

MainLine



The Journal of NMRA

Australasian Region

Vol 33 No 4 September October 2016

NMRA Australasian Region Directory

REGIONAL COMMITTEE

President: David O'Hearn (02) 4308 1025 president@nmra.org.au

Vice President:

Spencer McCormack (02) 4973 1414 vicepresident@nmra.org.au

Secretary: Peter Burrows (02) 4344 7439 secretary@nmra.org.au

Treasurer: John Gillies (02) 6248 8408 treasurer@nmra.org.au

Pacific District Director

Mike Bartlett (02) 6553 6227 director@nmra.org.au

Members:

Sam Mangion MMR (02) 4399 2150 sam@nmra.org.au

Graham Young (07) 5479 0339 graham@nmra.org.au

Charles Clarke (07) 5499 7283 charkes@nmra.org.au

Public Officer

Sowerby Smith MMR FNMRA (02) 9871-4157 publicofficer@nmra.org.au

Trustee

1st President and AR Trustee John Saxon MMR HLM

SUPERINTENDENTS

Div 1 Qld Martyn Jenkins 0407 637 607 div1sup@nmra.org.au

Div 2 ACT Dion Koch 0413 010 444 div2sup@nmra.org.au

Div 3 Vic/Tas Grant McAdam (03) 9578-8685 div3sup@nmra.org.au

Div 4 WA Rod Tonkin (08) 9309 5338 div4sup@nmra.org.au

Div 5 NZ Kelvin Sherson (04) 234- 8577 div5sup@nmra.org.au

Div 6 SA Max Wright (08) 8370 0055 div6sup@nmra.org.au

Div 7 NSW Les Fowler 0411 266 196 div7sup@nmra.org.au

Div 8 Northern Rivers Alan Harris (02) 6652 2919 div8sup@nmra.org.au

Div 9 Mid Nth Coast Chris Minahan (02) 6559 3516 div9sup@nmra.org.au

Taiwan Sub District Ivan Yih 886 3 4961368 Taiwansup@nmra.org.au

REGIONAL VOLUNTEERS

A.P. Regional Mgr Gerry Hopkins FNMRA (02) 4329-0242 ap@nmra.org.au

A.P. Asst. Mgr, ACT Stephe Jitts MMR (02)6226 5695 apviceact@nmra.org.au

A.P. Asst. Mgr, Vic Laurie Green MMR (03) 9744-5188 apvicevic@nmra.org.au

A.P. Asst. Mgr, S.A. Ray Brownbill (08) 8389 1045 apvicesa@nmra.org.au

A.P. Asst. Mgr, QLD Laurie McLean MMR (07) 5471 0212 apviceqldsth@nmra.org.au

A.P. Asst. Mgr, W.A. Phil Knife MMR (08) 9948 1067 apvicewa@nmra.org.au

Librarian Warick Fox (02) 9686 7639 librarian@nmra.org.au

Regional Contest Chair Gerry Hopkins FNMRA (02) 4329-0242 contest@nmra.org.au

Editor - MainLine Rod Tonkin (08) 9309 5338 editor@nmra.org.au

Web Master Wayne Eagle (02) 9627-9892 webmaster@nmra.org.au

Web Administrator Gerry Hopkins FNMRA (02) 4329-0242 updates@nmra.org.au

Education Chairman Peter Burrows (02) 4329 2541 education@nmra.org.au *

Convention Chairman 2017 John Prattis convention@nmra.org.au

Membership Erik Bennett (02) 9997 7971 membership@nmra.org.au

33 Kananook Avenue Bayview, NSW 2104

Editor

Rod Tonkin

Editorial assistant

Alan Burrough

Contributions

All members of Australasian Region are invited to submit articles of a railway nature for publication in Mainline. Submissions in Word or JPG format can be Emailed to

editor@nmra.org.au. or to my home Email address rjtonkin@inet.net.au .

Original uncropped photo files would be preferred.

Please ensure any contributions of copyrighted material have written approval from the copyright holder.

Disclaimer

All comments published are the views of the author/authors and not the views of NMRA AR

Articles are provided by members in good faith and the views expressed therein are not necessarily those of NMRA AR

Target dates for future issues

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Cover photo

QR's "Spirt of the Outback" approaching Longreach in 2016 . Photo by Arthur Hayes

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- Pacific directors report
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- Australasian Region directory
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President's Thoughts

Welcome to this edition of the electronic MainLine.

We had a very successful mini-Convention at Berowra in September and some pictures from this Convention are elsewhere in this edition of MainLine. One facet of the convention that is worth flagging is the modelling and photographic competitions. I encourage you all to submit models and pictures into these competitions. You learn a lot to help improve your skills, you gain points towards your Achievement Program and you get a buzz seeing your model being photographed and published in magazines like this MainLine.

The next convention will be in Adelaide on the weekend of 16-17 September 2017. Adelaide is a great location with opportunities to visit other tourist sites including the famous Barossa Valley.

In the last issue of MainLine I mentioned the benefits available to NMRA members on the US NMRA web site "members only" area. This issue I would like to flag all the social media information sharing sources in the NMRA.

As the NMRA strives to expand its social media presence, we are proud to announce the launch of the official NMRA YouTube Channel, NMRA ORG! The plan is to post informative, educational, interesting and entertaining video content for NMRA members and non-members, as well as provide "sneak peaks" of new NMRA Members-Only content. (The full videos will only be accessible on the Member portion of the NMRA website.) The YouTube Channel is currently located at <https://www.youtube.com/channel/UChw-7-1FWB5zQgTM0ZVY-Yw>, but we should have a custom URL sometime soon. For now, just use that link.

Video content will be created by members, provided by key model railroading partners and shared from other interesting and relevant YouTubers. We hope to provide our viewers with a "one stop shop" for the best in model railroading videos.

We invite all members to visit the channel frequently, share the content with fellow hobbyists and feel free to send your own video creations to us for addition to the NMRA library. Videos, or their download links, can be emailed to marketing@nmra.org. Please note that we can't accept copyrighted material without the express written permission of the content owner. Doing so would place us in violation of both copyright laws, as well as YouTube policies.

The NMRA YouTube Channel joins our Facebook page ([facebook/nmra.org](https://www.facebook.com/nmra.org)), Twitter feed

([@nmraonline](https://twitter.com/nmraonline)) and new Instagram account ([nmra_online](https://www.instagram.com/nmra_online)). We've gained **almost 3000 new Facebook followers since February**, have just over 600 Twitter followers and are building our Instagram account. The NMRA would love to feature your photos on Instagram, and we welcome members to send images to marketing@nmra.org. Please include your name (and Instagram name, if applicable), Region and Division, and a brief description of the picture.

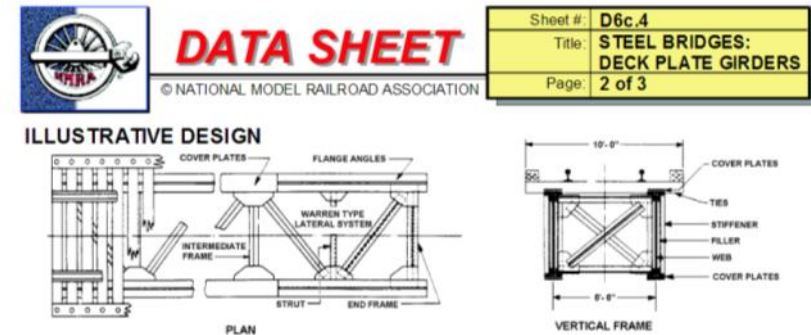
Join in the fun on the NMRA's social media channels! Remember, without the support of talented NMRA members just like you, our social media presence could not have grown so quickly!

Until next time, enjoy your modelling.

David O'Hearn

AR President

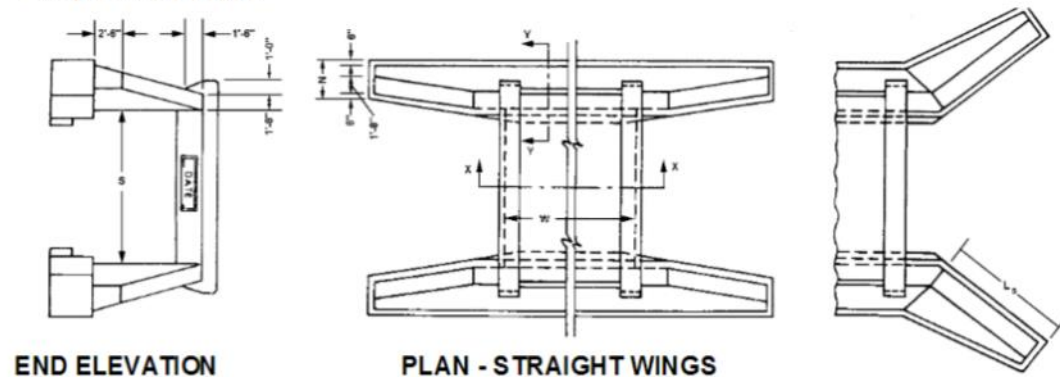
2 October 2016



Excerpts from NMRA data sheets in the "members only" section of the NMRA web site

CULVERTS - CONCRETE BOX

The concrete box culvert designs presented here are typical of late 19th century design. The culvert can have two skewed wings or two straight wings or a skewed wing on the inlet and a straight on the outlet.



Secretary's notes

APPLYING for a SANCTION

Divisions and members need to apply for a sanction to ensure Public Liability Cover when they are

- Hosting an exhibition, convention or fund raiser.
- Conducting a non-layout display, clinic or fundraiser at an event or venue hosted by others.
- Conducting a layout display at an event or venue hosted by others.

More detail on this can be found in the July 2015 MainLine (Vol 32 No 2).

The current Sanction Application Form can always be found on our website at <http://www.nmra.org.au/Forms/forms.html>

- Make sure you tick the box that best fits your situation.
- Be clear about the event name, location and dates.
- Include the bump-in date (if applicable) e.g. the Friday night before the event.
- Write clearly ensuring you include a return email or postal address.

Email applications are preferred but post can be accommodates when necessary. Please don't leave sanction applications until the last minute. Please allow at least five days for a confirmation the sanction has been granted. I check the Secretary Email about every other day

All applications will be acknowledged with an approval or rejection (rare) usually the same day I see the application. In future all acknowledgements will be copied to the relevant Divisional Superintendent.

Peter Burrows
Secretary NMRA (AR)

NMRA (AR) SANCTION APPLICATION FOR DIVISIONS, 100% CLUBS & SIGS



- HOSTING AN EXHIBITION, CONVENTION OR FUND RAISER
- CONDUCTING A NON-LAYOUT DISPLAY, CLINIC OR FUND RAISER AT AN EVENT OR VENUE HOSTED BY OTHERS
- CONDUCTING A LAYOUT DISPLAY AT AN EVENT OR VENUE HOSTED BY OTHERS

Please tick the box adjacent the circumstance best matching your activity.

The NMRA (AR) will sanction Divisions, 100% Clubs and Special Interest Groups (SIGS) for Public Liability Insurance (PLI) purposes for the above activities provided the Division, Club, SIG or Individual undertake that the following conditions will be strictly adhered to. These rules are not proposed to be show stoppers but are to ensure the event falls under the NMRA (AR) umbrella (to ensure PLI cover).

1. When hosting an exhibition or convention, place the NMRA (AR) logo on all exhibition/convention advertising, web sites, ticketing and associated correspondence.
2. Display an NMRA (AR) Banner or Sign in a prominent position. Note that signage can be provided by the NMRA (AR) upon application to the Division Superintendent.
3. Be responsible for the maintenance of their layout (if exhibiting a layout) and keep the display or fundraising space in a clean and tidy condition.
4. Comply with the Venue Manager's safety and other requirements.

Please fill out the information below and return to secretary@nmra.org.au (preferred) or post to Secretary NMRA AR c/o 45 Karingi St. Ettalong Beach NSW 2257

I / we will abide by the terms listed above. PLEASE NOTE: Write clearly.

_____ Name of Organisation or Layout	_____ Exhibition/Convention Name
_____ Name of Applicant or layout owner	_____ Date of Exhibition/Convention
_____ Signed	_____ Date
..... Email Address for response	Division

ARC use only	
Approved/Rejected by	Responded to Applicant(s) and
Copied to Div Super/...../..... (date)	

Editor's Musings

Unwelcome layout visitor eviction Termites!

The September Division Four meeting was intended to be a celebration of Martindale Creek's twentieth birthday. Eight days before the big event I noticed a section of the back scene at Claireville was loose. Closer examination showed the upright supporting the back scene at this point had been destroyed by termites. Removal of the modesty skirting around this section of the layout showed the little beasts had destroyed a couple of cross members, two legs, two of the L girders and damaged one more L girder.

Was my layout unusable and needed replacing? Or could I repair it. Bearing in mind the observation of Field Marshal Slim "Nothing is as good or as bad as it first appears" I preserved. A thorough inspection of the layout showed the damage was repairable. Interestingly the much maligned (by experts) chip board decking supporting the track was undamaged by the termite attack. I decided to try to replace the damaged sections of the layout framing.



Termite damaged L girder



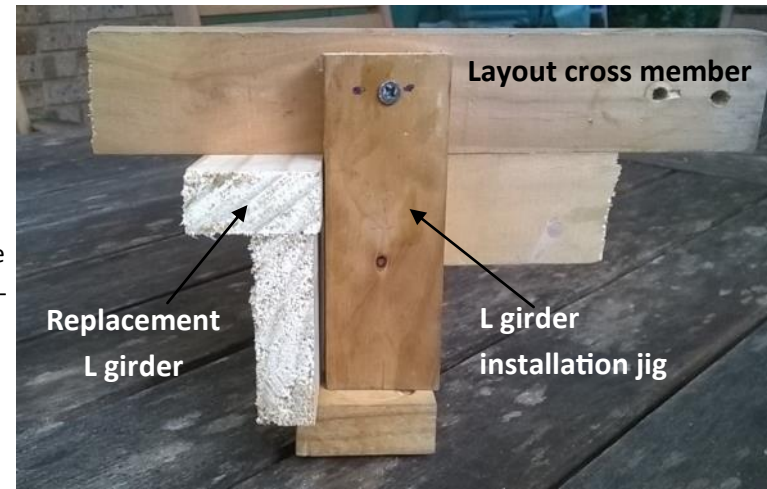
Termite damaged layout leg

Martindale Creek is supported on an L girder frame. The framing is screwed together with self drilling screws. Termite damaged frame members, it has turned out are easily unscrewed for removal from beneath the layout. Aren't battery powered hand drills marvellous?

Installing replacement framing sections was a trifle trickier than removing them. I had built the layout L girder frames upside down. This made attaching the L girders to the cross members a breeze. Holding a replacement one point eight metres long L girder in position overhead in a space a little over 600 mm high and securing it to the cross members with self drilling screws didn't sound like a fun afternoon.

A jig to hold the replacement L Girder in position for installation onto the cross members was required. The two jigs I

built out of scrap 42 mm by 19 mm pine did the trick. Each jig was attached by a wood screw to a layout cross member. The pair of jigs held each new L girder in position while I secured the L girder to the frame cross members from below using a battery powered drill to drive the self drilling screws.



With the replacement L girders installed new legs were secured to the L girders to support the layout. The original layout legs were bolted to the framing. I'd had good results screwing instead of bolting the legs onto the recent extensions to the layout. The replacement legs and bracing were all attached to the layout framing with self drilling wood screws

Replacement cross members were installed as required to support the track bed.

With a day to spare before the event Martindale Creek was deemed structurally sound, powered up and trains were once again running over the layout.

The above saga shows a routine inspection of your layout especially beneath the base board is well worthwhile.

Rod Tonkin

Editor



Layout operations returning to normal after the structural repairs

2016 Australasian Region Convention

Around sixty members and partners attended the 2016 Australasian Region Convention at the Berowra Community Centre on the 11th of September. The attached photos show the convention had something for everyone. The contest results were

Best in show Awards

John Baker Award for best US prototype: John Parker for his passenger car

Rick Shoup Award for best Australian prototype: Dennis Clarke for his wine tanker.

Displays offline:

1st: Stephen Reynolds for his Virture Motors diorama

Modules:

1st: Chris Lord for his old Ghan diorama.

2nd: Chris Lord for his Humpty Flat diorama.

Photographs

Prototype photos:

1st: John Parker

2nd: John Parker

Freight Cars:

1st: John Parker

2nd: Gary Norwood

3rd: Dennis Clarke

Locomotives:

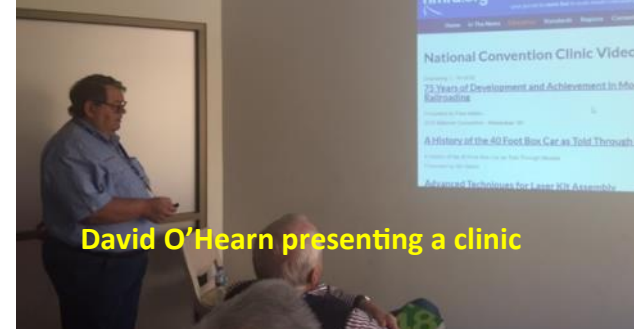
1st: Gary Norwood

2nd: Stephen Chapman

Achievement Program certificates were presented as follows:

Kelly Loyd for Master Builder Structures
Jeff Lee and Stephen Chapman for
Author

All photos by David O'Hearn



David O'Hearn presenting a clinic



The convention "coaling stage" saw plenty of action



Lunch time fellowship



Tracey Pallas waiting for her audience to arrive for her clinic on stockyards



Convention attendees admiring the modelling contest entries

John Parker's Santa Fe coach

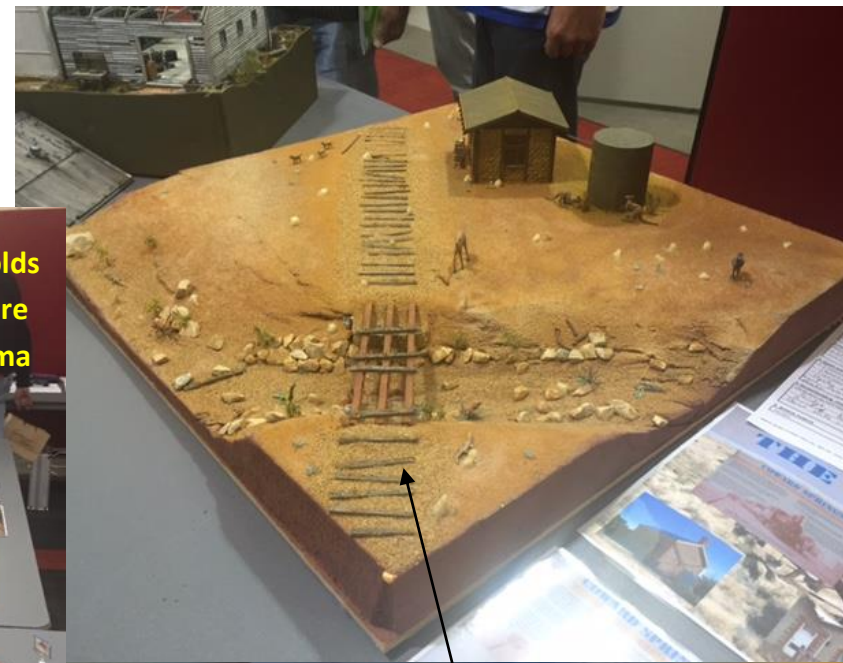


2016 Convention Contest Entries

Dennis Clarke's Wine Tanker



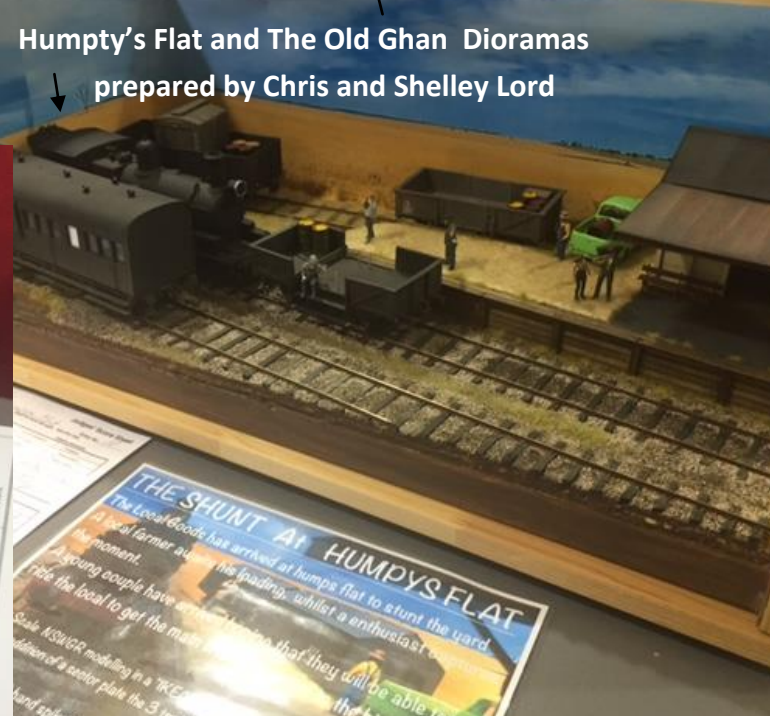
Stephen Reynolds with his "Virture Motors" diorama



Humpty's Flat and The Old Ghan Dioramas prepared by Chris and Shelley Lord



Stephen Chapman's Dunkirk





HALF PINT CREEK

Chris Fraser

This is a freelance, American outline, switching layout in HO scale. It depicts the run-down Lostan foundry in the 1950s set in rugged terrain on the west coast. Its glory days were in the early 1940s producing parts for the war effort. It now survives by the manufacture and supply of specialised machine components. Most of the vegetation has been removed during the construction and operation of the foundry and Half Pint Creek is almost dry due to damming upstream.

Operation focuses on the small amount of local freight and passenger service together with the daily movement of traffic between the foundry and Tumbleweed Wharf. The company operates on a shoestring and most of its rolling stock is in a poor state of repair.

All the buildings were scratch built, mainly from cardboard, and bits from the junk box.

LAYOUT SIZE 3.4 metres X 0.5 metres



More photos Stephen Reynolds "Virtue Motors" Diorama



Kelly Lloyd MMR's Mechanical signalling installation



An Operating Staff System

Chris Minahan

The recently completed extension to the Taree & District Model Railway Club's layout consisted partly of a reasonably long (approximately 50 metres) single track branch line with four passing loops, a balloon loop, and yard. Due to the nature of the terrain and scenery, driver visibility is limited and it is not possible to see the line between each of the passing loops. Indeed, one section consists of about eight metres of line but five metres of this section is tunnel.

Partly to include prototypical running, and partly for the protection of members' locomotives and rolling stock, a staff working system was introduced on this branch.

As is always the case, certain compromises from the prototype were required. There are five sections with a staff machine at the start and end of each section. The staff for each section will only operate the two machines for the relevant sections.

Once a driver is ready to depart a section, he must obtain the staff for the section. If another train is in the section, the staff will not be available - it will be in the possession of the driver of the other train. On obtaining possession of the staff, it is inserted into the machine at the departure end causing the block starter signal to show clear. It will also power the section of track between the block starter and the incoming home signal. Once past the location of the incoming home signal, the staff is removed from the departure machine and held in the possession of the driver. Possession of the staff is the driver's authority to be in

the section and inhibits the clearing of the block starter for a train in the opposing direction.

Approaching the home signal at the end of the block (which will be showing dan-

ger), the driver sets up the required/unoccupied road into the passing loop/yard and inserts the staff into the machine at this end of the block. This action will set the home signal clear and allow the train to proceed into the passing loop/yard. The track section between the home signal and the first point into the local area is powered only when the staff is inserted in the machine.

Once the train is safely in the passing loop, the staff is removed and stored in a receptacle ready for the next train.

The primary disadvantage of this system is the staff may be at the far end of the block as there is only one staff for each section. This did occur in the prototype when there was more traffic in one direction than the other- all the staves would eventually be at one end and would need to be redistributed. This occurred quite regularly on the Casino branch in New South Wales. Morning loaded milk trains would return in the evening as larger consists of empties and multiple locomotives and the staves would accumulate at Lismore.



The parts of one staff machine



The staff inserted into the staff machine



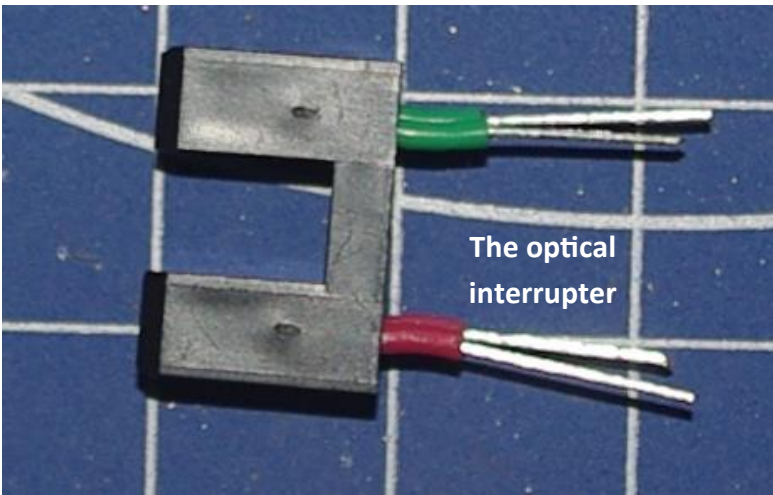
A partially assembled staff machine

One of the train staves



The staves are constructed of 10 mm dowel with two sections of reduced diameters and differing lengths on one end to make them unique and will only operate the two machines in each section. They are painted different colours for each section and the machine openings are painted the same colour and will only accept the appropriate staff.

The staff machines consist of two 2.5 mm and one 5 mm plate aluminium, spaced by styrene and aluminium tubing to match the length of the appropriate staff.



The optical interrupter

On the bottom plate, an optical interrupter senses when the correct staff has been inserted and operates the signal and track circuitry.

Each machine consists of a small power supply that draws power from the track, an optical interrupter, a transistor

and a relay. This power supply and transistor are mounted below the bottom aluminium plate.

The optical interrupter has an infra red LED on one side and a sensor on the other.

The photo shows a staff inserted in a machine. Only one staff will be able to reach the interrupter and operate the machine.

The system is reliable and achieves the desired results of avoiding conflicting traffic and protecting members rolling stock

A Layout in a week.

Jeff Lee

I am not sure if it was the last glass of red wine or a weak moment but.

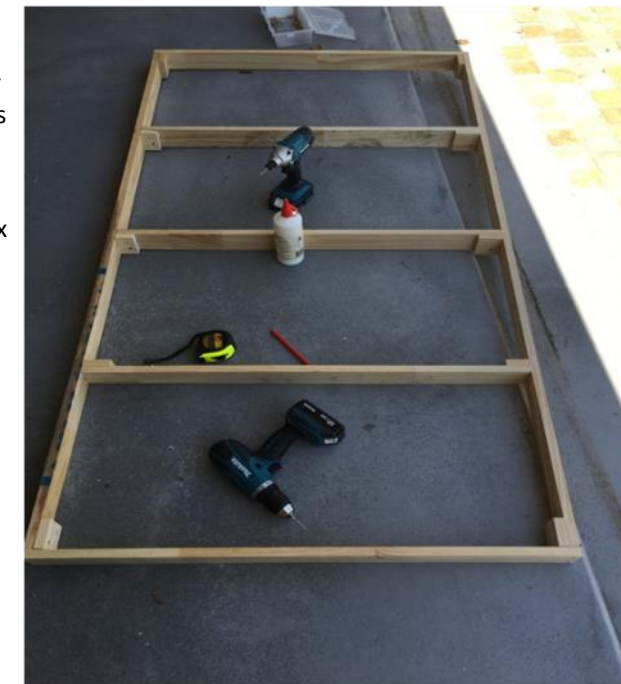
My neighbor and I are keen on checking "bargains" at the local "Reject" shops, \$2 shops, and Aldi etc. John, my neighbour, mentioned that he had seen a Marklin digital train set at Aldi. I said I had seen it and that the price had dropped from \$175 to \$135. John thought he might buy it for his grandson. My weakness was I said I would build a layout for it. Oh really!!!

The train set was bought and John went on a 10 day holiday, but left the train set with me. The layout had to be big enough to support the 160 x 85cm track plan, so I planned the board to be 175 x 95cm. I planned a small tunnel through a mountain and a ridge extending the length of the layout to hide trains on the back side. We would also have a road and a bridge over that road. I had a plan. Then I worked out the timber and other requirements.

Off to the local hardware store for some framing timber, fascia timber, base MDF, and a sheet of 50mm thick, 2400x1200 Styrofoam. It was fun with all this on the car roof racks. Speed was definitely limited to about 40kmph.

I used the white insulation Styrofoam, rather than the more expensive blue foam, as it was only for a base and scenery forms.

Here is the frame. It is screwed and glued. This went together quickly. The timber is 67 x 22mm (approx. 3 x 1 inch). On top of the frame is a sheet of 4mm MDF which was painted on both sides first to insure against any possible water getting to it and warping it. The MDF was nailed and glued to the frame.





Forming up the scenery

The scenery progressed with layers of 50mm Styrofoam, shaped with a box cutter knife and in some cases a hot wire cutter. All the Styrofoam was glued in place with common water based PVA white glue. After the mountain was roughly the shape required it was covered in plasterer's "Top Coat", a lightweight finish for drywalls (gyprock walls) in homes. In this case it was covered on average about 2-4 mm thick. In some places where rocks could be carved the thickness was increased. This topping gives the final shape and also creates a solid base for attaching trees etc. Here is the completed plaster work with base coat painting.



Plaster coating the Styrofoam scenery base



Adding the basic ground colour and rock castings

Any mountain needs some rocks and so a number were cast using Woodlands Scenics rock moulds and inserted into the mountain.

The next stage was completing the layers of scenery. This stage was to glue on a layer of scenery base – basically the dirt before fallen foliage and trees and shrubs are added. I used a sprinkler container to sift the scenery base coat onto the white glue across the mountains.

The ground base is sprinkled onto the base covered with white PVA glue. After covering with ground foam the area is sprayed with "wet water" (1/3 alcohol, and 2/3 water). Then the area is soaked with more diluted white glue and more layers of ground foam. The wet water allows to glue to soak into the material better and also hold the scenery prior to more glue.



Adding ground cover and foliage



Building the road



Rail over bridge

The road was a base of 3mm cork with 2mm white plastic sheet on top. It was necessary to build a bridge where the track crosses over the road. The bridge was built from spare N Scale girders and sides.



End view of partially completed layout

Gradually the layout came together. The small rocks are ground pumice. The fence near the supermarket and enclosing the container depot is flyscreen wire painted silver. The posts are wire and superglue is used to assemble the fences.

The road was painted grey and the lines were marked in white paint. The lines were then covered with 2mm masking tape to identify the correct white lines and the road painted again.

The trees are lichen covered over small pieces of lavender sticks.

The rocks were initially too grey so they were whitewashed until they better represented uncovered rocks.

Here is the finished layout. One week and all done. Now we need more people, cars and other details. Boy, I hope John's grandson, Charlie likes it!!!!



Layout ready for operation

Car Forwarding on Martindale Creek

Rod Tonkin

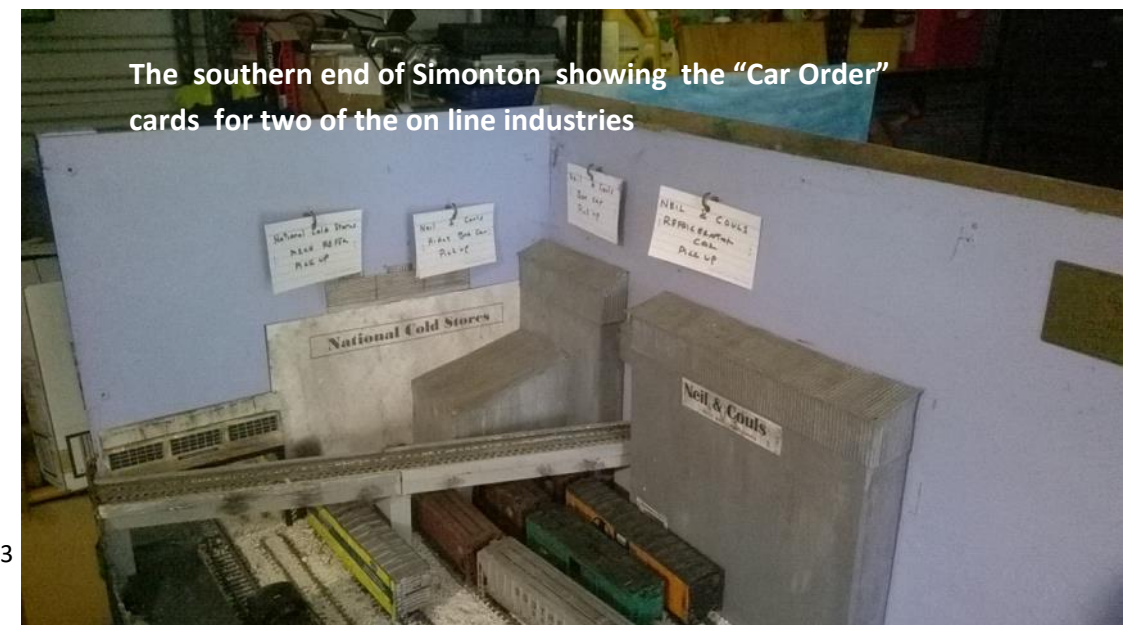
Martindale Creek was designed from its inception as an operational layout. Various systems have been tried to manage car forwarding on the layout. The most effective system I've seen to date is the "Card Order" system unveiled at the 2011 Sacramento Convention. This system controls the traffic not the freight car. If I'm shipping out a load of scrap steel I've no interest in whose freight car it is. All I'm interested in is will it be suitable for the lading or loading.

Each industry set out spot has a double sided card on a hook. The card details the industry and freight car required for the lading on both sides. The card reads "set out" on one side and "pick up" on the other side. When a train arrives at a set out spot, the train crew read the card. If the card reads "Set out" and their train contains a suitable freight car, they set out the freight car and turn the card over. If their train does not include a suitable freight car they move on. If the card reads "Pick up" the freight car at that location is attached to their train. They then turn the card over.

The big advantages of this system over car cards is you don't need to carry the car cards around and if a card is lost or damaged it is easy to replace.



"Car Order" cards at the meat works



The southern end of Simonton showing the "Car Order" cards for two of the on line industries

Division 1 HO Scale Module Special Interest Group



SIG members operating the layout

The SIG

The Division 1 HO Scale Module SIG is made up of NMRA members who decided to combine their resources and modelling skills to display HO Scale North American prototype modelling at public exhibitions

The Layout

The layout is named “The Wayne Branch” and was designed and built as a lightweight, portable, end-to-end switching layout, displaying various industrial areas. Over the length of the branch, each module is connected railroad-wise by a mainline and a parallel switching track. Trains are controlled by NCE DCC which allows infinite flexibility in movement of trains. The layout being end-to-end, with standardised module interfaces, has numerous benefits. Space required to display is effectively halved, individual modules can be built to any length, modules can be displayed in any order, and in any number.

In practice, Bob Brown’s “Yard”, a train make up and storage yard is always at the left hand end of the layout, with the remaining modules on display extending to the right of Bob’s Yard in no particular order. However, experience over the several years of display has shown that Bob Cuffe’s module is an ideal fit for the right hand end. The module owned by Les Ellen gets us round the curve. The remaining operational modules are owned by Paul Skehan and Ian Venables. Additional modules are being constructed.

The layout concept has been proven over several years with the number of modules displayed varying between two and five, depending on module availability, and space allocated at shows.

The Display Concept

The end-to-end concept was adopted both to enable the operators to ‘operate’ the layout, and to have the trains completely in the public view at all times.

The Operating Concept

The operation of the layout revolves around moving appropriate freight cars to and from the “Yard” via the mainline as required by particular industries. These switching moves are conducted by the “Yard” yardmaster using appropriate road locos. Requested rolling stock is left on the main siding at the requesting industry for local switching by that individual industry. The reverse process occurs when rolling stock needs to be returned to the main yard, with individual industries leaving rolling stock on the main siding to be collected.

The “Yard” and some other modules also have passenger facilities which vary in size and allow either a railcar or a one coach train to move passengers along the ‘Branch’.

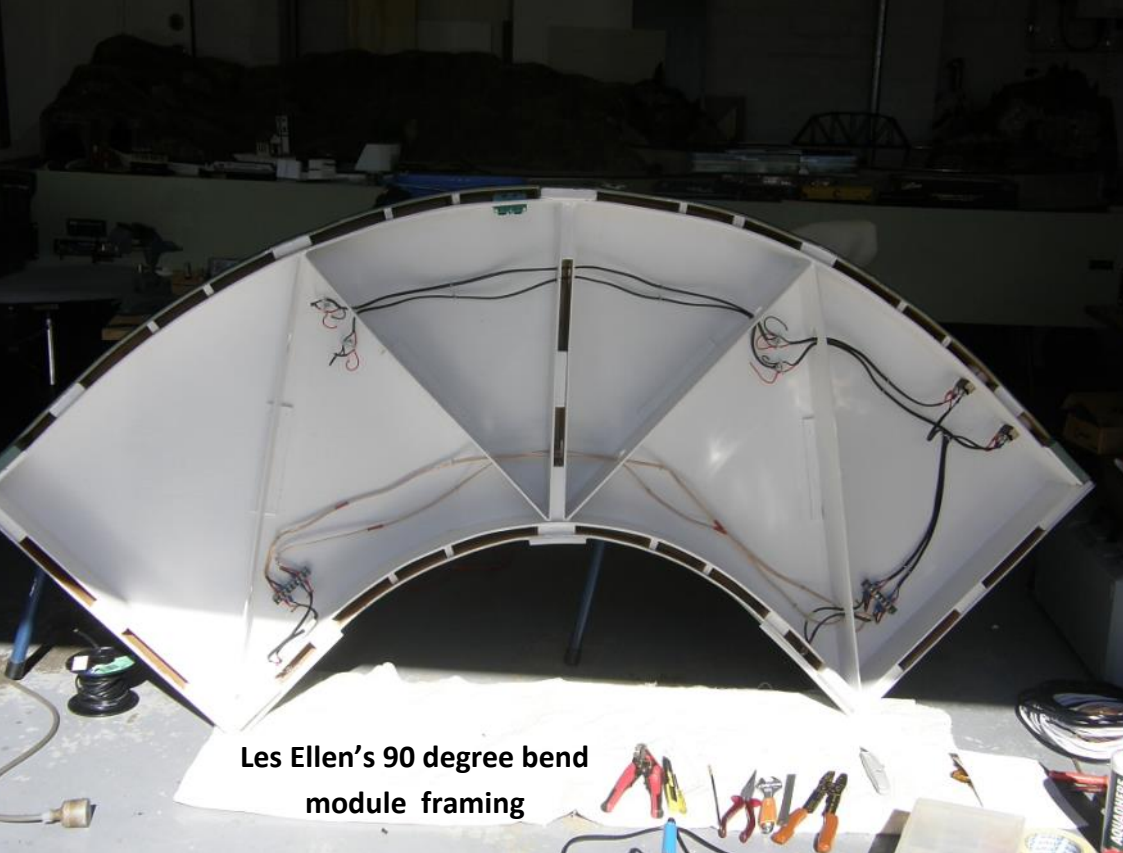
Membership

New members are welcome. All members of the SIG must belong to the NMRA.

For information contact Paul Skehan at: email mdskehan@bigpond.com



The assembled layout at an exhibition

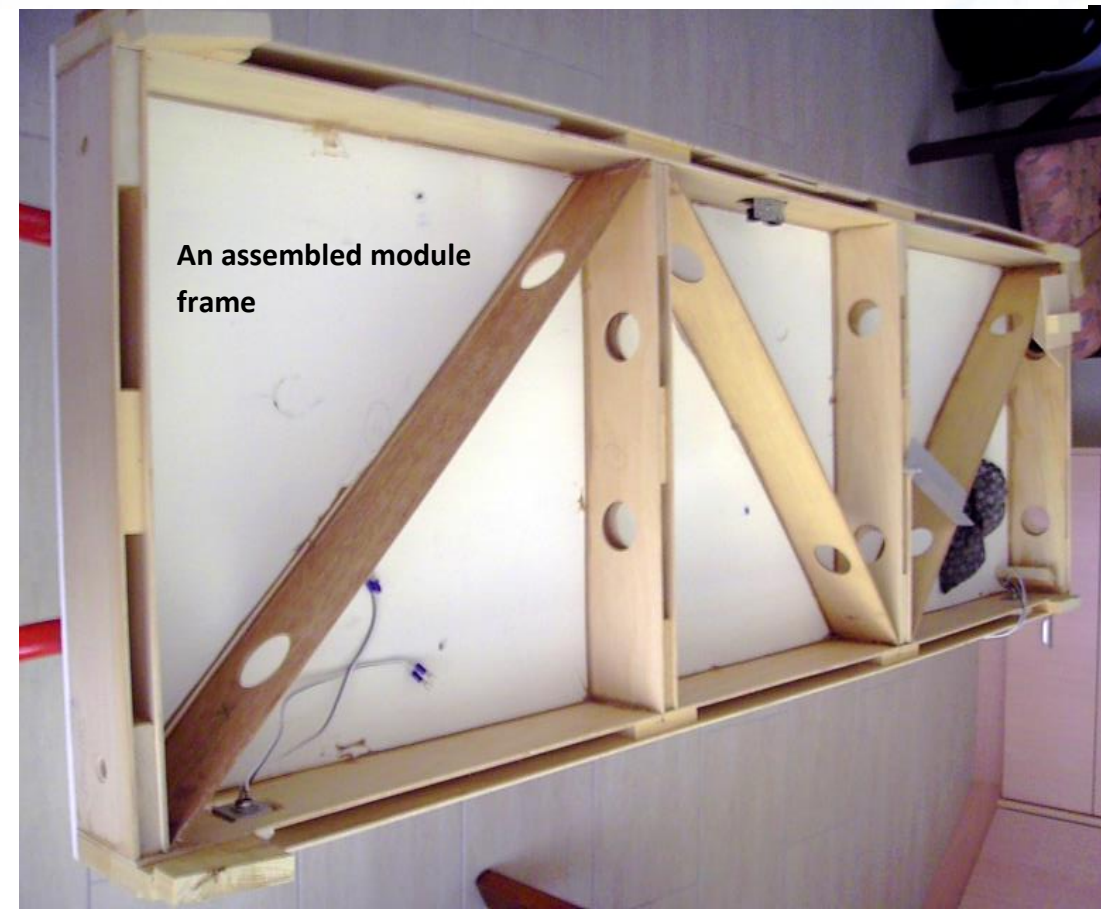
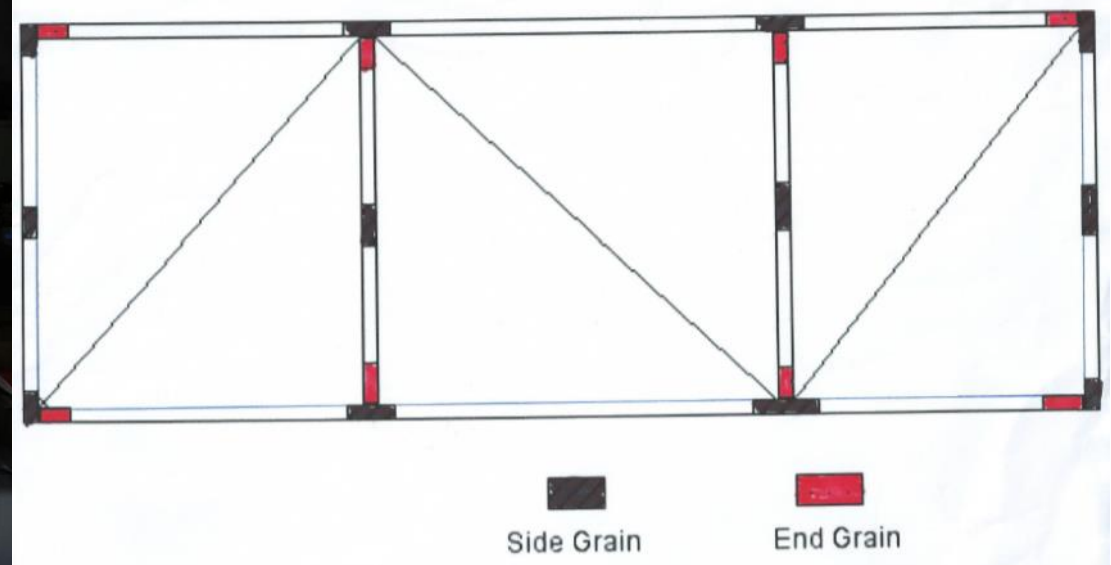


Les Ellen's 90 degree bend module framing



Les Ellen's 90 degree bend module on its legs

Module Frame showing layout of girders



An assembled module frame



Bob Brown's staging yard module



Bob Cuffe's "End of the line" module

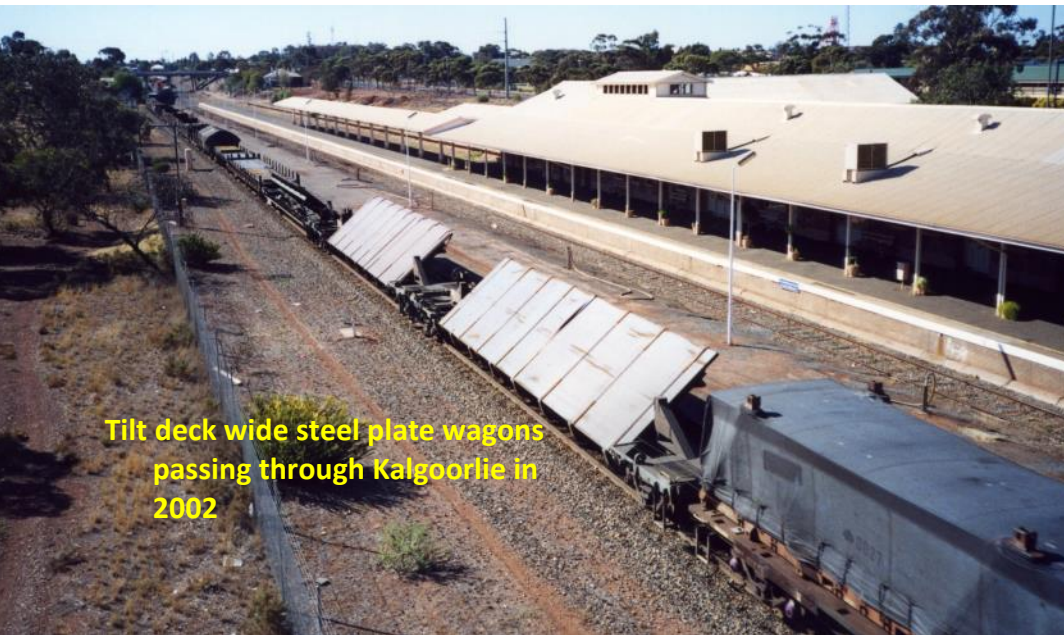


Building Material Sizes

Rod Tonkin

Using the correct size for building materials help our modeling efforts. Open top freight car loads, building material stock piles and scenic items constructed from them are to scale. This listing covers steel plates, steel sections, steel pipes, PVC pipes, polyethylene pipes and fiber cement pipes. All these products are carried by rail.

Hot rolled steel plates are rolled in Australia range from 5mm to 100mm thick. The width varies from 1200mm to 3300 mm. The length of plates varies from four metres minimum to a maximum of 18metres. Special tilt deck flat cars to transport three point three metre wide plates are in service. Coiled plate is rolled in 900mm and 1200mm wide coils in 3mm to 6 mm thickness.



Tilt deck wide steel plate wagons passing through Kalgoorlie in 2002

Steel sections commonly used in Australia are equal angles, unequal angles, channels, beams, columns and rails. These sections are rolled in the following locations. Whyalla- rolled rail, large angles, large channels and universal sections. Port Kembla- rolled plate and manufactured welded beams. Newcastle- rolled light angles, light channels, taper flange beams and bars.

These sections currently come in the following lengths.

Welded Beams

12, 15, 18 metres

Universal Sections (I Beams)

9, 10.5, 12, 13.5, 15, 16.5, 18 metres

Parallel flange Channels

9, 10.5, 12, 13.5, 15, 16.5 metres

Taper Flange Channels

7.5, 9, 12 metres

Taper Flange Beams

9, 12 metres

Unequal Angles

7.5, 9, 10.5 12, 15 metres

Equal Angles

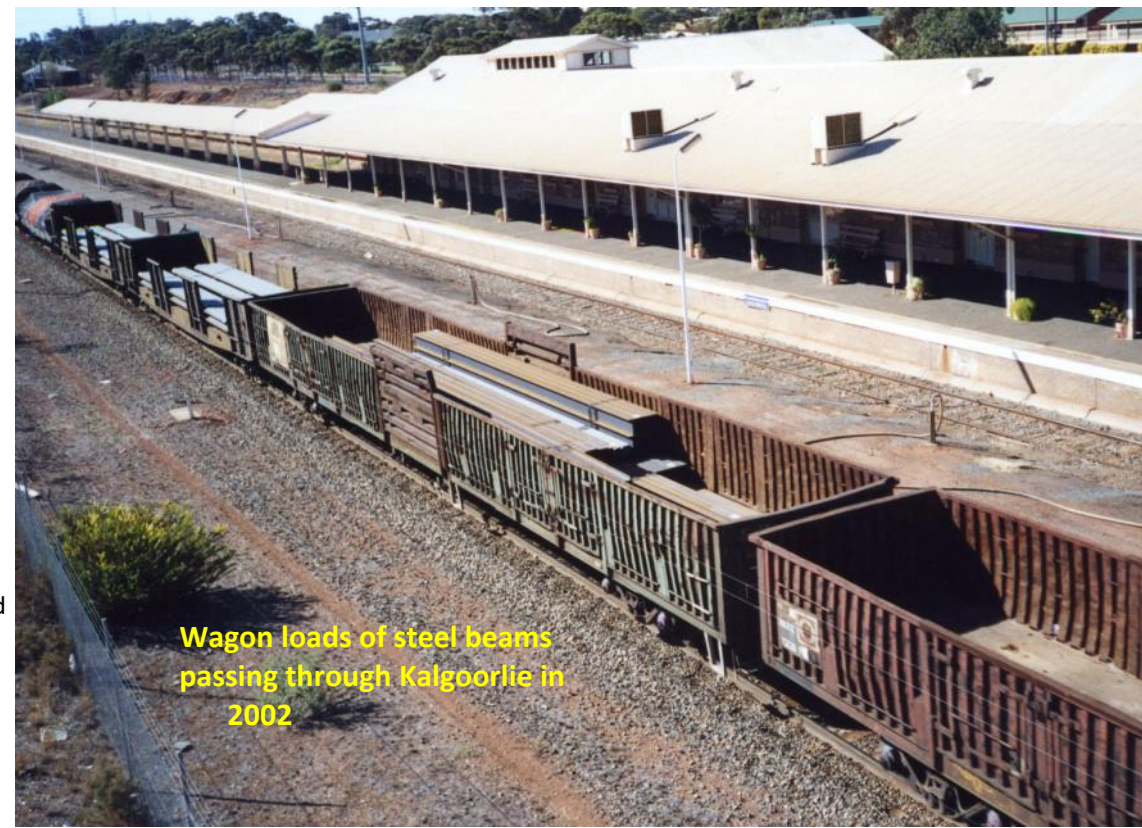
7.5, 9, 10.5 12, 15 metres

Rails

8, 9, 10.5, 12.2, 13.7, 27.2 metres

Bar stock

6 metre



Wagon loads of steel beams passing through Kalgoorlie in 2002

Welded sections(I sections) are manufactured as beams and columns in the following sizes:

1200mm deep by 500 to 275mm wide
 1000mm deep by 400 to 300mm wide
 900mm deep by 400 to 300mm wide
 800mm deep by 300 to 250mm wide
 700mm deep by 275 to 250mm wide
 500mm deep by 500mm wide
 400mm deep by 400mm wide
 350mm deep by 350mm wide

Universal sections were introduced in the late 1960s. Two series are produced, universal beams (I sections) and universal columns(H sections). The sizes are:

610UB 610 deep by 230 wide
 530UB 530 deep by 210 wide
 460UB 460 deep by 190 wide
 410UB 410 deep by 180 wide
 360UB 360 deep by 170 wide
 310UB 310 deep by 165 wide
 250UB 250 deep by 145 wide
 200UB 200 deep by 134 wide
 180UB 180 deep by 90 wide
 150UB 150 deep by 75 wide
 300UC 300 deep by 300 wide
 200UC 200 deep by 200 wide
 150UC 150 deep by 150 wide
 100UC 100 deep by 100 wide

Parallel flange channels (C sections) are produced in the following sizes:

380PFC 380 deep by 100 wide
 300PFC 300 deep by 90 wide
 250PFC 250 deep by 90 wide
 230PFC 230 deep by 75 wide
 200PFC 200 deep by 75 wide
 180PFC 180 deep by 75 wide
 150PFC 150 deep by 75 wide

Angles (L sections) are rolled in both equal leg and unequal leg sizes. The equal leg angle size range is:

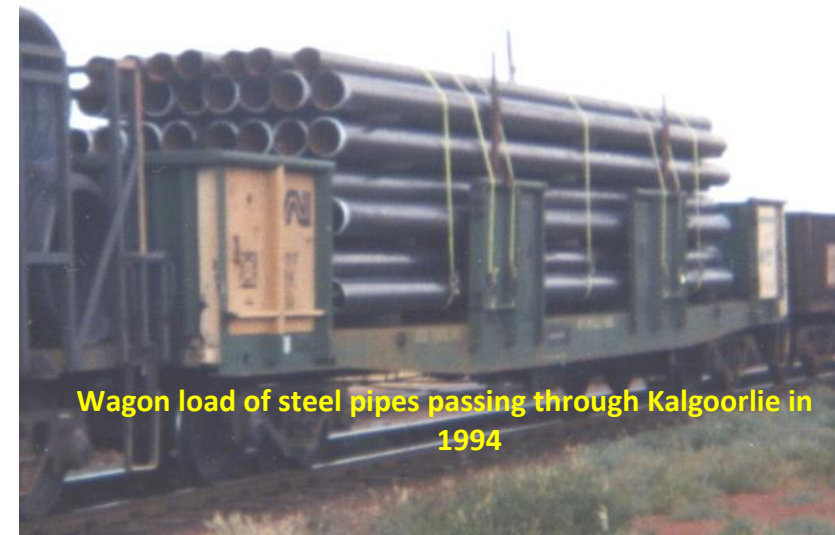
200*200
 150*150
 125*125
 100*100
 90*90
 75*75
 65*65
 55*55
 50*50
 45*45
 40*40
 30*30
 25*25

The unequal leg angle size range is:

150*100
 150*90
 125*75
 100*75
 75*50
 65*50

Steel pipe sizes depend on the standard they are built to. Steel pipes manufactured in Australia are produced to the Australian standard AS1074 for screwed and socketed pipe for general duty. Steel pipe for higher pressure applications are produced to ASTM A53 and API 5L standards. Steel pipe is designated by its nominal internal diameter. The outside diameter of steel pipe is a constant dimension for each size. The wall thickness is varied to suit the duty required.

AS1074 pipe is manufactured in 6.5 meter lengths. The pipe is supplied either in black i.e. untreated or galvanized. They are available both



Wagon load of steel pipes passing through Kalgoorlie in 1994

plain ended or screwed and socketed. The sizes produced are:

Nominal Bore	Outside Diameter
8	13.5
10	17.2
15	21.3
20	26.9
25	33.7
32	42.4
40	48.3
50	60.3
65	76.1
80	88.9
100	114.3



Wagon load of natural gas pipe passing through Kalgoorlie in 2003

Pressure pipe to ASTM A53 and API 5L is produced in 6, 9, 13, 15 and 19 meter lengths. These steel pipes are usually supplied plain ended. These lengths are the nominal lengths. Around 10% are supplied as short lengths of 60% to 90% of the nominal lengths. Pressure pipe is normally supplied black. Pipe for natural gas service is factory coated with a yellow plastic coating. The pressure pipe sizes produced are.

Nominal Bore	Outside Diameter.
8	13.7
10	17.1
15	21.3
20	26.7
25	33.4
32	42.2
40	48.3
50	60.3
65	73.0
80	88.9
90	101.6
100	114.3
150	168.3
200	219.1
250	273.1
300	323.9
350	355.6
400	406.4
450	457
500	508
550	559
600	610
650	660
700	711
750	762
800	813
850	864
900	914

Fiber cement pipes were till the early 1980s manufactured with asbestos as the reinforcing fiber. The standard length was four meters. The bore in these pipes was a constant. The wall thickness is varied to suit the duty. The pipes were sup-

plied plain ended in a natural cement finish. The sizes produced were

Nominal Diameter	Outside Diameter
80	95
100	121
150	177
200	232
225	259
250	286
300	345
375	413
450	492
525	571
600	650

Poly Vinyl Chloride pipe is manufactured in 6 meter lengths. The colour as delivered is white for liquid service and telephone conduits. For natural gas it is supplied moulded in yellow. For use as electrical conduit it is moulded in orange. The pipe is manufactured either as plain ended or with a socket integral with the pipe on one end. The sizes produced are,

Nominal Diameter	Outside Diameter
50	60
80	88.9
100	107.9
150	160.3
195	219.1

Polyethylene pipe is normally supplied in 6 and 12 metre lengths. Large sizes can be supplied in 18 metre lengths to special order. The smaller sizes can be supplied in coils.

Polyethylene pipe is supplied in black for normal duty and yellow for natural gas service. The sizes of polyethylene pipe produced are based on the pipe outside diameter. The pipe wall thickness is varied to provide a range of pressure ratings. The size range pro-

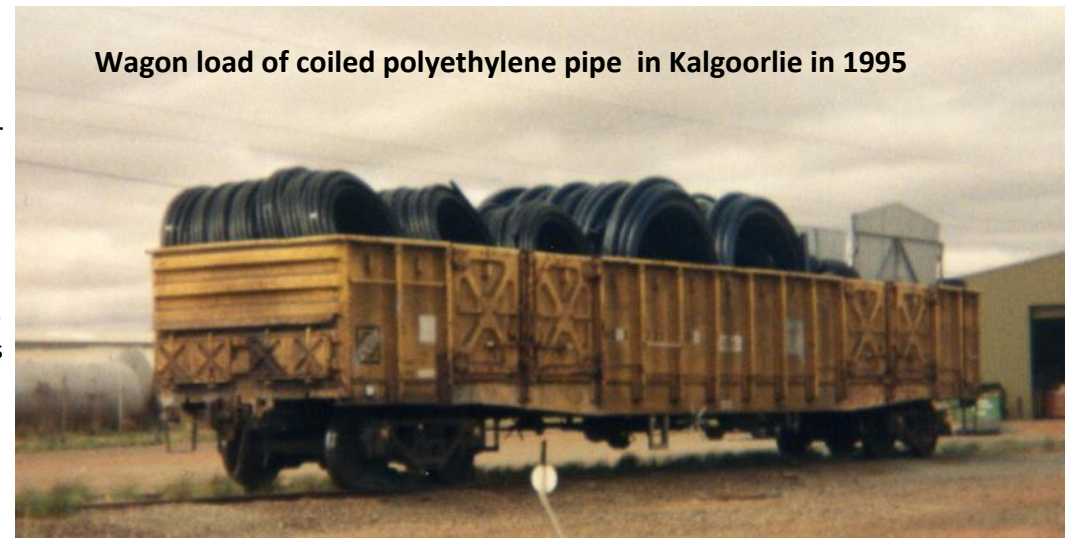
duced is; 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 1000.

Coiled polyethylene pipe is supplied in the following size coils

Pipe O.D.	Coil O.D.	Coil I.D.	Length on coil metres
20	1100	600	200
25	1200	725	200
32	1500	900	200
40	1700	1100	150
50	2000	1450	150
63	2200	1600	100
75	2700	1900	100
90	2800	2000	60 or 100
110	3100	2170	60 or 100

Armed with these dimensions you can model prototypical wagon loads, supplier's stock yards, construction sites and truck loads.

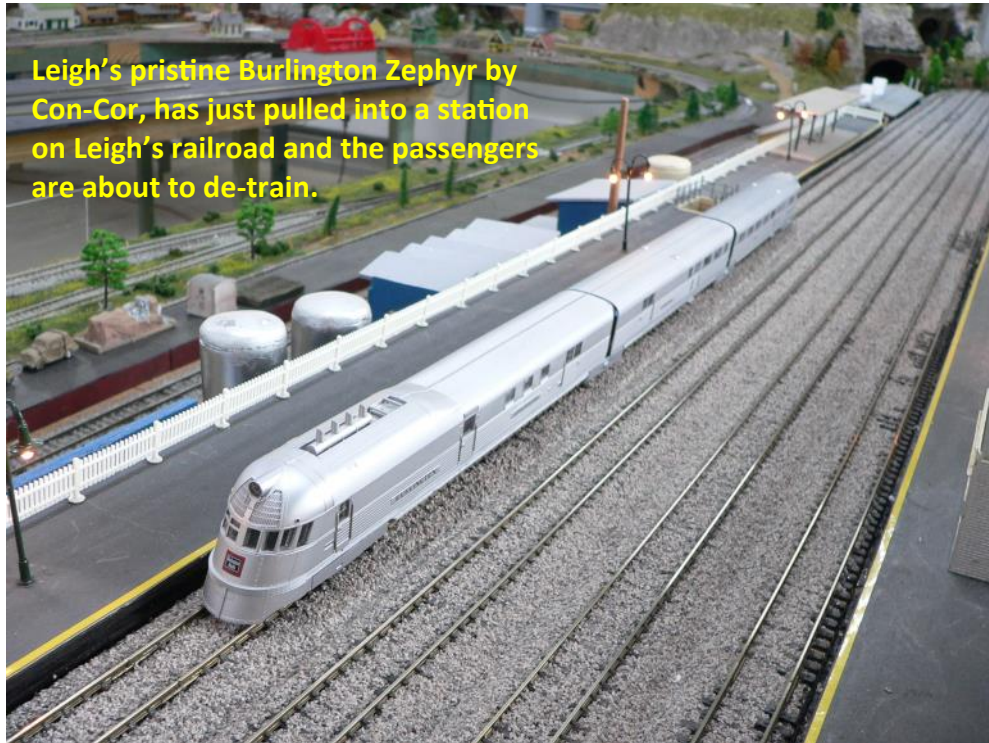
Wagon load of coiled polyethylene pipe in Kalgoorlie in 1995



Division One highlights

On Saturday 20th August, Division 1 met at Leigh Craig's home at Woodhill, just north of Beaudesert. There is always a sense of awe when we go to Leigh's, firstly because of how much work he has done to his large layout since our last visit and secondly, because of the magnificent lunch that Leigh or perhaps more accurately, Glenda serves to attendees.

Leigh has managed no doubt with some help from the Action Model Railroad Club, to scenic much of the layout and a circuit run on this railroad certainly gives you the impression that you have been on quite a journey.



Leigh's pristine Burlington Zephyr by Con-Cor, has just pulled into a station on Leigh's railroad and the passengers are about to de-train.

There was running of some of Leigh's fleet but members, as usual, availed themselves of the opportunity to get some running in with their own rolling stock.

Upcoming Events

Model Railway Discussion Group

Meets at Whitfords Library, corner of Marmion Ave & Whitfords Ave, Hillarys WA 6025 at 2.00 pm on the first Tuesday of the month, facilitated by NMRA AR Division Four



ModelRail

SUNDAY 13 NOVEMBER 2016: 10AM TO 4PM

Come along to ModelRail 2016, our model railway community open day.



AUSTRALIAN MODEL RAILWAY ASSOCIATION WA BRANCH (INC)

See more than 12 operating model railway layouts in a variety of scales. There will be modeling displays and kids can even drive some of the trains.

A refreshment stand selling cold soft drinks and water and a sausage sizzle will be available.

Entry is by gold coin donation.

Where: AMRA Clubrooms, 24 Moojebing Street Bayswater WA 6931



At Railfest this year Rail Heritage WA cranked up the engine of preserved XA 1405

Division Three Highlights



Divisions Three's August Meeting



Peter Kendal's HO30 Joe Works Shay



Paul Richie's S scale Depot

Myra Thornton's HO Scale Track maintenance workers



Rod Hutchinson Copyright © 2018

Rod Hutchinson Copyright © 2018

Gavin Hince's On3 turntable



Peter MacDonald's O Scale D3 and ABL coach

Rod Hutchinson Copyright © 2018



Rod Hutchinson Copyright © 2018

Division Four Highlights

Peter's 0-8-0



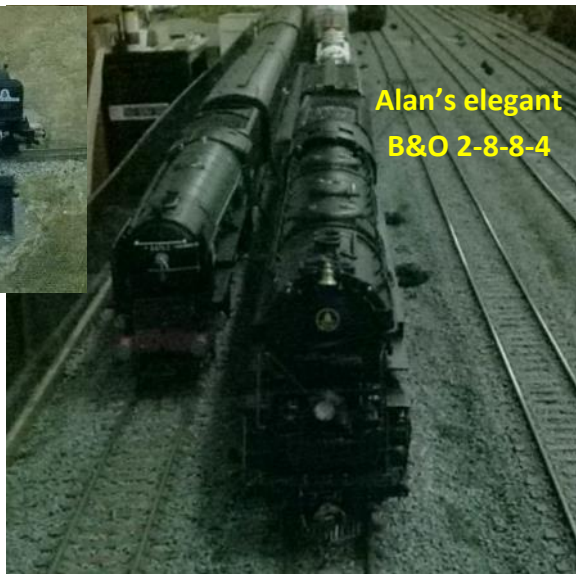
Division Four's August meeting was held at AM-RA WA's clubrooms. Members were invited to bring a train, tell us why they liked the model and run it on one of the layouts. Peter brought a CNR 0-8-0 he bought while attending the

Toronto NMRA Convention., Alan brought his as yet unlettered 2-8-8-4 and Rod brought his OO scale model of the 2008 built A1 Locomotive Trust's 4-6-2 "Tornado" in the BR green colour scheme.



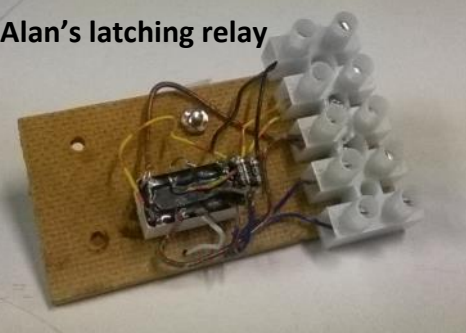
Tornado attacking the spiral climb

All the models were put through their paces on the Valentine run layout. Alan set up the full route around the layout including the spiral climb to the summit station. "Tornado". managed to haul six BR Mk1 sleepers up the steep gradient



Alan's elegant B&O 2-8-8-4

Alan's latching relay



of the spiral to the summit station. The steep climb did not fuss either Peter's 0-8-0 or Alan's 2-8-8-4 Alan showed us progress on the latching relay he intends to use to allow multiple push buttons to actuate some of the point motors on the Valentine Run



Alan's 2-6-0 recording 35 grams tractive effort on the test track

The September meeting was held at Rod Tonkin's on a rather chilly afternoon for this time of the year. We used Rod's new DC/DCC power supply on the test track to put some of our models through their paces.. The results are tabulated below.

Manufacturer	Model	TE	Power	Comments
Rivarossi	EMD E8	60 gms	DC	Traction tyres
Proto 2000	EMD E8	90 gms	DCC	All wheel drive
Walthers	Alco FA 1	75 gms	DC	
Broadway Limited	Alco RSD 15	95 gms	DCC	
Bachmann	2-6-0	35 gms	DCC	
Bachmann	EMD GP30	70 gms	DCC	
Bachmann	Rusty 0-6-0	30 gms	DC	

King of the hill at the September meeting,

Alan's Alco RSD 15



During an afternoon tea of patty cakes, party pies and sausage rolls the candles were blown out on Martindale Creek's twentieth birthday cake.

Martindale Creek's birthday cake complete with candles



Division Six Highlights

Seventeen hardy souls gathered today at Ron Solly's home at Evanston Gardens in September. Apologies were received and DS Max called for a report from the AP Manager Ray. The report was short as there are a few Certificates still in the pipeline. John Prattis gave a short report on proposed activities during the 2017 Convention. It's hoped to run operating sessions in the week before and/or after the convention. General business followed, with procedural items.

Show and tell was next. Michael brought some of his new Centenary carriages. Vern has found a supplier at Mitre 10 of 0.8 mm shrink tubing. Hutch has a coaster ship underway and partly completed. Scott showed the progress he's making with his G scale timber water tower.

Our guest speaker was Ray Brownbill who presented the second half of his talk on Operations Schedules and Timetables. It was very interesting as some members already run operations on their layouts.

Hutch won the raffle to much acclaim.

Next month we are at John Marsh's at Nairne.

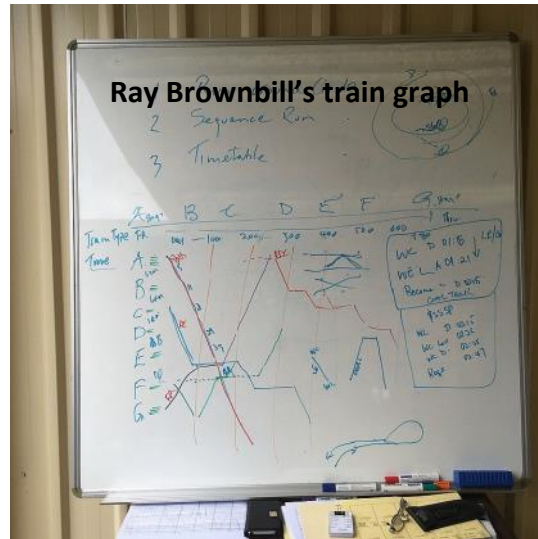
A small but dedicated group of members gathered at the home of Ivy and John Marsh at Nairne at 2.00 p.m. on Saturday 8th October 2016. DS Max welcomed members and thanked John and Ivy for welcoming us into their home and presented John with his meeting plaque.

Show and tell included a presentation by Steve Weedon of a large operations panel and cards from a friend's layout which has ceased operation.

At about 3.00 p.m. we all enjoyed afternoon tea, coffee and cake and then repaired to John's train room which has been freshly renovated and a new layout built. An enjoyable afternoon was had by all.



Steve Weedon's presentation of a layout operations panel and car card system



Members admiring John Marsh's layout room



Ray Brownbill's presentation on operations

DECCA SIG

The August meeting of the NMRA DECCA SIG, was held at James Tate's residence.

The main topic of discussion at the was the Noarlunga Exhibition. The members agreed who was attending the exhibition and who was loading the layout onto the trailer.

Once the exhibition manning was sorted out, Ainslie showed us how to add "Stay Alive" capability to our model locomotives.



The members of the NMRA Div 6 DECCA SIG exhibited at the Noarlunga Exhibition on Saturday the 1st and Sunday the 2nd of October, 2016.

This turned out to be quite an enjoyable event. There was quite a bit of interest from members of the public. Visitors to the exhibition asked many questions about DCC, Computer Control and other topics. It didn't start to rain until we started to pack up.

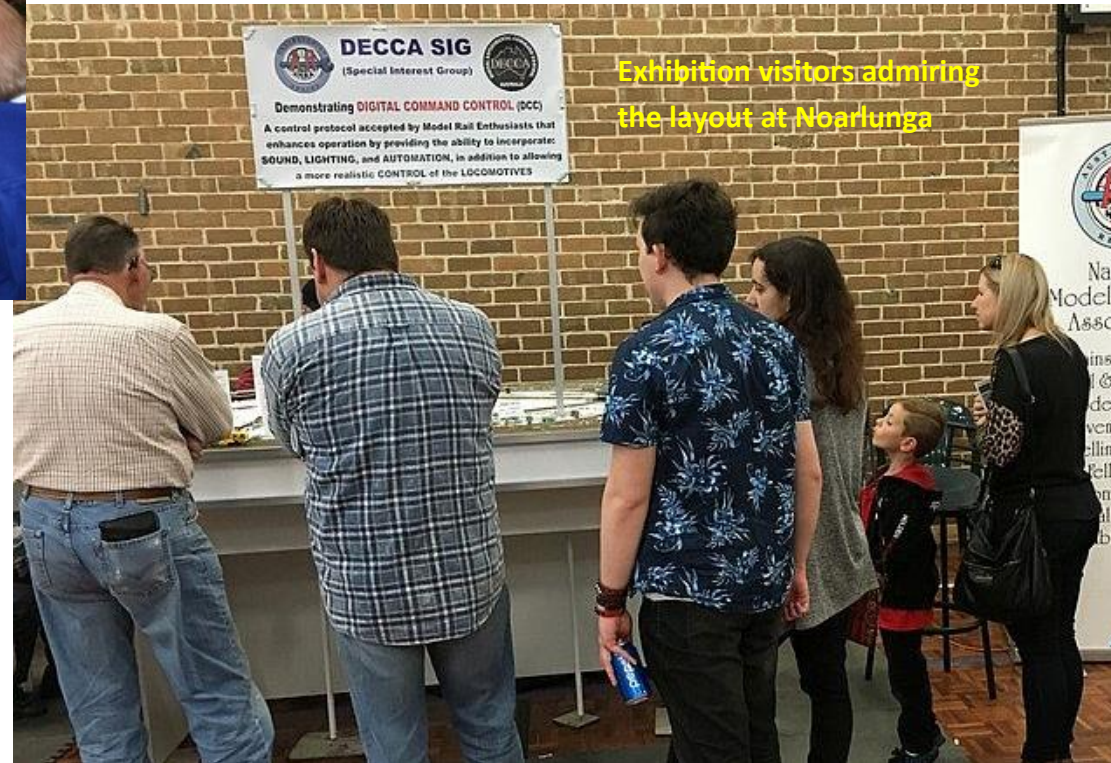


The DECCA SIG layout set up at Noarlunga



Ainslie's hands on demonstration of adding stay alive capability to models

Following the work shop our hosts James & Viv provided afternoon tea.

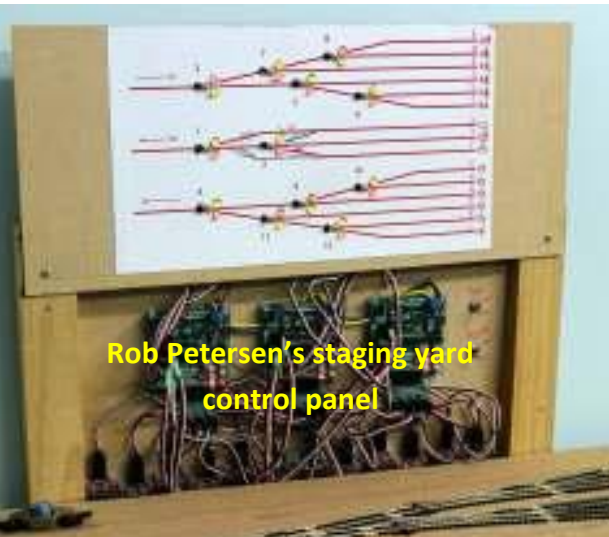


Exhibition visitors admiring the layout at Noarlunga

Division Seven Highlights

Rob Petersen hosted the August Meeting at his home at North Rocks on Saturday, 13th August.

Rob models the Erie Lackawana in N scale.



Rob Petersen's staging yard control panel

Rob Petersen's staging yard and its control panel



Rob Petersen in his layout room



Narrow Gauge SIG

The Narrow Gauge SIG Meeting was held on Saturday, 27th August at Ken and Jenny Scales place at Blue Haven. The numbers were down on the usual meetings with only 8 people attending, probably because of the distance from Sydney. Also, our fearless leader, John Montgomery, was missing in the wilds of Tasmania.

Ken demonstrated his range of Proxxon miniature drop saws and table saws to make and size scale limber for scratch building projects.

John Meredith brought along a beautiful little tram he scratch built based on the Mt Lyell Tramway.

Ken also had a number of scratch built On30 structures on show during the afternoon.



Ken's miniature drop saw



John Meredith's Tram



Some of Ken Scales buildings



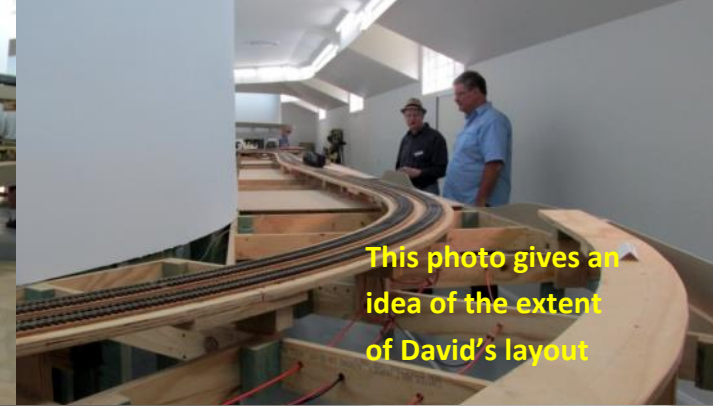
At the appropriate time, Jenny put on a wonderful afternoon tea and the conversations continued in the kitchen and family room areas of the house before everyone headed home.

Division Seven Highlights

Division 7 held its October meeting on Saturday the 8th of October at the home of David Howarth MMR in Dural, Sydney.

David is building a O Scale layout based on the steam/diesel era of the New York Central intended for operation.

David's interests are not limited to trains



This photo gives an idea of the extent of David's layout

Classic New York Central steam power the J3 Hudson with fourteen wheel tender



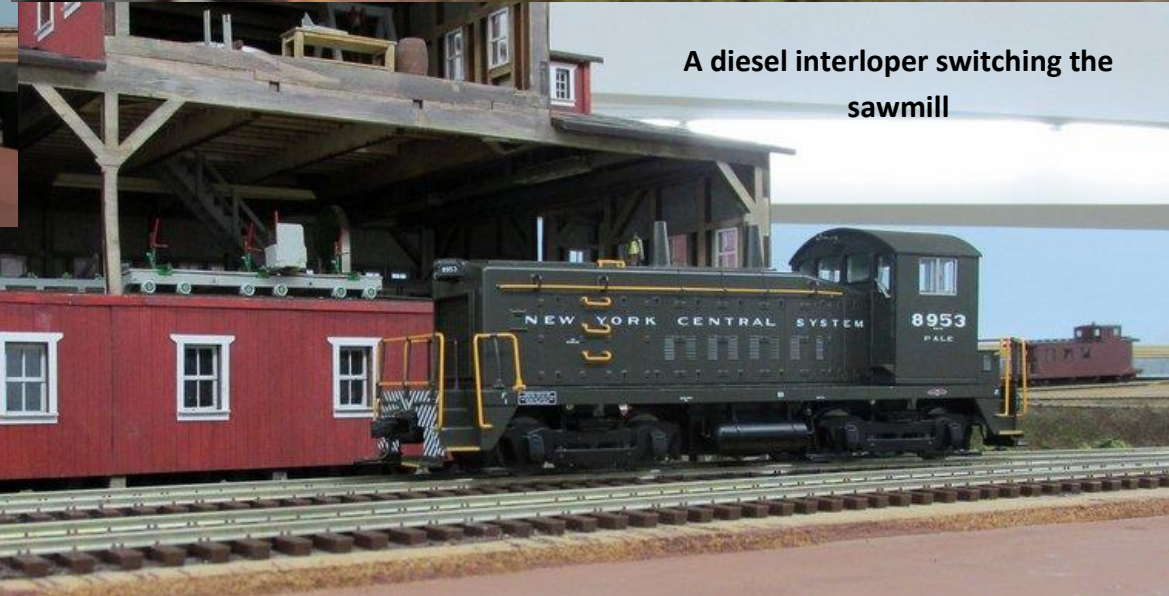
A view of the sawmill from the log pond



Warren Wormald inspecting some of David's motive power



A diesel interloper switching the sawmill



Prototype Observations

Arthur Hayes

Longreach is a town in Central West Queensland, Australia approximately 700 kilometres from the coast, west of Rockhampton. The town is named after the "long reach" of the Thomson River on which it is situated. The town was gazetted in 1887, and the railway reached the town in 1892. The town is on the Tropic of Capricorn. At the 2011 Australian Census Longreach recorded a population of 3,137. The main industries of the area are cattle, sheep, and, more recently, tourism.

The railway line continues past the town in a north western direction for another 200 kilometres to Winton. Given the rationalized of rail services in recent times, the town still receives twice weekly passenger service from Brisbane. The "Spirit of the Outback" (known to some as the 'Cowboy') has recently been updated to an all stainless steel coach train. The train provides first class single and twin sleepers and economy single sleepers and seats. The train also features a Dining Car "The Tuckerbox Restaurant", the Lounger Car with the Stockman's Bar, and the "Captain Starlight" Club Car. Captain Starlight was a local bushranger in the Longreach area.

Approximately 3,000 head of cattle is railed from Winton per week in season in trains consisting of 44 decks (wagons) hauled by multi locomotives. A weekly freight service from Rockhampton conveys general freight in containers and gypsum containers. Plus the line has the usual maintenance trains from time to time.

In the late 90s, the line west of Bogantungan was updated from a "B" class 10t axle load line to an "A" class 15t axle load line allowing 93t main line locomotives to be used the full length of the line to Winton.

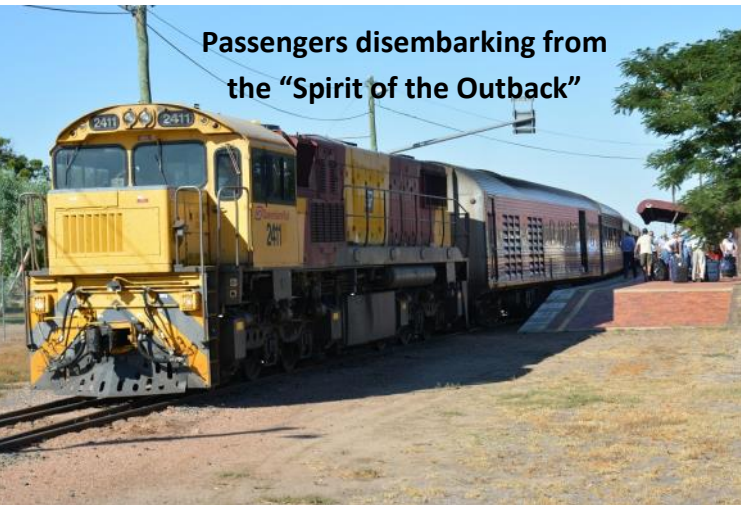
Spirit of the Outback passing retired Qantas 747 400 "Longreach"



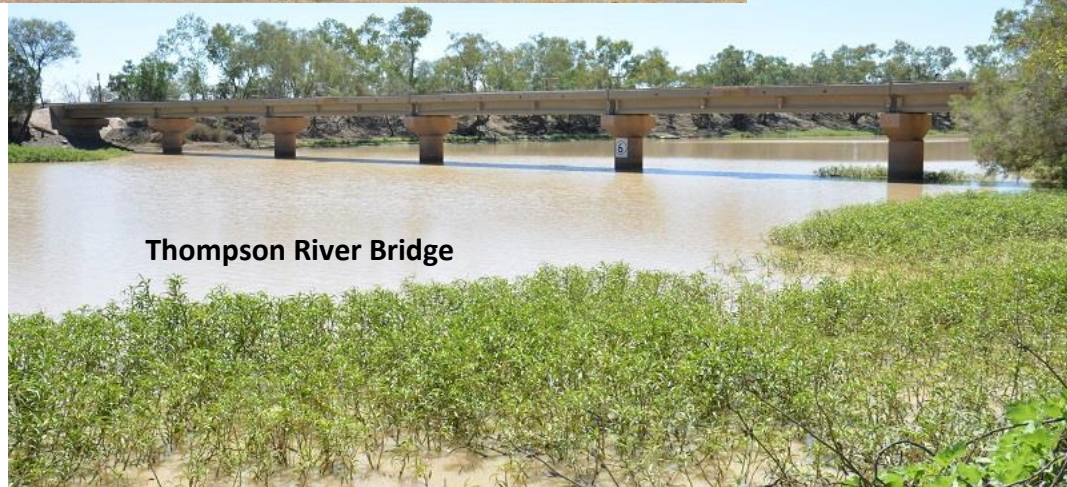
Longreach station



Passengers disembarking from the "Spirit of the Outback"



Thompson River Bridge



A feature of QR operations is turning the entire train at the end of each trip. The "Spirit of the Outback" is being turned on the Longreach triangle

