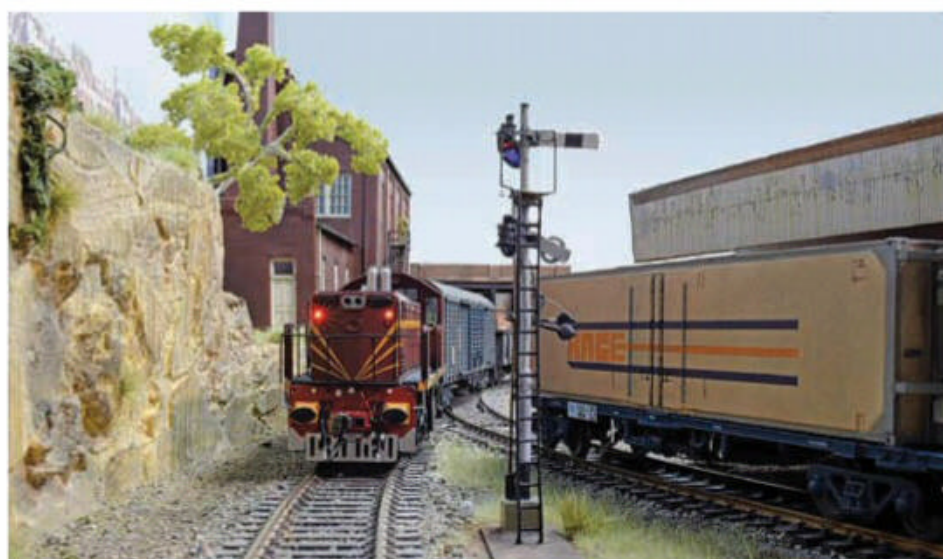
The full range of NR class locomotives including the indigenous units are available now.



FEATURES

18 Rozelle Street

Ben Gray describes his award-winning minimum space layout Rozelle Street in HO scale.



24 Photographic Opportunities with a 'Selfie Stick'

Jonathan Majer outlines how to photograph your layout using a 'selfie stick'.

25 Esperance Fuel Sidings

The AMRM team presents a location to model: the Esperance fuel sidings.

29 Build a 'Heatane Gas' Liquefied Petroleum Gas (LPG) Facility

Bruce McLean describes building a 'Heatane Gas' liquefied petroleum gas (LPG) facility.

36 Marmalake Bulk Grain Storage

Richard Parker outlines the operations of Marmalake's bulk storage facility and how this was incorporated into his layout.



42 Building a *Bluebird* Railcar in O (1/4-inch) Scale

Graham Ahern describes how to build an SAR *Bluebird* railcar in O (1/4-inch) scale.

47 Modelling Modern-era Containers Part 2: Domestic Containers

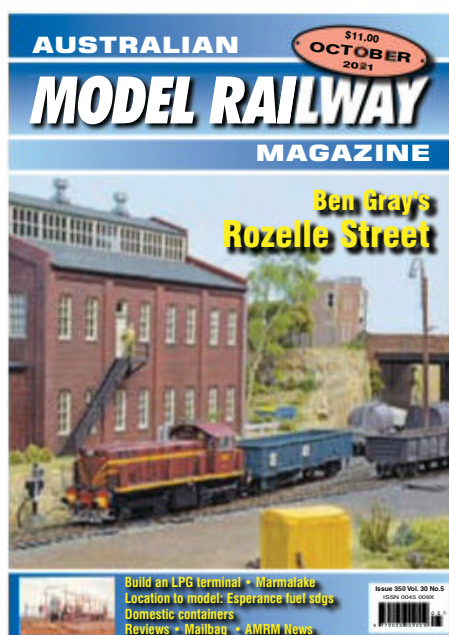
Chris Jones explains in detail the 'how' and 'why' of modern-era domestic containers.

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- 35 In The Loop: Making it Yourself
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ON THE COVER:

NSWGR diesel hydraulic locomotive 7305 is busy shunting wagons on Ben Gray's 'Rozelle Street'.



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The good the bad and the ugly

The current AMRM team has been in control of the editorial reigns for over a year now and it's time for AMRM readers to give us some feedback. Feedback we have received so far includes:

- fewer reviews, more articles;
- more prototype articles like the V/Line G class article, showing details, modifications etc. to model the prototype effectively;
- publish locomotive and rolling stock plans; and
- publish beginner articles (for example, building layouts, laying track, scenery etc.).

From my point of view the magazine's ethos should be to:

- inspire, providing inspirational articles etc.;
- entertain — sometimes it's good to sit back and enjoy other modellers' journeys;
- inform, providing knowledge, display techniques, good useful prototype references etc. to progress your modelling; and
- promote Australian railway modelling.

We have been experimenting with the magazine in a number of ways, including:

- Present feature layout articles, with larger 'high impact' images. Where available a 'meet the author' section, so the reader can get some background to the modeller.
- Present modelling and construction articles into a framed step-by-step format. This creates a better visual flow and also means any related image is close to — or boxed into — the related text.
- Locations to model and (recently) trains worth modelling.
- Exhibition reports.
- Present a mix of scales, prototypes and era.

In the end, AMRM is *your* magazine. While we will never please everyone, we can gauge what readers want to see. When providing your feedback, please give some thought to:

- If you are (or were) a beginner, what would you like to see in the magazine to get you started?
- What are you avoiding doing on your layout because you are not confident and need guidance or knowledge?
- Is there something that we have not covered that you would like to see in AMRM?
- What articles have you found inspirational and why? I know when I was starting in the hobby, I almost read the print off issues I found inspirational.

We are hesitant to use a survey. Personally, I find them draining as you end up having to provide an opinion to lots of different things that you really don't care about. Or it is way too expansive and you end up saying anything just to get to the end of the survey! The AMRM office team do a fantastic job; accomplishing a survey would create an undue burden to their already busy task. So, the best way you can give us feedback is to email us at: amrmfeedback@tpg.com.au.

I will review your responses, so here is your chance to give us what you consider as 'the good, the bad and the ugly'.

SOUTHERN CROSS MODEL RAILWAY ASSOCIATION

The Annual Membership Fee for SCMRA is \$66.00 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 \$33.00 plus the (\$20.00) Joining Fee (does not include October issue of AMRM). All fees are GST Inclusive. Membership entitles you to participate in the activities of the Association, to receive AMRM and our regular news-sheet *Booster*. Standards, Recommended Practices and Information Sheets covering model railway practice are included in the joining kit together with a vinyl ring binder and are also issued at regular intervals. For further details write to the Secretary or contact the divisional representative. Meetings are usually organised on the second Saturday of

each month in New South Wales. For further details and location please contact the divisional representative. Membership services include magazine binders and photocopies of articles from out of print issues of AMRM at discount prices.

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AT ISSN 0045-009X

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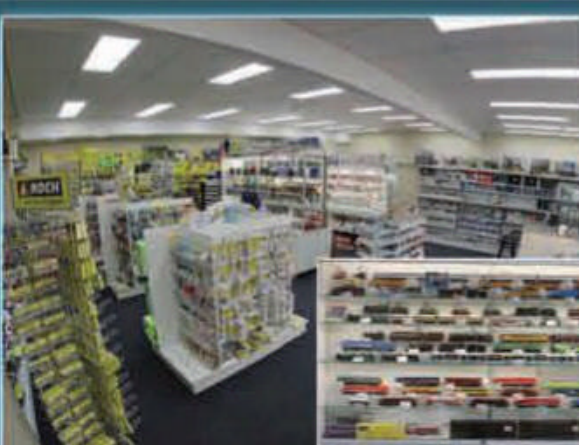
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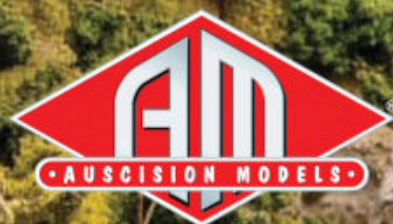
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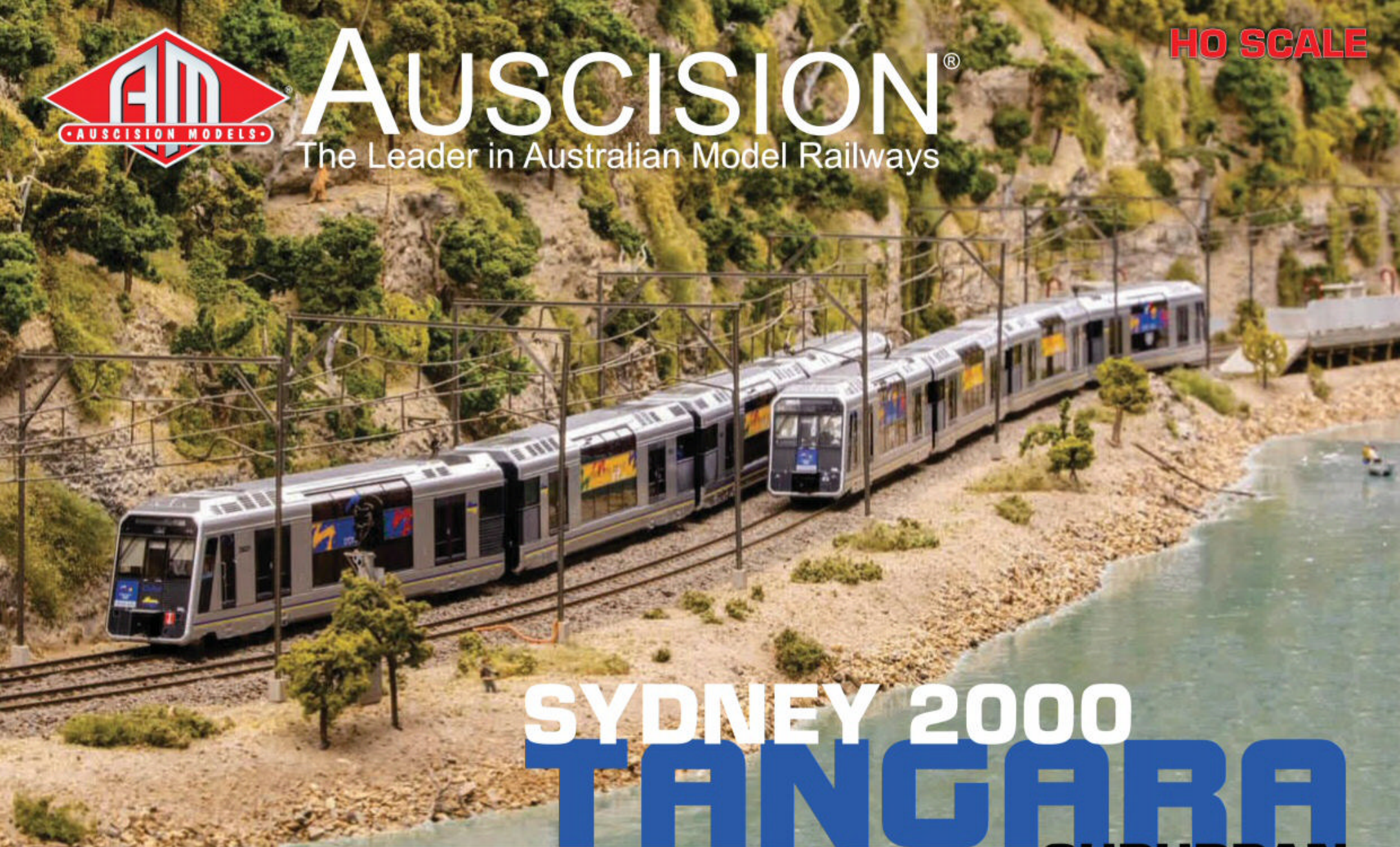




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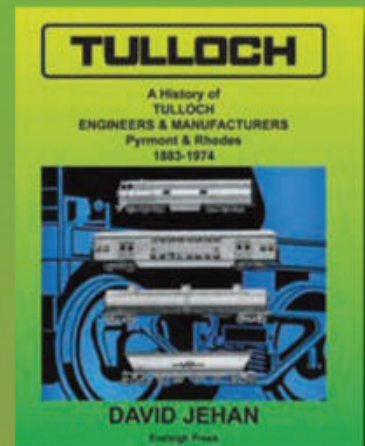
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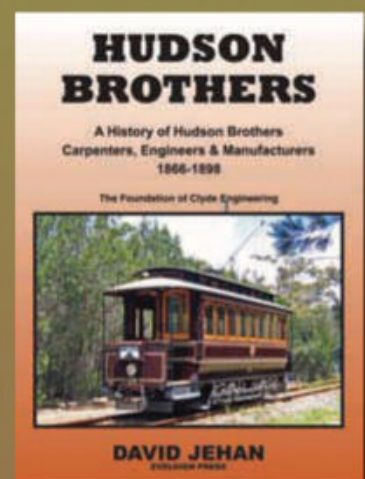


In this volume, David records the history of the engineering firm of Tulloch from its formation in Pyrmont in 1883 until 1974. This highly acclaimed book won the Colin Crisp Award for Engineering Heritage from Engineers Australia. The author traces Robert Tulloch's arrival in Australia from Scotland, his first job at the Atlas Foundry until he formed his owned company in 1883.

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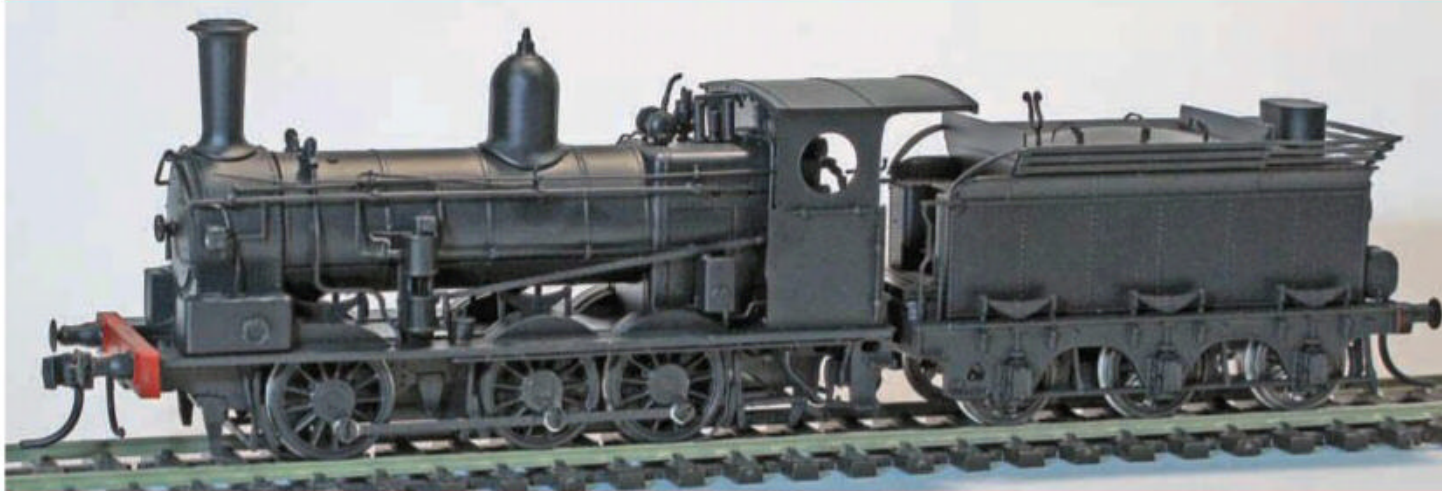
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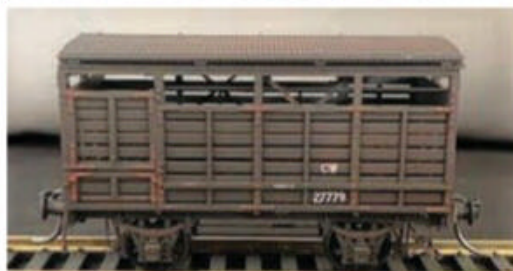


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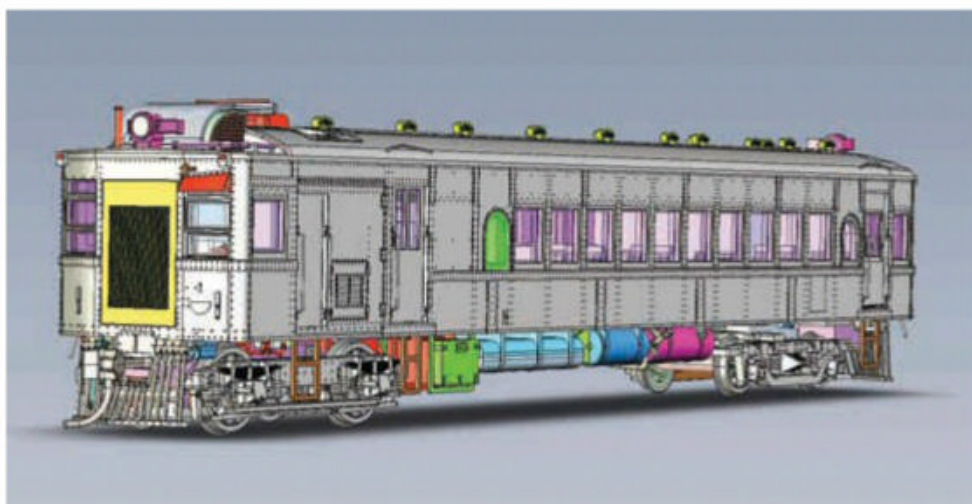
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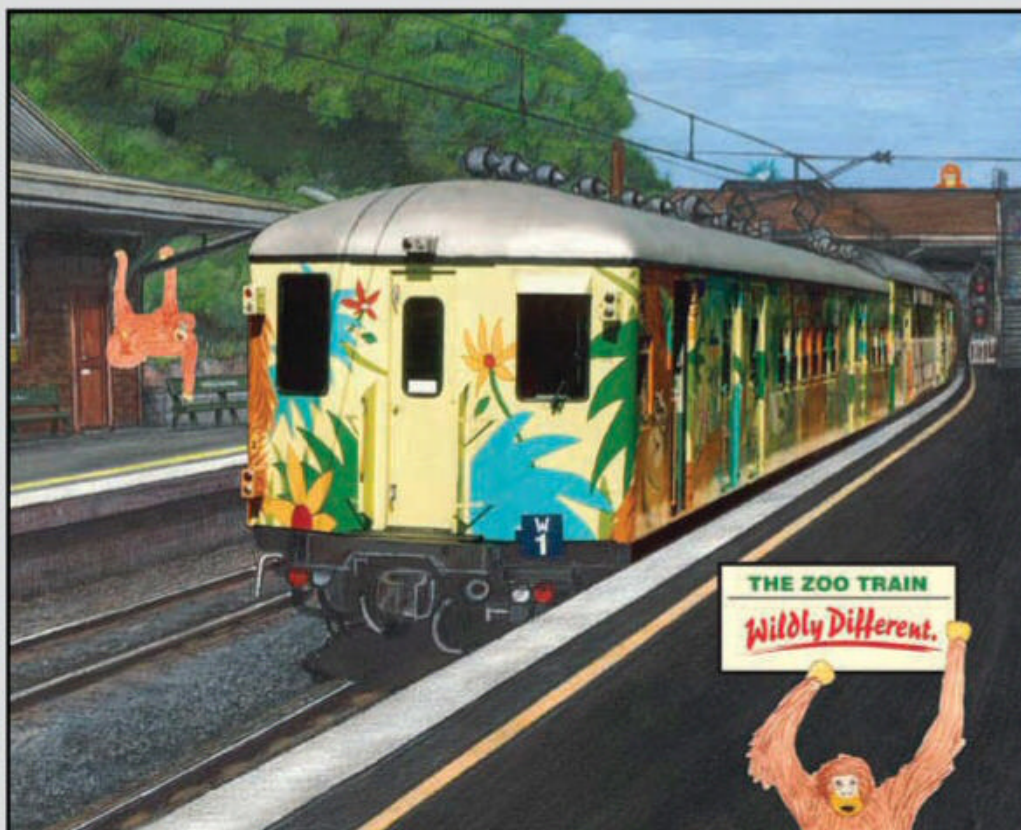
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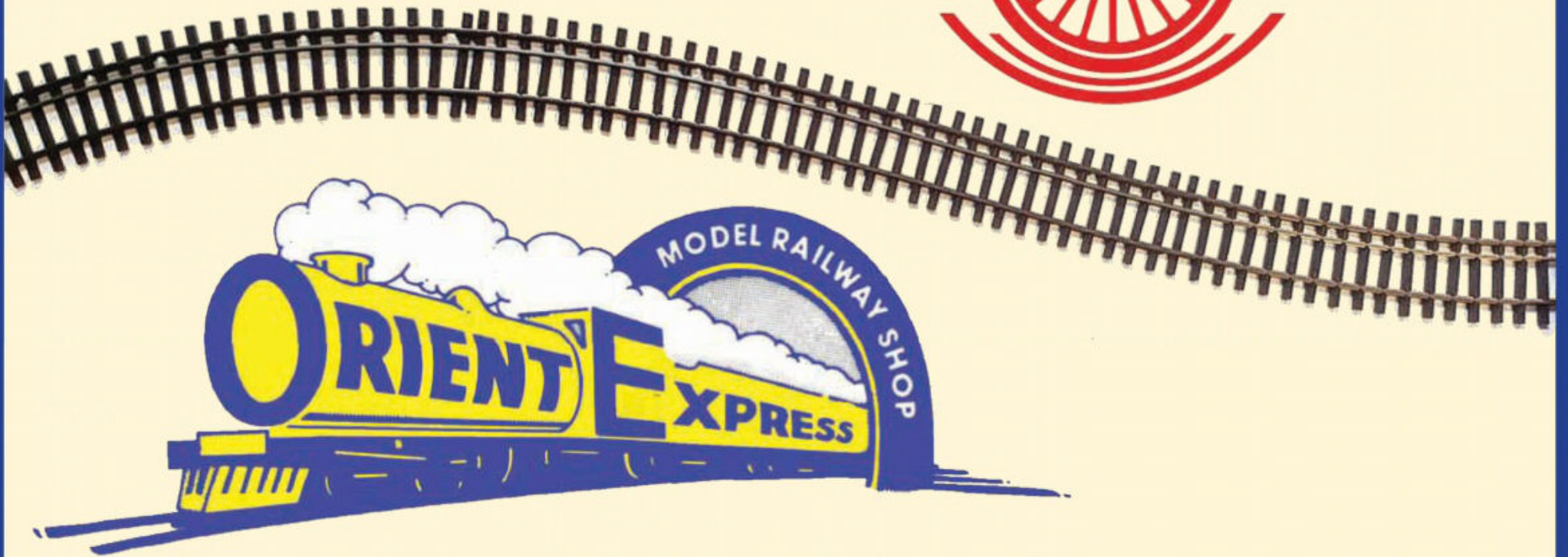


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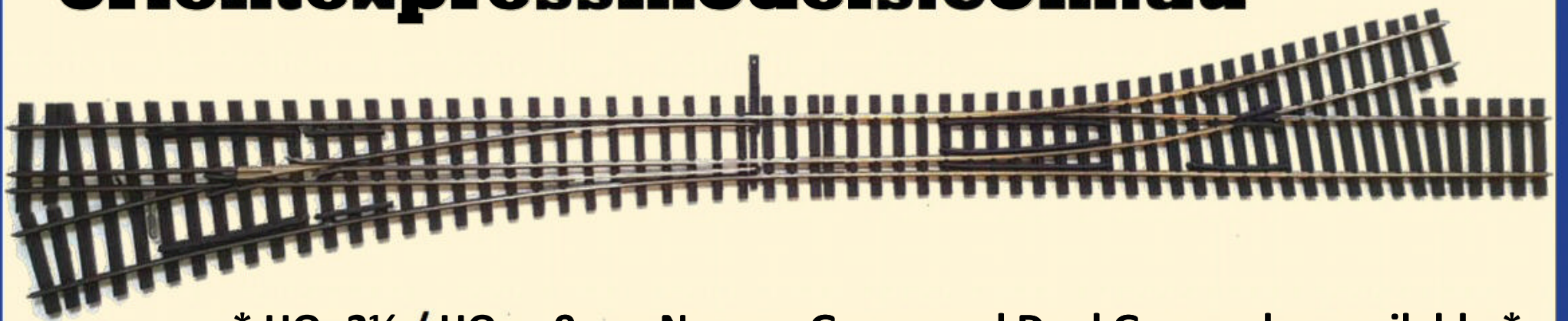
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Narrow Gauge: Flextrack

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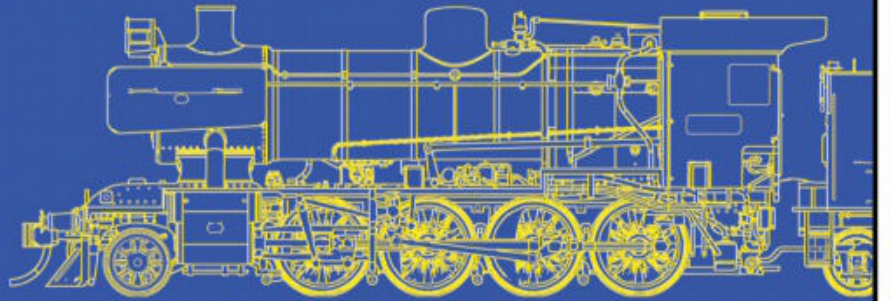
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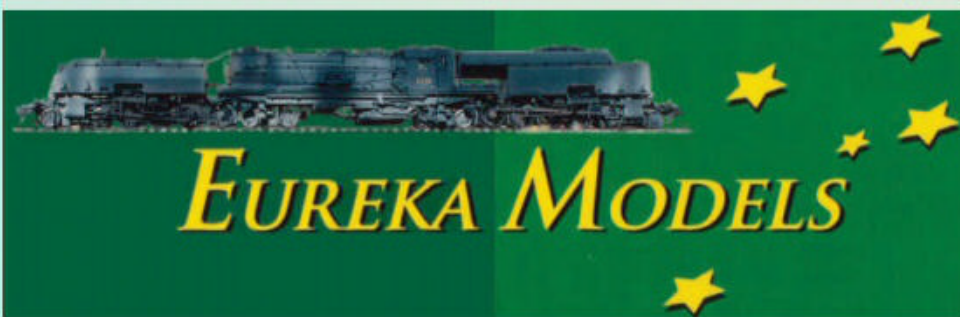
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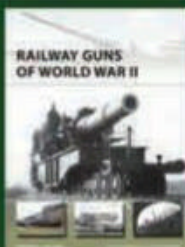
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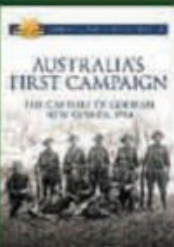













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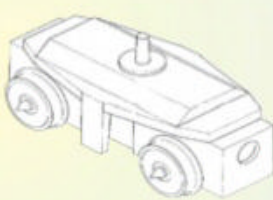
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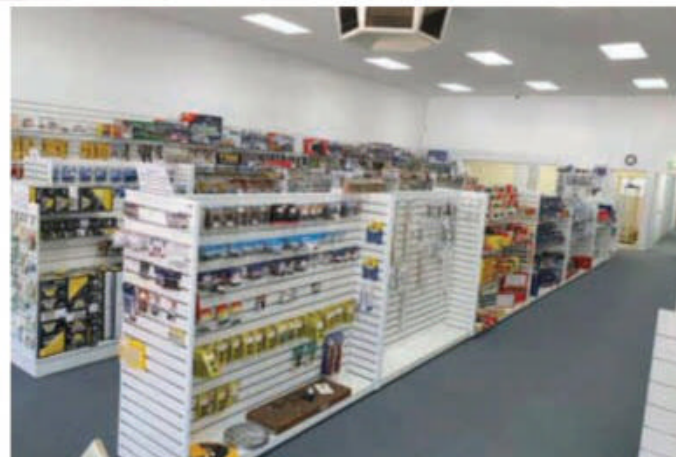
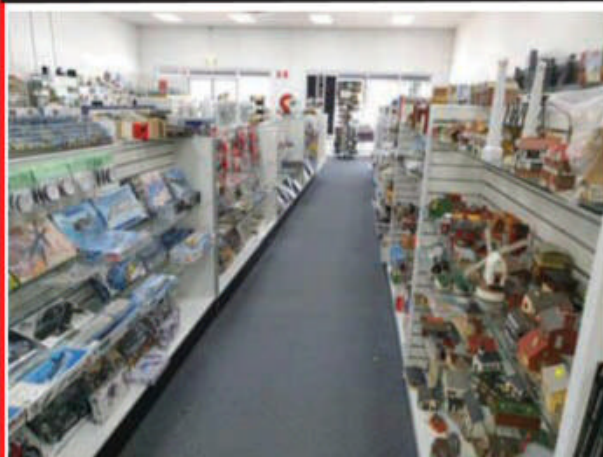
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▲ Locomotive 4887 slowly draws into Rozelle Street yard with a trip train from Enfield yard.

▼ The layout also serves as a detailed diorama on which to photograph weathered or enhanced R-T-R models. On another perpetually bright and cloudless day, X208 drags some fairly new PRX cement hoppers into the yard for assembly into a trip train.





With marker lights showing red at both ends for shunting, 7305 receives the shunt ahead signal to draw forward of the signal protecting the main line. The yard signal, built by Dale Richards, increases the challenge of shunting within the available space in as few moves as possible, with each use of 'shunt ahead' serving as a penalty.

ROZELLE STREET

Ben Gray describes his minimum space layout based on inner-urban Sydney in the late 1970s.

Introduction

Two of the great temptations of gaining your own space to build a model railway is to fill that space with as much track as possible or to inadvertently design and build a layout that neither fits the time you have available to build and operate it, nor achieves what you want out of your modelling. The result: an unpainted timber concoction of track and wires that leads to more frustration and disappointment than joy, ultimately discouraging you from finishing that layout. Sound familiar?

At the end of 2015 I was preparing to move interstate for work and into a much smaller home. I read a blog post by North American model railway author Lance Mindheim encouraging modellers to build layouts to suit our lifestyles. The theory goes that if you only have time to run your layout for 30 minutes a day, by yourself, perhaps a double-garage-sized, round-the-walls behemoth requiring four operators isn't going to be achievable in the time you have available.

My own spare-bedroom-sized New South Wales country branchline layout at the time was still just bare boards and unfinished trackwork after two years of periodic construction. Clearly,

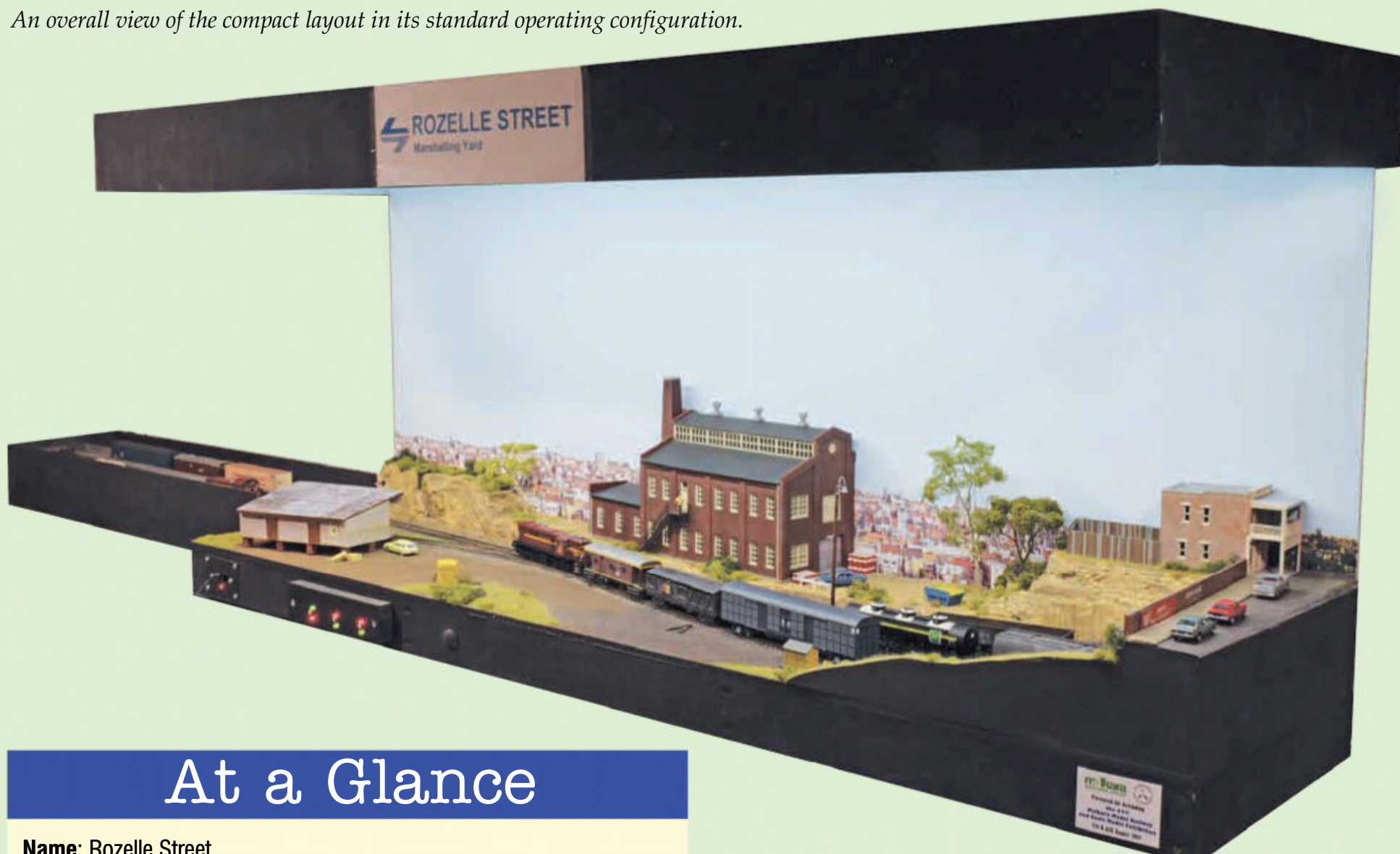
my current lifestyle was incompatible with building a layout of that size. I decided to re-think my approach to having a model railway.

Around the same time, I read an advertisement in the December 2015 AMRM for the Hobsons Bay Model Railway Club (HBMRC) Oz-32 competition. It was a competition to build an Australian-themed layout of any gauge or scale, in under 32 square feet. It also had to be finished to exhibit in July 2016, giving me just over six months to build it. The idea for *Rozelle Street* was born.

Design and Construction

To apply Lance Mindheim's theory, I realistically get about 40 minutes once a week to run a model railway, so a shunting layout is more conducive to my lifestyle. In looking at some designs I settled on an inglenook pattern; a shunting puzzle where three out of the five wagons available are assembled from two sidings into a third siding, in a specific order, with a limited head-shunt available. Australia has fewer of the compact urban locations, with lots of shunting activity, that lend realism to

An overall view of the compact layout in its standard operating configuration.



At a Glance

Name: Rozelle Street

Scale: HO

Period: NSWGR 1978–79

Layout Type: minimum space shunting layout

Layout Size: 1400 mm x 330 mm

Rail height above floor: 1245 mm

Baseboards: 6 mm ply on a pine base

Track: Peco code 75

Control: NCE DCC

Buildings and Structures: kits, scratch-built from paper and card

Scenery: Woodlands Scenics, Mininatur and natural dirt

Locomotives: R-T-R from Auscision and IDR Models

Rolling stock: R-T-R and kit-built

Builder: Ben Gray

About the creator of Rozelle Street

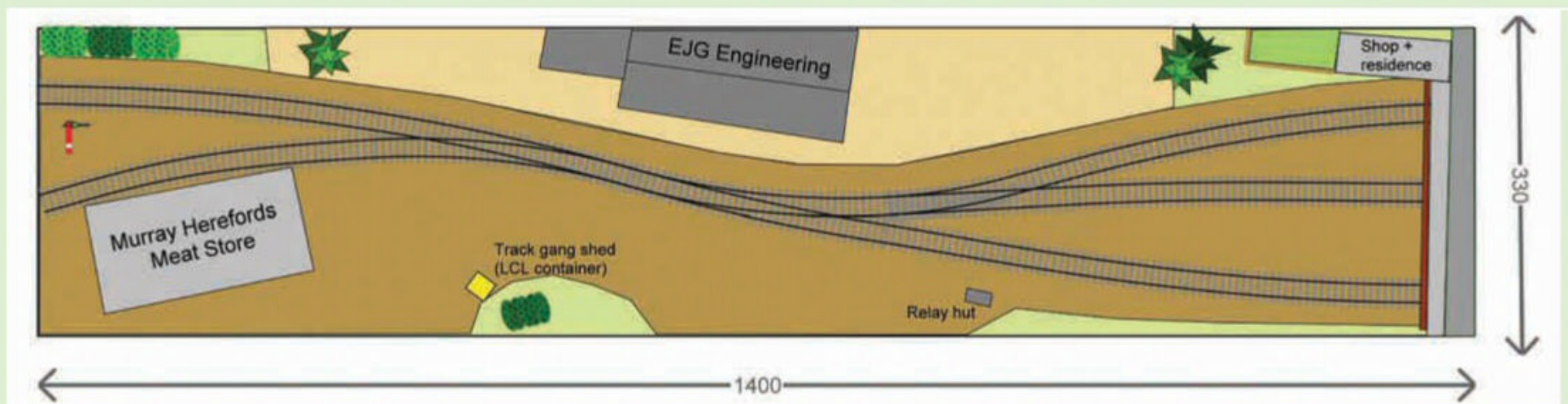
Ben has had a keen interest in trains since the age of five, particularly the NSWGR. He is passionate about building realistic Australian scenery and enjoys the challenges of recreating the late NSW Public Transport Commission era in model form as accurately as possible. He currently lives in Sydney, NSW, with his wife and their young son.

British and North American shunting layouts of this design. However, prototypical inspiration can be found in all Australian capital cities, even Canberra!

I model the New South Wales Government Railways in the late PTC era, circa 1978–79, mainly for the ability to run modern bogie rollingstock alongside the last of the four-wheel stock, interspersed with colourful, interstate wagons visiting on bogie exchange, hauled by diesels wearing the greatest livery ever designed for them: Indian red. Using the inglenook concept, I've chosen to represent a section of the Rozelle goods yards area on the metropolitan goods lines in Sydney, ending under a road bridge at a mirror to increase the perception of a bigger space. For added complexity, a guard's van is added, with the completed consist departing the layout for the fiddle yard as a trip train.

A meat siding was added at the opposite end of the layout, inspired by the former siding at St Leonards. This siding is shunted in the opposite direction to the goods yard, adding a little more variety to operations.

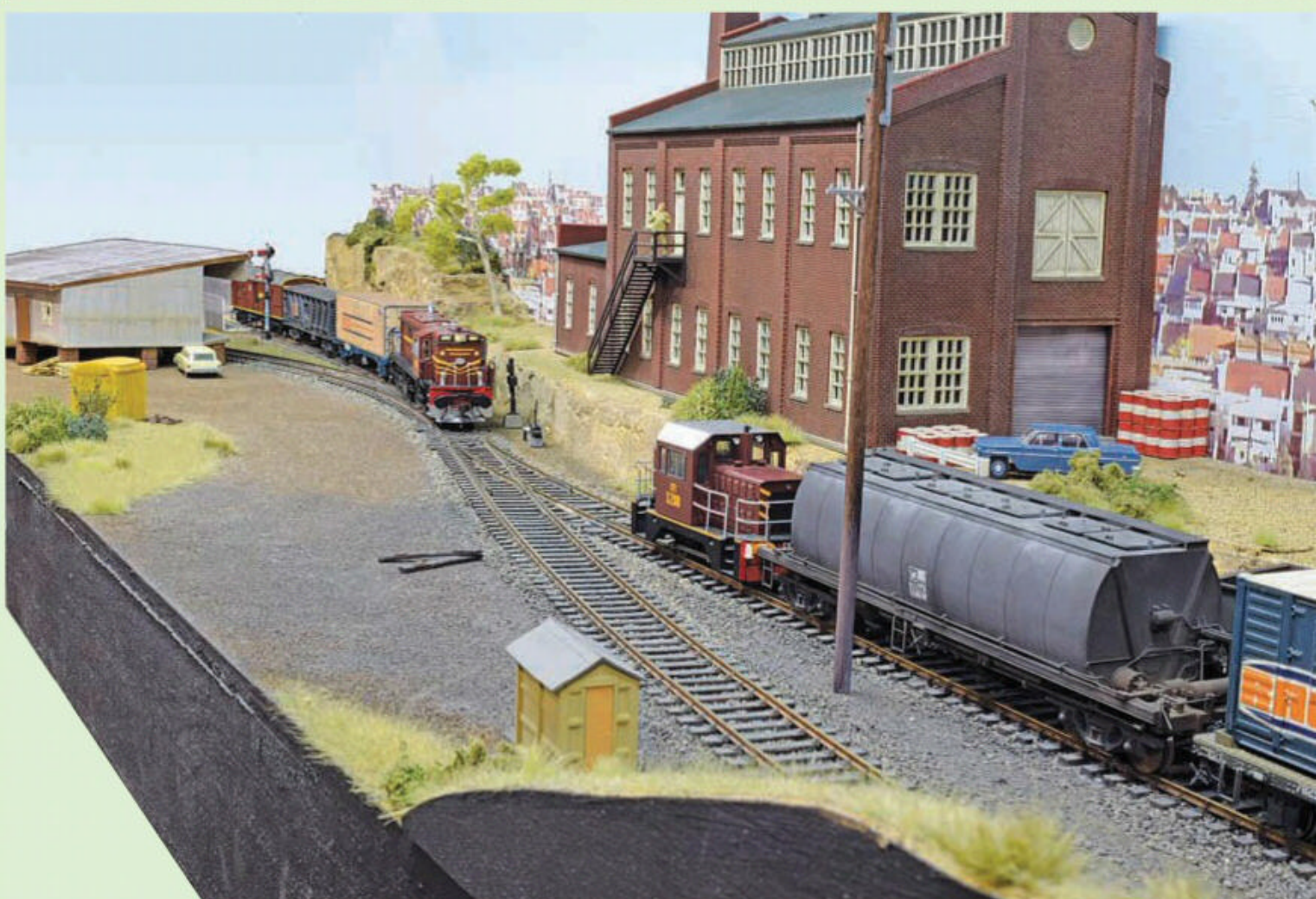
The layout baseboard is 1400 mm long by 330 mm wide, built from lengths of pine and 6 mm plywood. As well as complying with the HBMRC competition specifications, it also had to fit in the back of my Toyota *Corolla* hatchback, and meet my wife's edict of being able to "fold up and be stored out of sight," to maintain the appearance of being 'normal people' to visitors. To meet these requirements, built-in pine legs fold down on hinges attached to the underframe, setting the track height at 1245 mm



► Taking in the view from the foot-bridge as 7305 breaks up another trip train into a lightly-patronised yard.

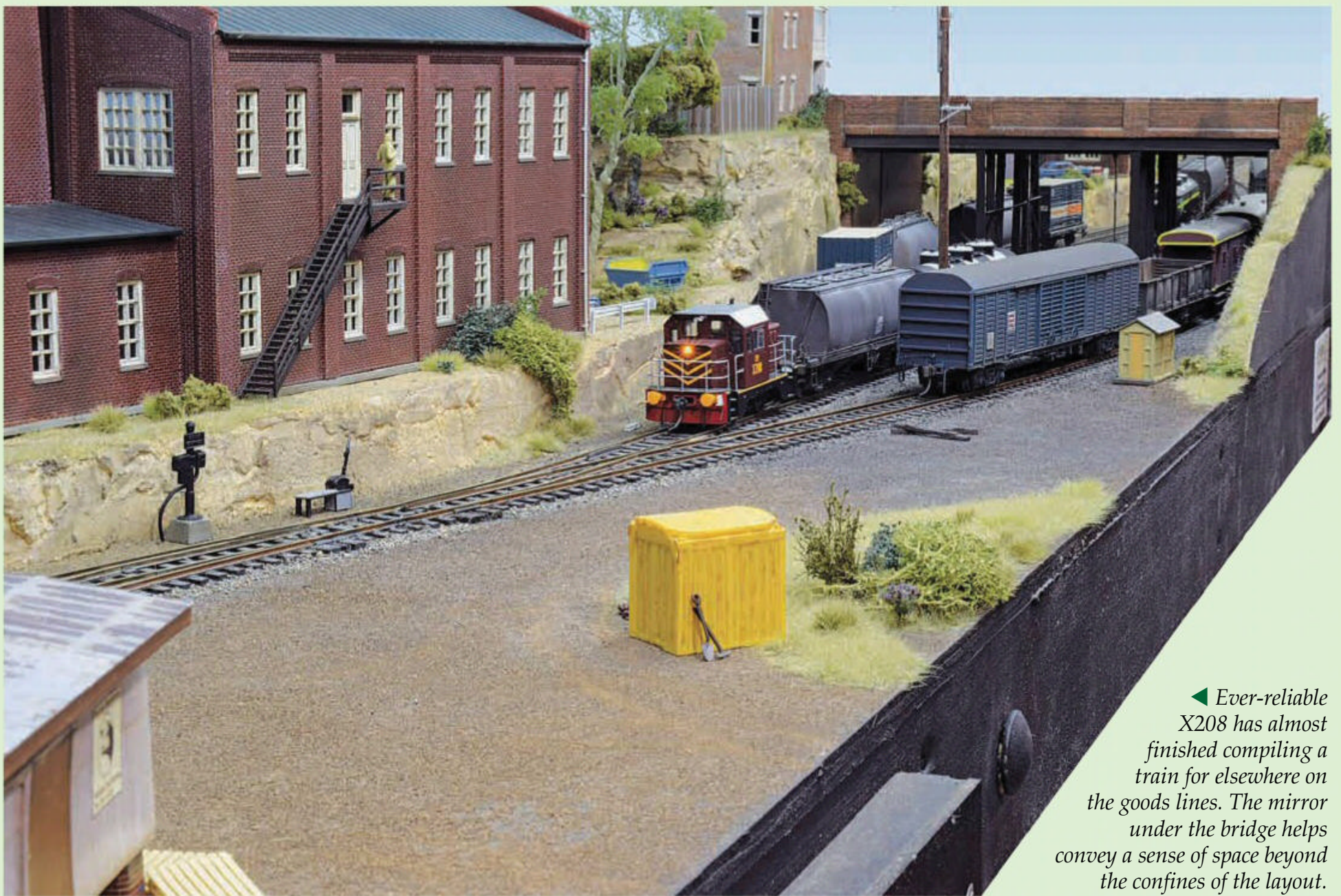


► Diesel hydraulic X208's crew takes crib in the yard sidings while 4887 drops off an ICX with a refrigerated RACE container for the meat store.



► Mainline power can also be found leaving the yard from time to time. Here, 42106 heads back to Enfield with some empty wagons in tow.





◀ Ever-reliable X208 has almost finished compiling a train for elsewhere on the goods lines. The mirror under the bridge helps convey a sense of space beyond the confines of the layout.

off the floor, braced with diagonal cross-pieces. The backscene and roof module are removable to allow for either storage or transport. The folding legs provide ease of transport to and from exhibitions, or moving house.

Lighting plays a big part of enjoying our layouts. I've found that shadows cast by room or hall lighting when moving around can make or break the realism displayed, even on a small layout. To address this, one cool and one warm light emitting diode (LED) lighting strip is attached to the roof module, forward of the edge, to avoid the front being in shadow to the viewer. I've found this combination of LEDs to be a closer representation of daylight than any alternative. A laptop power pack provides power to the LED strips.

The lighting pelmet is supported by an aluminium square tube bolted into the back of the scenic module. The backboard slots into the scenic module and is secured against the vertical aluminium tube by a length of dowel.

A simple 900 mm-long fiddle yard completes the layout, using cassettes made from aluminium angle secured to lengths of pine at HO scale track spacing. Power to the fiddle yard is delivered by alligator clips that connect to the digital command control (DCC) bus under the layout. Simple but effective.

Track

The track is all Peco code 75 recycled from a previous layout. It is glued straight onto the painted timber using polyvinyl acetate (PVA) glue and wired for DCC operation. I've laid the track on a slight reverse curve because too much straight track can be boring, and the curve shows off more sides of each model.

The points are powered by Tam Valley servos; these provide a smooth, slow operation and take up minimal space under the layout. I've also used a Hex Frog Juicer to improve reliability at low speed over points.

Small neodymium magnets are installed within the baseboard and under the rails to serve as uncouplers. This improves the aesthetics of the trackwork and avoids having to touch wagons or locos when operating. While they sometimes work too well, uncoupling on a curve can be difficult with some of the longer

wagons, but it's still the best method I've found so far. The magnets were covered with black paper to help hide them before laying the track on top.

The sleepers are all individually painted shades of grey and brown using artists' acrylic paints. The rails are weathered using a brown Artline marker. Ballast was laid dry and brushed from the tops of the sleepers. It was then wet with 100% isopropyl alcohol followed by a mixture of PVA glue diluted with water and drops of dishwashing detergent applied from an eye-dropper. Once dry, crushed dark-grey pastel crayon was brushed over the top of the sleepers and ballast to tie it all together. This greatly enhances the track's overall appearance and realism.

Scenery

The base layer is very finely sifted dirt from my local area, sealed with a PVA and water mix. Sandstone rock is an iconic part of the natural landscape of Sydney and was a key element I wanted to reproduce. The rock layers were built as described in Malcolm Smith's *Building Bell's Grotto* series in the December 2014 and February 2015 issues of AMRM. When dry, a round file was used to replicate vertical drill lines on the rock, thus representing the drilling method of construction visible on the prototype. The rock was then painted with a wash of yellow artists' acrylic paints, followed by a more 'golden' yellow wash to achieve the sandstone look.

To get the look of sandstone exposed to weather, I added several layers of a thin brown/dark grey wash made from artists' acrylic paints, gently applied in random patterns in a downward brush motion. This allows the recessed areas of the rock to still show their yellow base colour, just like the prototype. Each layer was left until completely dry to check the final colour.

This scenic base was covered with various lichens, bushes and grasses from Silflor/Mininatur, Scenic Express and Woodlands Scenics. Apart from the small shop and factory, all buildings and the bridge were scratch-built from cardboard overlaid with various Scalesscenes patterns. Since first exhibiting it, I've slowly added scenic detail items from Uneek.

Backdrop

The backdrop is plywood painted sky blue, with an image printed onto A4 paper at a printing shop. I wanted a unique Sydney scene, and found one in the background of one of the many National Film and Sound Archive films from the 1970s on YouTube. After taking a screen shot, I copied the scene into Microsoft Paint to get the basic length and played with the colour tones in Word. When printed, I removed a few trees or a building on the horizon every so often with scissors to make it look less like a repeated picture. This was glued onto the backboard with a glue stick from our home office. I'm quite pleased with the result.

Locos and Rolling Stock

I find that smaller locos are an important element in maintaining perspective on a small-space layout. Accordingly, most of the time I use an Auscision 73 class or 48 class and an IDR Models X200 class, all equipped with DCC and sound. Sound adds that extra operational element in my opinion, especially in shunting.

Of the five wagons I have out at any one time, one is a larger, modern 63 ft bogie wagon, three are 36–45 ft wagons and one is a four-wheeler. On a smaller layout, the use of shorter rolling-stock gives the impression of more happening in a given space, though if I need a challenge, I'll throw in a 75 ft Commonwealth Railways' VFX.

I'm slowly weathering more of my rollingstock, enjoying learning how to represent the weathering patterns between general goods, cement, wheat and meat traffic.

Exhibiting

After several late nights adding the final touches and testing everything, I completed the layout and made my deadline for the 2016 Hobson's Bay exhibition.

Presentation is important, and a simple black material 'skirt' attaches to the layout at exhibitions using standard folder clips obtained from the newsagent.

Because of its role as a home layout, and my own difficulty of getting the attention of an operator standing behind a layout at an exhibition, *Rozelle Street* was built to be operated from the front. I've found that this is more conducive to interacting with the public and other modellers, and sharing ideas.

Later, *Rozelle Street* was exhibited at Malkara in the ACT and, since then, I've found that experiencing the hobby from the

other side of the yellow line has only enhanced my enjoyment of it. Many other layout operators would come by during both days and offer their encouragement and helpful suggestions to enhance operations in future. I encourage anyone thinking of building a layout to set themselves a similar challenge to build and exhibit a home-based layout.

Conclusion

Rozelle Street was great fun to build and is a lot more satisfying to operate than it first appears. Exhibiting was the perfect motivation for me to push through problems that would have stopped me in the past and, as a result, I now have a finished layout that continues to provide enjoyment many years later.

Building one small layout provides the confidence to build another, and I've started building a new layout since *Rozelle Street* was finished. Having a layout to run and to serve as a template for copying the tried and tested construction methods has been quite helpful.

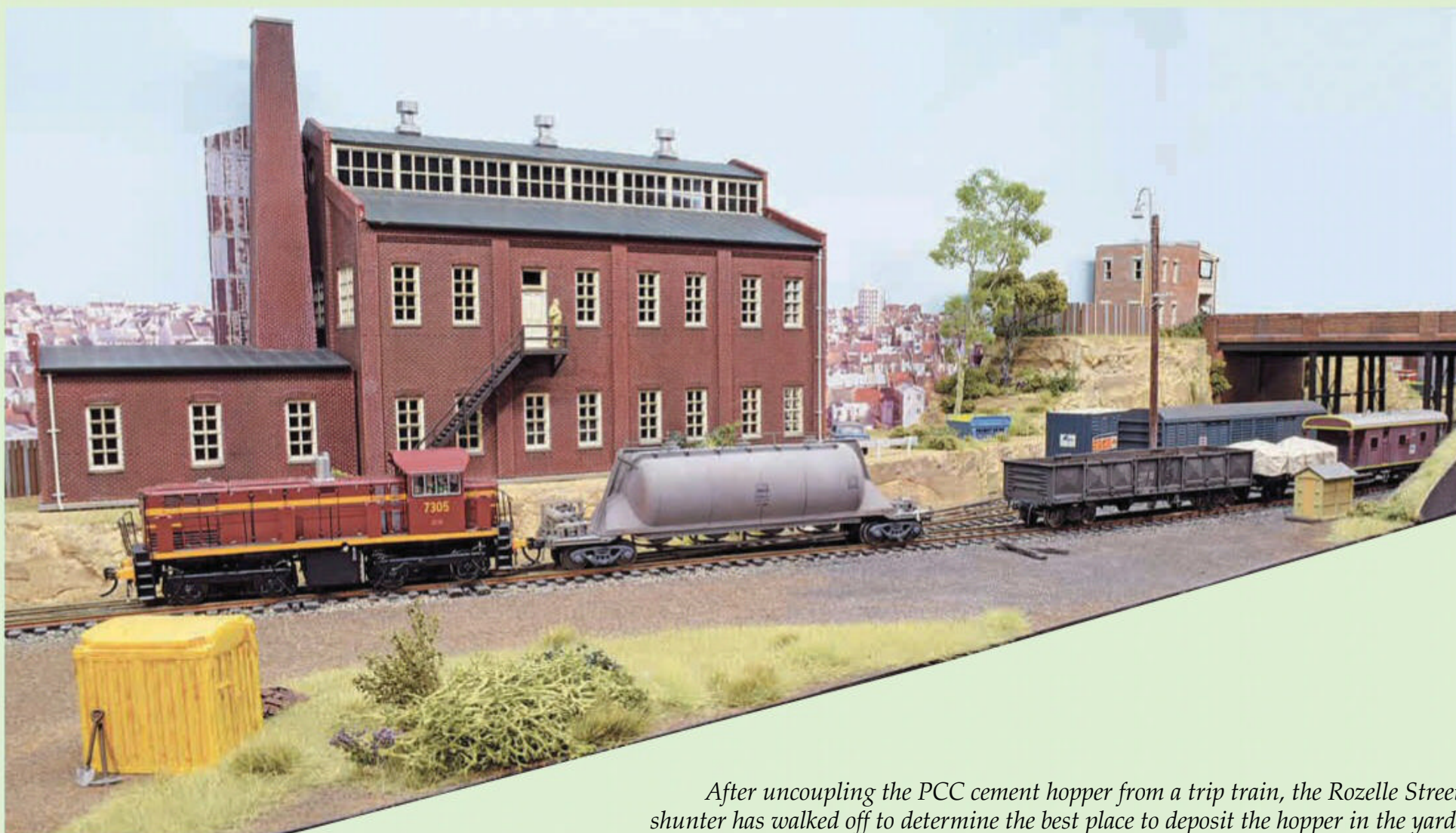
My thanks go to the Hobson's Bay Model Railway Club for an original idea to stimulate the construction of new layouts for the exhibition scene and to the many, many modellers I have corresponded with on line to swap ideas and tips.

Lastly, thanks go to my wife for her continued patience and encouragement, and to my brother, Andrew Gray, for keeping my "but what if we just..." ideas in check and without whom the layout would not have been exhibited. 

Editor's notes

Design considerations of 'Rozelle Street' to contemplate:

- Assessing the amount of time you can actually dedicate to a layout and how much time you intend to operate it each week; these points may lead you to consider a smaller design.
- Small layouts can be used to hone your skills; construction time is significantly reduced.
- Capital cost is reduced; fewer locomotives, rolling stock and track is required.
- You can build many small layouts, of varying prototypes and eras, versus one large layout.
- Ben is currently building another layout using the same type of concept.



After uncoupling the PCC cement hopper from a trip train, the *Rozelle Street* shunter has walked off to determine the best place to deposit the hopper in the yard.

Photographic opportunities with a 'selfie stick'

Jonathan Majer provides techniques for using a 'selfie stick' to photograph your layout. Photos by the author.

Many of us like to take photographs or videos of scenes on our layout. One way to do this is to use a camera mounted on a small tripod or by placing it directly on the baseboard at track level. Although track-level photos can be very effective, positioning of the camera in the desired position can be limited by its size and by the presence of structures such as telegraph poles and figures on the baseboard, by accessibility to parts of the layout and by general scenery 'clutter'.

An alternative to using a camera is to use a smart phone, many of which are now able to take photographs with a quality similar to a good digital camera. To some extent, the smaller size of a smart phone overcomes some of the problems associated with a digital camera, but not all of them. I wrote an article about mounting the smart phone on a monopod, commonly referred to as a 'selfie stick' or 'wand of Narcissus' [Editor's note: Refer to 'The Monopod: from Selfies to Secret Scenes', issue 312, June 2015.]. By using this, the smart phone can be held slightly above the scene to be photographed at distances of up to one metre from the photographer and can be positioned in hard-to-reach places. For instance, it could be pointed backward behind a building that is not normally visible from the front of the layout. I have used this device for many years and produced some very interesting photos.

However, there has been one disadvantage — the need to touch the button on the smart phone to take the photo, a difficult process when it is one metre away on the end of the 'selfie stick'. This can be overcome by deciding where to position the phone for your desired photo, withdrawing it then returning it to position after setting up the 10-second timer. Accurate repositioning of the smart phone can be a hit-and-miss process, meaning that several attempts might be made before taking that 'perfect' image. It is also problematic using the video function as the button needs to be pressed twice: once at the beginning and once at the end of the sequence, inevitably leading to a large amount of movement of the phone. This can be rectified by editing out

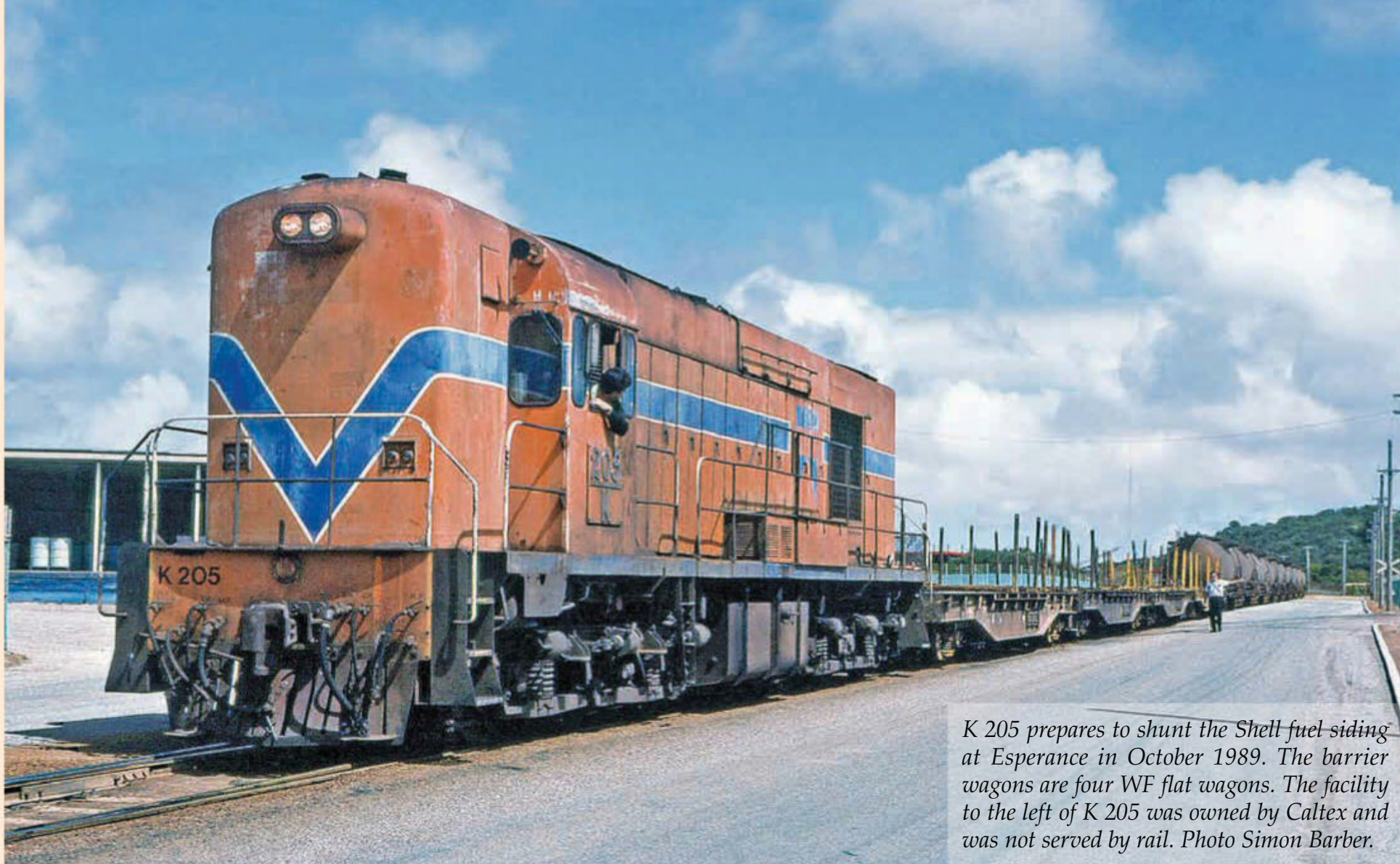


the unwanted parts of the 'take' at the beginning and end of the sequence, providing the photographer is able to use a video-editing program.

These problems can now be overcome with a new type of monopod that incorporates a Bluetooth device in its handle that communicates with the smart phone on the end of the 'selfie stick' (see photo 1). A removable button on the handle (see photo 2) is used to take the photograph and, if taking a video, a second press of the button ends the shooting. The handle can fold out to produce a tripod so, if the button is removed, it can be used to take photographs or videos without the need to touch the handle (see header photo).

These monopods are widely available on eBay by searching for 'Bluetooth selfie stick'; they cost less than \$20. In addition to being affordable, the device is compact and simple to use, requiring minimal set-up time. I have been able to take interesting photos from positions that would normally be inaccessible. Also, the device is comfortable to grasp when videoing a moving train, meaning that camera shake is minimal. I believe this device can open up new horizons in model railway photography and readers have the added benefit of being able to take a 'selfie' of themselves enjoying their layout! There is now a new generation of monopods called gimbals that have additional features that, importantly, include image stabilisation. However, I do not have experience with these devices — and they are much more expensive.





K 205 prepares to shunt the Shell fuel siding at Esperance in October 1989. The barrier wagons are four WF flat wagons. The facility to the left of K 205 was owned by Caltex and was not served by rail. Photo Simon Barber.

A LOCATION TO MODEL

Esperance fuel sidings

Photos by the AMRM team unless otherwise stated.

Nestled in the south-east of Western Australia is the town of Esperance; the fuel sidings there would make an interesting location to model.

The original narrow gauge Esperance line became marooned by the gauge standardisation project in 1970. In 1974 it was converted to standard gauge, thus this sleepy branch line was extensively rebuilt. The original narrow gauge yard was abandoned and an extensive marshalling yard was built to the west of the city. Two standard gauge branches were built: one to serve the port of Esperance the other an industrial branch. This industrial branch served:

- Cooperative Bulk Handling (now CBH Group) grain bunkers,
- a superphosphate facility, and
- fuel sidings.

The industrial branch operated in isolation to the rest of Esperance yard compete with lockable points at the entry point to and departure point from the yard.

At the location of the fuel siding, a run-around siding was constructed along with three sidings serving fuel distributors (see the associated track plan).

The Ampol siding was for non-tank wagon delivery only (that is, 205 L (44 gallon) drums etc.).

The Shell siding was configured to accept tank wagons only. The BP siding was configured to accept fuel in 205 L drums etc. in tank wagons and open wagons or vans.

By 1995 only the Shell siding was active; all traces of the other sidings had been removed.

Today, the Shell siding is still operational with Pacific National currently operating the fuel train.

Rolling Stock

For the barrier wagons WF series flat wagons can be used (refer to AMRM issue 134, October 1985). There were plenty of

others, including car carriers and vans so you can be creative here.

Atlas make a 33 000 [US] gallon tank car (available in N scale and HO scale) that can be kit-bashed into a WJP.

For the BP siding you can deliver 205 L drums in WBAXs and WOAXs along with regular tank wagons.

Locomotives

Until 1994, the K class and Ka class ruled the Esperance line. After 1994, the line was upgraded to enable L class locomotives to operate Koolyanobbing export ore trains to Esperance. From 1994 to today, locomotives to work the fuel sidings include: DC (ex-NSWGR 422 class), L class and Q class, along with the current operator's NR class.

Modelling Operations

The sidings are fairly compact and thus could be built as a stand-alone shelf layout or a section attached to a larger layout. There is plenty of operational complexity to keep you busy.

Starting with the shunt locomotive and the incoming tank wagons, you will be kept busy sorting out which tank wagon needs to go where, shunting back and forth with the barrier wagons and making sure the locomotive does not go past the STOP boards.

If you need even more operational scope, you can add the BP sidings.

This provides even more complex operations with a reduced head-shunt distance and needing to place the vans, open wagons and tankers all in their respective positions.

Summary

The Esperance fuel sidings enables us to model the WAGR and Westrail eras right through to the current era in one location.

Rolling stock outlay is low and the layout is best operated by one locomotive. Ready-to-run locomotives and rolling stock are available.

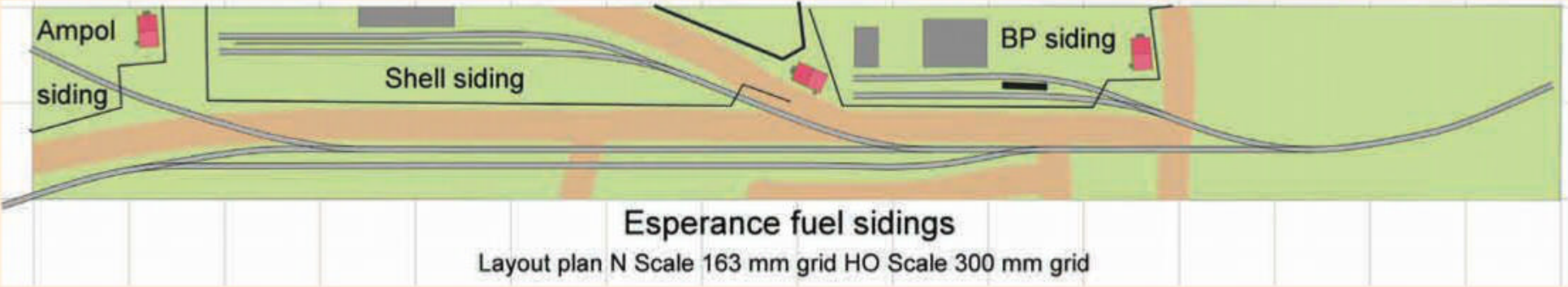
Scenery effort is minimal:

- The prototype facilities can be replicated using various model manufacturers' fuel distribution and terminal kits.
- The remainder of the scenery is low, scrubby bush land.

- The operational complexity of shunting fuel tank wagons around will give you lots of operational satisfaction, with a minimal investment in rolling stock.

References

WAGR Westrail fuel tank wagon history:
http://westralia.uk/wj_truck.htm.



The Shell Siding



▲ The former Shell administration building.

▼ The gate to the former Shell siding; two WGLAs are stored here as barrier wagons for shunting. Signs are positioned just prior to the loading points that state: 'STOP LOCOMOTIVES NOT TO PASS THIS POINT.' Note the weighted point throw at this location; all other points are lever thrown at this location.



◀ Two large storage tanks dominate the facility; the bunded area can be seen just beyond the fence. Road vehicle entry and exit can be seen to the left the sliding gate. Note the direction of traffic is reverse to Australian public road rules!

Q 4016 and AC 4303 head out of Esperance with the fuel train on 3 January 2016.



The BP Siding



▲ The angle of the gate at the BP terminal is a tell-tale as to its former function of a railway siding. The BP terminal was configured to accept tank wagons and 205 L (44 gallon) drums in open wagons or vans via the shed in the distance.



▲ The office of the former BP facility; the signs delineate between South East Petroleum and BP Esperance.



▲ The remaining part of the Esperance BP facility.

◀ Referring to the photo top right looking east between the piping and the building, is where the BP sidings would have been positioned.

Not long after Pacific National took over the Esperance–Kalgoorlie fuel train, NR 121 waits to start shunting, while NR 7 is in the run-around siding in the distance.





ATBY 14592 was built in 1981 as WJPB 14592, part of a leasing fleet owned by Bain Leasing Pty Ltd.



ATMY 553 was built as WJM 553 for BP.



Not all tank wagons used on Esperance traffic are of Western Australian origin. NTAY 6131 was built by Indeng Qld as SCA 282 for Shell NSW in 1979.



WGLA 30119 was built from a WF series flat wagon. The sides are fabricated to carry bagged nickel. Two of these wagons were regularly used as barrier wagons at Esperance fuel siding.



WJP 607 was built for Shell in 1982.

Build a 'Heatane Gas' liquefied petroleum gas (LPG) facility

Bruce McLean outlines LPG traffic and builds the Heatane Gas facility in Mildura, Victoria. Photos by the author.

Mildura is a large provincial city in north-west Victoria. Until natural gas was provided to the city, portable gas supplies in steel bottles were the principal source of gas energy for homes and businesses.

Mildura is also the terminus on my Maryborough to Mildura railway. Amongst the features replicating this station and its environs are a number of private sidings serving fruit packing sheds, oil companies, livestock, cement and the Gas and Fuel Corporation of Victoria (as it existed during my modelling time line) trading as Heatane Gas. The prototype siding was opened for traffic on 5 March 1979 and consisted of a short dead-end siding facing down trains. Its purpose was to provide a safe stabling place for one LPG tank wagon. The Heatane Gas depot was nearby and was connected by an underground pipeline.

The rail siding was secured by a Hayes derail block and so arranged that the security gate could not be opened unless the Hayes derail block was in the OFF position (see photo 8). The site was secured by a high security fence with locked gates. A 'fold-out' TANKER CONNECTED sign indicated when the gas tank wagon was being discharged (see photo 6). The outstanding feature of this

siding was the deluge water suppression system constructed to completely surround the tank wagon to flood the site in the event of venting gas or fire.

Modelling Heatane Gas

Modelling this siding was a challenge, but in one sense, made easy. My next-door neighbour was the local Heatane Gas representative so access to the site was no issue. I was able to get some fairly accurate dimensions for the suppression system as well as many photos for modelling and historical purposes (see prototype images).

The deluge water suppression system was constructed entirely with brass wire and took many hours. However, it was a great learning experience, especially trying to control the heat being applied for each join so the one just completed did not loosen and collapse. Ian Thorpe, a good friend and AMRM illustrator, gave me some practical advice using styrene many years ago when he demonstrated the 'trim it later' method. I used the same practical advice with the brass wire on this project.

I used a wooden jig with small nails to shape the individual sections for soldering and trimmed to length later. After all vertical structures were in place, I added

▲ A TWX LPG tank wagon fits comfortably inside the superstructure of the deluge water suppression system.

Materials Required

Deluge Water Suppression System Superstructure

Detail Associates brass wire:

- 0.040 thou for the main supports
- 0.010 thou for the spray heads
- 0.020 thou for the rest of the structure

Fencing

- 1 mm wire for the post and tulle from Lincraft for the chain mesh.

Holding Tank

- one Walthers Cornerstone central gas supply kit (this kit has two tanks)
- one BGB Heatane Gas U van decals



2

◀ An overall shot of the LPG facility showing the location of the holding tank. The office and store building are scratch-built using card, Northeastern timber and BGB corrugated card.

the horizontal piping with the spray heads.

The overall size of the suppression system is 230 mm long and 55 mm high.

When completed, it was painted over-all in red flat enamel.

The holding tank is made from a Walthers Cornerstone central gas supply kit. Only one tank was required for my facility. This was then painted white and I applied 'Heatane Gas' decals from a BGB U van decal set.

The chain link fence is scratch-built from tulle from Lincraft and the posts are 1 mm wire.

Model Operations

My railway operates from a train running schedule (not a timetable or a card system) and one of the scheduled goods trains conveys loading for the Mildura sidings. After arrival at Mildura, the local Y class pilot and a safety wagon run the LPG tank wagon to the siding and then reverse-shunt the wagon until it is placed correctly within the compound. A similar operation removes the wagon at a later time. The source for this traffic on my railway is Maryborough so I then set out to build a second suppression system at that location. The second one took less time, of course, with the technique and experience still fresh. That site is entirely fictitious for my purposes as the Victorian Railways LPG gas traffic actually originated at Bittern on the Stony Point line (south-east of Melbourne) and was sent to Mildura, Warrnambool and Wodonga.

Prototype Summary

The Gas and Fuel Corporation siding at Mildura was last used on 9 December 1983 with VGTX 2, also the first tank wagon to use the site. With the arrival of natural gas and after a very short life of four years the siding was dismantled in 1986. Road transport was then used to supply LPG for portable uses.

Rolling Stock

Initially, my gas tank wagon was kit-bashed from an Athearn tank wagon and was in use for about 35 years until SDS Models released its wonderful TWX/VTGX models in 2015.

[Editor's note: For background history on these tank wagons, refer to Neil Cram's article in AMRM No. 158, October 1989.] ▶

◀ With the LPG tank wagon removed, you can clearly see the intricacy of the deluge water suppression system.



3

End view showing the baulks and the TANKER CONNECTED sign.



4

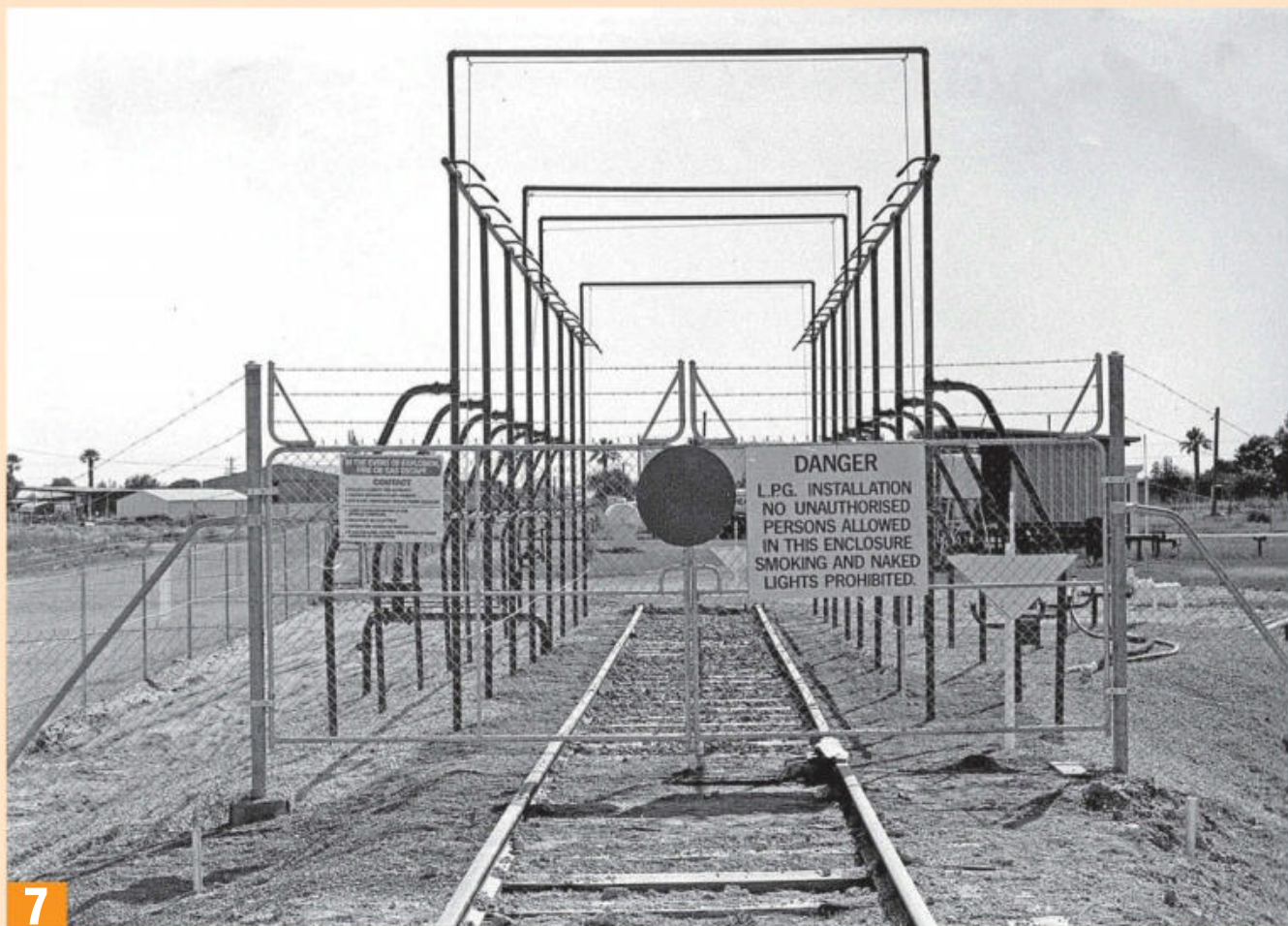
Details of the Heatane Gas facility, Mildura, Victoria



VTGX 2 at the Heatane Gas siding, 9 December 1983.



VTGX 2 at the Heatane Gas siding, 9 December 1983.



Heatane Gas siding, 29 March 1979; the Hayes derail block is on the right-side rail.

A Simple Economic Train Shuttle Circuit

Part two

Robert Kosmider enhancing the circuit with a timer.

I had a need for a 'one hit' shuttle service, or limited runs, so when switching on, the train ran once (or a set number of times) up and down the track between stations and then stopped at its original departure point.

This was achieved by adding an extra timer board (also available on Ebay for about \$5) that was somewhat different to the continuous timer cycling board. This is a 'Signal Activated Timer' (SAT). In addition to the components in part one [Editor note: 'A Simple economic train shuttle circuit' (part one) was published in AMRM issue August 2021].

We need a SAT board and two extra relays (one can be a single pole but the other must be double pole). I used two double pole versions as these are most readily available. The boards are shown in photo 2, they look very similar – the top board is the original continuous cycling and the lower is the SAT. You'll notice the SAT has an extra terminal on the input side (on the right in the photo). This is the external signal terminal.

The Circuit Principles

The 'Signal Activated Timer' (SAT) is a 'one shot timer'. The 12VDC board is set up for a given time and remains dormant. A signal is then sent to the board (12VDC) via a push button (say), the time runs down and the relay activates.

The circuit principle / operation is that the system (shuttle) is activated by a push button and a (latched) relay pair, the latter activating the continuous cycling timer. After a predetermined time (say one cycle) the SAT unlatches the relay pair and closes down the circuit.

For those wishing to know about the latched relay pair, refer Drawing four. The push button supply can be any 12VDC supply (or 5VDC if it's a 5VDC relay coil), but the supply to the normally open (NO) contacts on relay one (R1) MUST come from the same source as the supply for the NO contacts on relay two (R2). The spare pole of R2 is then used to control the supply to the continuous cycling timer.

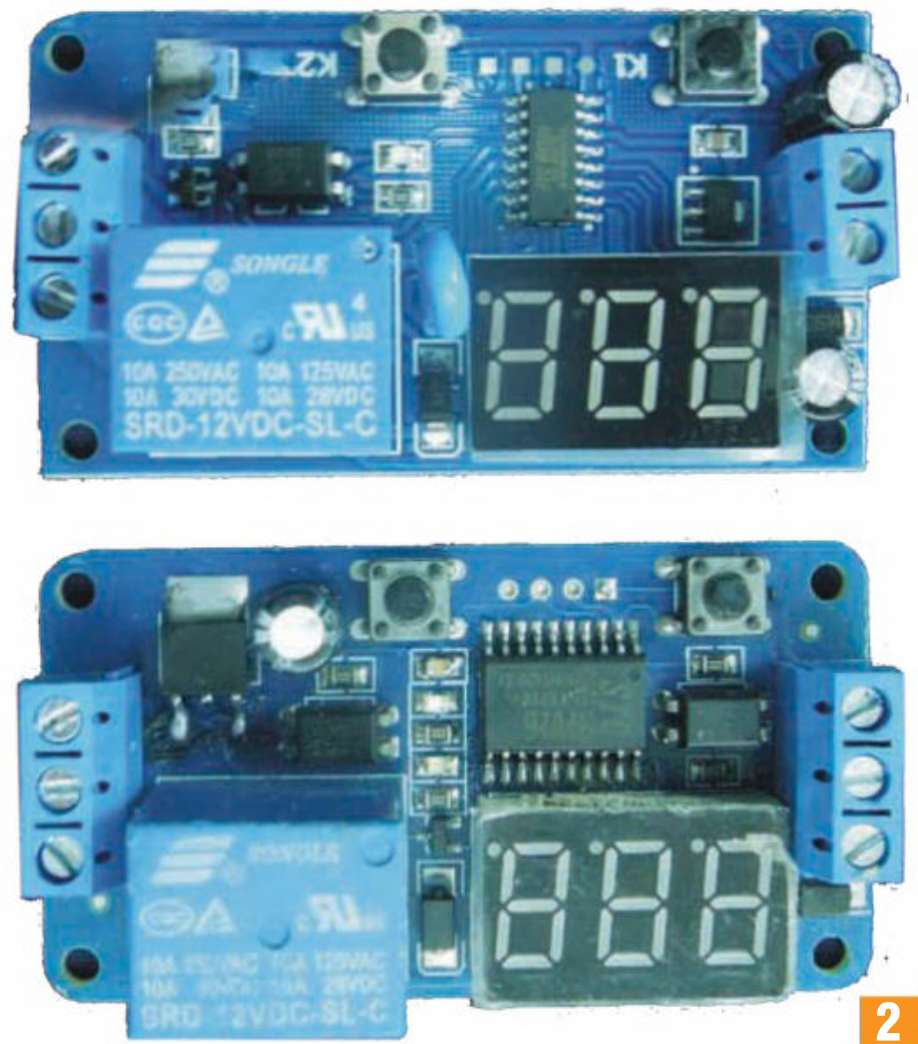
Study of the drawing will show that when the push button (push to make, PM) is activated this closes the NO R1 contact which sends power to the coil of R2. The power to R2 NO contacts (now closed) then feeds the coil and continues to do so even though R1 is switched off (remember switch PM is a momentary push button) and the power to R2 stays on. You'll note that in the circuit of R2 there is also a switch called PB. This is a normally closed push button and pushing it will open the circuit and switch off relay R2.

This is a very useful relay pair that can be used in many applications; we will use it to activate our shuttle, replacing the PB button with the normally closed (NC) contacts on the SAT board, and the other pole on R2 activating the timer board we have used before.

Full Circuit Description

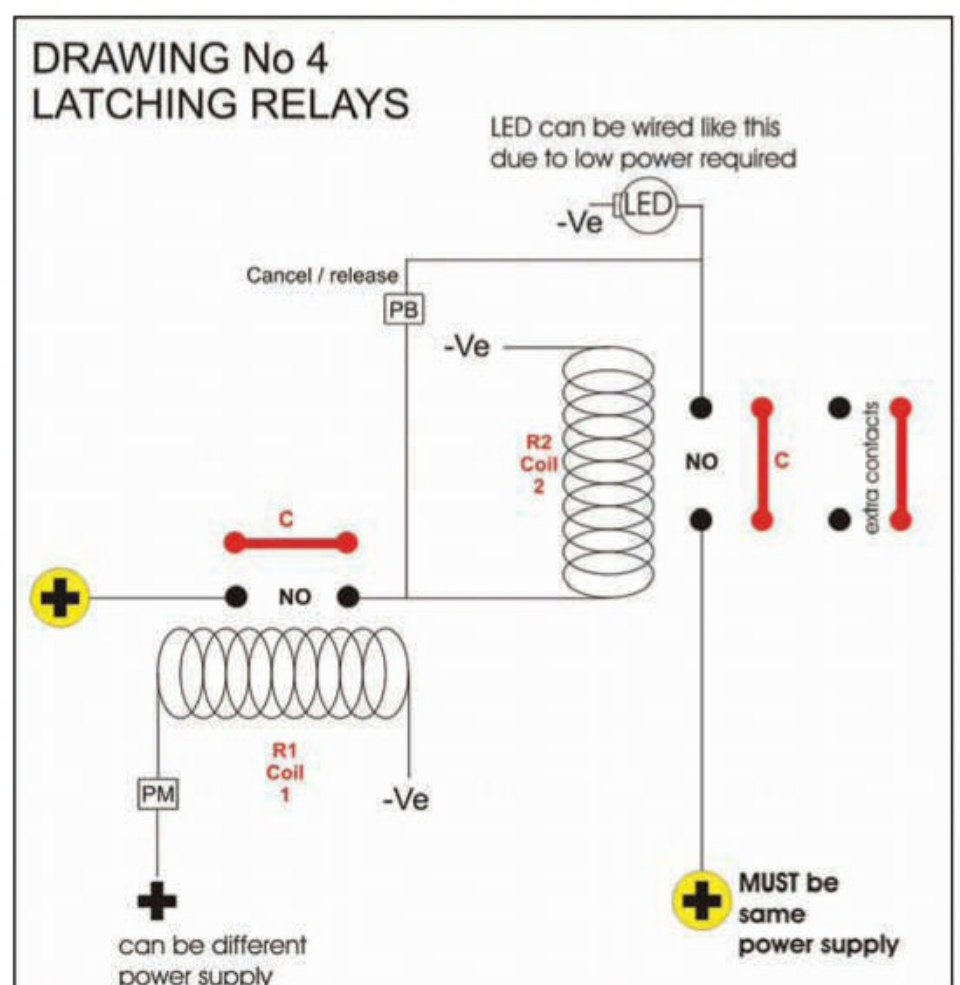
Drawing five shows the circuit complete with timer boards. The latched relay pairs are omitted to simplify the drawing, as basically the setup is quite simple.

The push to make button (PM) that serves to latch the relays also sends a momentary power pulse to the SAT which has been preset for the cycle time (T). At the same time the continuous timer board cycles for a total of T, each on-off cycle being $\frac{1}{2} T$. This cycling timer powers the coil on-off on the reversing relay (see part 1).

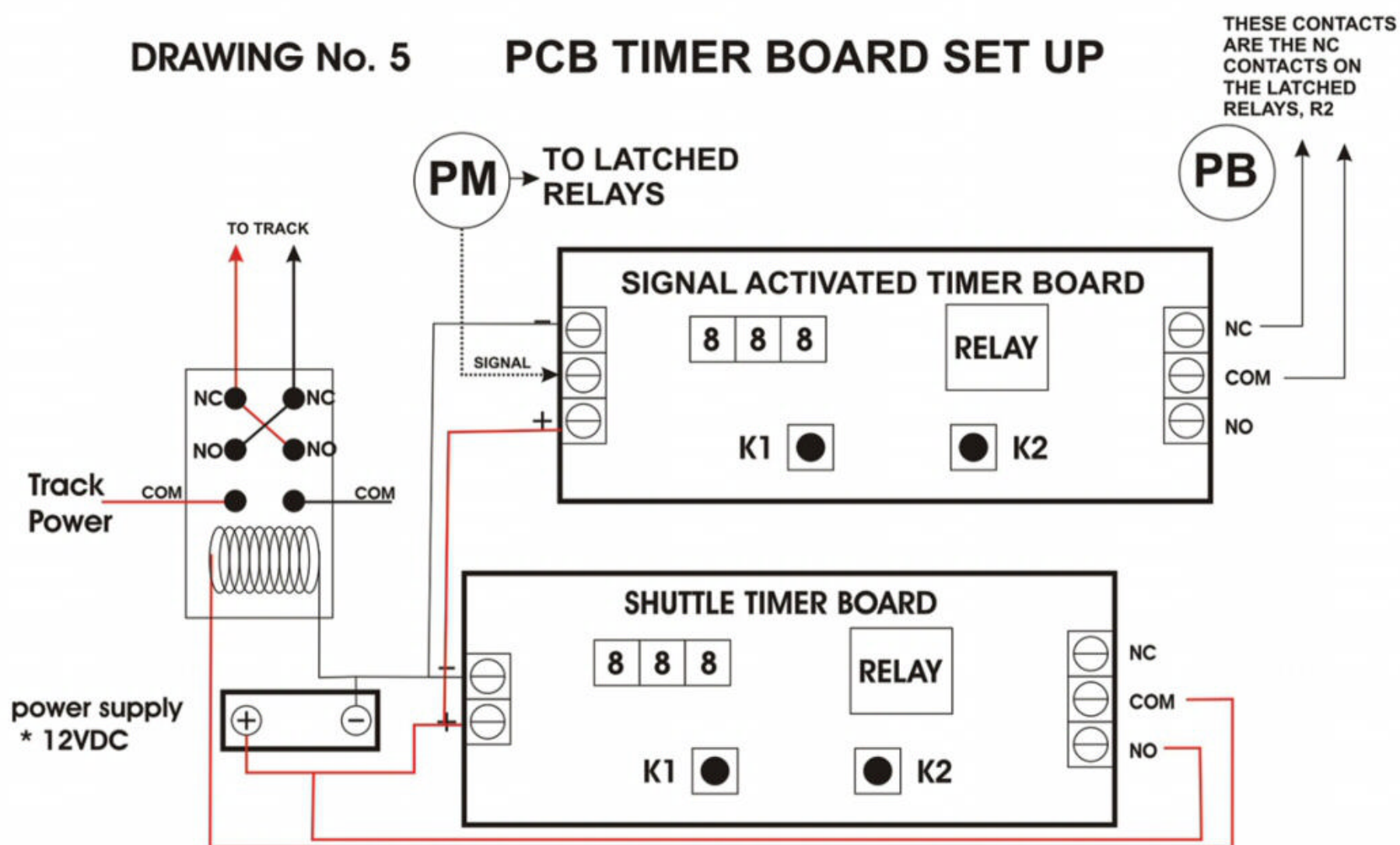


2

Developing the Circuit.



PCB TIMER BOARD SET UP



When the SAT counts down to 0 it activates the PB switch (actually the NC contacts) on the board and so switches out the latched pair and switching off all power to both boards and the reversing relay. The circuit shown in drawing five shows a 12VDC reversing relay.

Timer Settings

The cycling timer is set as per part 1. If the total cycle time is T (for a return journey) then the SAT is set at 2T. This is for a single return journey, but if you want to do many return trips, say 10 trips, then the total SAT time is 20T (2T x 10).

Conclusion and Costs

As discussed in part one [*Editor note: see AMRM issue August 2021*] I found the commercially available circuits too expensive for what I needed with features that I felt I did not need. I wanted about five of these units so costs would have been prohibitive. I managed to use cheap relays keeping the cost down to less than \$10 for the original shuttle timer and less than \$15 for the complete ‘enhanced’ version. I did have quite a few relays (5VDC) at \$1 each (Ebay again) so that was a bonus and other bits and pieces came out of the spares box.

BRASSTIC KITS

By popular demand, the *Australian Model Railway Magazine* is once again stocking the brass castings for the BRASSTIC NSW 45 class, SAR 600 class and NSW 48 class modifications, as described in articles in AMRM.

	Cost is:	
45 Class		\$30.00
48 Class		\$30.00
600 Class		\$30.00

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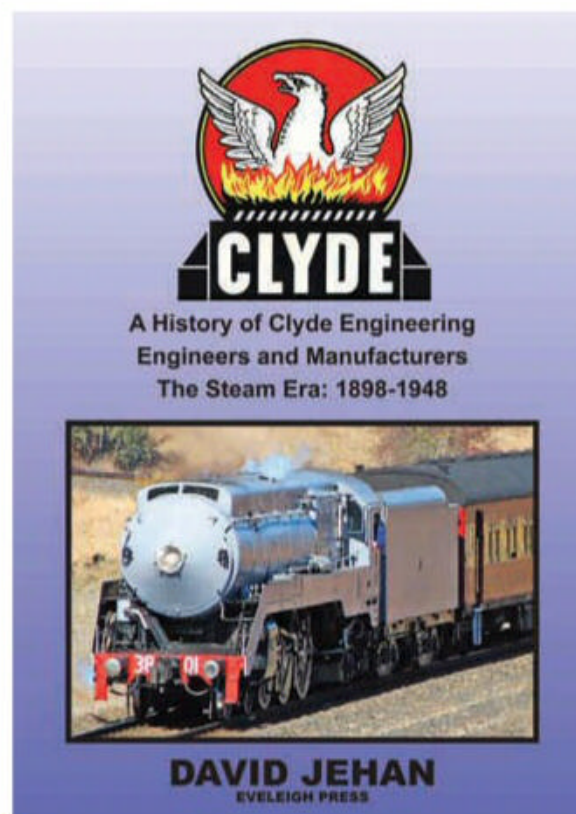
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BHP 6070 is a Broadway Limited Inc. AC6000CW. Kieran incorporated a number of modifications including the correct size name plate, cab windscreen protectors, modified side windows and aerial package, correct plough, dual K5LA air horns, dual handrails, BHP logo on the roof, safety stripes on the footplate of the front walkway and correct ditch light positioning.

Kieran Wright Modellers Gallery

Kieran normally models WAGR and Westrail Sn3½, but he has created a number of HO scale models covering Western Australian prototype.



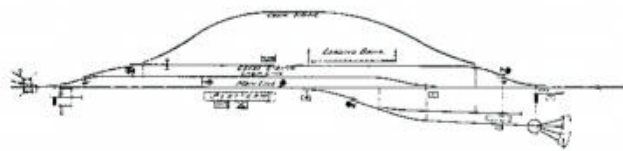
Number 7094 is a modified Athearn Dash 9-44CW with tear-drop cab windows, working marker lights and correctly-positioned ditch lights, double-rung handrails and extended fuel filler. It is finished in Hammersley Iron livery using MnJ decals.



G513 is modelled in Freight Australia livery as operated on SCT services to WA. Kieran started with a Powerline Models G1 series locomotive, then modified it by adding multiple unit cable, hoses, handrails and uncoupler bar, ditch lights, correct air horns, GPS and antennas. The model was finished with a coat of Freight Australia green, appropriate decals and G513 side number plate.

This ROCY wagon is an award-winning scratch-built model. Made from styrene sheet and evergreen styrene shapes, the model was finished using Bakers SRM decals.





IN THE LOOP

Making it Yourself

Trevor Hodges. Photos by the author.

A few years ago, I wrote about embarking on building my first scratch-built steam locomotive: a 2-6-4T NSWGR (Z)20 class tank locomotive in 1:43.5 scale. I think I ended that column with a reference to letting *In the Loop* readers know how it turned out. I have made references to my Z(20) 2002 in the column since then so it's probably clear to most long-term readers that the locomotive was completed and has been running quite happily on *Morpeth*. I thought it was time to follow up on that promise by doing a short review of the way the locomotive turned out and also reflect on the decisions I made over ten years ago regarding getting the tools and equipment necessary to carry out the work.

My 2002 is essentially complete and running on my layout hauling a couple of 'American' end-platform carriages up and down the line. I'm very happy with the way she turned out and, had I not scratch-built it, *Morpeth* would be without a locomotive that was ubiquitous on the line. This locomotive was essential in creating a large portion of the prototype line's atmosphere. No matter what state of completion a layout has reached, most of us run all sorts of out-of-era and out-of-prototype locomotives on our layouts for all sorts of reasons. However, I'd hazard a guess that if you were to drill down into a layout builder's motivation for building his/her layout, there will be at least one core train where no compromises will be contemplated. It doesn't matter whether it's the *Brisbane Limited*, the *Savannahlander* or *The Ghan*, there is almost always one train on everyone's layout that spells out what that layout is about. For me this was a Z(20) hauling two 'American' end-platform carriages. While my two carriages and one locomotive might not sound like a particularly ambitious target, it took me fifteen years to assemble.

There are a couple of things I'm not completely happy with about 2002; I've never been completely happy with the lines of the cab roof. The roof is level on the cab, but some sort of inaccuracy crept in as I was uniting the cab with the locomotive's superstructure and this creates the impression that the cab roof is sitting at a slight angle to the footplate. On casual viewing, it's not that noticeable, but I know it's there and a person who judged 2002 in a competition noticed it, too. The notes provided by the judges after the competition confirmed this. This didn't annoy or upset me; if anything, I was impressed by the quality of the judging and the detailed feedback I received. However, it did teach me a lesson: I won't be repeating the same mistake on the next locomotive. For me, this is strong motivation for entering competitions, because — despite 2002



scoring one of the highest-ever point scores in that competition's history — I know I can do better. Unfortunately, correcting 2002's roof-line error would require major surgery so I'll just have to live with it.

Another small bug is the front pony truck that has a tendency to derail on turn-outs. This seems to happen only when an operating crew arrive; it's almost inevitable that the wheels will hit the dirt. I have a plan to fix this. These two minor

problems are not something that keeps me up at night, but they do niggle me.

Looking back, was the expense and effort of setting myself up to scratch-build a locomotive worth it? I purchased a mill and a lathe about ten years ago with the aim of building locomotives and it's taken quite a bit of time and effort to gain the skills necessary to use them safely and efficiently. Remember that machines like these can bite and just because they are small doesn't mean they can't do some real damage to eyes and fingers. So far, 2002 is the only locomotive to come off the production line. Surely it would have been cheaper to commission a locomotive builder to make this one 'critical' locomotive needed on *Morpeth* and save myself all the hassle? This really depends on your perspective. If a Z(20) had been the only locomotive I wanted that wasn't available as a kit or ready-to-run, getting someone to make this locomotive for me would have made logical, economic sense. However, this is not the only locomotive I plan to build and, as might be expected, I've used the machines I acquired for all sorts of other projects over that time. Everything from cleaning up rolling stock buffer castings to making a plumbing fixture. As you improve your skills, and acquire knowledge and equipment, it should come as no surprise that these often get used in areas outside your original modelling goals.

At the moment I'm working toward building two examples of a locomotive of a prototype I don't currently model, in a scale I'm fairly certain no one has ever built one to. As I carry out the research required, I'm placing orders for components that I don't intend making myself. It will probably take me about 12 months to build the locomotives. Scratch-building steam locomotives may not be everyone's cup of tea and may seem like a niche interest to many hobbyists. However, I've fallen in love with the particular locomotive — even if I never have a layout to run it on. Take my word for it, there are few aspects of this hobby that can equal the deep satisfaction to be gained from being able to say "I built that.". My only advice to anyone who might be interested in giving scratch-building a try, would be to go ahead and give it a go. It is most definitely worth the effort.



MARMALAKE

Bulk Grain Storage

*Richard Parker outlines the operations of Marmalake's bulk storage facility and how he incorporated it into his layout.
Photos by John Dennis.*

Marmalake is a large bulk grain storage facility and sidings attached to the yard at Murtoa, 296 km (185 miles) from Melbourne on the main western line to Adelaide.

[Editor's note: *Bushel measurements have been retained in this article, but cited tonnages apply to wheat only.*]

When the Second World War broke out, wheat that would have been exported had to be stored for domestic use. Murtoa and Dunolly were selected as the places to build large wheat storage sheds. The Murtoa site was located just south of the railway yards. No. 1 shed measured 265 m (870 ft) long by 60 m (198 ft) wide holding more than 81.6 thousand tonnes (three million bushels). No. 2 shed measured 405 m (1330 ft) long by 73 m (242 ft) wide holding about 204 thousand tonnes (7.5 million bushels). No. 2 shed was the largest in the southern hemisphere at the time of construction. One of these historically significant sheds (No. 1 shed) has been saved and restored, and has a World

Heritage listing. It is now a major tourist attraction known as the 'Stick Shed'. (Refer to www.thestickshed.com.au for more information.)

To service these large storage sheds, a new 1.6 km (one mile) long railway siding called 'Marmalake' was built in 1941. Initially it was not connected to the Murtoa yard and was operated as a staff-locked, loop siding. This meant that each time wagons had to be shunted into Marmalake, the crew was given a staff to go out onto the main line beyond the home signal to the Marmalake loop. To enable shunting without being interrupted by main line trains, an independent connection between Murtoa and Marmalake was installed in 1950.

Following the clearance of accumulated wartime stocks, Marmalake was used in seasons when wheat production was high. Wheat was brought to Marmalake by rail from outlying silos so farmers could deliver their wheat without undue hold-

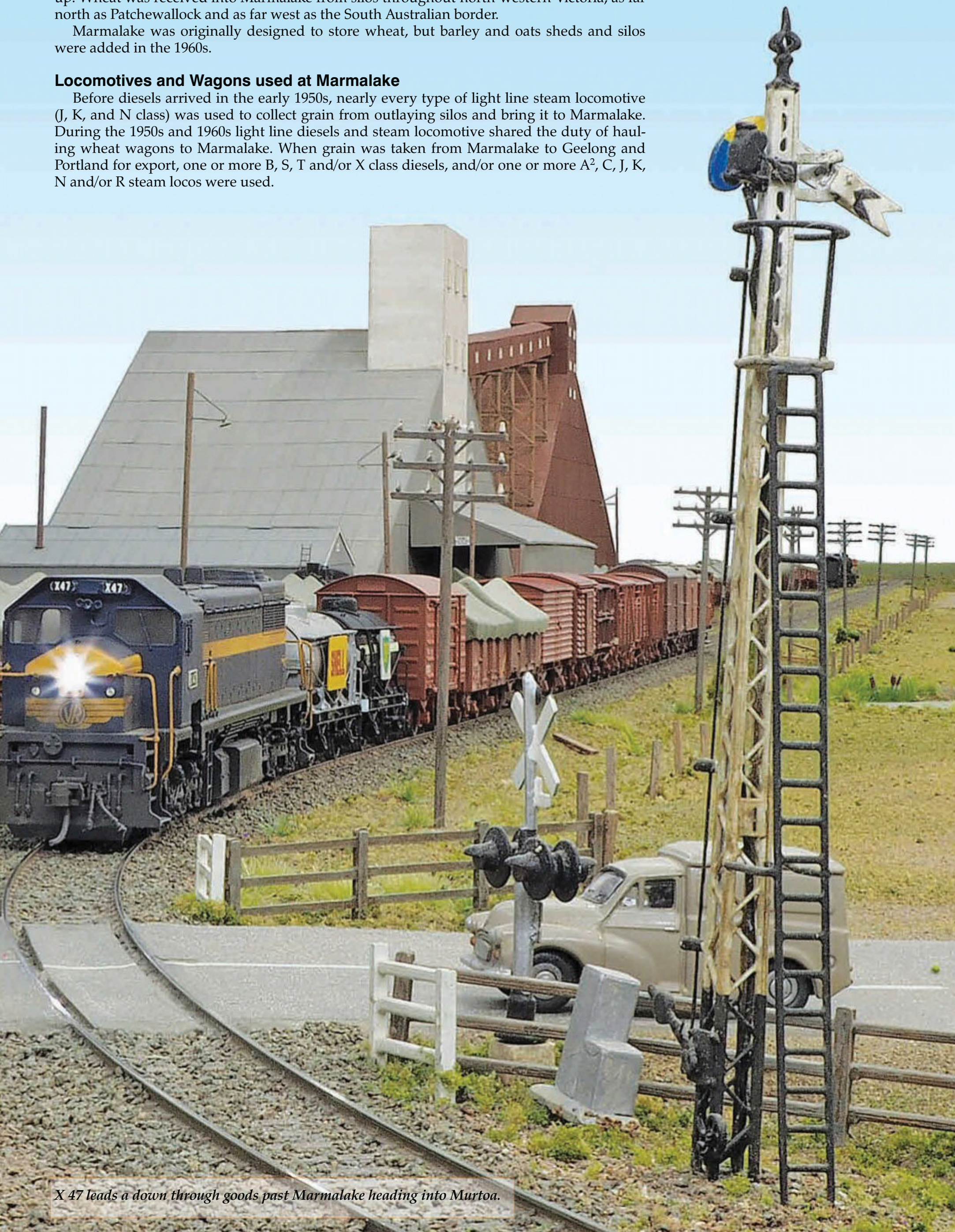


up. Wheat was received into Marmalake from silos throughout north-western Victoria, as far north as Patchewallock and as far west as the South Australian border.

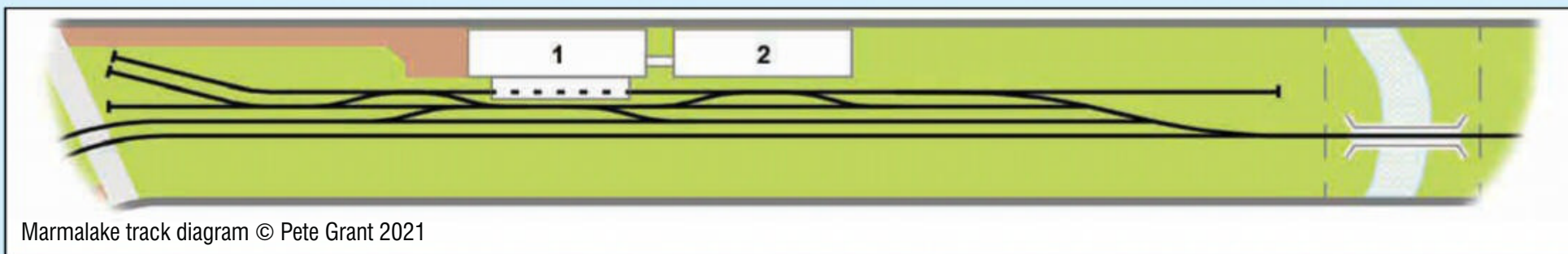
Marmalake was originally designed to store wheat, but barley and oats sheds and silos were added in the 1960s.

Locomotives and Wagons used at Marmalake

Before diesels arrived in the early 1950s, nearly every type of light line steam locomotive (J, K, and N class) was used to collect grain from outlying silos and bring it to Marmalake. During the 1950s and 1960s light line diesels and steam locomotive shared the duty of hauling wheat wagons to Marmalake. When grain was taken from Marmalake to Geelong and Portland for export, one or more B, S, T and/or X class diesels, and/or one or more A², C, J, K, N and/or R steam locos were used.



X 47 leads a down through goods past Marmalake heading into Murtoa.



Loaded GYs at the up end of Marmalake waiting to be unloaded.



Wagons that refused to roll down the 1:100 grade were given a nudge by the resident Fordson tractor.

The main wagons used to ship bulk wheat to and from Marmalake were the nearly 6000 grain-proofed GY wagons, built specifically for that purpose. In peak wheat season, other types of open wagons (I, IA and RY wagons) were brought into service and temporarily grain-proofed with tar paper. During the bumper 1965 wheat season, larger 40- and 50-tonne bogie open wagons were brought in to help move the backlog to Marmalake. At this time a number of J, K, N and R class steam locomotives were brought out of storage and pressed into service.

In 1966, 58 tonne (57 ton) GJX aluminium bogie hopper wagons were introduced; these greatly increased capacity and speed of unloading. Between 1979 and 1982, the Victorian Railways converted 811 four-wheel GYs to top-loading bottom-discharge GH hopper wagons.

Operation

During the peak wheat harvest, trains with long rakes of wheat wagons arrived with loaded wagons and departed with empty wagons each day. The Murtoa railway yard was a hive of activity, shunting wagons into sidings and marshalling them for their short trip to Marmalake's sidings. It was possible to have several hundred GYs in the Murtoa yard waiting to be shunted up to Marmalake. It was not unusual to have six locomotives stabled in Murtoa's small loco yard overnight.

Loaded wagons would be shunted up the 1:100 rise to the up end of Marmalake's sidings by the yard pilot, usually a K, J or N class steamer, or Y or T class diesel in later years. The pilot would then collect the empty wagons from the down end sidings and return them to Murtoa yard. The wagons would be assembled into rakes of 30-40 and taken back to the country silos to be refilled with wheat. This process continued throughout the wheat season.

Loaded wagons would be split into groups of four then rolled down the slight grade to be weighed, before being rolled down into the track shed (the covered area in front of No. 1 shed) for unloading. If the wagons refused to roll, they were given a nudge by the resident Fordson tractor. When the wagons arrived in the track shed, the ropes were untied and the tarps pulled up over the doors. A 'door knocker' would come along and knock open the heavy latches securing the doors. The door knocker needed to have quick reflexes as

A busy day around Marmalake. Motor trucks waiting to be unloaded, the yard pilot picking up empty wagons and the afternoon Melbourne passenger train passing by. Among the traffic at the level crossing is a classic Pioneer Express 'Flxible Clipper'.

22.4 tonnes (22 tons) of wheat flung the door open — the door knockers never knew how many blows it would take to get the door open. Next came the 'rakers', a team of eight (two per wagon) who would manually rake the wheat out of the wagons with a large flat-bladed rake. These were back-breaking jobs, but these workers would earn three to four times the average wage at the time.

During peak wheat seasons in the 1950s and 60s, two twelve-hour shifts unloaded an average of 300 GY/I/IA/RW wagons, totalling over 6110 tonnes (6000 tons) of wheat per day.

In addition to receiving wheat by rail, Marmalake received wheat by road from farmers in nearby districts. As many as 300 motor truck loads of wheat totalling 1987 tonnes (73 000 bushels) could be delivered in one day.

Building a Prototype Model of Marmalake

The beauty of building a prototype model is that you don't have to agonise over what track plan to use and what buildings to include. I was fortunate to get a detailed track plan and original drawings of the sheds. The next step was to create it as close as possible to what was there in the 1950–60s.

Marmalake is over 1.6 km (1 mile) long and, if modelled in HO scale, would take up 18.4 m (more than 60 ft) of space. I have a large shed but even I don't have a 'spare' 60 ft to use. I kept No. 1 and No. 2 sheds, and the central track area in strict HO scale (that is, with no compression), but shortened the outer ends of the up and down yards to fit into the space available. This still gives the overall impression of a large facility with extensive yards.

I must admit I did use a little modeller's licence and incorporated a combination of the original 1941 track layout as well as the modifications made in 1950. This enabled me to have a separate track from the Murtoa yard to enable trains to be brought into Marmalake without hindering mainline traffic, as well as taking trains in and out of Marmalake at the Melbourne end. It also created an additional loop to store and cross trains. To add some interest, in a lift-up section, I incorporated the Yarriambiack Creek at the Melbourne end. In reality, this creek was on the other side of Murtoa near Jung.

Workers unload GY wagons at No. 1 shed; the building to the left is the plant room.



Up passenger train from Horsham crossing the Yarriambiack Creek on its way to Murtoa.





The process of unloading GY wagons in the track (unloading) shed. To the left, a 'door knocker' has just opened the doors on a GY and is now supervising the grain spilling into the grates. To the right, two 'rakers' are raking the remaining grain out of GYs (the shed has been removed for illustration purposes).

Building the Sheds

Modelling the two large sheds was the next challenge. While I could accommodate the width of the two sheds in HO scale (2 m overall width), modelling their length in HO scale would be a problem. No. 1 shed would be 3 m and No. 2 shed would be 4.6 m long. To overcome this, I only modelled from the track back to the edge of the 750 mm wide layout. The sheds ended up being only 300 mm deep, but from the front, they give the impression of their massive size.

The sheds were made from 3 mm foam board and clad with Northeastern HO scale corrugated iron. The track (unloading) shed and conveyor gallery, from No. 1 to No. 2 shed were made of Northeastern scale timber and styrene, and clad with Northeastern corrugated iron. Windows were a combination of Ratio, Grandt Line [Editor's note: Refer to <https://sanjuandetails.com>.] and 3D-printed windows from John de la Land of Brunel Hobbies.

Track and Scenery

Track in the Marmalake yards is Peco code 83 and the main line is Peco code 75. In this section of the layout, I used slide switches with a wire pull-rod to the edge of the baseboard to change points and polarity by hand. I figured that I would only be changing the points at Marmalake when I was shunting and standing next to it.

The base of the Marmalake section is covered by a layer of 12 mm Caneite. To form the slight hills and dales, Caneite was either layered up or cut away to get appropriate embankments or depressions. I also carved drains and other detail into the Caneite and covered it with brown-coloured plaster. The scenery base is natural dirt mixed with 'Havana' colour grout to lighten it to the correct colour. Grass is various mixtures of Woodland Scenics burnt grass, dried grass and light green. Weeds along the track and in the fields are Woodland Scenics burnt grass and light green coarse ground foam. Highlight



Motor trucks bring wheat in from nearby farms, while J 516 pushes a rake of loaded wagons into Marmalake.



weeds and bushes come from MiniNatur, Noch and Woodland Scenics.

Operation of the Model Version of Marmalake

Marmalake worked around the clock to unload up to 300 GY wagons per day.

In peak wheat season there were several trains with 30–40 GYs arriving to Murtoa each day. From 1966, GJXs were also used to transport wheat. If I want to extend the modelling period, I can use models of GJX/F and GH hopper wagons. No matter what period between the 1940s to the 1970s, loaded wagons are assembled in the Murtoa yard and shunted up to Marmalake

for unloading. Empty wagons were brought back to Murtoa, assembled and taken back to the various Wimmera silos to be reloaded and brought back again and again.

After the wheat season was over, the stored wheat was gradually loaded back into rakes of GYs, GH or GJX wagons and taken to Geelong and Portland for export.

▼ *The expanse of No. 1 and No. 2 sheds at Marmalake.*





Building a *Bluebird* Railcar in O (1/4-inch) Scale

Graham Ahern describes how to build an SAR Bluebird railcar in a large scale.

Photos by Graham Ahern unless otherwise stated.

While I have been scratch-building and kit-bashing carriages and wagons in HO scale for many years, I was nevertheless surprised just how large a *Bluebird* railcar would be in O scale.

Building such a model in O scale requires a large amount of scratch-building and I find there is a measure of satisfaction in what can be achieved. To effectively construct any model, it is essential to have a good plan to a consistent scale. I obtained some large-scale *Bluebird* plans from Refreshing Memories. However, the dining room table was needed to lay them out, so some smaller scale plans also proved useful. While I knew a reasonable amount about the sides and ends of the Bluebird, the plan of the underframe proved invaluable. Another invaluable item was a steel scale ruler with its 1/4-inch to a foot (1:48) measurements.

Most plans of the railcar are in imperial dimensions, but as the O scale part of the scale ruler reaches only a scale 48 foot, the larger measurements have also been referred to in the article in millimetres.

Basic Construction

The main construction medium I used was styrene and the first vehicle was a 250 class railcar. Although the *Bluebirds* have flush windows, there is a thick interior panel, so I decided to create the sides from 2 mm sheet styrene. I cut out the two sides 433.7 mm (68 foot 3-inch) long x 46.6 mm (7 foot 4-inch) high and four end segments 46.6 mm (7 foot 4-inch) high x 22.8 mm (3 foot 7-inch) wide. There are seven large windows 31.8 mm (5 foot) wide x 14.3 mm (2 foot 3-inch) high and one small window 14.3 mm (2 foot 3-inch) high x 11.1 mm (1 foot 9-inch) wide on each side; these were marked out on the sides as well as a space 39.7 mm (6 foot 3-inch) high x 30.2 mm (4 foot 9-inch) wide for the sliding door of the parcel compartment.

I then drilled four holes in the corners of the window area

Materials Required

- 1 mm, 2 mm and 3 mm thick styrene sheet;
- Evergreen styrene metal siding with 0.125-inch spacing (610 mm x 350 mm sheets);
- Lima O scale diesel mechanism (from a British Railways 33 class);
- 8 BA screws;
- sections of timber for the roof;
- Precision Scale Company diesel roof fans in brass No. 5687 (two packets);
- 0.125-inch K & S tubing as required;
- Kadee No. 805 couplers;
- metal flywire as required;
- 1:48 scale North West Short Line 36-inch wheels with inside bearings; and
- Commonwealth-style side-frames (7 mm scale) from Wayho Models.

[Editor's note: Heljan has released a British Railways Mk 1 coach with Commonwealth bogies in 7 mm scale (No. HJ4936). Acquiring them as a spare part might be a good substitute.]

and the door space. I used a fine saw to roughly cut the surplus material out, later finishing off using various files, taking particular care with the curved corners of each window. The window in the end segments, each 18.0 mm (2 foot 10-inch) wide x 16.4 mm (2 foot 7-inch) high were created in the same manner.

Fluting on the sides was represented by an Evergreen styrene metal siding of 0.125-inch spacing. Initially, this was available only in small sheets that was not really suitable for an O scale vehicle. However, I discovered that Evergreen could supply this styrene shape in 610 mm x 350 mm sheets so that was a big help. End of The Line Hobbies kindly placed a special order.

I cut out two pieces of this material 370 mm long x 20 mm high, one piece being glued to each side panel stretching from the inner edge of the rear door to the edge of the parcel compartment. Two further pieces 33 mm long x 20 mm high were cut out to provide the fluting from the edge of the parcel compartment to the edge of the front doorway on each side.

In addition, I carefully cut out a small strip of fluting 370 mm long x 6 mm high to fill the area just above the window between the doorways (as before), along with another small piece 33 mm long x 6 mm high to go at the same level between the parcel compartment and the front doorway.

The next task depends on whether the model is intended to be powered or not. If not, a full-length styrene floor will be required. From a 3 mm styrene sheet, cut a piece 491 mm long x 55 mm wide, with the ends shaped as shown in Figure 1. Such a floor is needed for a 100 class trailer. Figure 1 shows the full-length floor; it is marked to show the part that is *not* required for the motored car.

For the powered 250 model, I used a Lima mechanism, the four-wheel '8 foot 4-inch' wheelbase unit that powered all Lima O scale British Railways 33 class diesels. This meant only part of the original Lima chassis was needed: only the power and trailer bogies, and a portion of their surrounding support structure that would fit between the sides. These chassis components fit between the two end segments of the styrene floor as shown in Figure 1. They are screwed with 8 BA screws onto the 235 mm long segment. Shape the ends as shown as in Figure 1.

The remaining task was to cut six doors from 1 mm styrene, 46.6 mm (7 foot 4-inch) high x 19.1 mm (3 foot) wide, along with two doors, 44.5 mm (7 foot) high x 34.9 mm (5 foot 6-inch) wide, for the parcel compartment. The small doors have a window 14.3 mm (2 foot 3-inch) high x 11.1 mm (1 foot 9-inch) wide; the parcel doors have a window 14.3 mm (2 foot 3-inch) high x 20.7 mm (3 foot 3-inch) wide. The windows in the doors were created in the way previously outlined; all have some curvature in the corners of the window.

All the components to create the basic body are now to hand and assembly can begin.

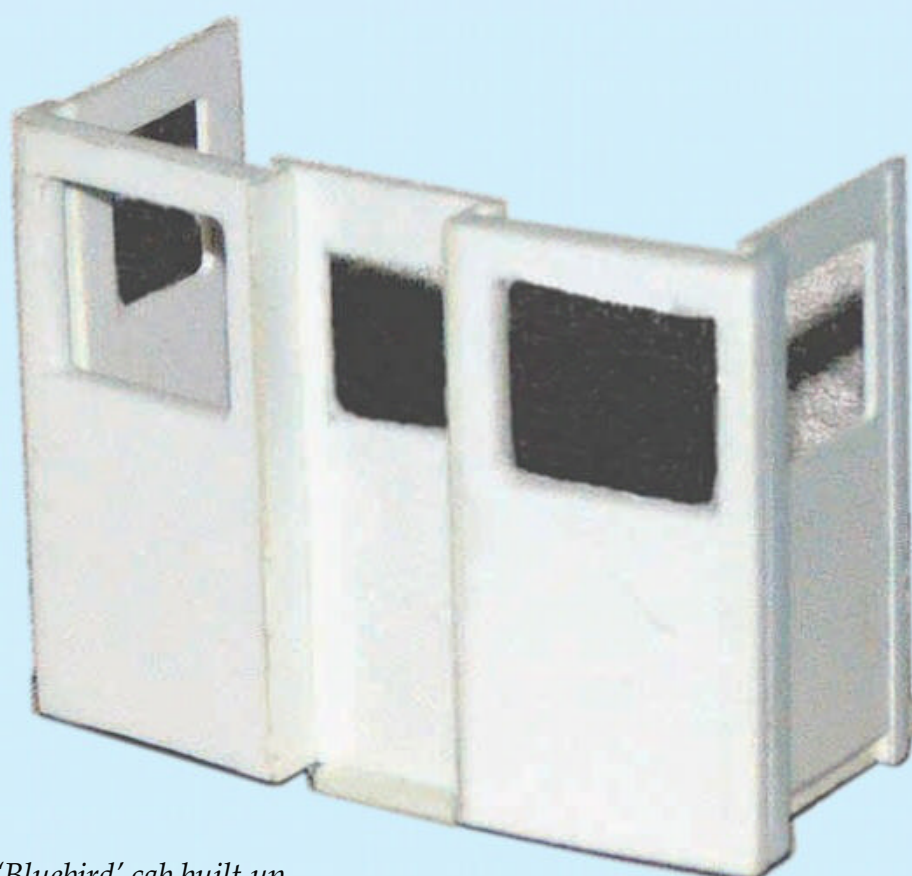
Assembly

For gluing styrene — particularly large pieces — I prefer Revell® liquid glue (with the long needle) for plastics. This provides some working time to make adjustments if required. To start, I glued each side to the floor, one at a time, with the bottom of the side level with the underside of the floor. As the glue dried I checked for 'squareness' using a small steel L square.

Prior to placing the end pieces in position, I added a 48 mm length of 4 mm x 2 mm styrene strip behind the outer edge of each end piece to provide some strength to the corner joint. In addition, I added another 48 mm length of 6 mm x 1 mm styrene strip to give the outer edge of each end corner some material to allow it to be curved slightly. After the end pieces are in position, the doors can be added: two on each side and one on the inside of each end. Finally, the parcel compartment doors can be fitted. This gives a basic body that needs to be level on the top to allow the roof to sit flush.

Interior

Bluebird railcars have an open interior broken only by several cross panels and the toilets. So, I made three panels from 1 mm styrene, each 55 mm wide x 45 mm high, and each with a window 14.3 mm (2 foot 3-inch) x 11.1 mm (1 foot 9-inch) to represent the walls that are across the carriage at each end of the pas-



'Bluebird' cab built up.

senger compartment and at the other entrance. To complete the basic interior, a small piece of 1 mm styrene was used to cover the window of each toilet compartment. I also cut two 1 mm styrene panels 45 mm high x 28 mm wide and two 45 mm high x 19 mm wide then glued these into place to enclose the toilet areas. Additional interior detail such as seats could be fitted if suitable castings can be found.

Roof

The roof was made from pine, and several lengths of timber were obtained from Otto's Joinery in Stepney, South Australia (or your preferred supplier).

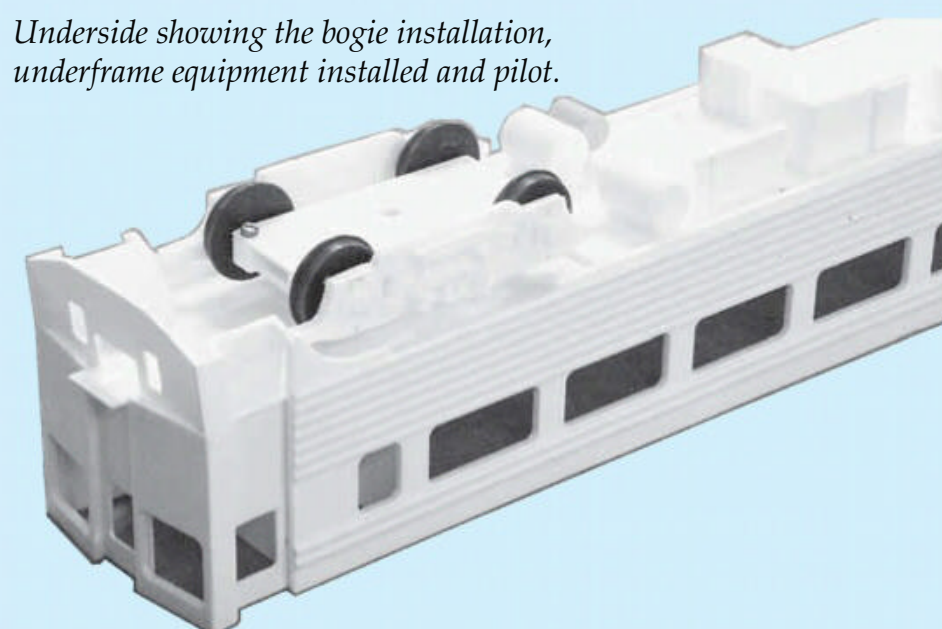
For *Bluebird* 250, I cut a piece of timber 344 mm long; one end was then shaped to create the distinctive *Bluebird* roof end. The opposite end had two recesses carefully cut out (17.5 mm (2 foot 9-inch) long x 15.9 mm (2 foot 6-inch) wide) to represent the



Body side with baggage door installed.



Body side with fluting installed.



Underside showing the bogie installation, underframe equipment installed and pilot.



'Bluebird' 254 on an up passenger service about to enter Sleeps Hill tunnel on 30 January 1980. Photo Bob Richardson.



'Bluebird' 259, 101 and a 280 at Port Pirie on 25 August 1985. Photo Bob Richardson.



'Bluebird' 254 at Keswick rail passenger terminal.

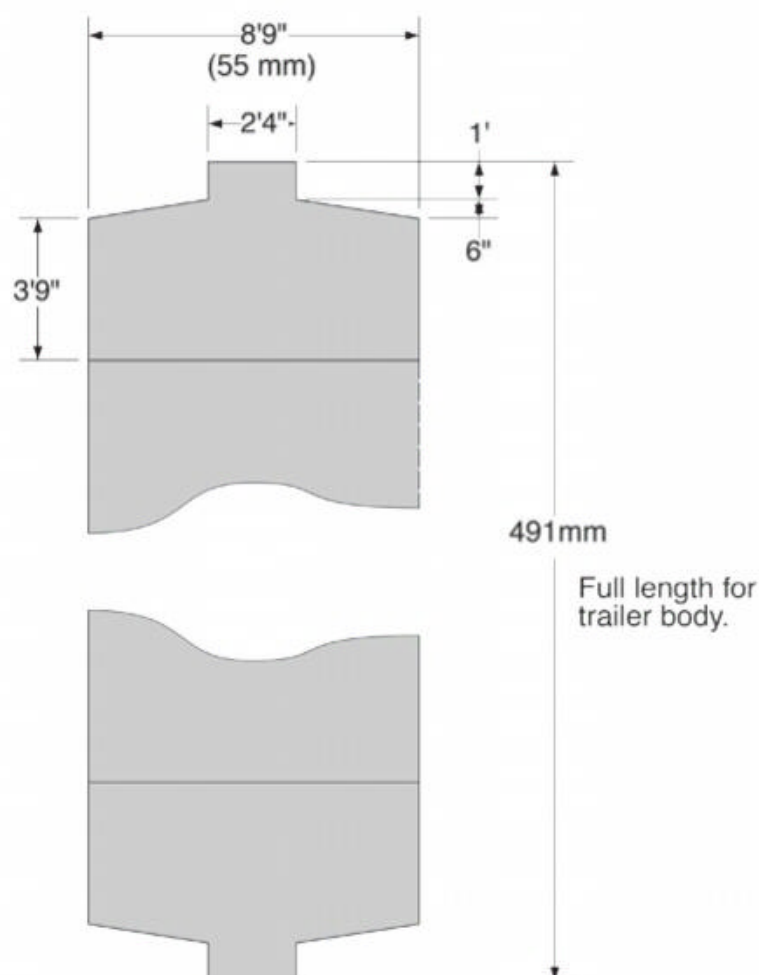


Fig. 1. Three millimetre styrene floor. The full length is used for the 100 class trailer. The motored version consists of two 3'9" end pieces, the part of the Lima powered bogie and chassis that is used and a 235 mm middle length. The bogie unit is screwed to one end and the middle lengths.

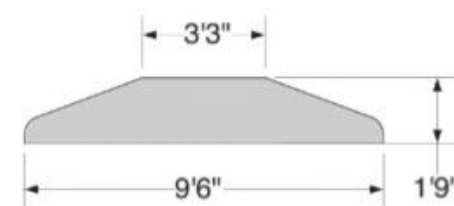


Fig. 2. Cross members (4) for the fan assembly of 1 mm and 2 mm styrene.

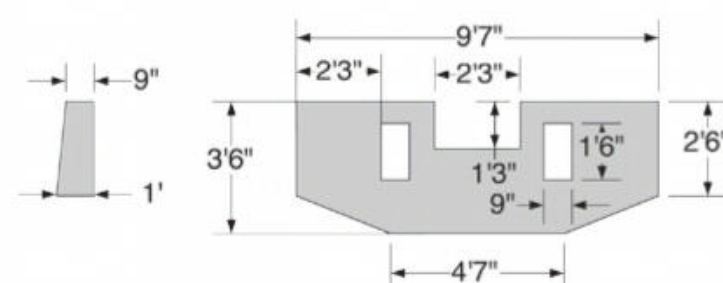


Fig. 3. Pilots of 1 mm styrene.

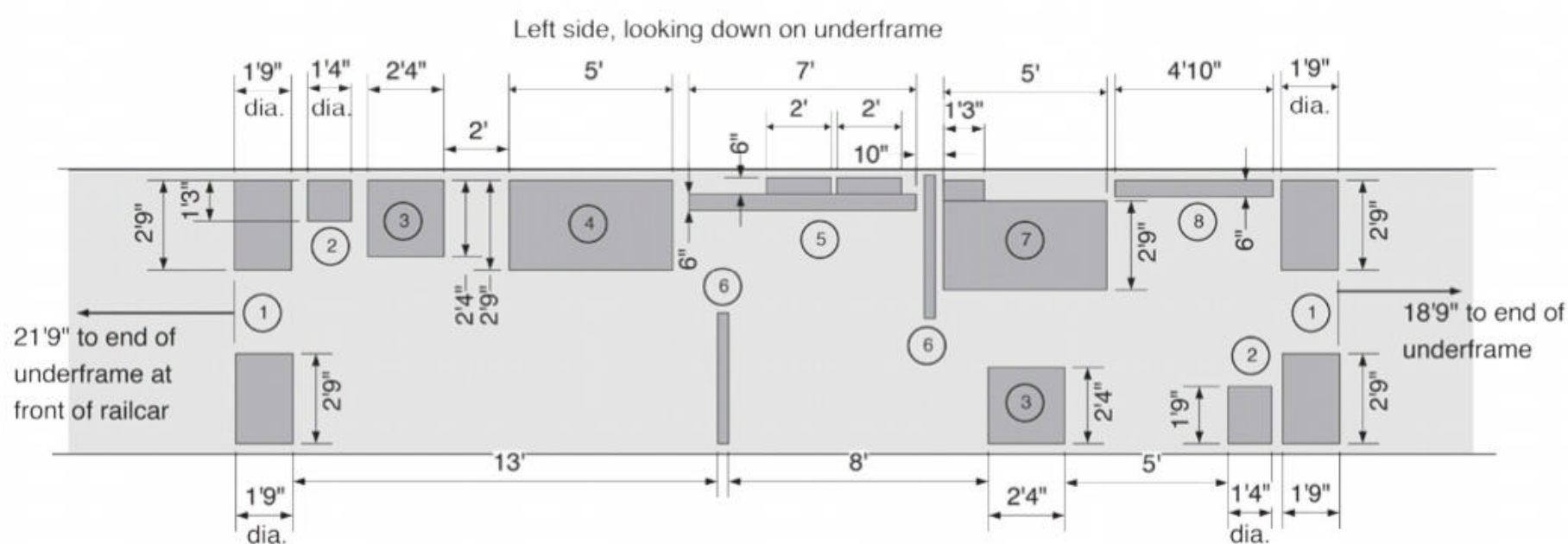
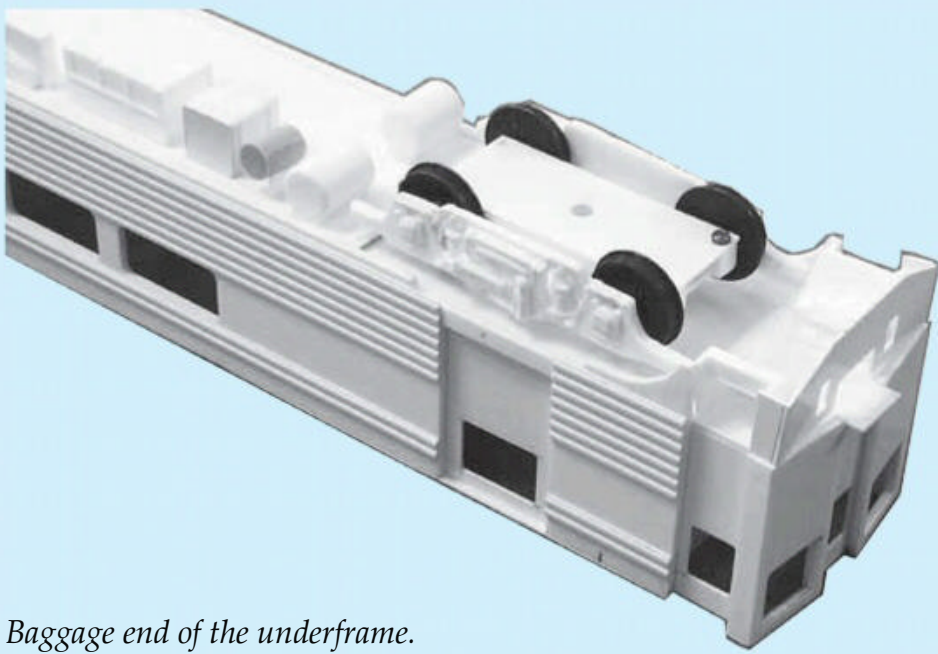


Fig. 4. 250 class underframe layout (not to scale). It is not possible to model all the underframe detail. This diagram gives an outline of what components I found could be readily modelled.

- | | |
|---------------------|-------------------------------|
| 1. Air Cylinder x 4 | 5. Air Conditioner Compressor |
| 2. Air Cleaner x 2 | 6. Fuel Filler x 2 |
| 3. Filter Box x 2 | 7. Air Conditioner Generator |
| 4. Battery Box | 8. Engine Cover |



'Bluebird' 253 at Keswick rail passenger terminal.



Baggage end of the underframe.

cavity where the exhaust is located. I cut another piece of timber 46 mm long to become the roof forward of the radiator. The distinctive roof end profile was again created on one end of this piece of timber.

Now we have a basic roof that requires a radiator structure to be built. After much searching some O scale diesel roof fans in brass made by Precision Scale Company were obtained from P & D Hobby Centre. I found these were a suitable size to represent the *Bluebird* roof fans.

The radiator structure was built in several segments as outlined below.

First, I constructed a platform for the roof fans from 3 mm styrene 95.3 mm (15 foot) long x 28.6 mm (4 foot 6-inch) wide. I then drew three circular holes of 25.4 mm (4 foot) diameter spaced 31.8 mm (5 foot) apart and, after drilling a couple of suitable holes, I cut the circles out with a fine saw. The circles were tidied up with a half-round file then I glued the fans in place flush with the top of the styrene.

Then, I cut out a base plate from 2 mm styrene measuring 103.8 mm (16 foot 4-inch) long x 53.5 mm (8 foot 5-inch) wide. This plate had four cross-members affixed at equal intervals, shaped as shown in Figure 2: two end members from 2 mm styrene and two intermediate members from 1 mm styrene. When the cross-members were in place, I glued the fan assembly to the top of the structure; all that remained was to glue (with Araldite®) some wire screening to the exterior portions of the cross-members to enclose the structure. The screening was metal flywire, a small length having been obtained from the local hardware store.

The radiator structure is now glued with Araldite® to the timber roof members to form the completed roof. The base plate is narrower than the timber pieces so it must be centrally located as it is meant to sit down between the sides of the carriage to help prevent any warping on such a long vehicle.

I placed another piece of 2 mm styrene 55.1 mm (8 foot 8-inch) long x 21.7 mm (3 foot 5-inch) wide adjacent to the base plate to provide a floor for the exhaust cavity. I then glued two lengths of 0.125-inch K & S tubing 11.1 mm (1 foot 9-inch) long together with Araldite® — one in each cavity — to represent the exhausts. I then drilled and tapped two 8 BA holes — one in each cavity floor — to allow the roof to be fixed in position with another 2 mm piece of styrene, 55.1 mm (8 foot 8-inch) long x 19.1 mm (3 foot) wide, glued between the carriage sides underneath the floor of the cavity. Finally, I glued a piece of 1 mm styrene 40 mm wide x 34 mm long to the outside of the roof 34 mm from the rear end of the roof to represent a hatch cover.

Underframe

The underframe has a number of items to be attached. The main ones are, of course, the bogies. As previously outlined, this motored 250 class used the Lima powered and unpowered bogies with a specially created set of Commonwealth style sideframes. These sideframes were based on the British version of the bogie in 7 mm scale from Wayho Models. To make them suitable for Australian applications, I shortened them by 6.4 mm (1 foot). Note that, on the *Bluebirds*, the traction rod faces to the end of the carriage on both sides. For non-powered vehicles, I made up a bogie framework that allowed me to fit 1:48 scale NWSL 36-inch wheels with inside bearings.

When fitting the bogies, be mindful of the need to fit steps to the underframe in the four corners of the carriage. The steps were cast from a pattern I was given and have since used in a number of other models. The remaining underfloor fittings placed between the bogies have been represented by individual castings made from patterns I created or adapted. These were mounted on a 2 mm platform 211.3 mm (33 foot 3-inch) long x 55.6 mm (8 foot 9-inch) wide, for ease of assembly as shown in Figure 4. This is not a complete set of underfloor items as the model is driven differently from the prototype, but is sufficient to give some idea of the underfloor equipment.

To complete the carriage, there are two remaining items: pilots and couplings. I made the pilots from 1 mm styrene as shown in Figure 3. I realise they could be considered a little flimsy but they are not normally subject to handling. The couplings were Kadee No. 805 positioned with the aid of a 1:48 scale height gauge.

Summary

While this is a rather detailed account of building a 250 class railcar, the construction techniques will let you build the other *Bluebird* vehicles and, for that matter, a number of other stainless steel style passenger carriages. As I had several *Bluebirds* to build, some experimentation with laser cutting of components also produced good results.

When building any model, it is always useful to have some photographs for reference purposes. There is a 250 class *Bluebird* preserved in the National Railway Museum at Port Adelaide and some former *Bluebird* carriages are still in existence, mainly as crew cars.

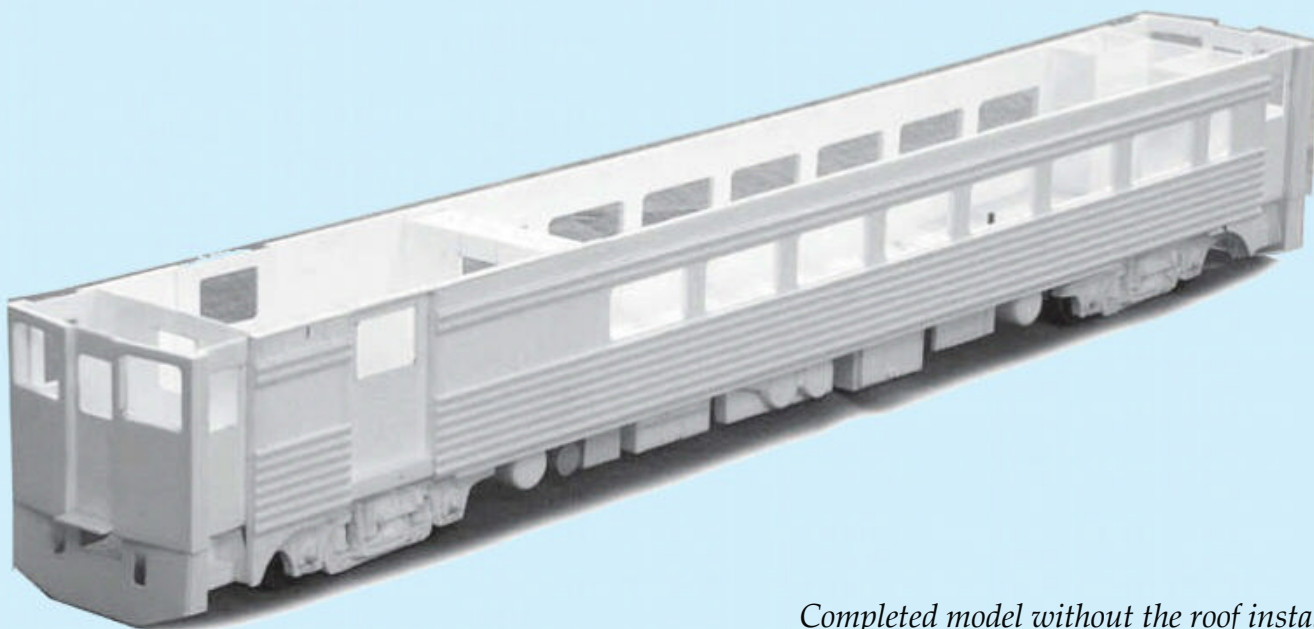
References

The Comrails website of Chris Drymalik (www.comrails.com) has a number of prototype photos.

AMRM No. 205, August 1997, *Beautiful Bluebirds*, Ian Dunn.

AMRM No. 207, December 1997, *Beautiful Bluebirds — Addendum*, B Lloyd, D Parsons, G Nixon

ARHS Bulletins Oct, Nov and Dec 1984, series of articles on *Bluebird* railcars, Kim Bird. [▶](#)



Completed model without the roof installed.



Almost at its destination, the Perth–Sydney (PS6) service rolls downhill through Aylmerton in the Southern Highlands of NSW. This service, led by a pair of NR class locomotives on 27 August 2016, carries a wide variety of domestic container types including general purpose, ISO tanks, refrigerated types, flat racks and curtain-siders. For keen-eyed modellers, the train is passing a new solar-powered track lubricator designed to reduce wheel noise.

Modelling Modern-era Containers

Part 2: Domestic Containers

Chris Jones explains in detail the ‘how’ and ‘why’ of modern-era domestic containers. Photos by the author unless noted.

Domestic containers are an unusual beast and, as the name implies, they are used in ‘local’ Australian applications. They partially comply with ISO standards, but need to comply with other equipment interface standards. They can be unique and innovative in their design. Australian domestic containers are often referred to as ‘Series R’ containers and comply with Standards Australia requirements AS-3711 and AS-4615. ‘Series R’ containers do not necessarily comply with all ISO 6346 standard requirements, although the method of securing containers to freight wagons, trailers and other containers remains the same.

Australia has embraced a containerised supply chain and, as a result, an interesting collection of domestic containers operate on trains and trucks around the country.

Due to the large variety of domestic containers and operations, this article primarily looks at common intermodal container types as seen on interstate rail services, but — in some cases — will touch on exceptions to the ‘rule’ and other interesting domestic containers.

There are four broad freight categories, but some category overlap can occur:

- **Palletised Freight.** This is commonly consumer or wholesale focussed freight, or component or ingredient freight required for various manufacturing processes. This can include refrigerated consumer products.
- **Bulk Loads.** This normally consists of liquids, powders, concentrates, ores, wood chips, plastic pellets, sugar or minerals.
- **Dimensional Load.** This includes steel, pipe and timber products, vehicles, glass and large equipment.

- **Custom Builds.** This category includes accommodation blocks, mobile kitchens, garbage and fuel cells.

Domestic containers frequent large intermodal terminals, arriving and departing by truck, and commonly operating from state to state or pit to port with regards to some bulk loads.

The vast majority of domestic containers are now manufactured in China and delivered by ship to Australia, although Doric Engineering in Devonport Tasmania has manufactured domestic containers including some of the early 48 foot Boxcar and FCL containers along with the steel coil ‘butter-boxes’.

Transportation Process

The vast majority of domestic containers (with the exception of some bulk type containers operating on dedicated bulk trains) are loaded at a supplier, manufac-



As the sun sets on an overcast day in outback South Australia in 2007, many common domestic containers are easily identified by colour and logo.

turer or warehouse facility and trucked to an intermodal rail terminal where they are loaded onto a train. Intermodal rail terminals handling domestic containers are often located in industrial outer suburbs in capital cities, close to large distribution centres and heavy industries. Domestic and export containers rarely mix in the same intermodal terminals.

After being loaded onto a train, a container will be moved, in most cases, interstate, where it will be unloaded onto a truck and delivered to the receiver to be unloaded. The container may then be back-loaded for a return journey, returned empty or stored locally awaiting a load.

The container may go to and/or from the depot or warehouse of the container owner, or the container may belong to a logistics company who are picking up freight for transport.

Empty domestic container parks are normally company depots or private terminals, and are not regularly common user, with container leasing companies having their own depots or using common user depots in most capital cities. Due to the specialised nature of tank containers, these are normally stored at tank depots that specialise in tank management, compliance, inspection and certification.

Domestic containers almost always never travel overseas, with the exception of Tasmanian freight crossing Bass Strait

and some freight to New Zealand and the Pacific Islands. This restriction in overseas travel is mainly because shipping lines require the use of their own shipping containers and also that many domestic containers are simply out of gauge (in width and length) for container ships and will not efficiently stack within the existing container guides.

Domestic containers are very unlikely to be seen on import or export container trains as these trains almost exclusively operate to or from a port terminal that handle only ISO shipping containers.

Wagons Used

Since the 1970s, container wagons have been designed to efficiently carry domestic containers. Some of the first designs of specialised wagons include the ‘jumbo’ JCW (NQJW) 80 foot skeletal wagons that were designed specifically for carrying Alltrans/TNT high-cube ‘jumbo’ 40 foot containers.

Wagon design has continued to mimic domestic container size increases, with the 1990s being a turning point in freight wagon design. Container lengths of 48 foot were becoming common (with some up to 53 foot), and heights were commonly 9 foot 6-inch or higher. Rail operators such as Australian National and National Rail, and freight companies like Boxcar and TNT Automotive were using articulated five-pack and double-stack well wagons capable of carrying these

longer and higher domestic containers, often with wagon design and container design occurring in partnership.

Present-day domestic intermodal operations continue to see the high use of specific wagons such as articulated five-packs and double-stack well wagons. While there are a number of older generic 40 foot, 60 foot and 80 foot wagons still used, these are not as efficient for non ISO-length containers, but are better suited for heavy domestic containers due to axle load limitation on articulated wagons.

While no longer common, car containers required specific wagons to be manufactured due to their extreme height. The TRAY and RRYW class wagons were specifically designed for car container haulage. Subsequently, following a major decline in Australian vehicle manufacturing, the TRAY wagons have now been scrapped and the RRYW wagons are employed by Pacific National in general domestic container traffic.

Container Markings

When it comes to markings on domestic containers, there are no hard and fast requirements on the container owners. As more containers are coming out of China on international shipping vessels, it is more common for domestic containers to comply with ISO standards or, at least, comply with the container coding convention of four letters and seven num-



Captured in September 2016 is an RQZY bar-coupled well wagon set, with a mixed double-stack load including some refrigerated containers (aka ‘reefers’), a half-height and some 53 foot Linfox containers.

bers. Just because domestic containers may have a compliant code, doesn't make them ISO shipping containers.

Most domestic container leasing companies comply with ISO standards and many of the large freight forwarding companies who own containers comply in part with those standards. Common domestic code deviations include the use of a four letter code, but not ending in 'U' that designates the item as a container. Other variations include the use of only six numbers and no check number or, in the case of Linfox, that organisation uses all seven numbers as the container number with no check number.

Container codes and numbering can often contain 'hidden' information such as the container size, container type or the year of manufacture (see photo at left). In the case of AFDB 413081, 'A' is Aurizon, 'F' is 40 foot and DB is 'decking beams'. The '4' is a 40 foot container, '13' is the year of manufacture and '081' is the serial number in that group. The seventh number is the check number.

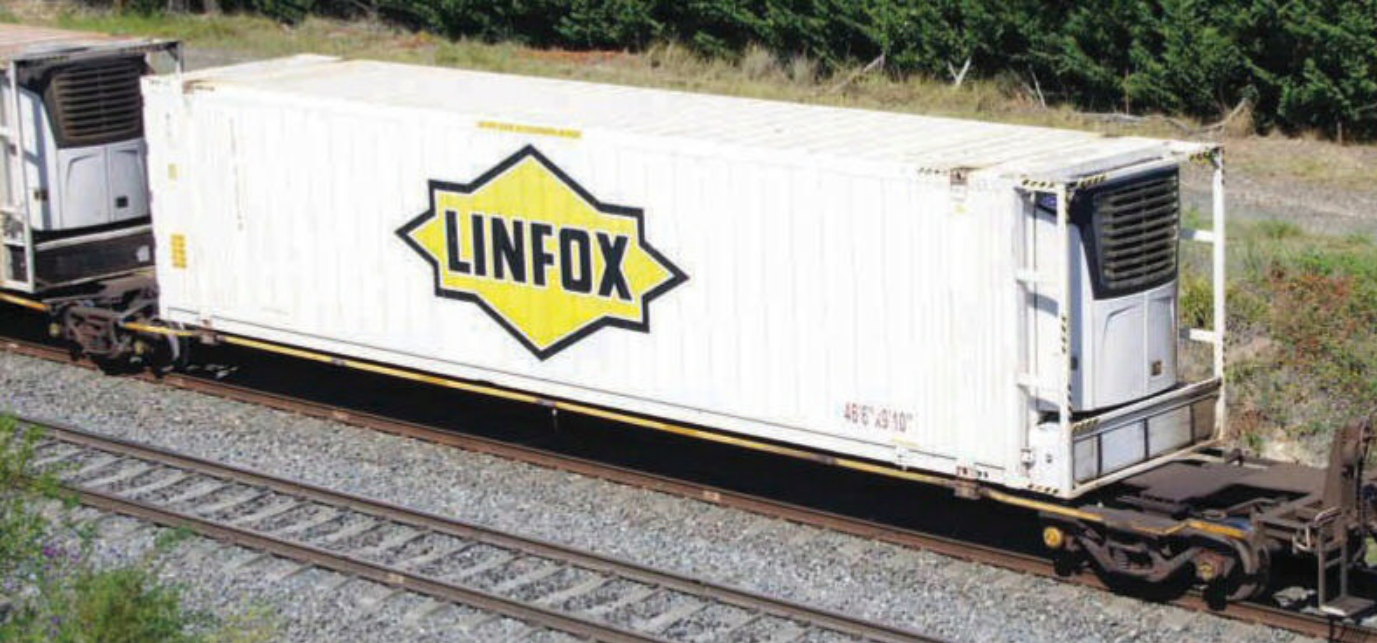
Similar to shipping containers, some domestic containers carry an ISO code to identify the characteristics of the container. The ISO code has four characters consisting of letters or numbers. The first character represents the container length and the second character represents the container height and width. The third and fourth represent the container type. Common domestic characteristics are listed in Table 1.

Where the fourth character is a number, the container has full-weight stacking and racking capabilities. Where the fourth character is a letter, the container has a reduced capability, normally due to the container being manufactured with a lighter tare mass and thus reduced strength. Many domestic containers have reduced capacity.



Former Aurizon-operated container AFDB 413081-6 showing its information carried on the end doors.

Table 1 — Common Domestic Characteristics						
1st Character	Length	2nd Character	Height	Width	3rd & 4th Character	Type
1	2991 (10 foot)	2	8'6"	2438 (8 foot)	G1 / GB	general (passive vents)
2	6058 (20 foot)	4	9'0"	2438 (8 foot)	G2 / GD	opens on one side or both (side door type)
3	9125 (30 foot)	5	9'6"	2438 (8 foot)	G9	general with bulk capabilities
4	12192 (20 foot)	8	4'3"	2438 (8 foot)	B0	dry bulk cargo
A	7150 (23 foot)	D	9'0"	>2438 <2500	R0 / RA	mechanically refrigerated
G	12500 (41 foot)	E	9'6"	>2438 <2500	R1 / RB	mechanically refrigerated and heated
L	13716 (45 foot)	F	>9'6"	>2438 <2500	R3 / RG	self-powered; mechanically refrigerated and heated
M	14630 (48 foot)	M	9'0"	>2500	N8	pressurised side-discharge tank
P	16154 (53 foot)	N	9'6"	>2500	K0-K6	liquid tank (various pressures)
R	unassigned	P	>9'6"	>2500	K7	cryogenic tank



A Linfox 46 foot 6 inch refrigerated container with its dimensions clearly marked on the side. Linfox operate a large fleet of these containers on train services.



On a Perth–Sydney (PS6) service with two FCL ‘Pocket Jumbos’, 14 November 2004. Photo by Scott Fitzgerald.



In 2006, a pair of 40 foot Seacell containers ride on an RQEY articulated two-pack wagon. Container lessor GE Seaco pioneered the Seacell concept; QR National (owner of the green container) had a reasonable-sized fleet in operation during the 2000s.



Table 2: Common Domestic Container Size Conversion Table					
Length		Height		Width	
Imperial	Metric	Imperial	Metric	Type	Metric
20 foot	6058 mm	8'6"	2591 mm	ISO (8 ft)	2438 mm
40 foot	12 198 mm	9'6"	2896 mm	CPC/SeaPC+	2460 mm
48 foot	14 630 mm	9'10"	3000 mm	Seacell	2484 mm
53 foot	16 154 mm	10'6"	3200 mm	Pallet Wide	2502 mm

◀ Cronos lease container CRXU 083043-3 is a 2EG9 type general purpose container with bulk capabilities. In this case the container is carrying ammonium nitrate for Orica. The CPC logo in the top right corner shows the container can carry two Australian pallets across its internal width. The external width is 2.46 metres.

Container Sizes

[Editor’s note: Containers use imperial measurements to define their sizes. ISO standard 20 foot shipping containers are often referred to as ‘twenty-foot equivalent units’ (TEUs). Refer to AMRM No. 329 (April 2018) for further details.]

Imperial measurements have been adopted and are generally used by transport authorities. ISO standards for containers were published between 1968 and 1970 by the International Maritime Organization and metric countries (like Australia) adhere to that philosophy.

Table 2 provides a quick reference conversion table of imperial and metric measurements as well as converting common container width terms or trademarks.

The only commonality between ISO shipping containers and some domestic containers are found with the lengths of 20 foot and 40 foot types. Many domestic containers are greater than 40 foot long, with common general cargo containers sized at 48 foot and some at 53 foot. Self-powered refrigerated containers come in various lengths from 21 foot or greater, 41 foot or greater, 46 foot 6-inch, or 48 foot or greater.

Aside from length differences, domestic containers are generally higher, with most designed to a minimum of 9 foot 6-inch, many now being 9 foot 10-inch and 10 foot 6-inch to maximise cubic capacity. Some specialised domestic containers reach 11 foot 6-inch or higher, such as glass-carrying containers and the novel FCL *Pocket Jumbo* at 3.7 metres high.

Finally, the width on most domestic containers is greater than the standard shipping container width of 8 foot. Domestic containers are permitted to be up to 2.5 m wide. This allows two standard Australian pallets to be loaded side-by-side. Australian ‘standard’ pallets are standard only in Australia and are 1165 mm x 1165 mm. They fit exactly in Australian railways’ RACE containers. They are not suited for ISO 20 foot or 40 foot shipping containers. Containers wider than the ISO standard (that is, 8 foot) often carry a name or branding to promote the additional width. These include branding such as Seacell and CPC types of containers.

The Seacell concept was introduced by GE Seaco and redesigned an ISO shipping container to handle two pallets wide internally. The container design moved the side wall strength to external ribs to create more internal space. These ribs are offset on adjacent sides so they can fit next to each other on international shipping vessels, although they don't seem to be common on international freight into and out of Australia. Seacell branded containers appear to have lost popularity in recent years, with most being manufactured in the 2000s. The 20 foot Toll (and former Patrick branded) Seacell containers are very common on rail and road with some having bulk top-hatch loading ability. In the 40 foot variants, Seaco, SCF and QR National have had notable-sized fleets.

Cellular Palletwide Containers (CPC) and other similar pallet-wide designs have been created with very thin side walls or reduced-depth corrugated side walls. These walls are often distinguishable due to their square-shaped rib corrugations. Some containers carry CPC markings in the top corner to advertise the design. CPC markings were commonplace when the concept was being promoted and, as a result, there are many Cronos and Toll containers carrying the logo. Many other containers are CPC-compliant, but do not necessarily display any external marking. In very recent times, Seaco introduced the branding 'SeaPC+' for pallet-wide containers.

Common Container Types

General purpose 20 foot containers carrying the code 25G1 and 2EG1 are very common on interstate intermodal services. They are very similar to export [ISO] 20 foot containers, but are 9 foot 6-inch high, 1 foot higher than ISO containers. The 2EG1 containers are also wider than standard ISO containers and are generally measured at 2.46 m or 2.48 m, making them suitable for two Australian pallets to be loaded side-by-side. While most 25G1 containers have common export container corrugated sides, the 2EG1 types often have a 'square-rib' thin-wall design or can be of the Seacell design.

The vast majority of 25G1 and 2EG1 containers are either removalist containers or lease containers. There is a large variety of removalist containers used by the bigger companies (Kent, Grace, Allied Pickfords and Pedemonts). Lease containers generally belong to SCF, Royal Wolf, Flex-Box, CS Leasing, Seaco/Cronos and Titan. Some freight companies operate these 20 foot containers with examples being Toll, Patrick, Sadleirs, SeaRoad and Linfox/FCL.

Bulk 20 foot containers carrying the common 2EG9 are a sub-group of the general-purpose containers. Other bulk container codes used are 2FG9, 2FGB, 2EB0, 2NB0 and 2NG9. Commonly 9 foot 6-inch high, with some now 9 foot 10-inch, they can be used for general pal-



Removalist companies operate many 25G1 containers; Kent is one of the largest. When photographed in late 2018 this container was almost new and has the interesting feature of having doors at both ends for easy access; a feature that is not common on most 25G1 containers.

letised freight, but are designed for bulk goods. Some have smooth internal walls for carrying large paper rolls and can be painted with a food-grade liner that makes them suitable for grains, sugars or other bulk foods. Ammonium nitrate and other chemicals are also carried in bulk containers. Bulk products are loaded through a circular hatch in the roof with the numbers of hatches per container varying from one to three. The product is discharged by tipping the product out either through two small hatches built into the door end or through a long skinny 'letter box' slot at the non-door end.

Prominent bulk container leasing com-

panies include Seaco/Cronos and CS Leasing, with Cronos owning a number of unusual 2DG9 9 foot high bulk containers. Common freight companies using bulk containers are Toll and Toll Shipping, and FCL/Linfox. Similar to the general-purpose type, the side corrugation pattern varies between containers.

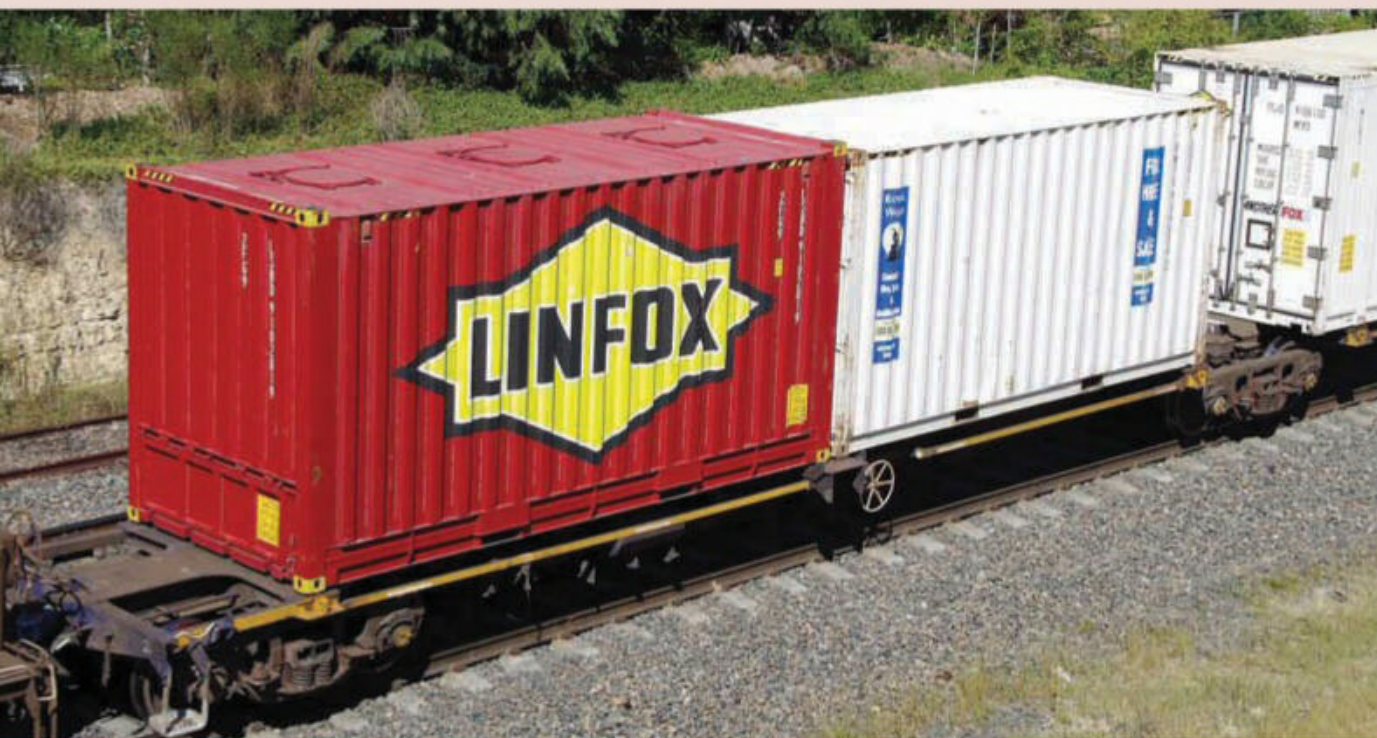
The 20 foot bulk containers such as the 2EG9 type should not be confused with 20 foot half-height concentrate and ore containers that run mainly as 'pit to port' block trains. These half-height containers with a removable lid are usually 1.45 m or 1.8 m high and generally do not carry a container type code.



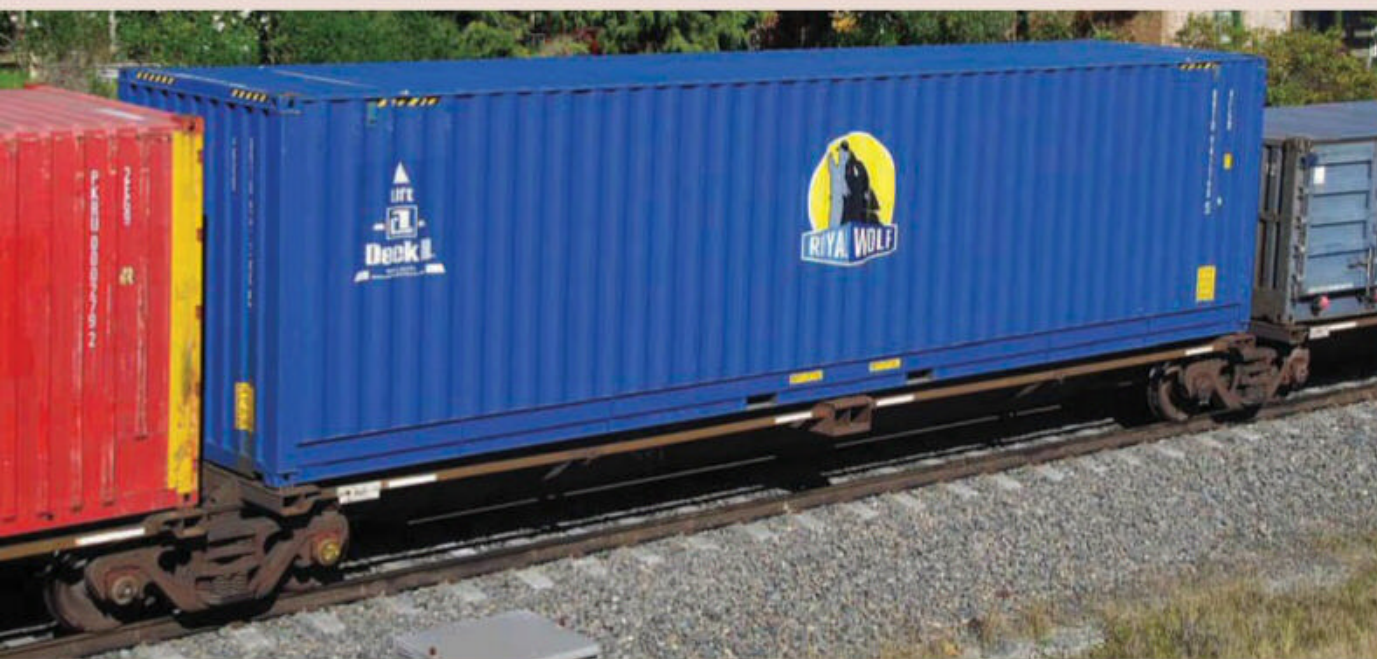
SCF is a large leasing company and this is one of their standard 2.46 m wide, 20 foot containers. The orange SCF logo is their current one, replacing the Rail Containers branding and also its short-lived yellow and black logo.



A pair of Cronos 20 foot bulk container on board a QQDY wagon that was built for Aurizon, but now owned by Pacific National. The container on the left is unusual in that it is a 9 foot high container making it a 2DG9 type. It has three roof hatches and the 'letter box' slot for unloading that is clearly marked by the yellow arrow pointing to the unloading end.



Linfox has a sizeable fleet of 20 foot bulk containers. This is a newer one being 9 foot 10-inch high with three circular roof hatches and a 'letter box' slot on one end.



The 40 foot general purpose domestic containers are almost always of the 4EG1 or 4FG1 type. This is due to the 45G1 type being mainly an export container (and not suitable for two Australian pallets), although there are a few domestic examples of the 45G1 type generally found being supplied by leasing companies such as Royal Wolf and SCF. The common dimensions for the 4EG1 and 4FG1 containers are either 9 foot 6-inch or 9 foot 10-inch high and either 2.46 m or 2.48 m wide; keeping them CPC-compliant on internal width. There are some 10 foot 6-inch high 4FG1 type containers although these are not common on rail due to height restrictions on the east coast.

There is not a great variety of 40 foot general purpose containers as they are designed for pallet freight, although side corrugations can vary and also include the Seacell design. Some containers have decking beams inside to allow more efficient stacking and loading of pallets. 40 foot bulk containers are extremely rare in Australia with Railroad Transport possibly having the only ones.

[Editor's note: At the end of July 2021, Railroad Transport had gone into liquidation with the loss of more than 100 jobs...]

All the major freight owners and freight forwarders have large quantities of 40 foot general purpose containers, with many supplementing their container fleets with lease containers from SCF, Intermodal Solutions, Royal Wolf and CS Leasing. TNT Jumbo containers were some of the first 40 foot general purpose domestic containers used on rail in Australia.

In NSW, dedicated waste (garbage) trains operate from Sydney to Tarago using specially-designed 42G1 containers.

Curtain-sided containers have incorrectly been referred to as 'Tautliners' for many years — and for good reason. The original curtain-sided truck trailer concept was developed in the 1960s and branded as 'Tautliner'; this brand has become synonymous in the transport

◀ Royal Wolf is a primary supplier of containers in Australia, with a large market share of niche customers. This company also supplies large freight operators and this container — relatively new in 2017 — is a general purpose type container fitted with 'Lift-a-Deck' decking beams. This system allows internal stacking of pallets across beams to reduce damage from stacking pallets directly on top of each other.

◀ At the time of writing, Railroad Transport operated a fleet of containers throughout Australia and this company had a rare design for a 40 foot general purpose container with a bulk-loading top hatch. The very square corrugated side makes it easily identified as a CPC container.

industry to describe a curtain-sided trailer or container. 'Tautliner' is a registered trade mark with trailer manufacturer Freighter; as such, the correct terminology in the modern era is 'curtain-sided container'.

Curtain-sided containers have been on the Australian rail scene since the 1980s and have remained commonplace ever since. Although most 20 foot versions have been replaced with side-door containers, 40 foot and 48 foot curtain lengths are still a preferred side-loading option due to the lighter weight of the curtain compared to doors. Side-loading a container is a widely-accepted loading method in Australia due to the limited number of rear-end loading docks. Side-access containers also allow pallets to be loaded or unloaded in any order; many forklifts can work on the same container concurrently.

Many early curtain-sided containers did not have codes although some recently-manufactured containers carry codes such as 4NSG, 4PSG and MFSG. The 'SG' suffix is not assigned in any ISO or Australian standard. There are a lot of subtle variations between curtain-sided containers; the main differences are the end walls and roof design, with some being flat and others being ribbed.

While K&S had a large fleet of curtain-sided containers in the early 2000s, both Toll and CEVA Logistics currently have large fleets active on rail, of which most are now more than 20 years old. Many of the Toll containers previously wore SPD, United, Interlink, LME Transport and TNT curtains, while the CEVA containers were TNT containers with either TNT markings or Holden markings. Sadleirs, Simon, KTI, Patrick, Northline, Linfox and SCT all operate curtain-sided containers, while Pacific National have a large number of 48 foot blue curtain-sided containers that replaced the 'Trailerail' services about 10 years ago. Pacific National also operate the only 24 foot containers, designed to allow a pair of smaller shipments to be made and consolidated onto a 48 foot wagon platform. Royal Wolf and SCF both supply curtain-sided containers to the market.

Side-door containers are mostly 20 foot long, although there are a few 40 foot versions — mainly 'half-height' (6 foot 9-inch). The side-door, like the curtain-sided containers, allows quick and easy access for forklifts to load and unload while the container remains loaded on a truck. A mezzanine (MEZ) deck, fitted to some containers, allows for pallets to be double-stacked within the container without risk of freight being damaged.

Due to the width of the side doors, most of the 20 foot versions have the prefix code 2N or 2P, with 40 foot versions being 4N or 4P. The suffix code varies greatly with G2, G4 and GD being common for non-ventilated containers and G8 or V0 being used for ventilated containers that are often used to transport fruit and vegetables.



Built for a very specific task, garbage containers are currently used to move Sydney's waste to Tarago (between Goulburn and Canberra). The rear door is hinged on only one side and is designed to aid loading and unloading.



More than 20 years old, this former Interlink curtain-sided container still shows its origin on the end doors. Now marked for Toll SPD, many of these containers are being refurbished and marked with the new Toll logo and darker green livery. The end designs of curtain-sided containers vary greatly.



This recently-built Northline curtain-sided container is 48 foot long and on hire from SCF. From a weathering perspective, the black curtain shows a lot of dust and the internal curtain straps are clearly visible in the dust. Most modern curtain-sided containers have solid ends for structural performance due to the lack of solid sides.



QR National (later Aurizon, now part of the Linfox group) was a big user of side-door containers. They provide safe and secure side-loading and unloading access similar to a curtain-sided container, but the side doors are less prone to damage. The doors can be ventilated to allow air flow.



Recent years have seen an increase in 'half-height' side-door containers. These are ideal for heavy pallet-loaded products that can not be stacked efficiently into a normal-height container. These containers also make good base containers for double-stacking on flat wagons.



SCF pioneered side doors made from plastic in 2010. The plastic doors were about one quarter the weight of steel doors yet provided the same strength rating. Apart from the orange side-door SCF containers they seem to be no longer used.

Leasing company SCF Containers pioneered the use of plastic side doors (that are bright orange) to reduce the tare weight of the container to try and compete more aggressively with the 40 foot and 48 foot curtain-sided market. To date, they have had mixed success and have recently gone back to curtain-sides for containers longer than 20 foot.

SCF has the largest fleet of side-door containers in Australia and lease these out to many of the larger freight companies. SCF side doors come in a wide range of colours including blue, white, orange, dark grey, QR National green and Aurizon yellow. Royal Wolf and CS Leasing also have lease fleets of side-door containers.

Many freight companies have modest-sized side-door fleets including Toll, Linfox, Sadleirs, Cahill and SeaRoad. 



HO scale E M Baldwin Bo-Bo Sugar cane locomotive by Lyndon's Trains. Price \$200 plus postage. www.lyndonstrains.com/collections/cane-trains

I have to admit that I am not an

expert on Queensland sugar mill tramway operations or their equipment. In my research regarding E M Baldwin and their locomotives, I used the book *A guide to Australian Locomotives*

(2009 edition) published by the Australian Railway Historical Society, New South Wales.

It would appear that E M Baldwin started as a "backyard operation" in Castle Hill in Sydney. They had a reputation for accomplishing work that other builders were reluctant to take on. The first locomotive they built for Queensland sugar mill tramways was for South Johnston Mill in 1960 and they continued supplying the market until 1983, when they built their last locomotive (TULLY 7) for the Tully Mill.

The model

The kit is based on E M Baldwin's B-B diesel hydraulic locomotives that were built for numerous sugar cane tramways over the years up to the mid 1970s.

The kit was supplied in a zip lock plastic bag that contained:

- Three pages of instructions
- A modified N scale SW9 chassis
- Brass wire and etchings for handrails
- A decal sheet and
- A 3D-printed locomotive body

Unfortunately, the body in my kit had suffered from a printer error during the printing process. I called Lyndon Trains about the issue; Lyndon advised that they would send me a new body print that week (it is great to see such good post-purchase customer service).

The build

Building this kit is fairly straight forward and well within the ability of most modellers. The body has lots of detail printed on it, including small dimples to indicate where to

drill all the holes to fit the handrails. The 3D printing was very good and I did not have to do any sanding as the print lines are very fine. I have built a couple of older 3D-printed models in the past and the biggest job by far is sanding out the print lines!

The biggest task to carry out is to mill out the inside of the body to allow the chassis to fit. To do this I used my Dremel tool fitted with a milling bit to remove just enough material to allow the chassis to fit the body held in by friction. Take your time doing the milling, so as not to take out too much material.

[Editor's note: use appropriate Personal Protective Equipment (PPE) such as safety glasses when using a Dremel tool]

Once the handrails are fitted and the body sitting on the chassis, the best part of the build can be started – detailing and painting. I looked at lots of photos of these locomotives and there doesn't seem to be two that are the same. That is great for the modeler as you can just about do as much detailing as you like.

I wanted to make mine as operating in the modern era and used additional parts that I had in my parts bin.

I washed the body in warm, soapy water before painting it and had no trouble with the paint adhering to the body. The locomotive was painted using Dulux white undercoat and Humbrol acrylic aerosol cans.

I fitted the locomotive with N scale couplers from Micro Trains; but had to file the coupler pockets slightly to get them to fit. Once again they are held in place by friction.

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

Once complete, I test ran the locomotive. The mechanism was a bit jerky to start with, but came good after a bit of running in. I did not install a DCC decoder in this model, but there appears to be room in the model to fit a decoder and maybe enough room to install sound. If you really wanted to go to town with this kit, fitting sound and lights would make this a stand-out model, but this is a bit beyond my skill set.

Conclusion

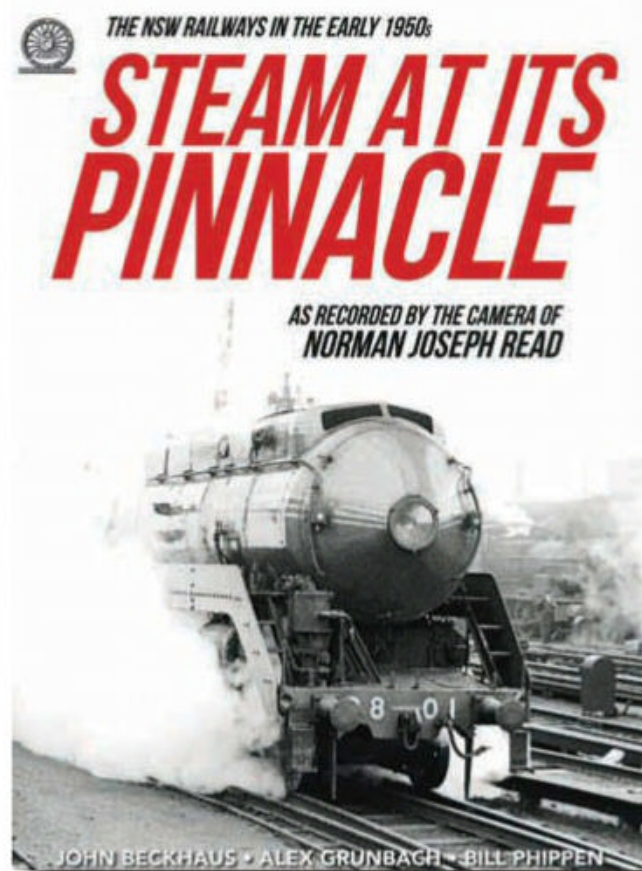
I really enjoyed building this kit. The biggest job was the painting and detailing, but for me this is one of the most enjoyable aspects of the hobby. The finished model looks great, runs well and, as always, reflects the work done by the modeller in the amount of effort put in. Highly recommended kit.

Gary Lamb

Steam At Its Pinnacle by Norman Joseph Read, published by John Beckhaus and Bill Phippen under the ARHS NSW Division, 5 Henderson Rd., Alexandria, NSW 2015. <https://arhsnsw.com.au/shop/> RRP: \$35.00.

The early 1950s was an interesting time on the railways; years of war-time neglect had taken its toll while the desire to update the locomotive and rollingstock fleet was a real-time struggle. Photographers, like those a decade or so later, were restricted by the lack of personal transport and money to purchase and process the film that recorded rail action. Norman Joseph Read was an active photographer for a very short time, these images coming from the period 1949 to 1953. They became part of the Australian Railway Historical Society, NSW Branch collection. The efforts of members Alex Grunbach (photo selection), John Beckhaus (Research and caption writer) and Bill Phippen (photo processing and design) has seen a period of Covid-19 lockup turned into an interesting 109 A4 page limp cover book.

The book covers the author's story and also provides a modern-day look at the NSWGR as it was during the photographic period. This alone is a highlight that can guide those wishing to model the early-1950 era. Like many of us, Norman had a wide railway interest with maybe a preference for



passenger cars. While living at Mortdale, he certainly got around. His favourite lineside locations are supported by images from difficult to access locations; inside Clyde Engineering for instance (Commonwealth Railways L class) and at the Metropolitan Colliery where out of service locomotives were found amongst the grass.

The branch lines to Kurrajong and Camden were visited, Norman's lens capturing the simplicity of the station platforms and building. Lineside, Norman photographed goods trains, some double-headed with plenty of smoke and steam, some at hard to access locations.

The images in this book will certainly assist those looking for detail, be it on the train, on the engine or passenger car or in the station and railway lineside scene. There are some pages that will certainly become earmarked, especially for those with an interest in Pullman cars. It is great seeing these long-hidden images being enjoyed.

Bob Gallagher

Upgrade for the Australian Railway Models (ARM) C38 NSWGR Steam locomotive in HO scale. \$55.00 from CtrlP Models <https://www.ctrlpmodels.com.au>

Sometimes we can't afford all the Australian outline steam locomotives. However, when I saw the Australian Railway Models

(ARM) C38 New South Wales Government Railways (NSWGR) Steam locomotive in HO scale at a very reasonable price, I jumped at it. It looked great in the magazine and I was needing an affordable mainline passenger locomotive.

Affordability comes at a price, the bogies on the tender were not as they seemed. They are moulded as part of the side frame and do not swivel.

All this aside, it had to be able to haul a decent load, so off I went to my

local train club to run it on the club layout.

The club track is around 100 m per lap and the train was going well until I noticed that the tender would jump a little at two locations. No other train was having these problems, so I thought I'd investigate. There were a few things happening here.

To ensure that the locomotive transverses a curve with the fixed axles on the tender, the width of the tender wheels is a teeny bit narrower than usual.

This means that the model is susceptible to derailments where track is slightly wider than usual.

For example, where a point has a cut out to the web of the rail, so that the point blades nestle into the web, to provide a smooth transition. When the C38 passes over the point where this cut out is, the width of the inside of the track is just a little teeny weeny, itsy bitsy bit wider (yes these are technical terms. Look them up if you don't think so) and since the width of the

tender wheels is a teeny bit narrower than usual the wheels fall inside the slot and the flanges hit the sleepers.

Thus, when the wheels get to the end of the slot in the point it hits the square end (the full width of the web and head of the rail) it is abruptly lifted up and jumps out.

Sure enough, one in five laps it would jump too hard and would disconnect from the carriage or even worse, derail.

Fortunately, there is a solution in the shape of a tender frame and bogie upgrade by CtrlP models. Pronounced "Control P" referring to the two buttons you press on a personal computer to print something. CtrlP models are a 3D printing model kit company and have seen a niche in the market where small production runs are required.

I am not a great, or even a good kit builder as I have not touched one for over 20 years, but I have been wanting to build one for a while. I needed a very simple kit to get me used to the techniques required for more sophisticated models and when I saw this kit, I jumped at it. It looks simple with less than a dozen parts. It's glued or screwed together and none of the joints are critical for the running of the loco. I think I could get away with just bolting the bogies onto the frame and putting onto the model if needed. I also liked that I only need to paint it one colour, black, so my painting skills won't need to be too good to get the job done. I can paint the buffer plates red if I want but I don't need to stress about it.

Tender Construction

The following are some notes about the kit construction:

- I was not sure what the dimples are on the sprue and which are meant to be rivets or bolts such as found on the buffer bases. This made it a little worrying when preparing parts.



- No diagram showing location of brake cylinders. The orientation from the ARM model was used as a pattern.
- Instructions need to be downloaded from their website.
- An observation, would it be good to have a washer between the bogie and frame?
- The kit is supplied with two types of buffers but no detail as to what era each were used? I decided to use the same as on the ARM model so that they would match.
- Which way should the bogies be facing?

[Editors note: CtrP models have been contacted for clarification of the above issues, also note that CrtIP models have recently released a MKII version using black material which will negate painting and includes a flat head screw for the coupler.]

So, apart from some confusion such as orientation etc. in the instructions; the kit went together well. Even though I haven't done any kit building for 20 years this was still easy.

Main notes regarding the operation of the model is that it ran substantially better. However, I would replace the screw that comes in the kit for attaching the Kadee coupler with a flat head screw, as a flat head screw will allow the bogie frame to swing freely and not fowl against a proud screw head.

So, I know I've taken a lot of words to get here but my conclusions are:

I love the first run of the ARM C38 steam locomotives, they look great and runs very well.

An issue with the ARM model is that the tender bogies aren't articulated and this means that the model is prone to jumping off the track at points.

The CtrIP models kit is a great way to solve this problem. The only drawback is the instructions and the coupler screw.

For all those who buy the ARM C38 I think the CtrIP kit is a great solution and supplies a little extra joy if you have ever wanted to make a very simple kit.

Martin Vella



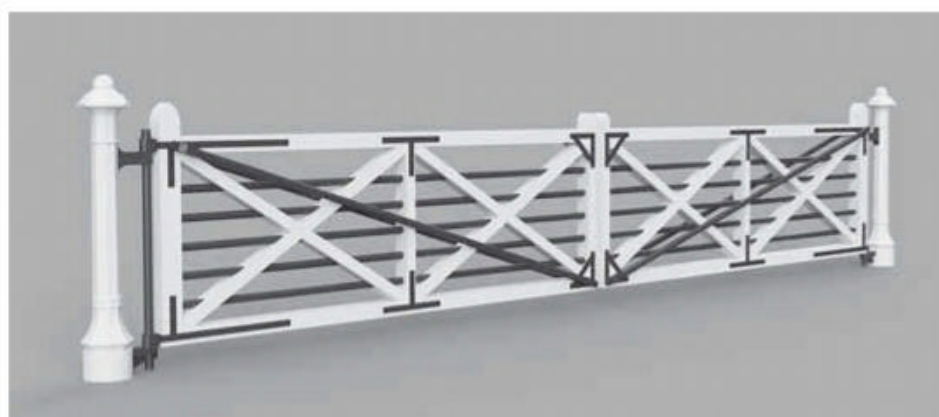
RECENT RELEASES



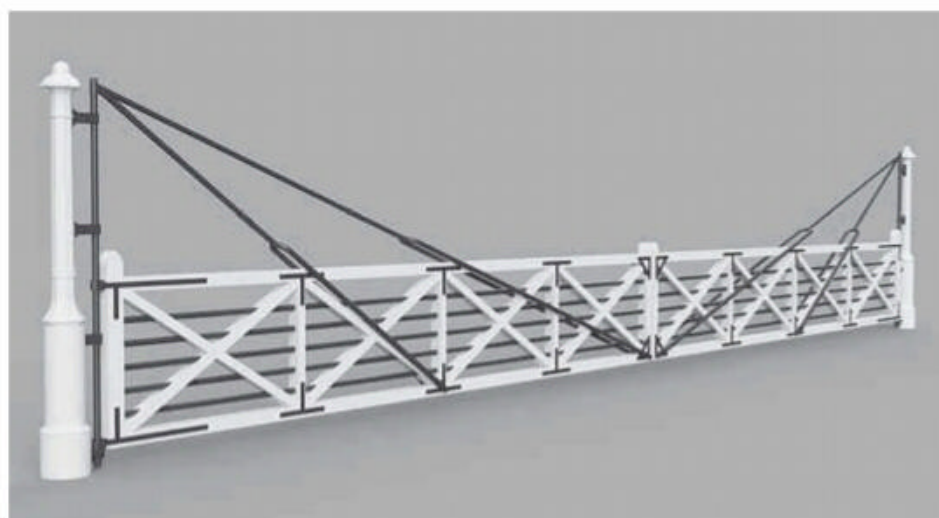
3Dmodel.studio have released a line of 3D printed HO scale Victorian Railways lineside structures including four different sized signal boxes. Digital rendering shown.



A detailed view of 3Dmodel.studio Victorian Railways HO scale signal box. Digital rendering shown.



3Dmodel.studio have also released a line of Victorian Railways level crossing gates in HO scale, in various sizes including 14, 17, 20 and 26 foot gate lengths, with high and low capstans. Digital rendering of the 14 foot gate shown.

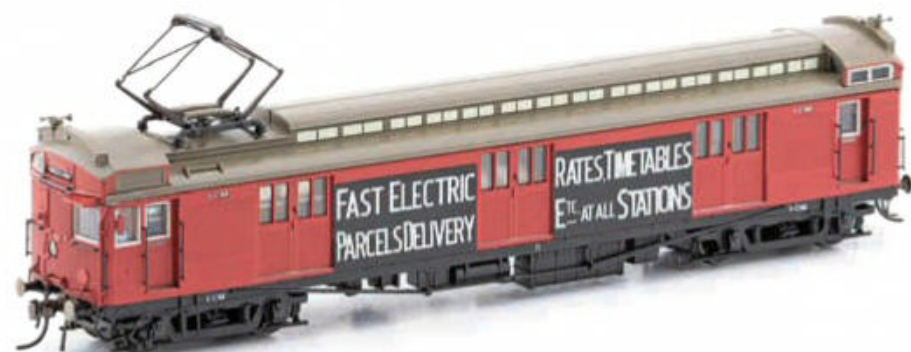


3Dmodel.studio's Victorian Railways 26 foot level crossing gates in HO scale. Digital rendering shown.

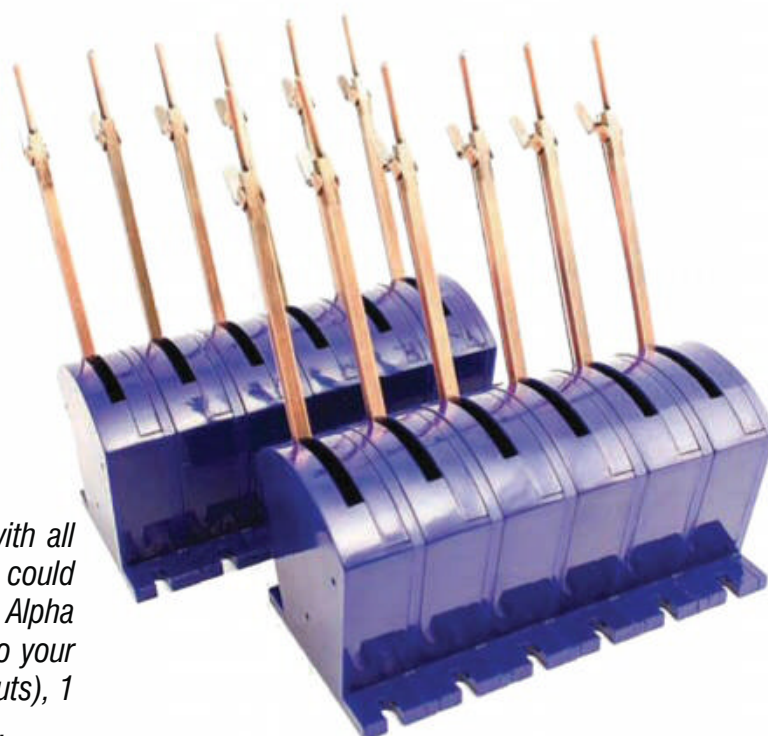


Auscision Models has released the Victorian Railways 'Tait' suburban car sets in HO scale, available in four and seven car sets with spoked and disc wheels.

► Auscision Models has released Victorian Railways CM parcel vans in HO scale, produced in three different liveries and available in single car sets.



DCC Concepts have released a Cobalt-S Lever "Signal box" control pack to work with all NCE DCC systems (NCE PowerCab/Power House Pro / Power House Pro Radio). This could be considered a good starter pack to build your own Signal box control panel. The Alpha encoder unit gives you a fully customisable layout control panel with a single cable to your layout. Included in the pack: 1 x Cobalt-S lever 12 pack, 1 x Alpha encoder unit (12 inputs), 1 x Alpha connection cable. DCC Concepts Cobalt-S Levers in assembled position (right).



Railmotor models have released the HO Scale Specialised Container Transport (SCT) PBSY van, available as single packs.

Andlan Models have recently retooled their HO scale New South Wales Government Railways (NSWGR) BLV kit. Masters for the body were done using all new CAD drawings, 3D printed on higher quality printers than they previously had access to. Bogies side frames are also from new 3D masters that overlay onto etched nickel silver bolsters.

Anton Trains have released a HO scale 60 foot Well-type NSWGR turntable.

- Sold painted and ready to run, features include:
- Motorised with stepper motor and micro processor control.
- Pre-programmed for 12-degree indexing.
- Bridge length 209mm. Cutout 220mm.
- One piece formed metal well for strength.
- Metal section reinforced polyurethane bridge for detail.
- Etched brass handrails and nickel silver track.
- Motorised unit comes complete with a 2m power control cable and switch unit – ready to install and connect.

Eureka Models have announced a re-run of their NSWGR 40 class diesel electric locomotive in HO scale.

This re-run will include new road numbers where appropriate.

Liveries include:

- NSWGR original green, royal blue and Tuscan.
- Cliff's Robe River Iron Associates No. 9401 and 9402 (available in three different configurations, as delivered, with modified bogies and as preserved).

The production slot is scheduled for 2022.

Ixion Model Railways is delighted to announce that the HO scale Victorian Railway J Class steam locomotive shipment is complete and has left the factory. It will ship from Hong Kong to Sydney on 24 August 2021. They are expected to be available around mid-September. Shop pre-orders will be filled as a priority.

Gopher Models & BadgerBits. The N scale NSWGR C38 class steam locomotive in both streamlined and standard versions are available



Andlan Models NSWGR BLV kit in HO scale.

again with a Kato chassis.

The N scale NSWGR 422 class diesel locomotive kit will be released in early October 2021. This will include a one piece body and the reliable Gopher Models chassis from the NSWGR 42, VR S, B and Commonwealth Railways GM. Decals that have been produced so far are Indian red, Australian Railroad Group, FreightRail, Northern Rivers Railroad. Other schemes in preparation are SRA of NSW Candy, Bicentennial, Reverse, Chicago Freight Car Leasing Australia (CFCLA) and Austrak. Lyndons Trains is working on a conversion kit for the side mounted aircon access and ditch lights.

The N scale NSWGR 73 class diesel locomotive kit is close to completing the development phase.

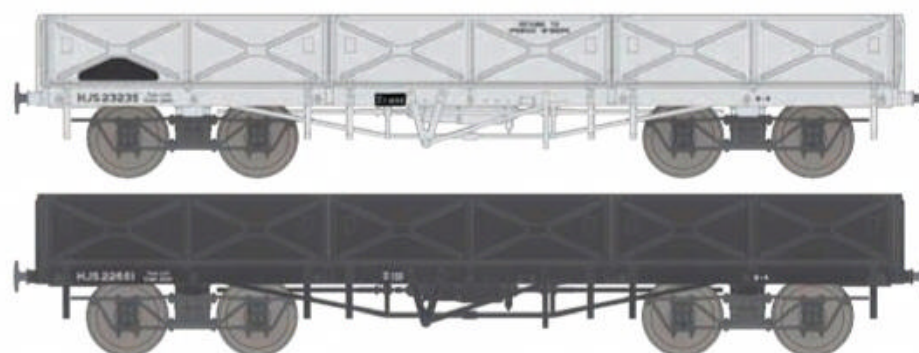
The N scale NSWGR 48 class diesel locomotive will be rerun from the factory in China, this re-run will have different liveries to the previous run. This production run will include earlier liveries plus more modern liveries.

Trainorama. The HO scale SAR – AN 930 class locomotive re-run is expected to be available at time of publication.

This re-run includes new numbers and modification specific details including 936 with chicken wire grills and plated over staff exchanger with water cooler at the A end.

Wombat Models has moved, the Postal Address is now, P.O. Box.94 Hill Top NSW 2575. the phone number and email addresses remain the same.

Most HO Scale C30T steam locomotive parts are available as spares, e.g. a short Kadee type coupler box for the No. 1 end.

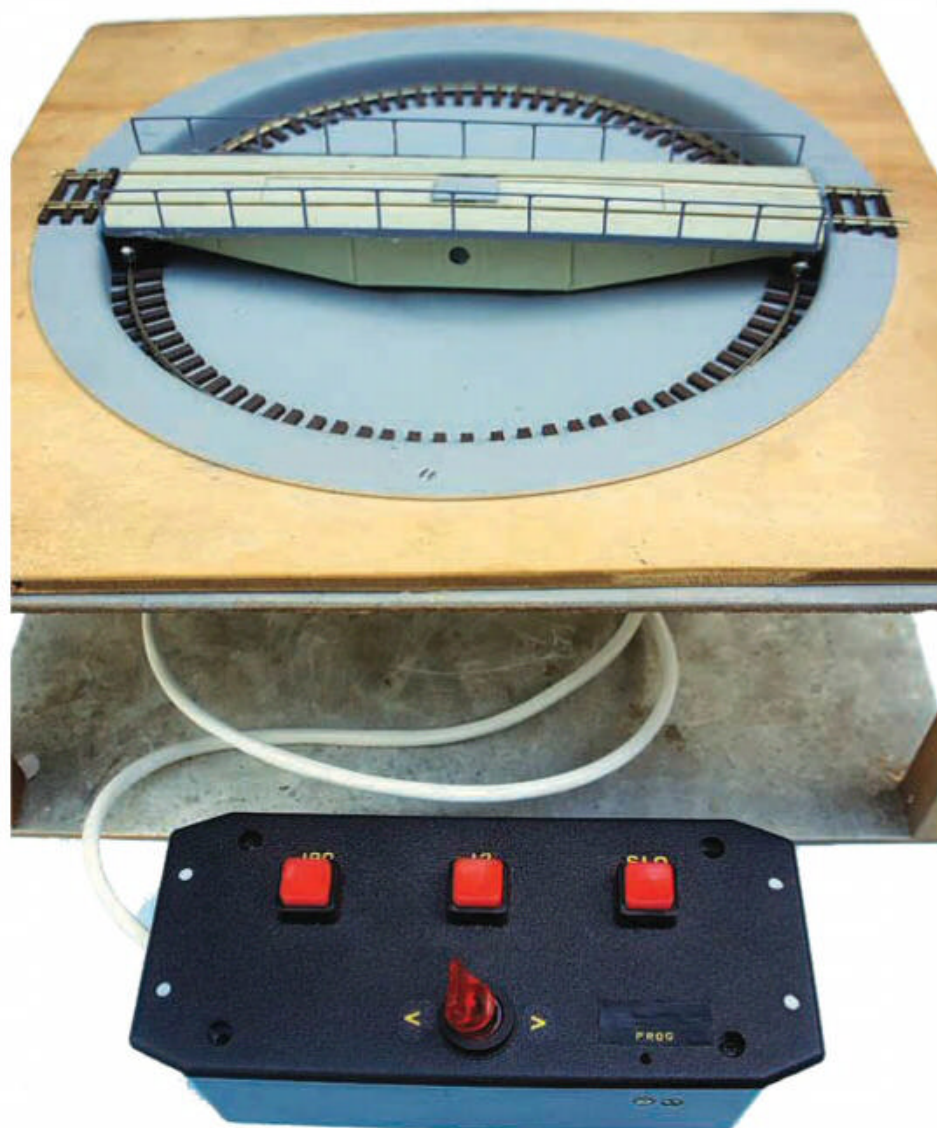


Wiske Models Queensland Railways HJS open wagons in HO and HO_n3½ with five foot bar frame bogies

A Lost Wax Brass (LWB) Cowcatcher is also available.

Wiske Models are re-running the Queensland Railways HJS open wagons in HO and HO_n3½.

Included in this production run are era specific printing as well as the five foot bar frame bogies, which were fitted to the first 600 wagons that were built in the United Kingdom.



Antons Trains 60 foot NSWGR ready to run turntable in HO scale.

Other News

Albury Hobby Centre. After 70 years of trading, the Albury Hobby Centre NSW closed its doors on the 31 of July 2021.

The closure was the result of a number of factors including:

Internet sales, lack of trading due to COVID-19 restrictions and finally the change of ownership of the building put paid to this long time business.

The Albury Hobby Centre first opened in 1951 and was operated by then owner Jack Ellis for 35 years.

The current owner James Blackwell had to make this difficult decision to close the Albury Hobby Centre when he was unable to find a suitable location in the Albury CBD in such a short timeframe.

Unfortunately for local hobbyist

in Albury, there will be no more ducking down on Saturday morning to get a piece of gear or paint to finish a model over the weekend.

Eveleigh Press advise that the second instalment of the Clyde (Engineering) series by David Jehan is due to be released soon. This book *Clyde*, will cover the 1898 to 1948 period, the real steam era.

The first book in the series *Hudson Brothers* covered the 1866 to 1898 period, when the timber orientated, rolling stock building company moved from Redfern to Clyde and the Clyde Engineering company became involved, helping NSW and Australia develop into the country it now is.

ModelOkits shop relocation. Due to the sale of their main packaging business, the ModelOkits shop will close till early mid September whilst they relocate. The shop will be moving to a larger shop in Thornleigh. This will be around 300m from Thornleigh station. There is plenty of parking and lots of good cafe's and restaurants nearby.

Exact details of opening times, will be revealed in due course.

The online store and phone orders are possible, however it may be difficult to locate specific stock. Any questions or enquiries please call them via the mobile number.

Corrections

We managed to spell Marree (a break of gauge town on the narrow gauge Central Australian Railway) incorrectly in the August 2021.

AMRM Office – Covid-19

The Covid-19 pandemic has caught up with the AMRM office, which is located in a locked-down local Council area. It is becoming obvious that we may not be able to always have staff on hand during the working week. We ask those contacting the office via phone to be patient. Please leave a message on the answering machine; staff will get back to you as soon as they can. However, there may be a delay in their response, staff may not contact you on the same day. Alternatively, you can place your order though the website www.australianmodelrailways.com as this service is maintained and monitored.

AMRM Team

Auscision Models have received painted pilot models of their N scale NR class locomotives, in a multitude of liveries. Pre order forms are currently pending.

The HO scale NSWGR 44 class locomotive painted pilot models have been received. Following inspection, revised painted pilot models have been requested.

Auscision Models have reviewed the HO Scale NSWGR DEB Set pilot model and are

currently working on the tooling corrections.

The HO scale Genesee & Wyoming Australia GWA class, Pacific National (PN) TT class, QR National LDP class, Specialised Container Transport SCT class and Southern Shorthaul Railroad SSR class GT46C-Ace re-run will have an updated Printed Circuit Board (PCB).

The PCB has been checked and works well with their DCC sound

file. This re-run will include flashing ditch lights and light logic features similar to that currently featured on the Auscision Models the NR class locomotive.

The HO Scale V/line G class and Australian National BL Class painted samples are expected to arrive in September 2021.

The HO Scale NHYH Coal Hopper and variants, and the VicRail V/line C Class painted pilot models have been delayed due to

factory production requirements.

The HO Scale Indigenous NR Class – Auscision Models have advised that these models are taking a little longer than expected due to the extensive pad printing required.

Auscision have announced a re-run of the State Rail Authority of New South Wales (SRA of NSW) WTY/NGTY grain hoppers in HO scale.



Auscision models SRA of NSW WTY grain hopper.

Auscision models SRA of NSW WGTY grain hopper.

Diary

EXHIBITIONS & EXPOS

BURWOOD – NSW. October 15-17, 2021. TT scale railway layout and construction display plus railway films not shown on TV. Burwood Uniting Church, Burwood Road (between Burwood station & Westfield). 2.00pm-5.00pm Fri & Sat, 12.00pm-5.00pm Sun. Peter Gray 0458 043 985.

SHEPPARTON – VIC. October 16-17, 2021. Shepparton Model Rail Exhibition (Mooroopna), GV Rail Club Inc. SIR IAN McLennan Centre, Mooroopna Recreation Reserve (Echuca Road entrance). 9.00am-5.30pm (Sat), 10.00am-4.00pm (Sun). Adults \$10, Children \$5, Family \$20. Ross 0407 845 247. <https://www.gvrailclub.com>

CANCELLED – SUNBURY – VIC. October 16-17, 2021. Sunbury Model Railway Club, St Anne's Church Hall, Riddell Road, Sunbury. Mark Warner 0407 880 604. mrwarner@iprimus.com.au

COWES – VIC. January 15-16, 2022. Phillip Island & District Railway Modellers Show, Senior Citizens Hall, 6 Lions Court, Cowes. Open 10.00am-5.00pm (Sat), 10.00am-4.00pm (Sun). Admission: \$8 Adults, \$5 U/15, \$20 Family. Grant Colwell 0432 104 220. Check website for any COVID-19 changes. piadrm.com

SEMINARS & CONVENTIONS

SUNBURY – VIC. October 16-17, 2021. Sunbury Model Railway Club, St Anne's Church Hall, Riddell Road, Sunbury, 10.00am-5.00pm (Sat), 10.00am-4.00pm (Sun). Adult \$10, Child \$4, Pension \$7, Family \$20. Mark Warner 0407 880 604. mrwarner@iprimus.com.au

OPEN DAYS

GLEN IRIS – VIC. October 3, 2021. Australian Model Railway Association, Victorian Branch Inc. at the Clubrooms, 92 Wills Street, Glen Iris 3146. Melway Map 59 Ref J8. Open: 10.00am-4.00pm (Sun) depending on Covid 19 Restrictions. Free Entry. amravic.com.au. Clubrooms telephone (03) 9885 7034.

CALOUNDRA – QLD. October 9, 2021. Sunshine Coast Model Railway Club, Uniting Church Hall, corner Queen and Ulm Streets Caloundra. Commencing at 9am (Sat). Terry Hicks 07 5491 4617. ghicks4@bigpond.com

SALE DAYS

CALOUNDRA – QLD. October 9, 2021. Sunshine Coast Model Railway Club, Uniting Church Hall corner Queen and Ulm Streets Caloundra commencing at 9.00am.

BRISBANE – QLD. November 7, 2021. The Railway Modellers Club of Queensland will hold a Buy & Sell and Open Day, at our clubrooms, Buckley Park, 20 Terrence Road, Brendale 4500. 10.00am-1.00pm. Over 40 tables of new and pre-loved items for sale, and our large G, HO, HOOn3 and N layouts will be operating.

rmcqevents@gmail.com or 0408 706 411
<http://rmcq.org.au/home/calendar/buy-sell-days>
<https://www.facebook.com/rmcqbrendale>

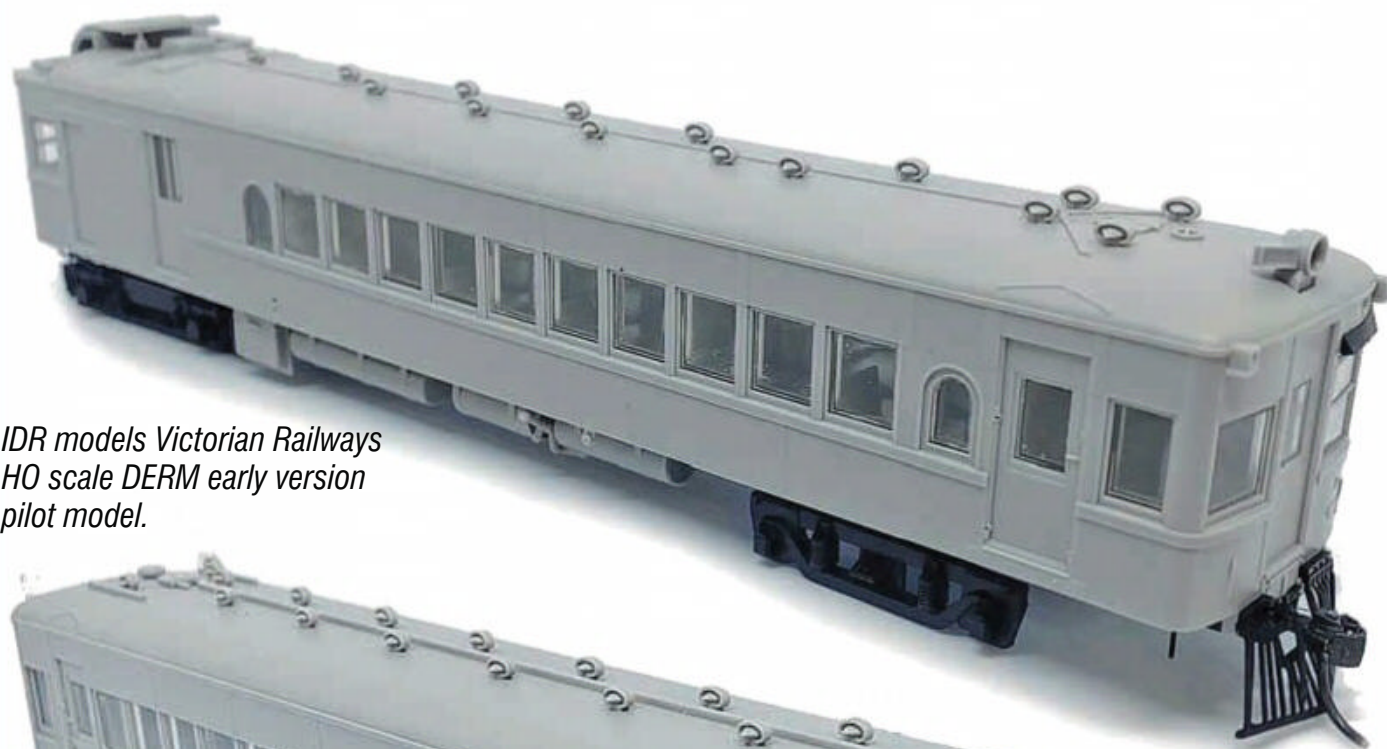
CALOUNDRA – QLD. March 26, 2022. Sunshine Coast Model Railway Club, Uniting Church Hall corner Queen and Ulm Streets Caloundra commencing at 9.00am.

Auscision models painted pilot models of their N scale NR class locomotives, in 18 different liveries.

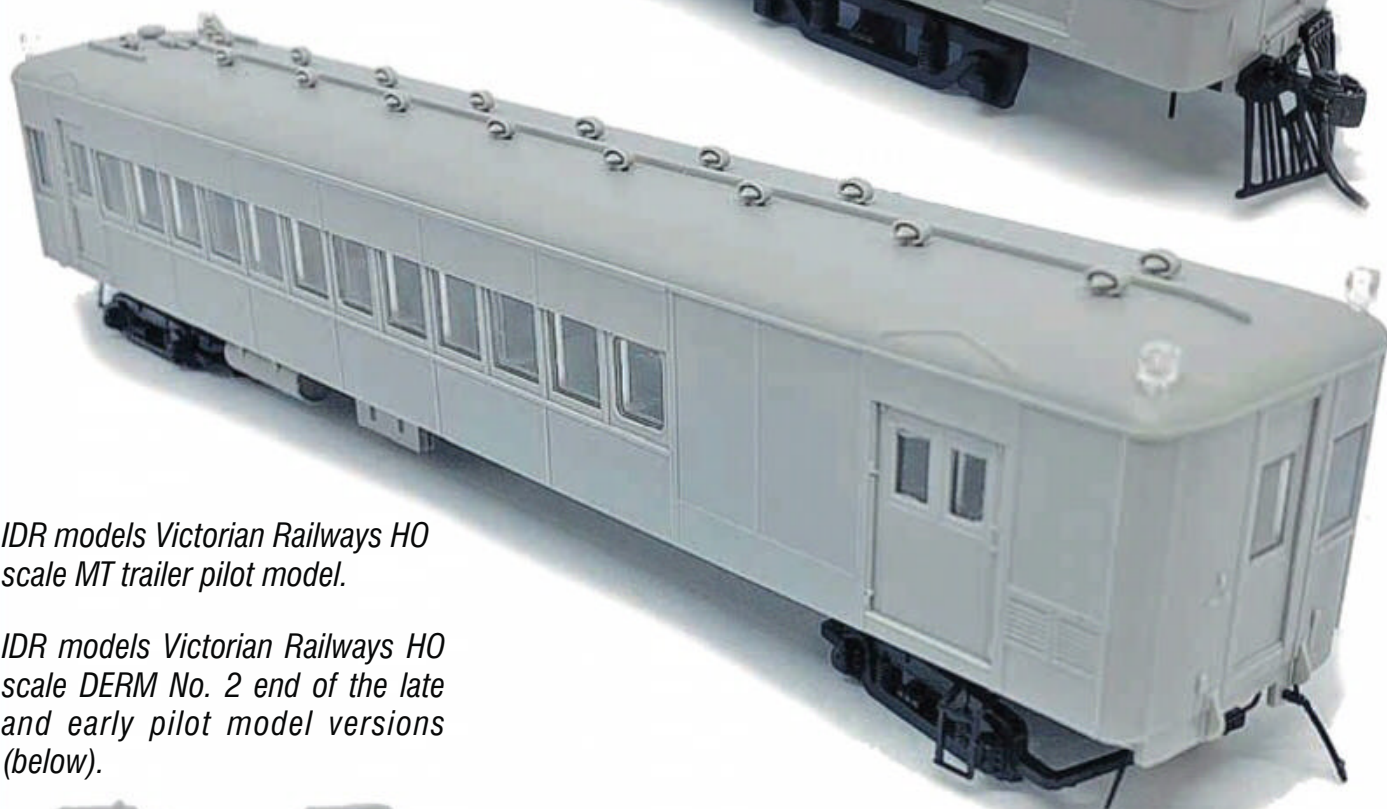


Auscision models painted pilot models of their Pacific National N scale NR class locomotives, a HO scale NR103 is shown for comparison.





IDR models Victorian Railways HO scale DERM early version pilot model.



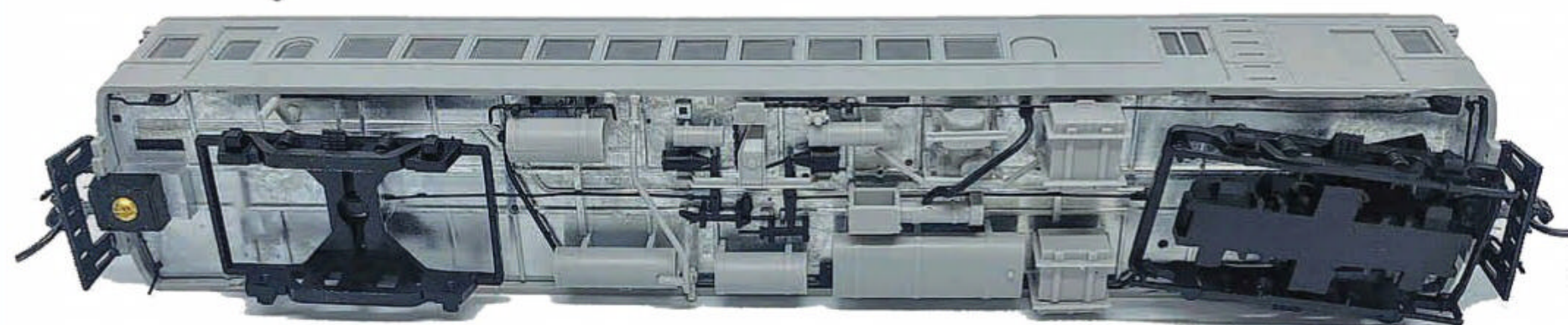
IDR models Victorian Railways HO scale MT trailer pilot model.

IDR models Victorian Railways HO scale DERM No. 2 end of the late and early pilot model versions (below).



IDR models Victorian Railways HO scale DERM No. 1 end of the early and late pilot model versions.

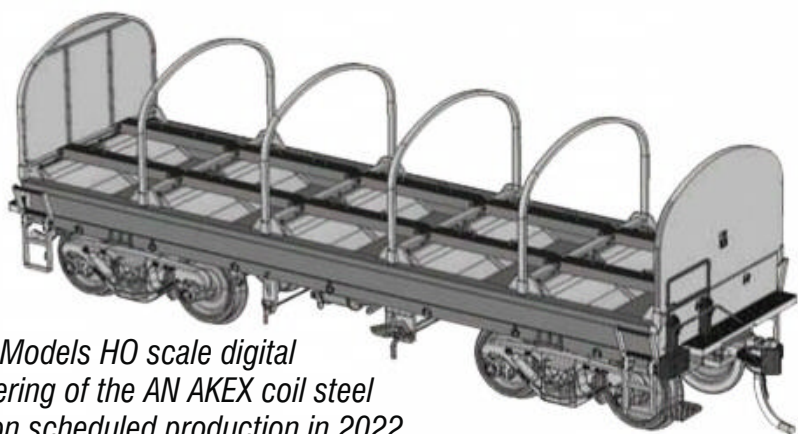
IDR models Victorian Railways HO scale DERM underframe detail (below) on a unpowered pilot model.



IDR Models have received unpainted pilot models of their HO scale Victorian Railways DERM railcars, and MT trailer cars.

The first round of tooling corrections has been accomplished, the factory has assembled the first running pilot models and are currently in transit for review.

The HO scale NSWGR BBW models have been shipped from the factory and are expected to be available at the time of publication.



SDS Models HO scale digital rendering of the AN AKEX coil steel wagon scheduled production in 2022.



SDS Models HO scale digital rendering of the SRA of NSW LHO/LHY brakevans, due for production this year.

SDS Models

In early August SDS Models received sufficient ESU DCC decoders to finalise the assembly of their *Great Southern*, *'Real trains not road trains'* and *The Overland* NR class models. These are now in stock along with a re-run of NR103, NR1 and NR121 all in PN blue.

The Victorian Railways D³ class steam locomotive should be available at time of publication. This model is sold under the Phoenix Reproductions brand, however, SDS Models guided the development and production. SDS Models are offering two unique running number D³s fitted with an earlier style D¹ – D² flare top tender.

Early September should see the HO scale pilot models of the MHO/VHO/DMC/KB series brakevan, SDS models are offering six body versions across this series and order forms are available on their website. Delivery is expected mid 2022.

Currently in production and arriving between now and the end of the year are the following HO scale projects:

- Austrains NEO NSWGR LHG brakevan

- Austrains NEO VR PL coach twin packs including the BCPL coach
- Austrains NEO NSWGR KP mail sorting van suitably enhanced
- Austrains NEO NSWGR LHO/LHY brakevan project again suitably enhanced
- Austrains NEO NSWGR End platform cars and
- Austrains NEO South Australian Railways (SAR) – Australian National (AN) SO/SOC concentrate wagon re-run. This production run will have new road numbers for SAR, AN ANR and National Rail and includes: Commonwealth Railways GQ AN livery. National Rail patch with ECOFAB covers. National Rail with and without ECOFAB covers. ECOFAB covers will be available separately.

New for 2022 and based upon the underframe of the SAR SOC wagon, is the AN AKEX coil steel wagon.

The SAR – Australian National Railways 900 class locomotive production is scheduled 2022.



MagnorailOz have announced two new items to compliment the Magnorail System. This system can be used to power HO scale cyclists actually pedalling their way around layouts and allows most scale vehicles to be animated.

To & Fro Unit – Exclusive to MagnorailOz, this unit will allow auto reverse and delayed timing of the Magnorail System enabling a range of scenarios using your existing vehicles or objects. This can be used for scenarios such as:

ferries traversing rivers, forklifts loading and unloading at freight depots, roadwork vehicles laying or grading roads, funiculars etc. Great for the modeller without Arduino skills. Magnorail track already comes with built-in holders for reed switches and activating magnets. Examples of scenarios can be viewed at <https://youtu.be/8tznHqgyehg>

New style Santa Claus. The popular cycling HO scale Santa has been upgraded with a 3D printed Santa and a pack of toys on his back. These ready to run units actually pedal along. The original Santa towing a trailer with Christmas tree is also available.



MagnorailOz Santa Claus with sack in HO scale.



SDS Models HO scale digital rendering of the NSWGR HO/MHO/DMC/KB brakevans, dynamometer car and parcels vans.

Vale

Dave Morris

1 July 1959 – 19 August 2021

I was saddened to learn of the death of my good friend Dave Morris on 19 August, 2021. Dave passed of organ failure brought on by respiratory complications in a hospital in Thailand, where he lived with his third wife Daw and their two step daughters. Dave had moved to Thailand several years ago to build a life with his new family.

I first met Dave at an O Gauge Modellers Workshop in Thornleigh in Sydney NSW around 2002, not long after he'd purchased the rolling stock segment of Century Models. Dave relaunched this enterprise as the Waratah Model Railway Company. There are two things I took away from that first encounter with Dave; the Grizzly Adams beard and his passion for his new rolling stock business. That beard was his most striking visual feature, the thing that everyone who ever met him will remember and was one of the reasons he acquired the nickname 'Grizz'. Like most other things in Dave's life, he was passionate about his beard and spent a considerable amount of time lavishing it with care and attention.

When I met Dave, he worked as a shunter at Enfield yard on the NSW Railways and it was here, that he acquired his passion for the railway rolling stock of his home state. He was a fierce, life-long unionist and like millions of others, a product of the post war immigrant experience. He came to love his adopted state with a passion that might be difficult for those born here to comprehend at times, but that was Dave all over: When he took something on there were no half measures and if you didn't share the enthusiasm then perhaps it might be best if you stepped aside to avoid getting pushed. He was a man of fierce passions: NSWGR rolling stock, Norton and Indian motorcycles, his beloved dog Bonnie, NSW coin collecting, Stringybark Creek, Arakoola and NSW outline railway modelling.

If the measure of a man is in his actions and not his words, then Dave should be remembered for the contribution he made to this hobby. Dave played a key role in the transformation of 1:43.5 (7mm) scale modelling from a niche activity carried out by very few into a broadly based, viable modelling scale. Through his ownership of the Waratah Model Railway Co, with his business partner Chris Harris, Dave kept the growing number of O scale modelers supplied with a range of rolling stock and line-side kits for well over a decade. He took the pioneering efforts of others and helped build a scale. Dave's involvement and leadership in the building and exhibiting of Stringybark Creek, the NSWGR outline 1:43.5 layout seen by many thousands at exhibitions over something like eight years, that stands as his enduring legacy to this hobby. The layout emerged through the efforts of a group of mostly Sydney based modellers Dave recruited following the publication of his now famous (some might say infamous) "Gunnas need not apply" letter to the Editor in 7th Heaven. Stringybark Creek was not the first NSW outline 7mm exhibition layout, it was certainly the most widely seen and led to the development of Arakoola, another truly massive and awe-inspiring O scale layout. These layouts got 7mm modelling in front of the broad spectrum of hobbyists and general public, making the scale tangible and letting everyone with an interest come to the realization that not all outstanding scale railway modelling comes in a HO scale package.

Dave would be the first to admit that he could sometimes be difficult to live and get along with. However, he was as passionate about his friendships as he was about his other enthusiasms. He taught me lessons about loyalty and keeping your promises in a world that no longer seems to value such virtues in the way it once did. He once drove 500km to keep a promise to my mother and she thought the sun shone out of him. I always regarded her as a fairly astute judge of character so in my book this says a lot. Dave Morris was a man who was many things to many people, but he was never ever a 'gunna'. I loved him, was proud to call him my friend and I already miss him like hell.

Trevor Hodges

Mailbag



Beginner's content

I was a bit puzzled by John Fuhrman's letter in the August 2021 issue of AMRM. He claims that the magazine doesn't publish "how-to" projects, or other content aimed at "new modellers". I say puzzled because the August issue has 4 articles out of 6 that describe "how-to" projects, and in previous issues for 2021 the ratio was about the same.

I'm also puzzled when people ask for articles aimed at "new modellers", but never actually define or specify what they mean by that phrase. Are they referring to people who have no previous knowledge of railways and no previous modelling experience? Knowledgeable enthusiasts who aren't modellers yet? Experienced modellers who weren't previously rail enthusiasts? I'd suggest that articles aimed at any one of these groups wouldn't necessarily meet the needs of the other groups, as their knowledge and skills base all differ greatly.

In Mr Fuhrman's case I would have thought that for someone who'd previously modelled US railroads, the type of articles he lists would be useful for anyone making the transition to Australian prototype. He claims these topics aren't "what Australian railway modelling is all about", but offers

no insight as to what he thinks that is, or should be. I'd be interested to read his views on that.

The article by Ian Barnes on superelevated track was something I found very interesting. I've superelevated the curves on my cameo layout by putting Evergreen styrene strip under the outer rails, but I wasn't aware of digital angle gauges. That will be something I will buy myself before my next round of tracklaying. Incidentally, my cameo layout is based on a little suburban station in Japan. I don't model Australian railways, but I still find the magazine worth buying, as the methods, materials and tools mentioned in the how-to articles are applicable across the board.

*Mark Newton
Waterfall NSW*

An eclectic mix

The August issue of the AMRM is an eclectic mix and well worth the money. It's nice to see more modelling and less opinion. I could have done with reading the VR Signal article back in 2007 or 2008 when I was starting on Broadford, I would have saved a fortune on the Heritage Models kits!

*Iain Hunter
United Kingdom*

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.

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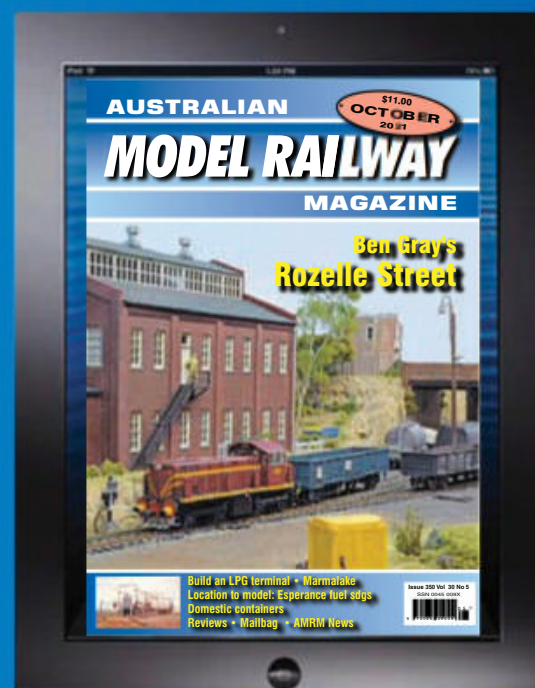
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The 2022 AMRM Calendar



The diesel cover features SSR102/SSR101 near Tumulla on an empty grain train. Other photos include El Zorro grain train with former government locomotives 44209, T342 and S312; 4912, 4842, 4903 and 4902 on a Dubbo freight at Newbridge; a FreightLink intermodal service near Adelaide River; English-Electric locomotive D45 departs Bulli with a local empty coal service to Coalcliff; C504, X47 and X50 between Ballarat and Warrenheip; English-Electric locomotives 2111 and 2113 climb out of the Meander River valley near Lemana Junction; two-car diesel railcar set 604/704 at Barmedman with a Lake Cargellico to Cootamundra service; Aurizon-liveried DBZ2309 and DBZ2311 haul a train of caustic tankers through the Darling Ranges; QR 1411 heads north from Nambour with a goods; No. 7524 express freight descending the grade at Lynton behind 967, X54, S313, 832, 841 and 939.

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The steam calendar cover features NSW 3628 on No. 25 Bathurst Day train at Locksley. Other photos include the down *Coonamble Mail* at Gilgandra hauled by 3040; VR N475 with a load of 4-wheel grain wagons; NSW 3641 and 6018 near Fasisfern; SAR oil burning T44 on a weekly goods from Quorn to Hawker; NSW 6040 between Wongarbron and Dubbo; WAGR F407 at Collie Depot; Standard Goods 5278 departing Newcastle with a Singleton passenger train; VR K151 departs the briquette siding with a string of 4-wheel open wagons; NSW 2510 climbs the grade from Harden to Demondrille; QR B18¼ 906 departs South Brisbane with a commuter train; NSW 3130 and 3135 in No. 3 roundhouse at Enfield; TGR *Tasman Limited* hauled by M# at Western Junction ready for departure to Launceston.

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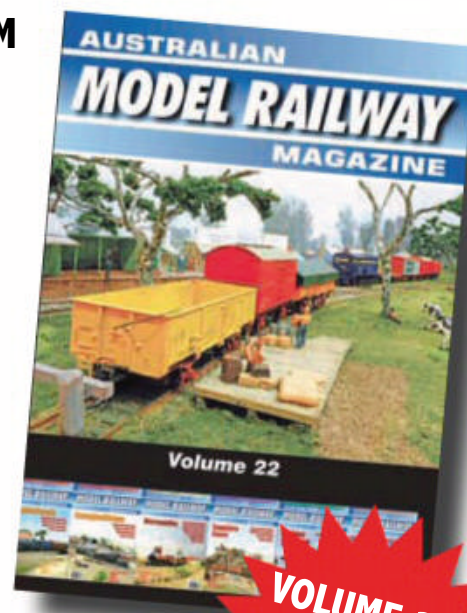
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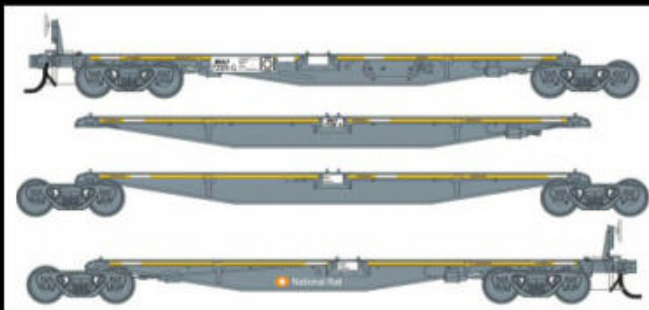
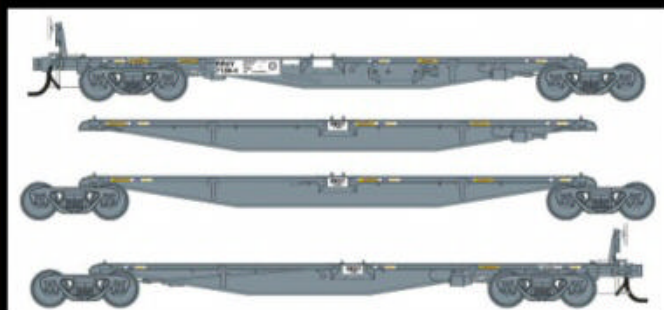
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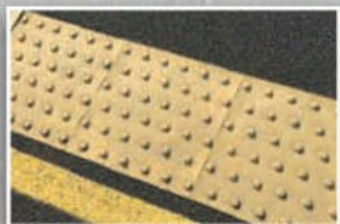
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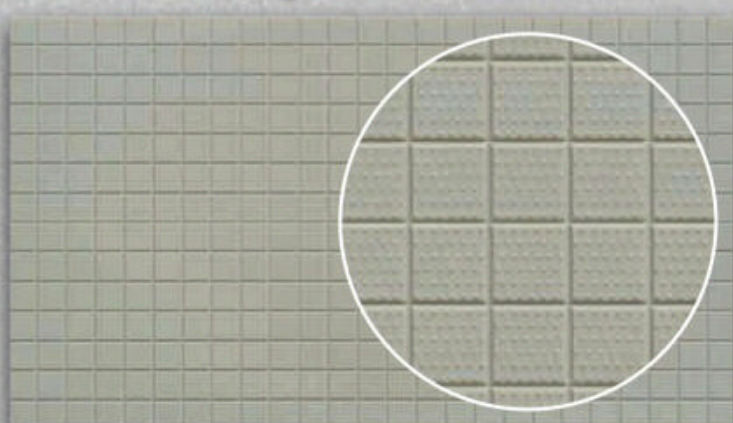
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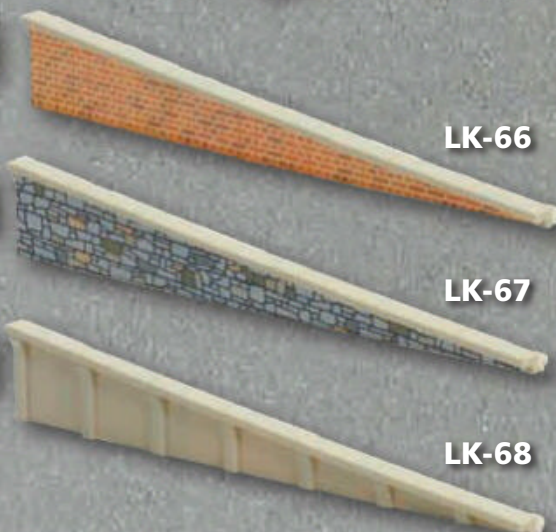
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