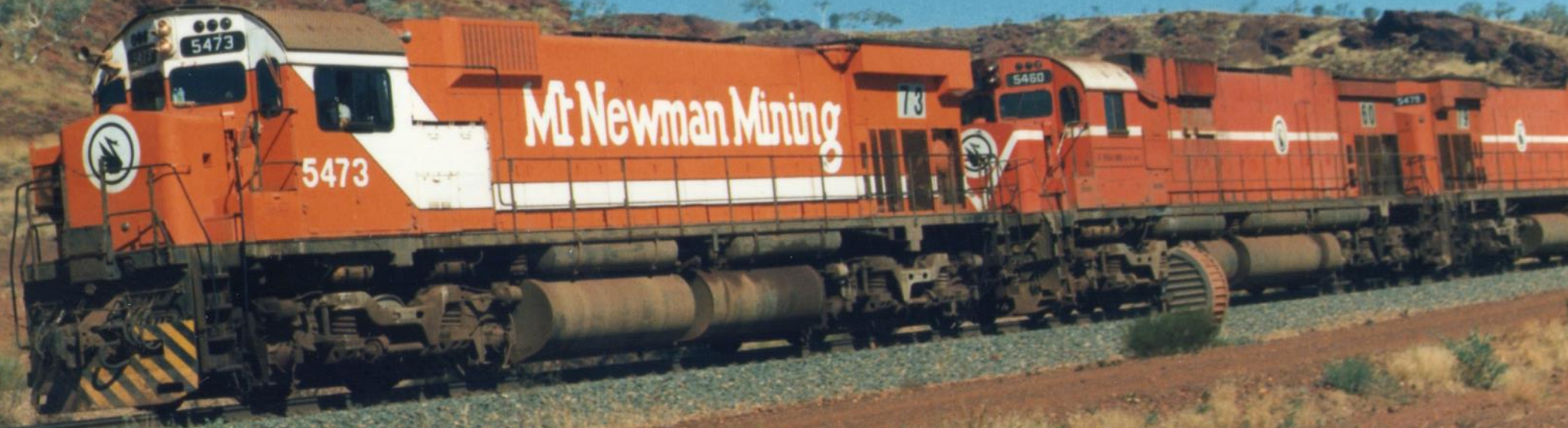


MainLine



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NMRA Australasian Region Directory

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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@iinet.net.au .

Original uncropped photo files would be preferred.

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

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Content submissions

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Cover photo

M636 5473 leads a C636 and an M636 at the head of a 240 car loaded ore train to Port Hedland around Christmas time in 1990 and not a snowman in sight.

Photo by the editor

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President's Message

Welcome to this edition of the electronic MainLine.

Our mini Convention hosted by Division 7 at Berowra in Sydney was a very successful event and enjoyed by those who attended. Next year we will have a full 2-day convention hosted by Division 6 in Adelaide on the weekend of 16-17 September 2017. This should be a great convention. It is timed to be a week after the national N Scale Convention so you can easily attend both and spend the intervening week visiting the many tourist attractions of Adelaide, the Barossa and the surrounding regions. If you have never been to Adelaide, here is your big chance to visit a great city.

At this time of year, your Divisions are hosting Christmas parties and giving out awards and commendations. I would like to personally thank all the many volunteers at the Region and Division levels of this great model rail association for their great efforts throughout the year. Also, those who open their homes and layouts for divisional monthly meeting are thanked for their efforts as without these places to meet, the organisation would not function.

I would also like to wish each member a Merry Christmas and hope that all your aspirations for 2017 are achieved. Furthermore, as we face the hot, hazy days of summer, it is the ideal opportunity to find a shady place and catch up on your modelling.

Until next time,

David O'Hearn

AR President

11 December 2016



Editor's Notes

Well here we are, another year almost over and the final issue of MainLine for Volume 33.

I'd like to thank you the region committee, division superintendents and individual members of Australasian Region for your support in providing copy and comment for MainLine. Without your help it would be a rather barren publication.

Its been quite a year. We've successfully changed MainLine from a quarterly to a bi monthly publication. A major reason for the change from four issues per year to six is to give us more opportunity to promote and report on our region convention. Next year we will have three issues published prior to the convention in September. The convention organising committee are free use these issues to enthuse members and their partners to make the trek to Adelaide for the convention.

Editing MainLine does not occupy all my spare time. I occasionally get a chance to do some railway modelling. I've recently acquired a sound equipped model diesel locomotive. I mistakenly assumed I could unpack the model, read the first page of the instruction sheet and I'd be in business. This approach let me start the engine, move off, blow the air horn and not much more .

To get the most out of the beast I'll need to fully read the double sided A3 size instruction leaflet supplied with the model and reread the instruction manual of my DCC system to be able to access all the 24 sound effects built into the decoder. I'll report on my journey into the realms of sound equipped model locomotives in coming issues of MainLine.

May the blessings of the Christmas season be with you.

Looking forward to 2017

Regards

Rod Tonkin Editor MainLine



Grain Augers

Arthur Hayes

In adding industry to my railway to create both a reason for the railway and operations, I build grain silos from PVC downpipe and styrene.

These things can be huge and vary from location to location, so some selective reduction was made to fit the space available on the layout.

To add realism and life to the silos, more work was required. Having travelled across the Darling Downs by train many times where you pass grain silos every 10/15 kilometres, I had some idea of machinery/buildings required to achieve this. Most have a weighbridge, elevated platform for taking samples of the grain coming in for storage, office, quarters, unloading sheds and equipment to handle the bulk grain.

To fit the bill I required a couple of grain augers, this would also add some colour to the site. In searching hobby shops, exhibitions and the World Wide Web, I could not find anything suitable. On our way down to the Armidale Convention we dropped by the grain terminal at Warwick to have a look about with the camera in the car. Jackpot, a yellow auger was found on the rail side of the silos. A few photos and a couple of measurements set me up to draw a sketch to work too.

Research on the web showed that grain augers come in various profiles, sizes and colours.

They can range in size from 31 feet to 102 feet in length with a tube size between 6 inches through to 13 inches in diameters with vary-

ing drive and lift options.

Beulah Machinery's website gives the sizes for Farm King conventional grain augers.

My augers were built with the materials I had on hand without the above knowledge on size.

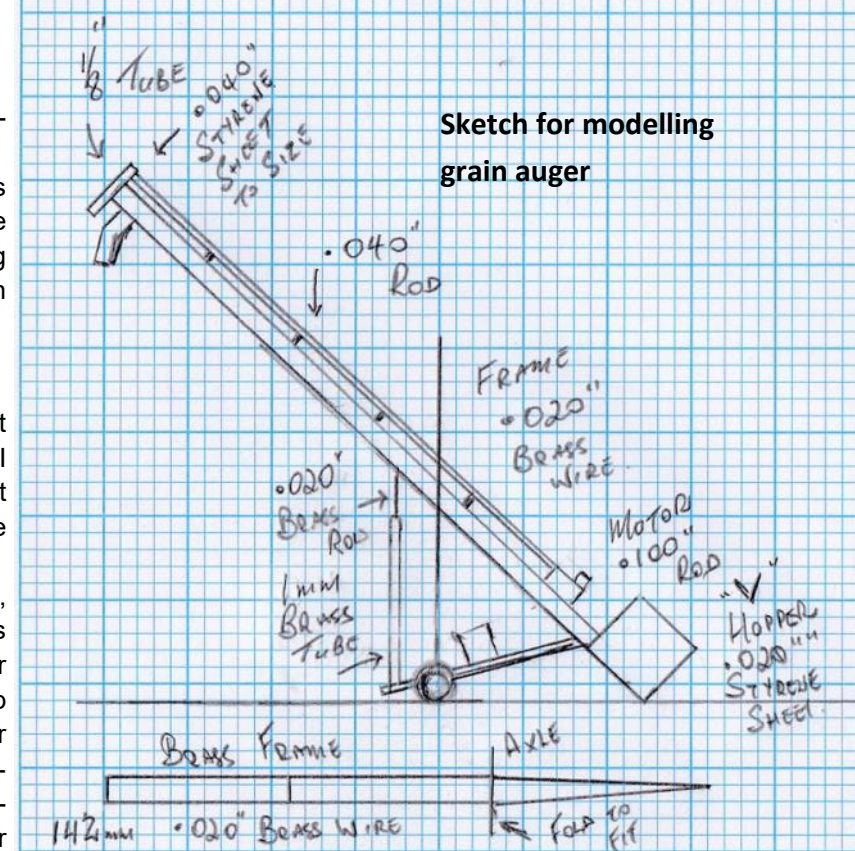
Materials used are, styrene tube was used for the auger tube and outlet drop chute, styrene rod for drive shaft, shaft support and electric motor, styrene sheet for driver cover at the top of the and hopper.

20 thou brass wire to form the lifting frame, and wheels from a cheap vehicle in the scrap box. Some lead may be required in the hopper to keep the auger upright. Once completed paint to desired colour.

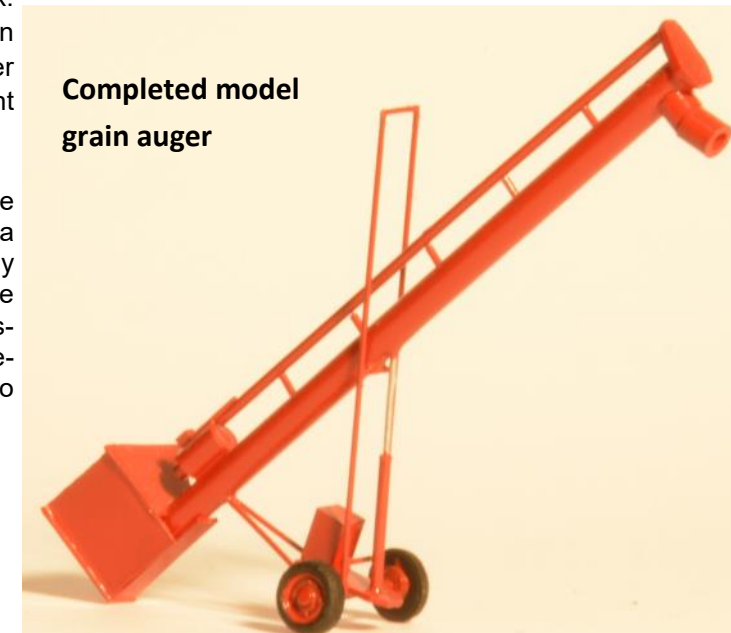
All up three were made for the grain terminal and one for a wagon load. The project only took a few hours to complete and has created plenty of discussion to the point where requests have been made to build a few for mates.



A real grain auger



Sketch for modelling grain auger



Completed model grain auger

Modelling Conrail 7651

Rod Tonkin

My early Conrail roster had an omission. I didn't have any ALCOs on the roster. The real Conrail inherited a reasonable number of the beasts. I really needed at least one on my roster. Perusing a traders stand at Railfest I came across a HO scale "Dummy" Model Power Alco RS11. It weighed a bit so I thought it worth a better look. Inspecting the entrails showed it was complete except for the motor. Coin changed hands and I became the owner of a HO scale model of Conrail 8416.



My Conrail RS11 as acquired

At home I was able to more closely inspect my acquisition. The drive train was

complete except for the motor. I just happened to have a motor from a defunct RS2 that would fit into CR 8416. A little fiddling to align the drive shafts and CR 8416 was no longer a dummy. Reconnecting the DC wiring took less time to complete than the time it took for my soldering iron to warm up. Placed on the track CR 8416 after a few prods with the 0-5-0 shunter was away.

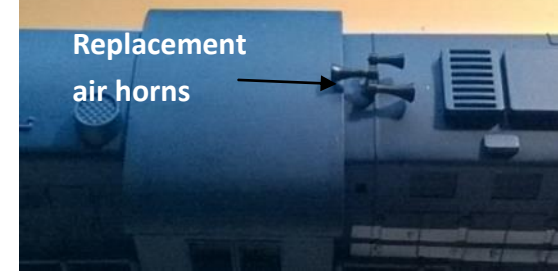
Now I had a working model locomotive, I needed to detail it to match the real thing. Conrail had 68 RS 11s numbered 7587 to 7654, mostly ex Penn Central units built in the late 1950s. They were all retired by the end of 1981. Only a few of Conrail's RS 11s notably 7644, 7651 and 7652, got the full Dress Blue colour scheme. The Conrail Cyclopaedia <http://crcyc.railfan.net/locos/alco/rs11/rs11.html> has photos of some of Conrail's RS 11s. The Conrail Historical society has a couple of photos of 7651.

<http://thecrhs.org/files/images/Scanned%20Image%20111930231.preview.jpg>

Model Power unfortunately got the number wrong, but that's easily remedied.

Model Powers RS11 looks like an Alco RS11 except for a few correctable features such as the location of the air horns, the shape of the fuel tank and the location of the air receivers.

The air horns on Conrail's RS11s were mounted on the top of the long hood adjacent to the cab. The main air horns point towards the end of the long hood. Many road switchers built in the late 1950s were set up long hood leading to provide collision protection for the crew. The orientation of the air horns suggests Conrail's RS11s were set up this way. My RS11 was fitted with a set of air horns (Athearn I think) from the junk box, on the long hood with the long air horns facing the end of the long hood.



The fuel tank on a RS11 is narrower than the walkways. The limitation to narrowing the fuel tank on a Model Power RS11 is the die cast weight inside the fuel tank moulding. I'm loath to cut down the diecast weight as the assembled model only weighs 350 grams. I cut the fuel tank casing to the width of the die cast weight as shown in the attached photo and fitted new black card sides to the fuel tank.



The air receivers on an RS11 are mounted on either side of the fuel tank beneath the walkways. I've only got three millimetres from the edge of the fuel tank to the edge of the walkway. I compromised by cutting six millimetre dowel down the middle to fit the available space and resemble the air receivers visible in the prototype photos. Once the air receivers were in place the fuel tank did not look right. I added three millimetre thick balsa wood "bludges" to the lower sides of the fuel tank and it looked more like the fuel tanks shown in the prototype photos as shown in the attached photo. I filled the grain of the air receivers and fuel tank bludges with wood filler and sanded the surfaces smooth. Once I was satisfied with the finish of the fuel tank and air receivers I painted it black like the prototype.





CR 7651's printed number box numbers

My RS11 could be any of the three RS11s Conrail repainted into the full blue colour scheme. The location of the lettering on the model does not match the photo of 7652 so I'm modelling 7651. The only lettering changes required were the cab side numbers and the number box numbers.

I set up the number box numbers in Excel. I used eleven point "Ariel Black" bold num-

bers in white on a black background, printed 50 percent full size on white paper. The printed number box number sets were coated both sides with acrylic matte medium and allowed to dry. I filed off the moulded on numbers on the number box glazing before installing the new numbers. The printed numbers were trimmed to fit over the original number box glazing and secured with acrylic matte medium.

The lettering on my RS11 was silk screen printed. Some experimenting showed me the ink used to letter the model was soluble in methylated spirits. Gently rubbing a paper tissue soaked in mentholated spirits over the cab side numbers dissolved the numbers. I allowed the methylated spirits to fully evaporate before continuing.

The new cab side numbers for Conrail 7651 were cut from Microsoft decal sheet 87-157. This decal sheet has two series of cab side numerals, Conrail style and Penn Central style. You need to refer to prototype photos to determine

which to use on a particular model. I found the decals set adequately on the cab sides without needing to use a decal setting solution. Once the decals were set, I brushed on a thin coating of acrylic matte medium to seal the decals in place.

The Model Power RS11 has an all over blue paint job including the walkway surfaces. This is correct for locos Conrail inherited and subsequently repainted. There are a few omissions to be addressed. The pilots and step wells should be painted black. The step well handrails and the edge of the bottom step should be painted white. The fuel tank and air receivers should be painted black. I painted the step wells, pilots, fuel tank and air receivers black with artist's acrylic paints. The step well handrails were painted white with a white paint marker pen.

Once the paint was dry it I could begin to weather my model. It helps to decide the effect you want to achieve before starting to weather a model. I wanted my RS11 to show hard work, the characteristic ALCO exhaust staining on the top of the locomotive and highlight the detail on the model. I used the technique described in "Basic Skills Module Nine" to weather my RS 11. <http://www.nmra.org.au/Learning/Mod%209%20Weathering.pdf>

The underframe and bogies received washes of burnt umber. The top sides received a liberal coating of black tinged with burnt umber. When the water colour weathering had dried, my RS11 looked like a hard working ALCO road switcher.



CR 7651 suitably scruffy earning its keep at the head of a local freight

G Scale Vertical Boiler Locomotive

Built by Vern Cracknell MMR

The inspiration for this model came from seeing photographs and models of such locomotives particularly from European sources. LGB have produced a vertical boiler model in recent years and Regner are known for their steam powered version.

This is a scratch-built freelance representation.

It uses a Buhler motor and gearbox from Garden Railway Specialists. The motor component protrudes through the platform into the boiler space. The decoder is from LGB (item 55022 –

which LGB describe as a compact decoder suitable for small engines eg field locomotives). Phosphor bronze wipers have been fitted to the frame and are in contact with the rear of each wheel.

The platform is constructed of 7mm and 2mm ply, with beadings from North Eastern Scale Lumber.

The motor and wheel assembly frame work is made from brass sheet with each panel bent at the top on a bracing tool, then soldered together for the drilling of the holes for the axles, and the various spacers, screws and nuts which hold the frame in true parallel. The frames are then unsoldered and trimmed after the drilling. The simple cylinder is from brass tube. The slide bars are square section brass and the piston rod slides into a brass tube. The slide bars and piston rod receptor were assembled and soldered in their correct configuration and then set into the cylinder tube, and when in place Plasti Bond was filled in to the brim. Excess was filed away when the Plasti Bond had hardened. The cross head, piston rod and the slide bar units were soldered, and filed where needed to move smoothly. The coupling rods on the wheel assembly and the connecting rod to the driving cam are also of brass.

The cam is attached to an axle which runs across the breadth of the platform. From this axle a sprocket and chain connect to the rear axle beneath, which is connected by the coupling rods to the front axle driven by the motor and gear assembly. I am indebted to Bernie Dickinson for fitting a sprocket to the rear axle. Bernie drilled the axle to insert a key, made a key slot in the sprocket and then turned two spacers so that the sprocket could not shift sideways. All this was done because it was believed that we could not rely on instant or superglue to be reliable and permanent. At the other end of the axle a sprocket is fixed which activates the sprocket and axle which turns the fly wheel.

The wheels are from Slaters (UK) and have axles with squared ends allowing accurate quar-

tering. The wheels are secure by screws. The wheels have threaded holes for the coupling rod screws. The boiler is PVC down pipe overlaid with balsa strips (from a bag from a hardware store) which has been distressed with a modeller's gouging tool. The fixing bands are from brass strip, tightened with screws and nuts. The firebox door is from styrene. The chimney is a heavy cardboard tube from a pack of garbage bags, with the finials formed from two different sized washers glued to the chimney top. The sloping top surface of the boiler is created by shaping MDF and eliminating blemishes with wood putty. The fly wheel is created by making a resin casting from a wheel of a child's toy. The lantern, whistle and chain are from Ozark Miniatures (USA). The Delrin chain and sprockets are from Micro Mark (USA)

The coal in the bunker is made from a broken down briquette. The tools in the front bunker are handmade. The various pipes are from 1/16 brass rod or coat hanger wire. The lagging on the pipes to the cylinder is from cotton string, as is the rope in the front bunker. The side rails have been constructed from square section brass and soldered. Rails at either end are from 1/16 brass with hand rail knobs from Garden Railway Specialists. The bucket on the driver's side is the plastic protection piece from a lantern battery. The cylindrical sand boxes are made from tube styrene, fitting with a styrene cap and a mapping pin as the knob. On the lower skirt of the platform rivet detail has been achieved by a rivet machine on paper which has then been glued to the structure.

The figures of the driver, the fireman and the track inspector are handmade using DAS modeling clay over copper armatures, which when dried have been filed, shaped and painted with tube acrylics.

The number was typed on a home computer and then printed on laser decal paper from Micro Mark. The background colour of the transfer was black with the number clear, and fixed over a white painted background. Application of the waterslide transfers was in the normal manner, with touching up as needed following. Testor's Dul Cote was used a number of times over the numbers. Dul Cote was also used to tone down the brass strips on the boiler, and also the timber on the boiler which had been painted and then coated with a matte Estapol. It needed its sheen to be removed. Most of the painting was by hand brushing, with air brushing for weathering with Nato black Tamiya acrylic.

The dimensions of the model are : length overall 250mm, width 130mm, height above rails 190mm.



Working up Hornby's OO Scale model of the A1 Steam Trust's 60163

Rod Tonkin

My Hornby model of the A1 Steam Trust's locomotive 60163 "Tornado" is painted in the lined green colour scheme with the "ferret with dartboard" crest on the coal tender. This was the appearance of BR A1's for most of their service lives. Searching the web showed 60163 only carried this crest from mid 2011 to early 2012, so it is only "Prototypically Correctly Lettered" for that period.

Decoder installation was compared to other Hornby steamers in which I've installed decoders in straight forward, full marks to Hornby. The instructions on how to remove the body shell were concise and easy to follow. The decoder socket was wired correctly and there was plenty of room inside the smoke box for the decoder.

The engine tender drawbar allows two engine to tender spacing's; according to the instruction sheet one for display and one for operation. The display spacing is just that, unless your layout is blessed with very wide radius curves. The operational engine tender spacing allows the model to negotiate 371 millimetre radius curves. This is less than the recommended minimum radius but as my model of 60163 can't read it can happily negotiate this curve.

On straight track the operational engine tender gap is around six millimetres. You could fall through a gap this wide. I wanted to either eliminate or disguise the gap between the engine and coal tender while retaining the operational engine tender spacing.

I thought a fixed locomotive drawbar with a curved slot engaging a fixed pin on the coal tender worth a try. Bachmann and Hornby use this approach on their passenger cars. This would give me close engine tender spacing on straight track and clearance on curves. Trial layouts showed me this approach wouldn't work.

I was stuck with disguising the existing draw bar arrangement. I tried a four millimetre wide engine tender buffer and a fall plate long enough to bridge the gap between the cab floor and the tender floor. The buffer was cut from four millimetre thick balsa and curved to allow



Model as delivered, coupled for layout operation, note the engine tender gap

the model to negotiate set track curves without bind. The fall plate was cut from black card and curved similarly to the buffer to clear the tender on curves. On the layout the clearance between the draw bar and the loco coupling pin meant the engine to tender distance varied considerably between pulling and pushing on set track curves. This did not affect the buffer. Under some conditions the fall plate fouled the tender body causing derailments. Cutting the fall plate shorter solved the problem. The photos show the field modified fall plate.

You wouldn't weather a model of Tornado. The real thing seems to always be impeccably polished. It is, however a working steam locomotive. I added some coal on top of the moulded in load in the tender and on the tender coal spout. To match most of the working steam locomotives I've seen, I've covered the fall plate with coal.

You need to slightly modify the foam cradle the model is delivered in to accommodate the cab fall plate and buffer. This modification does not affect the model being held securely in the foam cradle.

The result on a layout with sharpish radius curves is a believable looking preservation era steam locomotive.



Model with buffer and fall plate installed

009 modelling

Michael Parker

I have been asked to give you a brief rundown on the items I submitted at the September meeting.

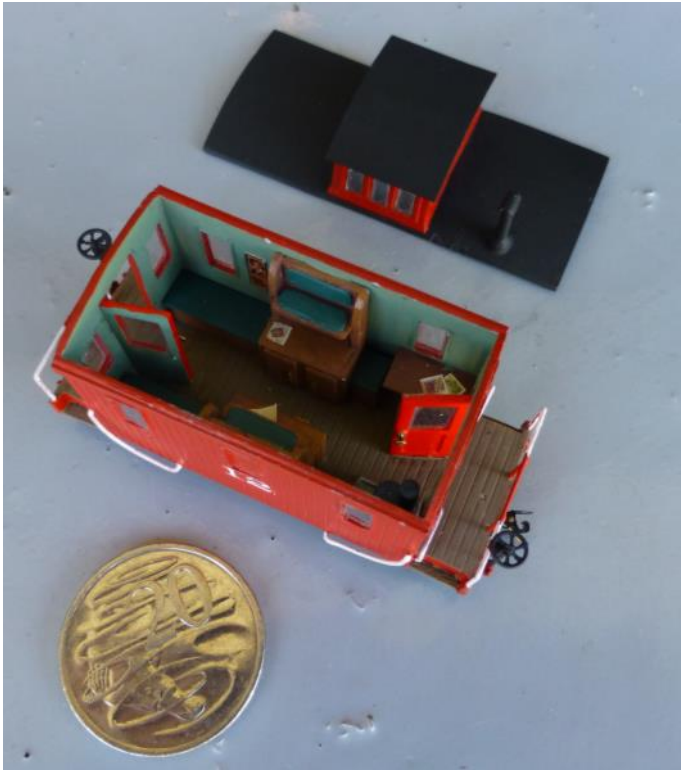
The first item or items to discuss are three "00" 9 models I scratch built, a Plymouth Diesel, a log Bunk, and a four wheel Caboose.

I know from experience that the first question on everyone's lips is why 009 ?

Well I am modelling American two foot gauge, and want to get that feeling of overhang that is so evident in the prototype. If I model in 00 or 4mm scale the 9mm track scales out at 27inches, which is only 3 inches or 1mm out in scale, however if I model in HO or 3.5mm to the foot, the track works out as 30 inches, and so I prefer the former.

Secondly as I build all of my own rolling stock, it really doesn't make any difference to me.

Caboose.



The model is inspired by a Denver & Rio Grande four wheel Caboose circ 1880. This particular vehicle has an interesting story, in that it started out as a three window flat roofed caboose. However it didn't take long before the crews got sick of having to go outside in winter weather, so a capola was added. In order to do this to such a small vehicle, they had to board up the center windows to make way for the benches/steps for the capola seats etc.

Happily I have a photo showing most of the interior.

I used an "N" scale British under-frame , and adjusted the wheel base to suit. The entire model was scratch built using Evergreen sheet and strips, with brass wire for hand rails. The only other commercial parts used were Cal Scale air brake parts, and brake wheels, and Kadee "N" scale couplers .

The entire interior was also made from Evergreen strips.

As the interior was fully detailed, I added weight under the floor.

Log Bunk.

The log bunk was inspired by an article in the Narrow Gauge Downunder magazine some years ago. The model in question was done in "O" n30, but I saw no reason not to modify the ideas to suit my 27inch gauge railway.

Again the model is entirely built from Evergreen strips, lead sheet is added inside the main or central beam, Cal Scale brake parts were added, along with Kadee "N" Scale couplers, and lots of Grantline nut and bolt castings.

Plymouth Diesel.

The diesel model is made using a Bachman "N" scale six wheel diesel chassis. To this I built a Plymouth body using many photos from books in my collection as reference. Again the entire body is made from Evergreen sheet and strips, with brass wire where needed for hand rails, and brass wire mesh behind the grill.

Commercial parts include Kadee "N" scale couplers, a bell from my parts box, and half a figure for the driver.

Decals were added from the Microscale range.

NOTE.

All the models were spray painted.



Buildings.

The other item I discussed were based on a technique I picked up while reading a few articles in Continental Modeler a few years ago. The articles were written by Emmanuel Nouaillier, in my opinion a true artist. Emmanuel described how to use common packaging material to create walls and various other infrastructure.

I started with what was on hand, which happened to be a sausage tray from Coles, the material is approximately 3 mm thick and black or grey in colour .

Once you cut a straight section out of the tray, you measure and cut the wall to size, mark out and cut all window and door openings.

The idea is to create the effect of a stucco or plastered wall, with small sections which have cracked and are falling away. To that end decide where the broken plaster would logically appear. For instance the corner of a window, or edge of the door, anywhere where the wall may suffer from movement or damage.

Next decide whether you want a stone or brick background, and then all you have to do is scribe the stonework or brickwork into the soft material. You can use a sharp but soft pencil, or any other similar tool, but be careful not to cut the surface.

If you are doing a brick background, be sure to work out the correct size brick for your scale, and ensure that the mortar lines are parallel with the top and bottom of the wall.

One of the unique properties with this material, is that once scribed the lines stay there.

It will be more apparent from the photos, but mark out the border of your work and then paint the entire area with your chosen mortar color. Once dry pick out the individual bricks or stone with various shades of brown, tan, and greys.

Next paint the remainder of the wall, in a flat color of your choice. When that has dried cut very fine cracks radiating out from the edges of the exposed brickwork with a hobby knife. Add your windows and doors, here you can use commercial castings or use balsa wood as I do to help add the effect of a building in need of a little TLC.

If I need trim or need to hide the join between stories I again use strips of balsa wood. For a low relief building cut sides from the material, make a forty-five degree cut along the sides, and glue the sides in place. White glue works well, but you will need pins to secure it until dry, alternatively I find the craft glue called 450, works well. You can add strips of the material or balsa to strengthen the corners, and once dry you can fill any imperfections with Sellys Spackle.

What I have described is only the tip of the iceberg, the material is available in all sorts of packaging, from fruit and vegetables to meat trays. One word of caution, be careful of some of the meat trays, as even when washed they can leave traces of blood which will quickly go off.



The other thing is that you can use this material, and technique to make bridge abutments, retaining walls, or entire buildings.

If you wish to make an entire building, and wish to show the interior, you can simply use Sellys Spackle to fill any pressings, or imperfections on the reverse side, and once painted the end result looks like an internal plastered wall.

I use Evergreen styrene shapes for down pipes, with small lengths of fine wire twisted around the pipe and pushed and glued into the soft wall. Evergreen is also used to create hinges, padlocks, signs, etc.

Overall a very cheap, and effective way to make buildings and other infrastructure.

Michael Parker.

Design Options?

Rod Tonkin

The bogie design adopted for the initial English Electric and British Railways built Type Four locomotives was the bogie used on the Southern Region trial diesel locomotives 10201-10203. This bogie design achieved the civil engineer's requirements to spread the weight of the locomotive to reduce the loading on the track by using a sixteen foot rigid wheel base. The bogie was capable of negotiating a four and a half chain curve (297 feet or 90.5 metres radius). This prototype minimum radius curve reduced to OO scale is around 1,200 mm. This curve radius is reasonable for a club layout but a trifle large for a modest home layout.

The English Electric (BR Class 40 class) and British Railways built (BR 44, 45 & 46 classes) Type Four locomotives were popular with rail fans and railway modellers. Interest in mass produced models of these locomotives was high. This gave the major model locomotive manufacturers cause for thought. How did they design the bogies of their scale length (around 280 mm in OO scale) models of these locomotives to negotiate curves in Lima's case of 360 mm radius?

The approach taken by Joueff, Mainline and until recently Bachmann was to allow the in-board axle to float by providing side play (Bachmann) or a pony truck (Joueff and Mainline). The bogie pivot was located mid way between the outer pair of axles. The non prototypical bogie pivot location reduced the body end over hang on curves at the expense of increased

Lima bogie design



overhang on the inside of the curve.

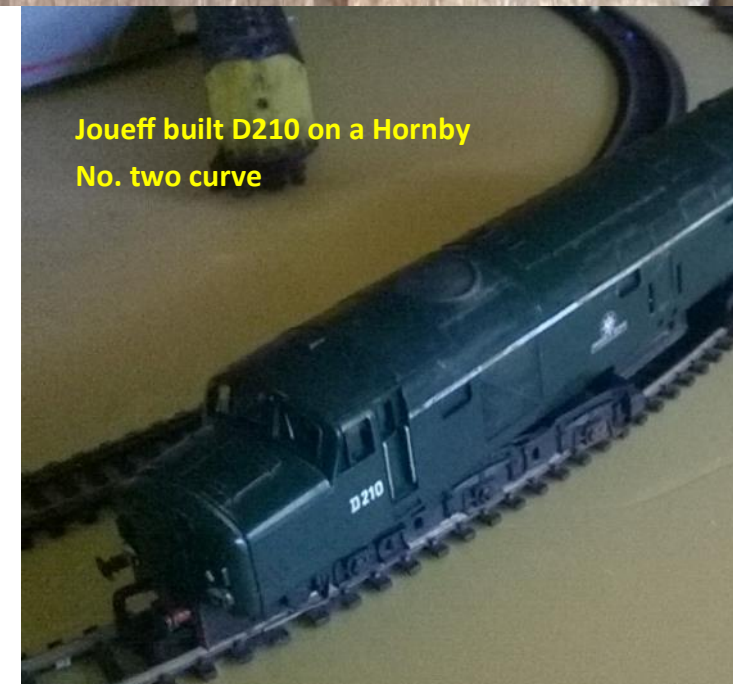
The approach taken by Lima, Hornby and now Bachmann was to let the middle axle float. This arrangement places the bogie pivot above the centre axle as per the prototype. The body end overhang of this design on curves is greater than the Joueff and Mainline models.

Joueff bogie design



Operationally there appears little difference between the two design approaches, both designs perform reliably on both set track curves and more generous radius curves..

Joueff built D210 on a Hornby No. two curve



Hornby built 40 152 on a Hornby no 2 curve





Building a “Donga”.

Arthur Hayes.

Since the mining boom, transportable / portable building have been falling off trucks all over Australia. These buildings come in various forms providing all types of accommodation and amenities.

When work started on a new layout, one of the sidings was to serve at grain handling terminal. We had a couple of Rix Products Grain Bins and elevator kits to form the grain storage part of the terminal. It was suggested we needed a workshop and an administration building. The workshop was built first, photos of the completed model can be found in MainLine March Autumn edition (Vol 33. No 1). The area for the administration building was not all that great. I had recalled the local domestic grain facilities at Wacol had a “Donga” for the shunt crew to operate out of. It had an office, meal room, store, toilet, shower and a veranda out front; something similar would be suitable.

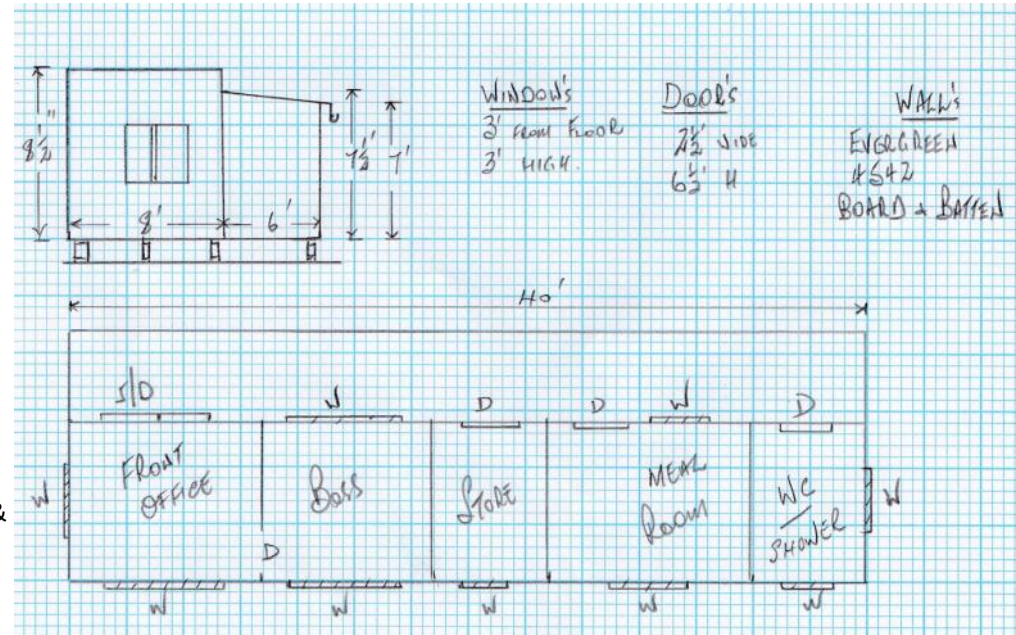
I was able to find various photos of Dongas on the net, but nothing suitable for what I needed. A 40 foot container was about the size required. Once again the graph paper, pencil and scale ruler came out for a run. The end result is attached and it became the blue print for an administration/amenities donga for troops.



The building was constructed from styrene. Evergreen 4542 Board & Sheet (.075”

spacing, .040 thick) was used for the sides and ends. The roof was made a press fit to allow lights to be fitted (*One should check it before taking photos, hey ??*). The print hanging on the office wall was a holiday snap reduced and cut to size. The window blinds are an inch strip cut off the bottom of a Holland blind in my workshop. DDC Concepts LEDs were used for lighting. Protowhite NANOs were used for the office and veranda to give a bright white. 2mm Protowhite twr (LED-PWT) were used in the meal room and toilet which give a yellowish light. Styrene rod and brass wire was used for the fire extinguishers. Power box and A/C units were added to the external walls. Office furniture and figures were added to give the structure life and meaning. A garden was added to the front, edging was rail leftover from the layout.

It is always nice to have that something different on the layout that you have done yourself. I trust these few words and photos will inspire you to try some different for you layout.



ANTI-FLICKER FEATURE for LED LIGHTING

Anislie Brittain

Recently I was approached by our SIG Coordinator (South Australia), to assist some members by designing and constructing a circuit that has such a feature. The aim was to ensure lighting, specifically LEDs, to continue working should the power to rolling stock in which they were fitted fail. This can unfortunately happen due to a variety of reasons, and is most noticeable on 2 axle rolling stock, as power pick-up from the track is minimal.

So after consideration of members expectations, and then researching what techniques would be suitable to satisfy the above requirement (including DCC accessory decoders), I eventually settled on a circuit that used a "Super Capacitor", as this would work on model railways using either DC or DCC to power the track, and probably be small enough to fit within most N Scale models.

Using such a Capacitor enables the load, in this case a LED or LEDs, to continue operating should power be disrupted.

(A "Super Cap" is an electrolytic capacitor, but differs from most other capacitors in that the capacity is significantly larger and is therefore stated in Farads rather than micro-Farads. Typically 1Farad or more.)

The 'Anti-Flicker' length of time is determined by the amount of current being consumed by the load. With high efficiency LEDs consuming approximately 2mA this figure could reach 7 or 8 minutes or more before light level variation is noticeable!

A simple circuit containing the minimum number components was chosen as shown in Fig.1. Please also refer to the accompanying component list.

NOTES ON CONSTRUCTION:

SAFETY FIRST! Please take all necessary precautions when carrying out the required practical steps; this includes cutting the board/copper track, cutting component leads and soldering.

The use of single sided prototype circuit board (sometimes called 'VERO' board) to mount

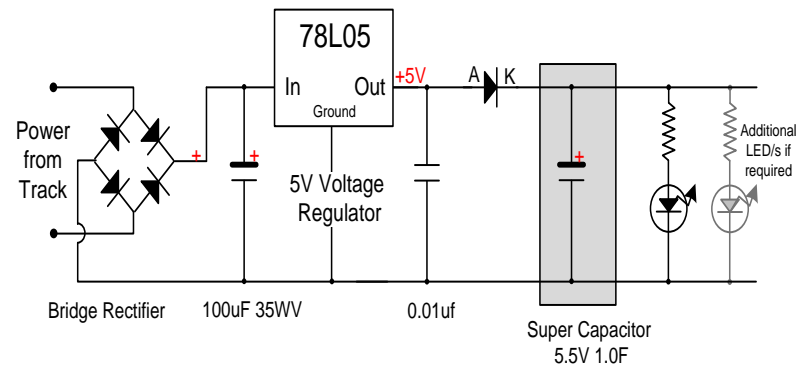
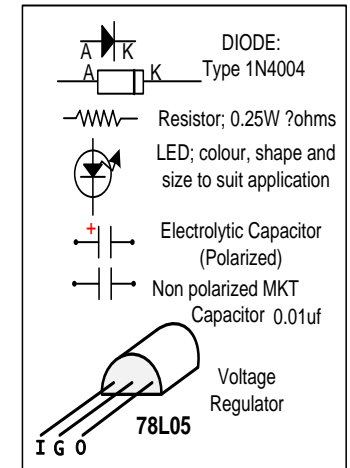


Fig 1: Note the use of a 5V Regulator to ensure supply to Super Capacitor is not exceeded.



the components was chosen. Although this requires working out a component layout, in the long run usually it ends up less time consuming, easier to install and takes less space than stringing up the individual components in "mid air". A printed circuit board would be the ideal, however because no two boards would necessarily be the same depending on the rolling stock chosen, this option and the use of surface mounted components, was not considered and was beyond the scope of most members.

After constructing the circuit I suggest that **CLOSE** inspection be made to check for solder bridges and other errors. If all is well, temporarily connect the unit to the track supply (or other AC/DC 12 volt supply) and check the voltage value across the Super Cap. This should be approx. 4.2/4.3 volts.

NOTE: It is ESSENTIAL to connect the Super Cap. correctly regarding polarity, to prevent DESTRUCTION! and possible eye injury.

LED current limiting resistor values will need to be determined by the user to suit the desired brightness of the LED types. Considering the voltage level available to the LEDs at the Super Cap terminals is approximately 4.2/4.3 volts, and at a current value of 2mA, I suggest that a resistor value of 2.2K ohms be tried first and then decreased if not found bright enough.

Caution: a value less than 220ohms could lead to LED destruction!

To enable LED testing be carried out on the bench, simply connect a jumper lead from the +ve side of the Super Cap to the trial resistor and then a jumper lead from resistor to the Anode (A) of the LED. The K of the LED is connected to the Negative side of the Capacitor.

Once illumination levels have been determined, the unit including LEDs can now be installed within the chosen rolling stock and connected to the electrical pick-ups. The Super-cap can be mounted in any suitable position with say, double sided tape. Insulate capacitor terminals if the vehicle is of metal construction.

Wheel/Axle contact arrangements would be up to the individual modeler. I understand various commercial units are available to suit various situations.

PARTS LIST:

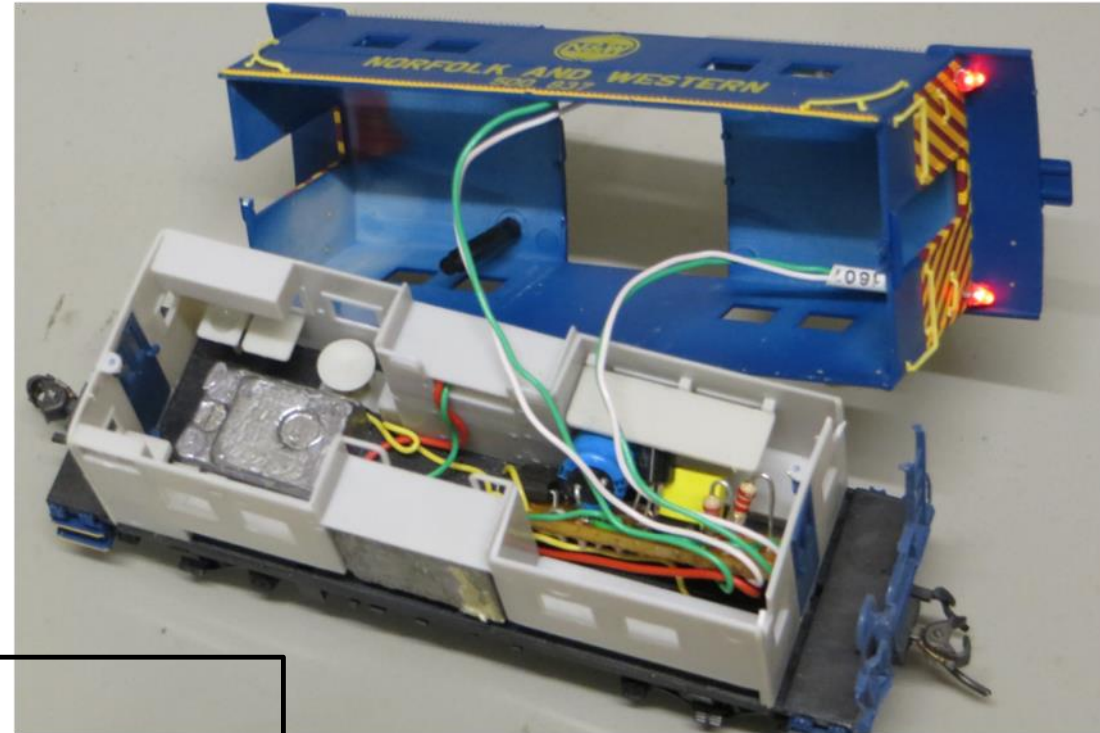
Component.....	ALTRONICS Reference Number
Bridge Rectifier; DI104 Plastic DIL printed circuit type.	Z0070
Voltage Regulator, 5V, 100Ma, 78L05;	Z0460
Super Capacitor, Electrolytic; 5.5 Volt, 1Farad.	R4996A
Capacitor, Electrolytic; 100uF, 35WV.	R5125
Capacitor, Polyester MKT Style; 0.01uF.	R3013B
Diode, 1N4004; 1A.	Z0109
LED, (example 3mm Bright Red).	Z0720
Resistor, Metal Film, 1%, ¼ Watt; (ohm value to suit LEDs.)	R7566 (2.2K ohm)

Strip Prototype Board; Single sided (Vero Bd).

H0711

MATERIAL:

Tinned copper wire for links; Hook-up wire flexible, insulated; Solder, 0.8mm Diam. Resin Cored; Twist drill, 3mm.; De-soldering braid, 3mm.; Cleaning fluid Isopropyl Alcohol; etc.



Suggested Component Layout using Prototype Board

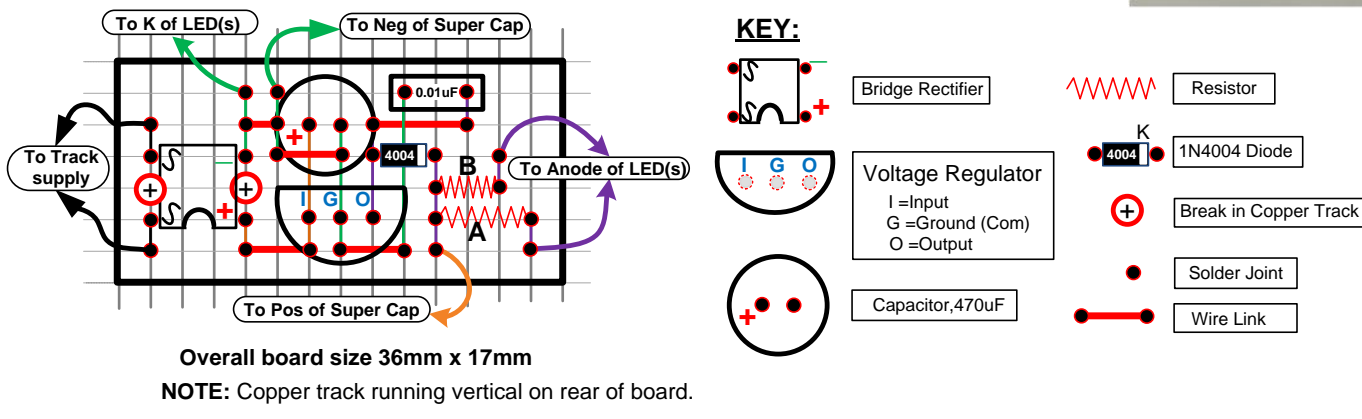


Photo 1: Anti-Flicker unit installed within a N&W Lifelike caboose. The two LEDs each consuming 2mA had been illuminated without track power for at least 8 minutes! The Super Cap is installed in the cut out opposite the centre weight.

Carry on Round the Bend

Or

Speeds around curves

Rod Tonkin

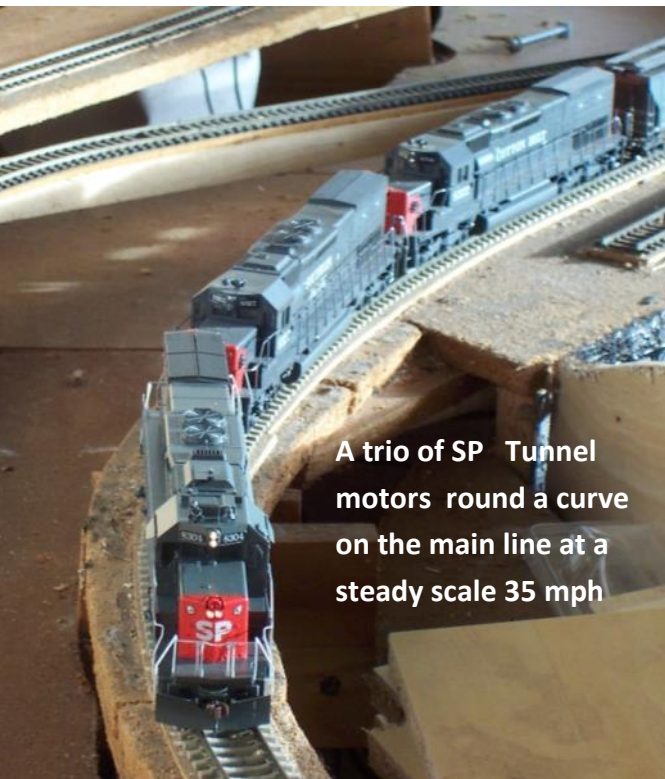
Physically our models can corner like V8 super cars, unfortunately the prototype can't. New South Wales Railways 1964 working time tables laid down allowable speeds around sharp curves. I've attached an abridged version of the chart of speeds around curves for 40 to 50 mph lines and the HO and N scales curve radii and scale speeds around these curves.

The sharpest curve listed has a radius of five chains (330 feet). The speed allowed around this curve was twelve miles an hour. In HO scale as the table shows this translates to travelling at 62 mm per second around an 1155 mm radius curve. Many of us myself included, would love to have the space on our layouts for five chain radius curves as our main line curve radius, let alone the 6,930 mm radius 45 mph curves.

We can give the impression of these curves by how we operating our layouts. On Martindale Creek most of the visible track is curved.

The main line curves I've designated as 35 mph curves. The Carlys Landing branch line curves I've designated as 12 mph curves.

My model locomotives like NSW railways steam locomotives, are not fitted with speedometers. I needed a cheap and cheerful method of estimating the speed of my trains. I've found it easier to measure the speed of the train than individual freight cars. Mainline freight trains on Martindale Creek are limited to eight fifty foot freight cars usually hauled by a pair of six axle diesel locomotives by crossing loop and staging track lengths, are around two metres



A trio of SP Tunnel motors round a curve on the main line at a steady scale 35 mph

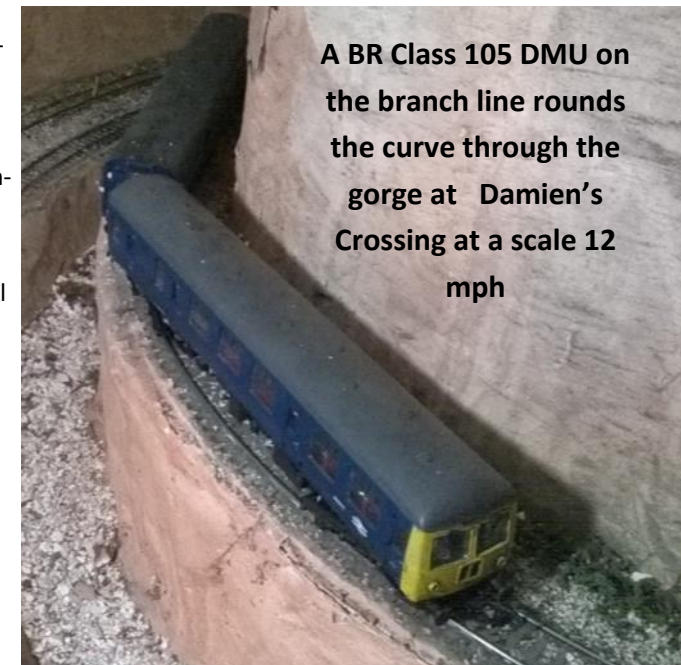
long. One of my mainline trains travelling at a scale 35 mph train should take around eleven seconds or longer to pass a single point to stay within the speed limit.

Trains on the branch line are limited to five freight cars. These five car freight trains hauled by a single diesel locomotive are around 1,100 mm long. My branch line freights need to take eighteen seconds or more to pass a single point to stay within the speed limit. My two coach

Speeds around curves						
New South Wales Railways			Models			
			HO scale		N Scale	
Curve radius		Speed	Curve radius	Speed	Curve radius	Speed
Chains	feet	mph	mm	mm/sec	mm	mm/sec
5	330	12	1,155	62	629	34
10	660	25	2,310	128	1,257	70
20	1,320	35	4,620	180	2,515	98
30	1,980	45	6,930	231	3,772	126

BR 105 rail car needs to take eight seconds to pass a single point to stay within the speed limit.

Running trains on your layout at prototypical speeds provides you with a number of advantages. Your layout appears larger as your trains take longer to arrive at their destinations. Traffic control on your layout becomes less like the pits at Mt Panorama and more like a real railway.



A BR Class 105 DMU on the branch line rounds the curve through the gorge at Damien's Crossing at a scale 12 mph

Bursting with the colour orange is a scene from host Ian Wellings' Great Northern theme layout .

Division One Highlights

You would go a long way to find a better use of a propriety shed than that of Ian Wellings'. His Great Northern layout has a lot to commend it. Ian has modified a typical garden shed into an almost luxurious train room and here the layout works very well.

Show & tell gave us an idea of the range of modelling interests in Division One. Laurie McLean staggered us again with his latest animated ideas all to a narrow gauge theme and era and all with sound. Highlighted was a western band playing from a gondola with strung lamps, musical instruments and very willing musicians all in On3. But Laurie also had a guardian and small child waving goodbye from the vestibule of a coach in HO. Each showing of Laurie's latest brings admiration and the note that on each, we see improvements in techniques from the previous.

Next Charles Clarke showed his latest acquisitions which included some IMEX vehicles and semi-trailer kits by Promotex and shaped by laser, a Promotex catalogue for perusal, Jarvis thick super glue and a new Vallejo plastic glue.

George Stainlay showed some new NSW sheep vans kits, the patterns for some parts of similar wagons which were made in Australia and then sent to the US for 3D printing and some larger stock wagons. George also had some cast sheep to fit into these wagons.

Graeme Prideaux showed a HO_n9 Minitrains Baldwin 2-6-2 pannier tank, a model of those used by the US Army and others to supply the trenches during WW I. Also shown was a coach for troops and a US Army Pershing gondola made by U.K. firm Meridian.

Ian Venables showed a partly done major kit-bash of a Roundhouse MDC 0-6-0 slope-backed tender switcher now detailed to be a model of a Louisville & Nashville B-4 switcher.

Bob Cuffe showed his almost finished scratch-built Santa Fe wig-wag signal done in brass. This is being built in HO and sticking to very fine standards. It will be a working model and Bob has shown considerable thoughtfulness in setting this crossing warning signal so that it looks real in size and in working action.

Michael Palmer showed some of his latest casting that make up a rolling stock workshop with all of the required tools, drawers for parts and workbenches. Michael has very cleverly used his casting to make other cast parts to use up the space in his mould most efficiently. The afternoon was spent yarning and operating Ian Wellings' layout after a tasty lunch prepared by Helen Wellings with help from Shirley Harland.

2016 New England Convention

Arthur Hayes MMR's photos of some of the models exhibited at the 2016 New England Model Railway Convention



Division Three Highlights

Grant McAdam steps down after 17 years as Superintendent of NMRA Division 3.

Division 3 of the NMRA, Australian Region held its final meeting for 2016. As usual it was held at the home of Grant McAdam, our Superintendent. An excellent venue on a warm sunny day which is reasonably central to most members. 23 members and guests attended this meeting and a number of items were presented for display.

The December meeting is always a jolly affair but this one was quite poignant. Grant McAdam will step down from the role of Div 3 Superintendent after 17 continuous years of voluntary service to the NMRA.

His contribution to our model railway hobby is extensive. Grant is a member of a number of groups but one most endearing was the Croydon Narrow Gauge Group. The group presented serious and amusing tableaux of the Victorian Railways Narrow Gauge Railways and sponsored the first Australian Narrow Gauge Convention (ANGC) held in 1996. Grant has been associated one way or the other with all ANGCs since.

Grant wrote for the Narrow Gauge Downunder Magazine bringing to readers the history of the narrow gauge railways of the United Kingdom. He spent many of his weekends attending model railway exhibitions. Regarded as the neatest structure builder in Australia, he had a penchant for the tiresome task of painting miniature animals and birds. He ventured into resin casting and has produced many examples suitable for the model rail-

way fraternity and his skills have been on show for the modeler and the general public to admire. In latter years he has been a prototype builder and instructions reviewer for The Outback Model Company. Grant has many railway modeling strings to his bow but it is time for him to take a quieter path.

Grant's role will be taken over by Allan Ogden. Allan is a keen On30 (O-16.5) modeler, with a Welsh bent, and has come to fame with his black and white renditions of modeling scenes inspired from early newsprint photographs.

Allan presented Grant with Hopkins/Bone award for 2016 and Laurie Green presented Grant with a Certificate of Appreciation for his long service to the NMRA.

Rod Hutchinson

Allan Ogden presenting Grant McAdam with the Hopkins bone award



Laurie Green presenting Grant with a certificate of appreciation for his service to the association.



Peter Mac Donald's O Scale shop front



Two views of Peter Kendal's O scale store

Division Four



Division Four Highlights

Division Four's October meeting was held at AMRA WA's Clubrooms. We commenced detailed planning for the locomotive performance completion we will be holding at the 2017 Perth Model Railway Exhibition. There will be a prize for the best performing model locomotive entered by an adult and prizes for the best performing model locomotives entered by junior modellers (under twelves). The contest will use our well tried test track and Rod's DC/DCC power supply. For more details of the contest refer to the advertisement on page 23.

Realistic Sound for Prototypical Locomotives



Peter's B23-7



Alan's Coaches

Show and tell produced Peter's Sound equipped B23-7, Alan's Rock Island streamlined coaches and Rod's "Association Official" Achievement Program award.

After feeding the inner man we adjourned to the layout room. Peter and Alan put their steeds through their paces on the Valentine Run. Peter put his B23-7 through its paces at the head of an iron ore train. Alan put his 4-4-0 at the head of a modest passenger train on the run up the spiral.



Peter's B23-7 in action



Alan's 4-4-0 in action

Rod in his quest to determine the capability of his pommie locos utilized AMRA WA's BR themed Haltwhistle layout for his trials. It has the space to run enormous trains. His model of A1 pacific 60163 Tornado, only capable of hauling six BR Mk1 coaches up the spiral grade on the Valentine Run walked up the Haltwhistle main line with a fourteen coach train of BR Mk1 corridor coaches.



Tornado cresting the grade with fourteen coaches in tow



BR 40 001 hauling its sixteen coach train over the Haltwhistle main line

Not to be out done by a steam locomotives a Lima built BR 40 class, 40 001, easily hauled a sixteen coach train of BR Mk1 corridor coaches over the Haltwhistle main line. We were unable to test the 40 class to its limits as we didn't have any more coaches.

Division Six

It was a lovely, sunny day on the 3rd December. We all (20 members plus partners), gathered at Gayle and Ray Brownbill's home where they put on their usual sumptuous barbecue to mark the culmination of a successful 2016.

There were a few administrative things to deal with, concerning next year's convention, but not too much business.

Ray described the progress on our new multimedia projector and Max announced the changes to the set up for the 2017 AMR Exhibition.

John Prattis had a show and tell of his recently completed NSW rolling stock and Ray proudly showed the development of his new layout room.

Photos of the layout room will follow in due course.

As Gayle is retiring as host of the Christmas barbie, the members presented her with a sheaf of flowers to show their appreciation.

Ray was active with his camera and the results are attached.

Division 6 members extend the Compliments of the Season to all.

Regards

Max Wright JP MMR 578
Division 6 Superintendent



Gayle Brownbill with her sheaf of flowers



Division Six members and partners entering into the spirit of the festive season



Division Seven Highlights

Attached are some of Chris Lord's photos of the late Colin Brettle's HO Scale layout.



Upcoming Events



Australasian Region

2017 September 16th - 17th

Torrens Valley Christian School

1227 Grand Junction Road

HOPE VALLEY 5090 - South Australia

Region Convention Contests

There will be a **Rick Shoup Award** for the best **Model Of Australasian Prototype**. This model can be a loco, rolling stock, structure. The choice is yours.

There will be a **John Baker Award** for the best **Model Of Non - Australian Prototype**. This model can be a loco, rolling stock, structure. The choice is yours.

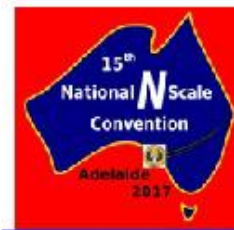
Additionally, attaining a point score of **87.5 pts. or 70%**, entitles the entrant to a Merit Award which counts towards Master Builder Awards in the NMRA Achievement Program.

Ex SAR 934 leading the "Overland" into



the old Adelaide station in 1983

If you require any information on the Modelling Contest Contact the [Contest Manager](#)



15th National N Scale Convention 2017 Adelaide, South Australia

<http://convention2017.nscale.org.au>
www.facebook.com/NationalNScaleConvention2017

7th to 10th September 2017.

The venue is the St Francis Winery Conference Centre, Reynella, which is about 25km south of Adelaide CBD and about 20km from the Adelaide airport. <http://stfranciswinery.com.au>



Workshops, Clinics, Demonstrations, Layouts in house, Layout Tours, Discussion Groups, Partner Program will all be on the Agenda, along with a number of Traders.

*Modelling Competition & Model Display
Convention Banquet*

Accommodation on site, so mention you are part of the Convention as the motel has been booked solely for our use during the Convention.



Presented by N Scale Conventions Australia Limited,
which is affiliated with the
Australasian Region of the NMRA

Upcoming Events

Division Four's 2017 Model Locomotive Performance Contest

The contest will take place at the 2017 AMRA WA Branch's Perth Model Train Exhibition. on the 3rd, 4th and 5th of June 2017.

Entry to the contest will be free to modellers attending the exhibition.

The contest is open at 16.5 mm gauge models up to 500 mm long. .

Models will be put through their paces on Division Four's locomotive test track The test track has a one amp capacity power supply either DC or DCC. The tractive effort of models entered will be measured by a Micro-Mart "Pull meter"

Models will be assessed on their tractive effort to weigh ratio and in the case of a tie DCC equipped models their tractive effort to current draw criteria will be used to separate the entries.

There will be a prize for the best performing model and prizes for the best models entered by junior modellers. (under twelve) The prizes will be presented at the June 2017 Division Four meeting.

To simplify administration at the exhibition the contest entry form is attached. Please feel free to print out and fill in an entry form for each model you are entering and bring it/them to the exhibition along with your entry/entries.

Division Four



Division Four model locomotive performance contest entry form

Entrant

Junior modeller Yes _____ No _____

Name _____

Contact details

Address _____

Email _____

Model entered

Prototype _____

Manufacturer _____

Scale/Gauge _____

Power supply DC _____ DCC _____

Traction tyres Yes _____ No _____

Results

Weight _____ grams

Tractive effort _____ grams

Tractive effort/ weight _____

Current draw _____ amperes

Tractive effort / current draw _____ Grams/Ampere



HO Scale Santa Fe 4-8-4 3784 on the test track

Prototype observations

C36-7M 5507 leads a C636 and another C36-7M on an ore train

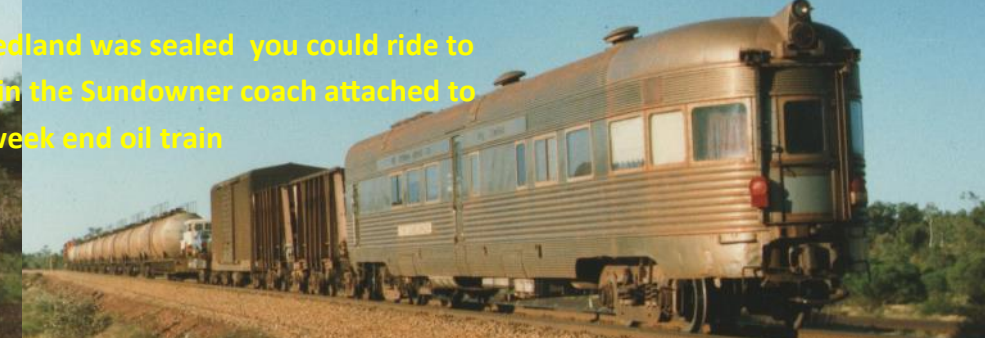


In 1990 BHP Iron Ore's trains were 240 cars long. Motive power was three 3,600 hp locos up front and two 3,600 hp locos two thirds of the way down the train

M636 5471 and an other M636 behind the Locotrol repeater car provide mid train power



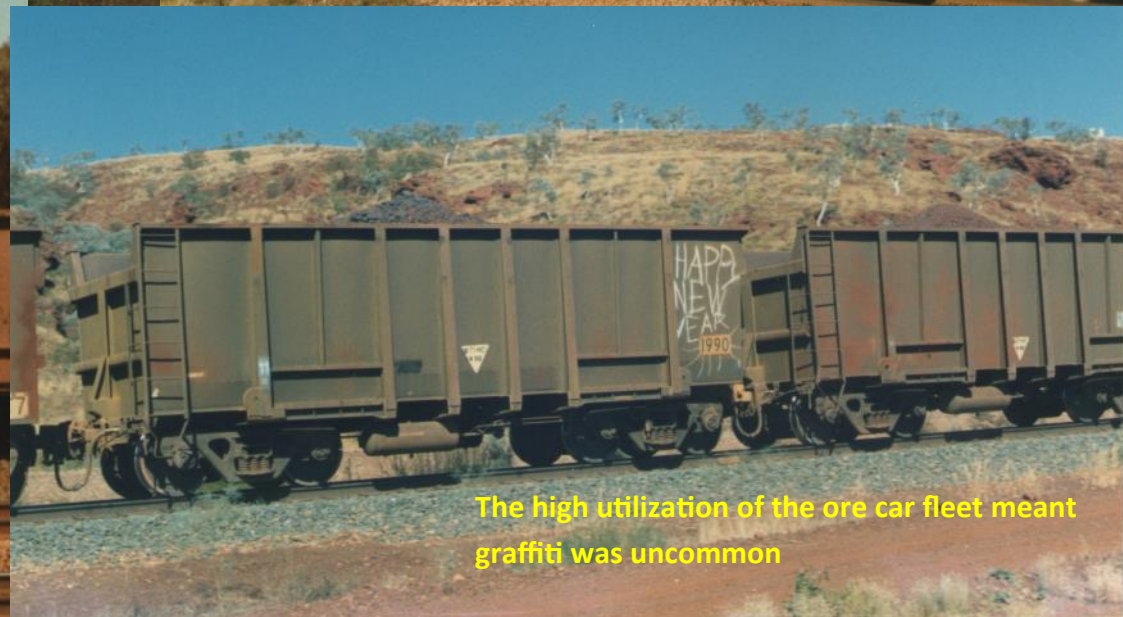
Until the road to Port Hedland was sealed you could ride to and from Port Hedland in the Sundowner coach attached to the week end oil train



The mine consumed a lot of fuel. An M636 is leading an empty fuel train to Port Hedland



Another variant of Locotrol repeater car, this time marshalled behind the mid train locomotives



The high utilization of the ore car fleet meant graffiti was uncommon