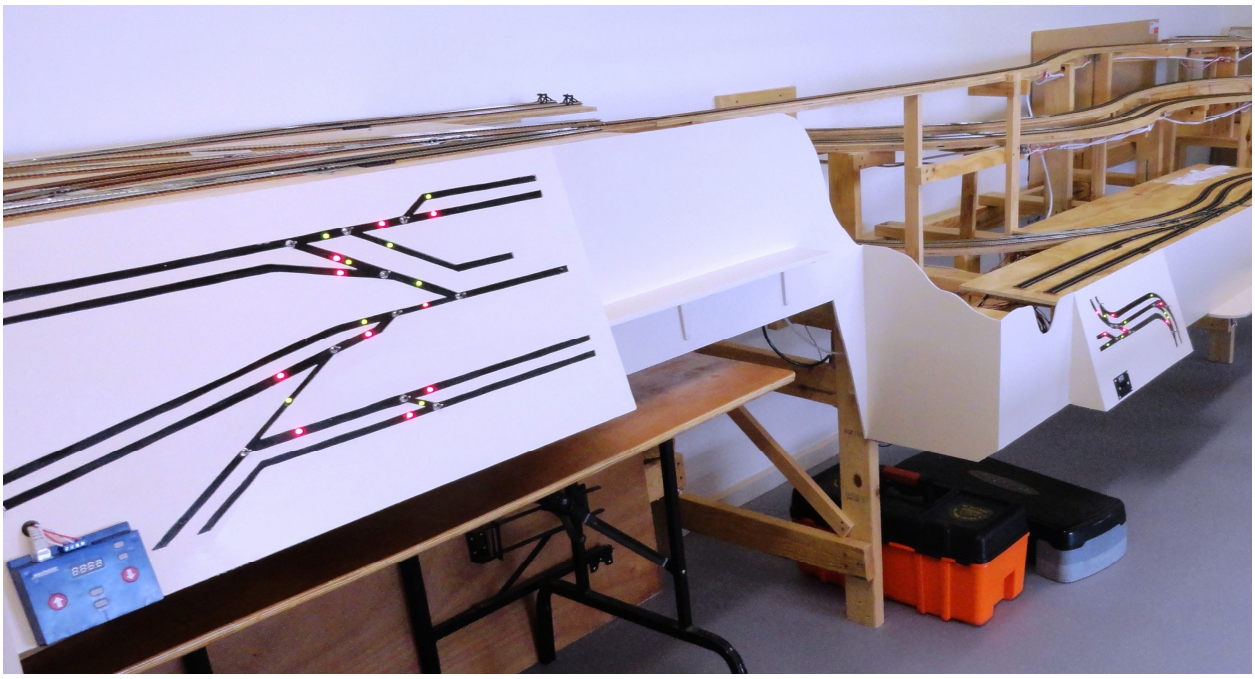
SOUTH AUSTRALIAN RAILWAY MODELLERS' ASSOCIATION INC.

PROMOTING THE HOBBY IN SOUTH AUSTRALIA
SINCE 1957

THE BUFFER STOP

JOURNAL OF SOUTH AUSTRALIAN RAILWAY MODELLER'S ASSOCIATION INC
SARMA
SEPTEMBER
2013



"Tim's layout is progressing with the addition of expansive control panels

INSIDE

SARMA Inc. meets on the **SECOND WEDNESDAY** of each month at 7.30 p.m. in the **'Log Cabin'** building on Lyons Road, Dernancourt, at the corner of Balmoral Road. Modelling nights are held on other Wednesday nights in the shed adjacent to the log cabin. See the Diary on Page 2 for details.

UBD Map 96 Ref D12 or Gregory's 148 J12: the red Scout symbol marks our clubroom.

Membership rates 2013 – 2014

Joining Fee:	$10.00	Country:	$45.00
Full (age ≥ 18):	$55.00	Student (full time; age ≥ 18):	$45.00
Family:	$55.00	Corporate:	$90.00
Junior (age ≤ 17):	$30.00		

The Membership Year runs from 1 April to 31 March.
Quarterly pro-rata rates apply to new members after 30 June each year.

All correspondence and membership enquires should be addressed to:
The Honorary Secretary, SARMA Inc., P.O. Box 4, Prospect, S.A., 5082.
SARMA Telephone InfoLine: (08) 8411 5500

Visit our web site at <http://www.sarma.asn.au> for more information and a membership form.
Webmaster: Peter Michalak <petemichalak1987@gmail.com>

"Buffer Stop" Contributions

Email address: peterp23@bigpond.com

We welcome contributions from members. Articles and photographs may be emailed to the address given above; they can also be submitted on paper. Members who forward articles written by, or photographs taken by, a third party need to obtain permission for their publication. Contributions may be subject to editing. Neither the Association nor the Editors accept any liability for the content or presentation of notices, articles and advertisements submitted for inclusion in the Buffer Stop other than those submitted by the Committee on behalf of the membership. Nor do the Association and the Editors necessarily subscribe to the views expressed or implied by contributors. The Editors reserve the right to refuse acceptance of any material considered unsuitable for publication. Material may have to be held over to a later edition.

Advertising rates (per issue): full page $40, half page $20, quarter page $10.

The deadline for each issue is MIDDAY on the LAST WEDNESDAY of the previous month but contributors of material for a particular issue are urged to supply it by mid-month.

Committee Members 2012 – 2013

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AMRE Representatives: Allan Norris; Phone: 8346 1742; email: addnor@optusnet.com.au

The Library may be accessed in the adjacent shed before the club meeting.

Contents

Diary

Fri 6 to Sat 14 Sep Royal Adelaide Show

Wed 11 Sep General Meeting plus display of model buildings and talk by Phillip Keenihan

Sat 14 & Sun 15 Sep NRM Miniature & Model Railway Show

Wed 18 Sep	Modellers night
Wed 25 Sep	Modellers night
Wed 2 Oct	Off night (Log Cabin not available)
Wed 9 Oct	**General Meeting plus ??**
Wed 16 Oct	Modellers night
Wed 23 Oct	Modellers night
Wed 30 Oct	Modellers night
Wed 13 Nov	**General Meeting plus ??**

Down the Track & Over the Hills; Exhibitions, etc

September 21-22
Shepparton (Vic)

October 5-7
Liverpool (NSW)

October 19-20
Bungendore (NSW)

November 16-17
Croydon (Vic)

January 4
Victor Harbor
Toy & Collectables Fair

Cover Photo

Tim Leach has obviously been hard at work on his layout and control panels despite setbacks due to white ants in other parts of his house and having a busy work schedule

Modellers' Nights

Please be aware that, on occasional Wednesday nights, the Log Cabin has been pre-booked by another group and is not available for modelling. Next such night — Oct 2nd

Editorial

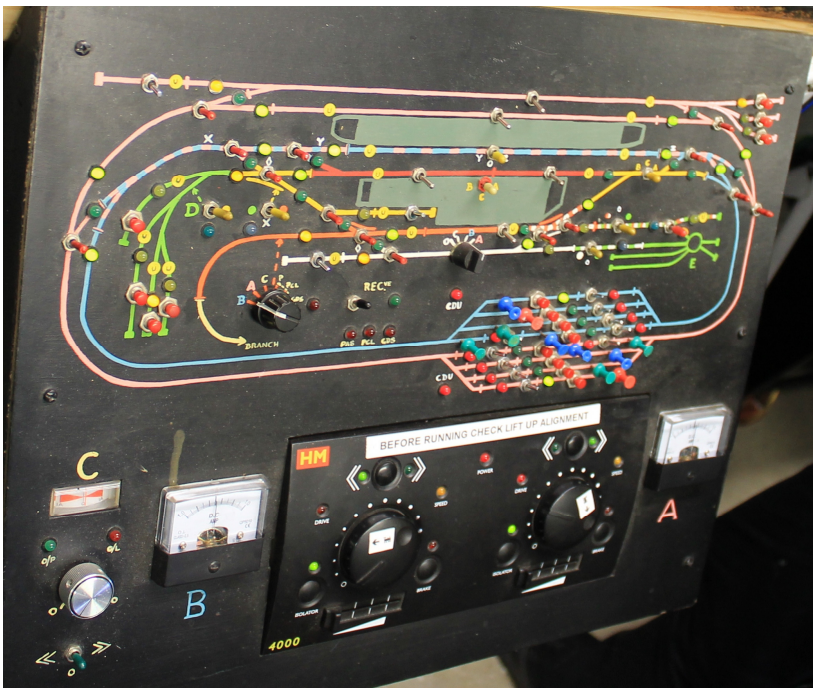
Welcome to the September Buffer Stop.

I definitely was a bit off last month. The errors which crept into the August Buffer Stop were not only numerous but fairly obvious; July instead of August and Marlborough instead of Maryborough just for starters - and I've got no-one to blame except me.

This months feature article is Tim's write-up on the construction of his control panels. In many ways, the most valuable parts of his article are his warnings about the mistakes he made and the ideas and advice he received.

Tim was also responsible for securing this month's speaker. Phillip Keenihan is a self-confessed Dremel nut who gets enjoyment from building model and dolls' houses. He will show us some of his work and talk about Dremel accessories and their use. He is well qualified in this as he demonstrates Dremel in stores like Bunnings and Mitre 10. We must try to get him into the model railway circle. At the moment he's offering no resistance and is keen to see our layout.

Peter P (Ed)



Compare this control panel to Tim's . I visited this not particularly complex layout recently; the panel was a bit daunting at first glance. Of course, a lot of section switches would not be necessary with DCC (but switches are cheaper than decoders).

I asked Tim to bring in examples of his ground and coloured foam so that I and August General Meeting attendees could see them in the flesh. There seemed to be a fair bit of interest.

From left: Raw foam; a little bit of Apple Green dye; a bit more dye; a lot of dye; Wine dye; fine (put through a flour sieve). *Ed.*

EDITED MINUTES OF THE GENERAL MEETING HELD AT DERNANCOURT ON 14th AUGUST 2013

Meeting opened at 7:36pm. Chairman Hugh Williams.
Members in attendance: 47
Apologies: 2
Visitors: David Armstrong
New members: Franck Vigouroux and family, David, Cheryl and Miriam. Nominated by David van der Linden and seconded by Iain Kennedy. Accepted.

Minutes of previous meeting: Moved D. van der Linden. Seconded Allan Norris, Carried
Outstanding Actions and Business arising: Not recorded in July minutes was that Paul Mackinnon won an LED kit in the raffle.

Correspondence in:
Invoice from Telstra
Invoice from Datacord (Photocopier)
Motive Power Magazine for July/Aug 2013
Model Railroader for Sept 2013
Letter from Chris Marlow with items for the library.
Letter from Bernard Martin regarding location of where photograph was taken
Voucher from End Of The Line Hobbies

Correspondence out:
Condolence card to Bill Coles' family
Thankyou letter to Bernard Martin for the framed photo he donated.

Finance: Financial statements presented – see attachments
Accept financial report: Moved G. Chaplin. Seconded Bob Houston, Carried

Reports:

Premises – Nothing major to report. All plans will be finalised by the next committee meeting, 30th August.

Exhibition Layouts–
HO: Yard modules tested and station modules now being worked on.
N: Nil

Club Layout – Dean reported that the layout is going ahead in leaps and bounds.

Social – Barrie announced that Christmas dinner will be at the Blue Gums Hotel, Fairview Park on the last Saturday in November.

BufferStop – Peter reported that there were some errors in the magazine this month and, with tongue in cheek, apportioned blame to the committee for not picking up on them at the meeting.

Library – A new book on the SAR 800 class diesel has been purchased for the library.

Maintenance – Nil

Bulk buys – Don Worby addressed the meeting for the first time in his new role as keeper of the shop. Announced the last call for club jackets. A suggestion was made from the floor to bring out all the items that are available to purchase at the next General Meeting.

Special Projects:

Swapmeet: Terry Meads provided his preliminary report on the next Swapmeet to be held on 3rd November. He made mention of the fact that there are another two swap meets on that weekend but believes it will not affect ours due to location. Flyers for shops will be ready at the September meeting.
Advertising in print media will begin on 5th September.

Royal Show: David handed out passes and schedules to all members manning the layout and provided some verbal instruction.

AMRE – Letter regarding changes to our terms of hire etc. at Greyhound Park was briefly talked about. Tim Leach reported that the costs will double over the next three years. Also, that the catering will be handled by Greyhound Park including exhibitors lounge and lunches.

General Business:
Hugh thanked John Venning for setting up the chairs for the General Meetings.

Hugh reminded the members about the Modelling the Railways of South Australia Convention, reassuring the members that confirmations will be sent out the following day. He also announced the dates for 2014 (13th Sept) and 2015 (29th Aug).

Peter Michalak was named returning officer for the upcoming committee elections.

Matt La Vista had a number of items including a new book on the Railways of the Eyre Peninsula and also celebrations of 100 years of the Tailem Bend Railway Station.

Jeremy Kemp will be having a go at driving a Red Hen as part of a gift from his parents to celebrate his birthday.

Peter Carter asked if club members put their own invoices into AMRE for expenses. It was explained that club members' expenses get re-

August Minutes continued

imbursed by the club and then the club puts in an invoice.

Trevor Carter pointed out that in the last issue of AMRM, the club was incorrectly called, SA Model Railway Club.

Bob Houston made mention of the passing of Ron Stewien. Ron was responsible, along with Malcolm Thompson, for the book 'A History of the South Australian Railways, Volume 1: The Early Years' and others.

Loco Raffle: Max Lane was asked to draw the winning ticket in the loco raffle which he did. The winning ticket belonged to Chris Symons and was numbered 86. Chris was happy to accept the prize, an OzRails model of an SAR 800 class diesel.

Show & tell:
Peter Carter: Powerline body, Hollywood foundry chassis narrow gauge 830 with BGB Long Toms and a BGB standard brake all on narrow gauge bogies.

Allan Norris: BGB bluebird kit modified to a crew car with the ends filled in, modified roof and underframe and windows tinted. Painted in GSW livery and ready to be hauled behind CLP's and the like on a grain train perhaps?

Dwayne Norris: Kit bashed cattle truck and scratch-built matching trailer for the new exhibition layout. Dwayne also signed the truck "Coles Livestock Transport" after Bill Coles. He also had the original model that the truck started out as, an Athearn concrete truck.

Dane Filander: Two odd steam locos he spied in his local Cash Converters store. One an English and the other looking like an "Old West" style.

Peter Pickering: City Class outside frame Great Western 4-4-0 steam loco by Bachmann and a Great Western 2-8-0T steam loco. There were also two small Terrier steam locos that he won in a Theodore Bruce auction of model railway equipment. They are allegedly in mint condition.

Peter also talked about Tim Leach's article on making your own coloured foam foliage, a word he found particularly pleasant. He presented some examples of the finished products. Applications include trees and grasses.

Dylan Ager: Presented a model of Q class loco he has been weathering with acrylic paints and powder paints. The end result looked very nice.

Break: Meeting suspended at 8:52pm

Raffle:
Blue D38, Barrie Mackinnon, DVD, American Steam
Black, A14, Terry Meads, Aztronics Pen Torch tool
Orange, D5, John Venning, Junction Models voucher
Green D97, Wayne Spencer, Aztronics voucher (donated back to club for the layout)
Black A28, Tim Leach, Pliers
Orange D27, David Jameson, Steam Era Bogies
Black D27, Gordon Chaplin, Aztronics LED kit
Orange D59, David Armstrong, Aztronics LED kit
Black A10, Peter Carter, Track rubber
Black A46, Hugh Williams, Photo paper
Black A54, Dane Filander, Torch
Blue D16, Wayne Spencer, Aztronics Pen Torch tool
Orange D76, Peter Pickering, Hobby knife
Blue D59, Jeremy Kemp, Model car
Green D98, Karl Eichinger, Photo paper

After meeting activities: DVD: Driving Creek – Railway & Potteries – The Unique World of Barry Brickell.

Meeting closed, Time not recorded
Secretary left before entertainment.

SCT Logistics 5MP9 passing over the Noarlunga underpass on 16 Aug; three locos, fuel pod and a CSR003 as dead unit plus a Belair to Adelaide train in front entering Goodwood. J VENNING

From the Buffer Stop Archives

50 Years Ago: September 1963

DAS

President: Bill Coles, Vice-Presidents: Don Willshire, Ray Stratton, Secretary: Peter Beck, Treasurer: John Datson, Librarian: Alan Aldous Committee Members: Bob Irvine, Len Venus, Geoff Barnes, Editor: Tiny Edwards, Sub-Editor: Trevor Carter.

ARHS TRIP: The most recent organised trip by the Railway Historical Society of SA was a run to Yunta on the Broken Hill line. We followed the trip by car and saw many familiar faces (including Dick Gadd) at the various stops. From Adelaide to Terowie the Special was hauled by a Pacific. At Terowie a narrow gauge 2-6-0 (gaily painted in bright green) headed the next stage to Peterborough. At Peterborough a newly overhauled Beyer-Garratt (painted in dark green) continued the trip to Yunta. Between Terowie and Peterborough the RAAF also joined the trip - a Canberra Jet continually 'shot up' the train. The trip was full of interest, especially for those following by car. The main road runs parallel to the railway line for almost all the way, thus allowing for action shots to be taken from the car while in motion. Films we hope to have for the September meeting. Bill Coles and Peter Beck

Some Club (Member) History -- Now long gone!!!

MY INTEREST IN MODEL RAILROADING

The disadvantage of the small model layout (which in this case was in fact a station with two sidings and one loop folded around and joined to form a double circle) was the fact that I could not invite the gang along to an operating night. The result of this was the building of a flexible layout entirely portable made up of 6' sections, 1' wide for straights and curves and 1'6" wide for station sections - all sections being interchangeable. The card system of operation provides for four stations but there would be no limit to the number of intervening straights and curves. So far two 6' sections with a station on each, using No. 4 universal points (18" radius) and Peco streamline track, has been constructed along with six straights and four curves.

My son and I have decided to call the layout -- "Nevada Central Railroad" Stan Filsell

(This layout eventually filled a garage - and many of the older SARMA members spent many happy hours operating on this layout. Both Stan and the Nevada Central Railroad are now long gone - and also is a part of SARMA and model railroad history).

40 Years Ago: September 1973

DW

President: Trevor Carter, Secretary: Bob Irvine, Treasurer: Barrie Mackinnon, Librarian: Tony Sitters, Maintenance: Stan Filsell, Committee Members: Rob Burford, Bob Burton, Editors: Ray Zeffert, Elliott Johnson.

Front cover: drawing of no.526.

Work on club layout progressing steadily (sounds familiar).

Eric Milne reports on the different types of bogies.

Table of details of locomotives. Michael church writes on the Industrial electric railways.

30 Years Ago: September 1983

PP

President: Noel Potter, Vice-Presidents: Trevor Carter, Tony Sitters, Secretary: Bill Lewis, Treasurer: Barrie Mackinnon, Layout: David Jameson, Maintenance: Don Snow, Librarian: Vic Kollosche, Editors: Rob Burford, Paul Mackinnon.

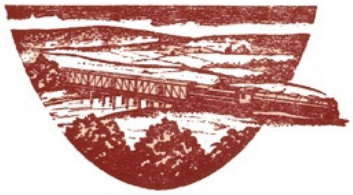
Cover: SAR steamer 500 hauling joint stock heavyweights on its last run. (Rob Burford photo)

Picture Parade: SLC18 & AFCX16 at Tarcoola in 1981. (Rob Burford photos)

SAR Q class loco - Drawings and photos.

Brill 75 Railcar - created from a GP40 (Nigel Bourn)

From the Buffer Stop Archives continued



20 Years Ago: September 1993

PP

President: Trevor Carter, Vice President (Administration): Peter Carter, Vice President (Special Projects): Brian Woods, Secretary: Bryan Leaney, Treasurer: Don Snow, Layout Director: John Willmer; Modular Layout Director: Peter Saunders, Maintenance Director: David Thomas, Social Director: Paul Mackinnon, Librarian: Richard Ash, Editors: Bill Button and Bernard Martin.

Cover: Four wheel insulated van.

Drawing: Goods brake No.4074 (19 ton, 20 passenger) by Hugh Williams.

Modular Layout Modules: History and proposed rules.

Photos of the modular layout at Strathalbyn (Aug 93).

Drawings of the shelter sheds as used on the Noarlunga line.

10 Years Ago: September 2003

DVL

President: Peter Carter, Vice-Presidents: Trevor Carter, Bill Lewis, Secretary: Ron Solly, Treasurer: Don Snow, Layout Director: John Willmer, Exhibition Layout Director: Bob Houston, Social Director: Barrie Mackinnon, Maintenance Director: Richard Fisheris, Librarian: Allan Norris, Editors: Paul MacKinnon, Harry Rush.

Cover photo: The Noojee Bridge, a timber trestle bridge situated east of Powelltown in the Dandenongs, Victoria.

Page three has photos of structures from the club layout rather than John's Layout report.

VALE for David Rayson on page 4.

Page 10, 11 and 12 have pictures of Seymour Railway Heritage Centre's "new" C501 which arrived on the 9th May.

An article titled "VR Trestle Bridge in Non2.5 appears on page 14.

SAR Narrow Gauge 4 wheel water tank plans on Page 16

SARMA's Christmas Dinner

Saturday, 30th November 2013.

Members and friends are invited to our annual **Christmas Dinner**
to be held this year at the **Blue Gums Hotel**, 345 Hancock Road, Fairview Park.
The dinner has been booked for 6.30 pm and a deposit has been paid on your behalf.
If you wish to attend please add your names to the list at a general meeting night,
leave a message on 8298 8571, or e-mail barrie@picknowl.com.au
no later than Saturday 23rd November 2013.
The a-la-carte menu is available for perusal at
http://www.bluegumshotel.com.au/site_files/344/2012%20MENU.pdf
If required, there is also accommodation available at http://www.bluegumshotel.com.au/accommodation.
If, after notifying me of your attendance, you find that you are unable to attend,
please notify me at least 24 hours before the dinner.

Visit <www.sarma.asn.au>
Send photos to Peter Michalak.

LIBRARY REPORT - *Recent Additions to the Library*

Australian Railway History	Sep 2013
Model Railroader	Sep 2013
A M R A Journal (W A)	Sept 13
Motive Power	July Aug 13

Modelling the Railways of S A Convention Notes 2013

S A R 800 Class Profile book

DVDs, Videos, Books & up to Four Magazines to be charged at $1 per month

Allan Norris

Constructing a Laminated Control Panel

Tim Leach

Over the past few years, I have learnt quite a bit from scratching about and constructing some ugly and inefficient control panels. Now that I have learnt a little, with special thanks from Dean Schluter and Ben (of Aztronics Adelaide), I have finally hit on the final type and design of a control panel that I believe looks great and, importantly for me, not technically difficult to construct and wire. I have 6 Control Panels to build.

I decided that I would like large and easy to operate control panels on my layout. I figured I might have at odd times, old, young or inexperienced operators (non SARMA members that is) therefore the need to keep the operation simple.

To date I have constructed three control panels and as usual I was pleased with the third one. The first one I constructed is serviceable so removing and redoing it has joined one of those "someday" projects for when the layout is nearly finished. I have incorporated my lessons learnt from all 3 control panels into this article and hopefully it can provide some tips and ideas should you wish to build or rebuild your control panels to either this or your own design.

The largest control panels will be for two 7 track wide fiddle yards. I think they will be 1.5m X 0.6m and, as you will see later, it could be smaller or larger. So far my largest control panel is 1m x 0.42m.

Each station and yard has its own adjacent control panel. They are mounted on the layout facia with a proportional scale of the track plan cut out of plywood which is laminated over a black painted base board.

Each control panel angles upward by 20 degrees so that, when operating, the view is just a quick glance down to see LED illuminated track directions which increases the chance of flicking the correct switch.

Construction of the wiring

I found it is easier to do the wiring first due to improved access to the front and underneath of the layout. Also I found valuable on the first panel that doing the wiring first enabled me to finalise the design and then test the switches and LEDs on a cardboard mock-up for practicality and operation but most of all to adjust and fix my bugga-ups.

My layout is primarily DCC with 7 blocks for one loco at a time DC operation in each block. The DC controls will be added at a later stage. The control panels each contain two DCC controller plugs, centre toggle two way switches for each turnout (up is points away; down is points toward you) and LEDs showing green or red directions that match the point direction. One of them has a DCC operated turntable (three more to go onto later control panels).

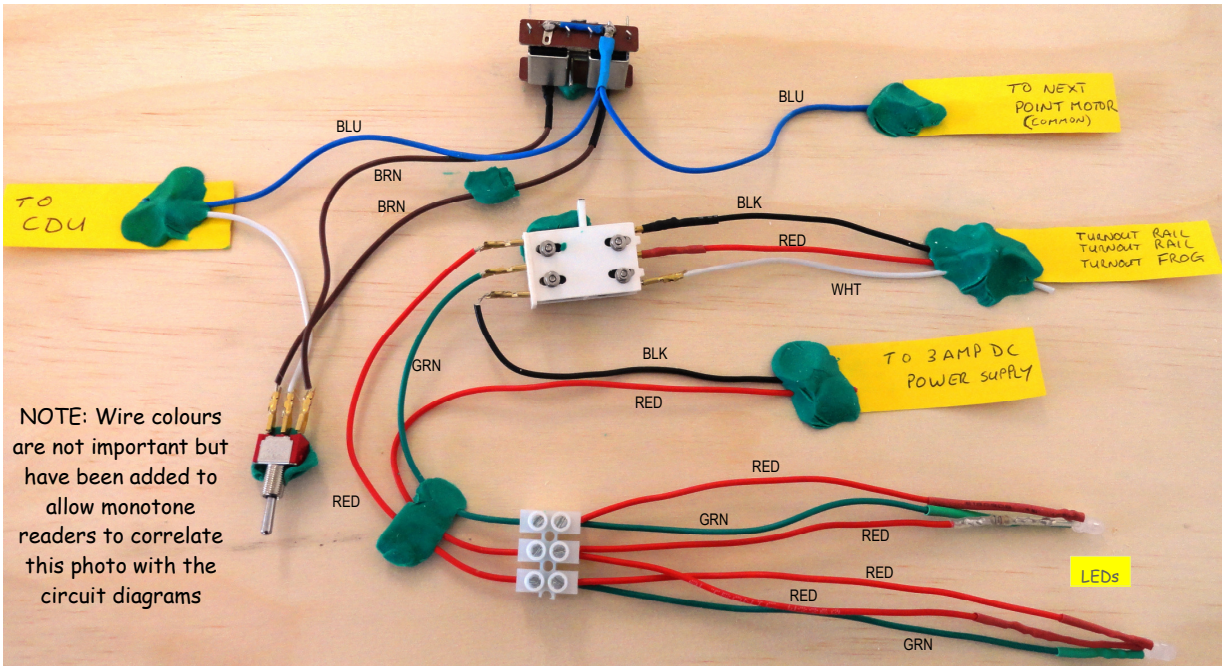
Capacitor Discharge Unit

I use Peco point motors which are relatively easy to wire. Whilst not essential with Peco point motors, you should consider a Capacitor Discharge Unit (CDU). Dean Schluter published a Buffer Stop article on how to construct a CDU which even I was able to follow.

My first CDU was my very first bit of electronical work and, following Dean's design, it was a fair effort by me. A fair effort means I did most of it except it didn't work first time. With Dean all you have to say is what dumb thing have I done and he will gladly oblige to tell you but in the process he fixes them for you whilst muttering something about blowing up a diode and kindly adding blinking LED's to it. *Thank you Dean.*

I have since built two more CDU's without supervision and despite mucking up the first one that Dean fixed up, they both work perfectly. CDU's are not hard to make if you follow Deans design. I have three double-bank CDU's (6 circuits) only because of the length of my layout; with a plan of 4 or more operators I wanted to avoid failure of two concurrent switches being switched at the same time. I recommend a CDU but the motors and elec-

Constructing a Laminated Control Panel continued



tronic equipment used in this design will work without a CDU.

Soldering or Spades

If you have a look at the photograph above, you will note that I have not soldered the joints at point motors or the centre toggle switch nor at the Southline switch connectors. I don't recommend soldering at these joins because of SODS law which contains the following factors.

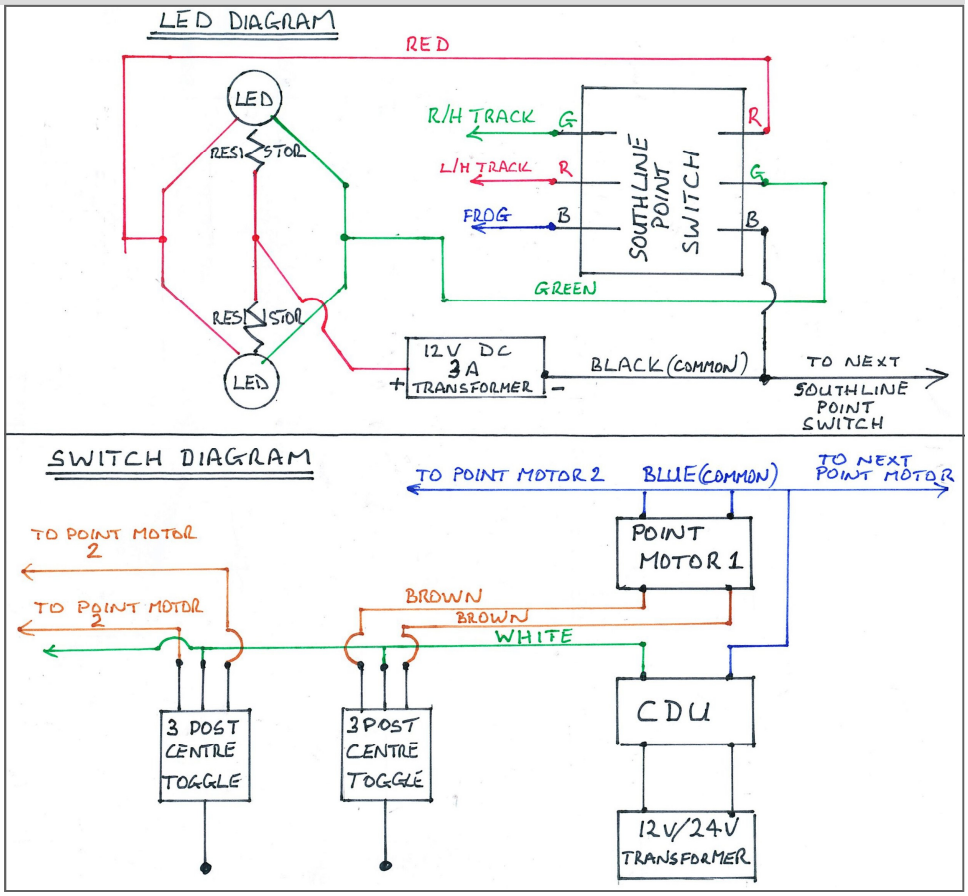
- SODS law: If there is a 50% chance it can go in back to front it will do so more than 50% of the time. You will often have the wires back to front because we are not electronic whizzes who can see the direction of the flowing electrons nor can we follow 6m of wiring twisting around their twins.
- If the turnouts turn left when you want them to turn right, just change the outside spades around on the toggle switch. You could do it on the motor but this is fiddlier.
- The LED is green when you want it to be red. Just change the spades around on the South line switch.
- The LEDs don't work at all because the polarity is wrong. You don't have to know about polarity, just change the spades over on the Southline switch.
- And the big saver is with a bit of shrink tubing; the risk of shorting from bent connections or ugly soldering lumps is completely avoided.
- The only time the spades have fallen out on me is when I have gone messing with something that was working.

I did solder the three legged posts on the LEDs to their respective wires and resistor by forming two loops and lightly twisting them together; then a small dab of solder to keep the joins firm. It's hard to see from the photo but, once soldered, I used shrink tubing to cover the wires right up to the plastic of the LED outer cover. This ensured that they won't short.

Wiring the LEDs to the control panel

The trick with LEDs is to know which

Constructing a Laminated Control Panel continued



way the flow of electrons go and know when diodes (includes LEDs) allow flow or block them. I still don't have it right in my head, but the LED Diagram, if followed, works thanks to Ben's help.

To have even illumination or even any illumination at all the LEDs cannot be wired in series. They must be wired in parallel. These instructions are for parallel wiring.

LED Assembly

Wiring the three legged LEDs requires a bit of explanation. I recommend you test each one as you go. Refer to the photograph above and LED Diagram. My process is:

1. Attach the resistor to the centre post of the LED by making a loop in the LED post, inserting one end of resistor into the loop and closing this so there are two linked loops.

2. Twist the two loops gently to make a good connection.

3. Dab a drop of solder on the connection for strength and stability.

4. Repeat at the other end of the resister to a short piece of stripped red wire.

5. Connect the red wire (after stripping the other end) to the centre of a terminal block of 3x2 terminals

6. Repeat the process with the other two outside posts (legs) of the LED but without a resistor. I made one outside wire red and the other green.

7. Repeat the above again with a second LED, but do not connect the second LED to the terminal block yet.

8. Using your transformer, place the +ve wire in the centre terminal on the block and the –ve wire on one of the outside posts. The LED will light up either Red or Green. If it does not then the +ve and -ve are the wrong way around; just swap them over.

9. If you then move the –ve to the other side of the terminal block the LED will change to the opposite colour.

10. Mark which terminal produces a red light with a red felt tip pen.

11. Repeat the test on the second LED and attach the wire that causes a Green LED to the terminal block you have just marked with the Red Felt tip pen. That is, green and red are joined in the terminal block.

12. Repeat for the other side of the terminal block

13. Attach the two centre red wires together in the centre terminal of the termi-

Constructing a Laminated Control Panel continued

nal block.

14. Two LEDs will now be attached to the one block. When the black +ve from the transformer is connected to the centre terminal and the –ve to the right terminal; one LED will be green the other will be red. When you move the –ve to the other side of the terminal block, the red LED will change to green and the green to red. This allows the LED to show which way the turnout is pointing when it is installed on the Laminated Control Panel.

Connect to the Southline Point Switch

The bottom terminal on the Southline switch always goes to the –ve of the transformer – my black wire. To save wire it is possible to wire the black (-ve) wire as a common wire to all the bottom terminals of the Southline switches. (See LED Diagram)

The red wire from the centre of the LED assembly always goes to the +ve on the transformer.

The Red outside wire on the Assembly goes to the right hand top terminal on the Southline Switch or the left hand middle terminal on the Southline Switch. Polarity is opposite on the two sides.

The green outside wire on the Assembly goes to right middle terminal, or the top left hand connector on the Southline Switch.

It is easy; please have a look at the LED Diagram. It is SODS law that you won't know the left or right of the Southline Switch under a layout especially if you have had to reinstall the adjustment bolts and nuts. If the LEDs are back to front in colours just swap the top and middle spades over on the Southline switch. If it doesn't work at all then the black wire is on the wrong terminal.

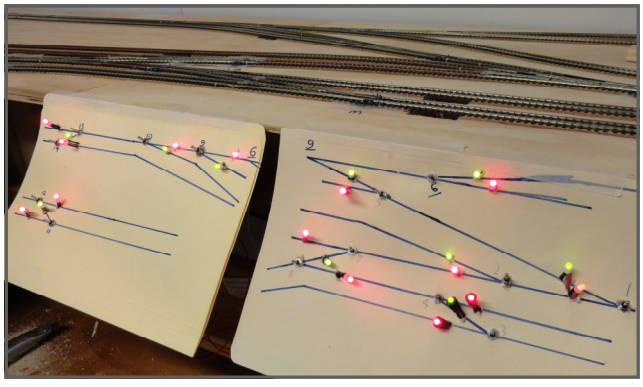
A note on Southline switches once installed. When the switch is installed on the point motor, and when the point is manually switched (slowly) you should hear a double click. If you hear only one click then only one half of the switch will work. Adjust the Southline Switch using the bolts and nuts until you can hear the double click.

Wiring the Point Motors to the Control Panel

Wiring the point motors is simple. You can save a lot of wire by running a common wire (my blue wire in the photographs and diagrams) from motor to motor and back to the CDU. The switch wires have to come back to the two outside posts on the centre toggle switch. See photograph on page 10 and Switch Diagram. You will note I gave up having different colours for left and right motor operation. It was just as easy to swap the spades over.

Each point motor has a return left and right switch wire which goes to the two outside posts of the centre toggle switch. This means "up" the turnout goes left and "down" it goes right. The centre post wire is connected back to the other terminal on the CDU. All the centre points are joined with a common wire as are the motors with the blue wire. I did use white wire for the centre post wires. Some colour distinction is required to aid fault finding.

What I did next came from an idea by Dave Holmes. He has or, by now, had his temporary control panels attached to a bit of cardboard. This is brilliant. I knocked up a rough track diagram on some foolscap manila folders (below) and taped it where the future control panel



Constructing a Laminated Control Panel continued

was to be placed. I attached the centre toggle switch to the cardboard (see above). This had a main function of being able to repeatedly operate the turnout left and right and to watch the LEDs change from green to red. It was quite fun to see the fruits of one's efforts and to feel smug but also, some real benefits are:

Being close to the future control panel I could approximate the final position of the centre toggle switch to ensure there was an efficient use of wire without joins or spaghetti.

When installing the switches (and LEDs) it was easy to identify what went in each hole on the laminated control panel if one extracted one switch or LED at a time when detaching it from the cardboard before attaching it to the control panel.

Before drilling or placing the components into the final laminated control panel you can test to make sure the turnouts are turning the right way and the LED's showing the correct colours. It was far easier to swap the spades around on a piece of manila folder. Hence, I stress, don't solder them.

The good thing about cardboard is you can keep moving the hardware around until it looks good as well as working well. Positioning of the LEDs was adjusted for aesthetics such as lining up LEDS vertically or equal distances from turnouts. The first positions on the cardboard always looked like a child's splatter picture.

Wiring Components:

Southline switches;

Your favourite turnout motor;
3 post centre spring toggle switches (these always return to the centre position and everything is off when in the centre);

Capacitor Discharge Unit;

A 6v, 9v or 12v 3 amp transformer;
3 post Green/Red LED;
540 ohm (or as selected) resistor for each LED;

Shrink tubing;

Terminal blocks cut into 3 double sections – 6 connections per block;

Lots of wire in at least 5 colours;

Wire holding clips – 2 way tape type;

Cushion for one's knees;

Pliers;

Soldering iron and solder.

Future signal wiring

I intend to use the LED wiring circuit to work in parallel with my signalling system so that not only do LEDs switch from green to red on the control panel, so too will the signals change to go and stop. This is another one-day task and I will report back to the Buffer stop when I have figured out this next stage of my layout.

Some Safety Facts

I did a bit of experimenting. I shouldn't have. Electricity bites and burns.

For the point motors; without a CDU; 12v DC is the maximum you should use. With a CDU I cheat. So that I can still have 12 volts flowing through each turnout motor, using a 24v transformer, I can have two turnouts change direction at the same time from the one switch with a bloody good belt. The millisecond belt produced by a CDU protects the turnout motors from 24V and hasn't hurt them to date. But don't whiz 24V through if you don't have a CDU.

LED's must have a resistor or they kaputz themselves. Don't place only one resistor in the circuit. After just a few LEDs on one resistor, the resistor became hot enough to boil water and melt the shrink tubing. Damn scary – I could have burnt the house down. So make sure each LED has its own resistor. I found 560ohm left the brightness of the LED not too bright and not too dim. You

Constructing a Laminated Control Panel continued

might want to vary the resistor to suit your LEDs and the ambient light.

I tried a 6v transformer and resistors were cool and safe. I tried a 12v transformer and the resistors were cool and safe too. I tried a 24v transformer and the resistors where on the way to boil water again. So stick to 6V or 12V

Construction of the Control Panel

I recommend 3mm plywood for both the base and the front face. Thicker grades interfered with the securing of switches and LED's to the panel. I do not recommend MDF. MDF was a failed path that I took. MDF was difficult to cut out the track plan without tearing the edges of the track plan cut out and also I had extensive tearing around the drill holes for the turnout switches in the pre-painted base – it was not quite a mess but it wasn't right. The disadvantage with plywood is that the wood grain finish shows through the paint.

The construction sequence is as follows:

1. Draw the outline of the track plan to be cut out on a sheet of plywood.

a. I used a 90/45 degree carpenters square and a steel ruler to produce a T square set up to keep the track plan square. For the angles of the turnouts I used a student's 30/60 degree plastic set square.

b. I drew left hand and upper borders 30mm from the edge. I ensured no cutting out in this border area was made. All track plan cut-outs started or finished on these borders for the following reasons:

i. It made the front face stronger and easier to handle but it didn't prevent me from breaking the first attempt so you need to be gentle; and

ii. This is where the control panel is to be screwed to the frame work in a later stage. It avoided potential LEDs having to be drilled through the frame work

iii. The toggle switches just wouldn't fit through the frame work;

iv. Having all sidings and yard entry points ending on the same vertical and horizontal line looks pretty good.

c. I started from the upper left hand corner of the track plan. Once the track plan was drawn to scale, the position of the right and bottom borders and edges could be marked out on the sheet of plywood. This avoids finding that the control panel is too small and also removes the complexity of measuring out to make sure everything is centred both vertically and horizontally.

d. Just one other important thing; a wide control panel needs a centre support. This too was marked with a 30mm wide vertical strip right in the middle of the control panel. It is important when marking out the track plan that it stretched or shrunk a little to make sure no turnout is placed in this centre lane. It is impossible to position the turnout switch through the 6mm panel plus the framework.

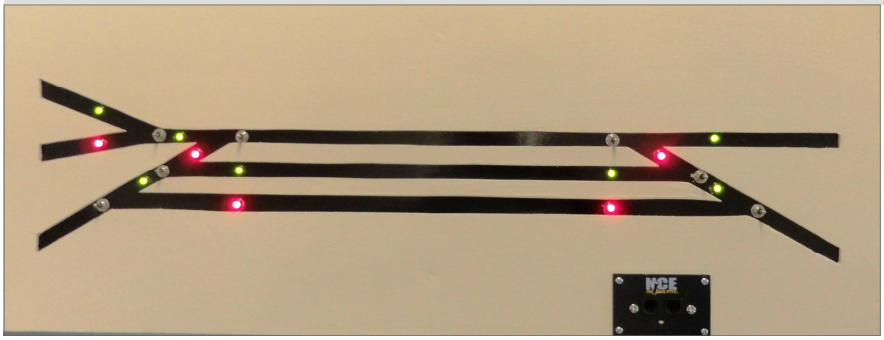
e. It is easier to adjust the fascia height flush with the angled control panels rather than trying to have the control panels meet the exact measurements of the fascia

f. Achieving a centrally positioned track plan on the fascia. If possible, it is easier to construct the control panels before the fascia.

g. On the first panel I cut out the tracks 10mm wide and 10mm apart. The switches and LED's did not fit within the tracks unless drilling was super central. Also the "fingers of plywood were very flimsy and I broke a couple (white glue fixed them). The second panel had tracks 15mm wide and 15mm apart and while nothing broke and everything fitted; the width of the turnouts look ugly. The third panel (top of next page) had 12.5mm wide tracks and 15mm apart and I found this to be the Goldilocks arrangement.

2. Cutting the plywood is best using an aluminium hack saw blade in the jig saw. I found that the wood blades,

Constructing a Laminated Control Panel continued



Final track-space proportions

whilst easier to manipulate, produced a rougher finish, an occasional splintering and, worst of all, increased vibration.

a. Vibration when cutting out the track plan caused many a breakages and back to the drawing (literally) board again. It is only 3mm so care is required. To help reduce vibration you can clamp scrap timber to the front face. This helps but it takes time resetting the clamps as you work around the front face.

b. The base layer is traced from the outside dimensions of front face and simply cut out to the same size.

c. It is likely that the cutting out of the track plan will include some "island" pieces that can be glued in place individually after the two main layers are glued together.

d. If the front face is used as a trace, then different colours can be painted on the base to colour code the track plan. I will be utilising this method when I build the fiddle yard control panels but, for a simple control panel, a gloss dark colour looks good with a light facia and vice versa.

3. After using a sealing paint I used two coats of Gloss Black for the base. Any colour can be used.

a. My layout's facia is light cream semi gloss and the contrast of cream and black, I think, looks quite good.

b. I applied both top coats of cream semi gloss to the front face before attaching it to the base (well at least I did in the second two control panels). It is very difficult to paint after it is glued without smudging the black base.

c. I used white glue spread thinly around on the underside of the front face. It is important not to use too much glue or it will run on the base's paint and become streaky. It is too difficult to wipe off in the tracks especially if you use the following non clamping method. So some care is required not to use too much or too little glue. I should have practiced on the scraps before constructing the first control panel.

d. Initially I clamped the base and front face together using scrap pieces of wood to protect the front face's paintwork but I found this unsatisfactory. The uneven nature of the clamping left some of the very thin "fingers" and "sharp angled" cut out corners" to not glue as the plywood warped as the glue set. On my third panel, I found that placing the newly laminated and glued control panel on the floor, then placing a thicker but larger piece of MDF/plywood on top (taking care not to smudge) and finally placing a multitude of heavy things on top covering as much of the surface area as you can. A couple of full tool boxes and some dumb bells from the gym did the trick.

4. I then built a suitable frame on the facia using the completed panel as the tape measure.

a. I used 40mmx19mm pine for the facia and control panel framework.

b. I angled the frame out 20 degrees.

c. I measured the angle using a student's protractor to form a 70 degree cut in the frame timber which I then screwed to the 90 vertical facia frame support. This is fiddly to cut but the effect of not having to rotate ones head down to near your navel to have a good view of a vertical panel is well worth it.

d. I used 3 vertical frame supports for the control panel each the same height as the control panel, which meant I had to cut the bottom of each vertical support

Constructing a Laminated Control Panel continued

to 20 degrees.

e. I then screwed in place at the bottom of the vertical supports a horizontal support back to the layouts facia, thus forming a right angled triangle.

5. Next the cardboard mock ups were pushed under the layout out of the way

6. The now dry Laminated Control Panel was screwed to the 3 vertical supports of the frame.

7. Before I started drilling holes for LEDs, switches and the other stuff to go on laminated panel, I stuck two pieces of scrap 3mm plywood together and drilled test holes to test the ideal size hole to insert the components into.

8. The advantage of using the temporary cardboard panel is prior to this step the switches and LEDs had been moved around the cardboard panel to test practicality and aesthetics. It was now a simple task to mark the drill holes in the black tracks then to start drilling making sure to start the drill in the centre of the track.

9. The almost final task is to remove the switches and LEDs one at a time from the cardboard and insert them into the control panel.

10. Then test; there will be a LED in the wrong hole or a toggle switch upside down. (Refer to SODS law in the Wiring section)

11. Finally, I filled the countersunk holes with putty and then painted over them to provide a seamless appearance on the Control Panel.

Drilling additional holes to take miscellaneous wires

I then played with it (the panel) for quite a while watching the points snap and the LEDs change colour in their black gloss tracks but there was one more task to do.

The DCC turntable controller had to be attached and there was no way did I want the controller upside down nor did I want to have the wires externally extending across the panel. The wires to the turntable controller are on the top in lieu of a sensible position at the bottom; therefore, a hole had to be drilled to take the wires through my recently constructed and magnificent piece of furniture. It is akin to drilling a hole in the middle of a kitchen cupboard!

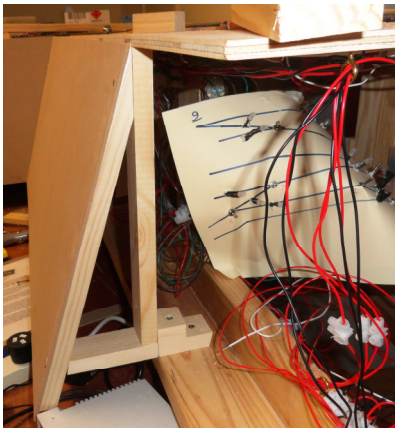
So off to Aztronics again to buy a black rubber grommet. These are tricky little suckers. The size of the rubber grommet depends on the size of the hole and the wires. This is the method I used on the scrap and then the Control Panel.

The grommets are designed to fit 1mm thick panels but will stretch to 3mm material; they will not stretch to 6mm. Therefore they need to be attached to the front face and not the base. The base needs to be drilled out to slightly larger than the outside diameter of the grommet and the front face drilled to about the inside diameter. Practice on scrap first - painful urging by the author from experience.

On the scrap I used two of those (well more than two as I established the correct sized drill) spade drills. Working from the back of the panel I drilled out the larger diameter to a depth of just the base material. I stopped just short and used a screwdriver to complete the separation of the glued base from the laminate. I then used the smaller spade drill to complete the hole.

Once I had successfully attached the grommet a number of times to the scrap, I successfully tackled the prototype and once completed I continued to play with the control panel for many more hours.■

W.I.P.



Exhibition Layout Rewiring/Wiring

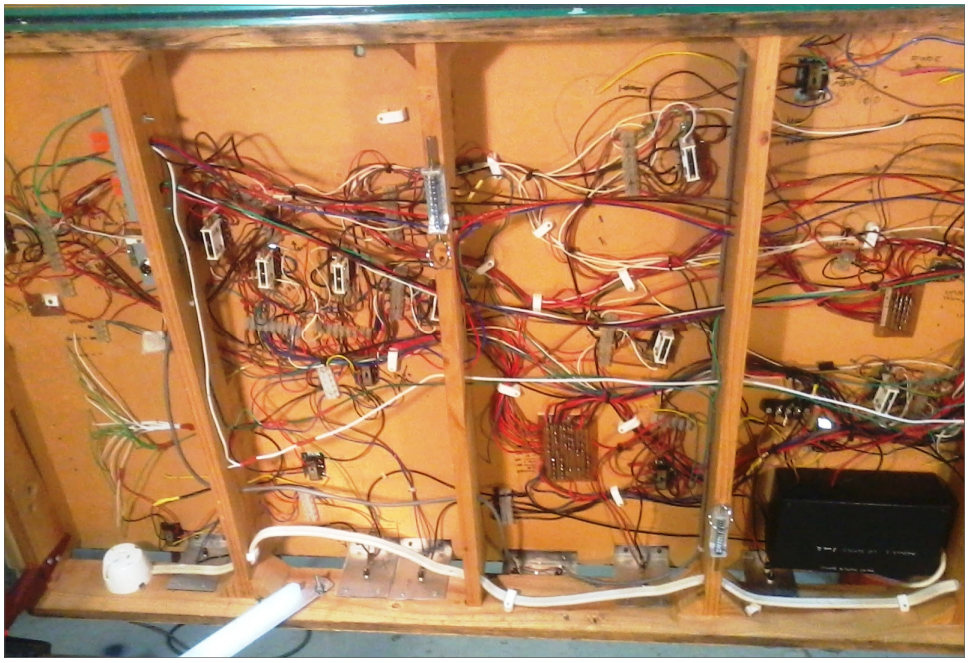
Dean Schluter

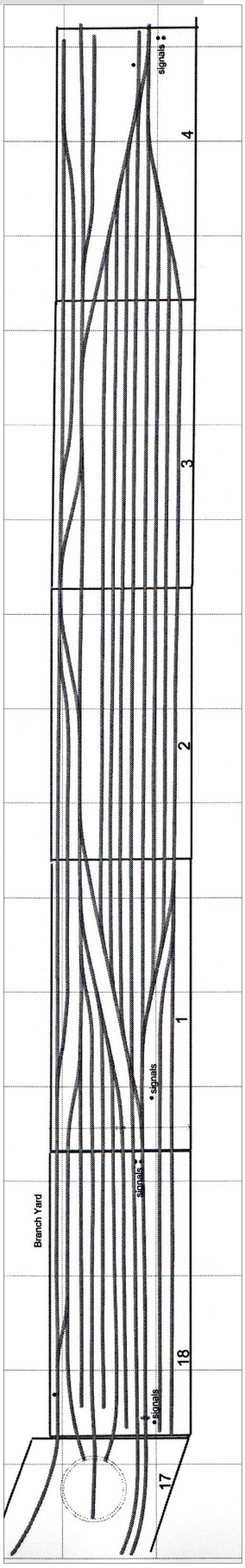
At last all of the modules have been wired and, in the case of the four yard modules from the Florey Springs layout, stripped of all of the redundant wiring that was required for the DC operation. I estimate that, from the four modules, 135 metres, six plug-socket sets and two relay boards with four relays each needed for block isolation switching etc have been removed. As can be seen in the photo of module 1 it looks a lot less complicated, **no!** well you should have seen it before the strip out. The yard has gained another module, number 18 that has six holding tracks, 2 of which access a turntable on module 17. These are mainly to service the branch station but can feed both mainline tracks as well. We have added two extra dead end holding tracks on 18 to service the outer main directly from loop 1.

For protection against **oops! sorry !** shutting down the whole system, each main line has a NEC overload protection board and another for the branch station and a fourth for the Branch yard. So let us hope they will solve some of those problems of inattention.

In operation, the layout should be able to handle up to 5 operators; 2 on each main and one on the branch, but the norm would be 3; this is possible because I have installed both mains with 3 signal sections, and to avoid signal overruns I have added repeater signals to the back of the modules in places where the signal track-side is difficult to see. This is very important because we don't want rear enders in the tunnels. It is also possible to access the branch from either main and vice the versa but only at the **boss's** discretion and the experience of the operators.

I would like to thank Bob Fleet and Gordon for their help in doing this work considering it is not like some of the more glamorous jobs of scenery etc. as Bob H, Len, Don and Andrew have been doing. I hope this work will assist them with their own layouts. Hopefully the layout will be finished by Christmas.■





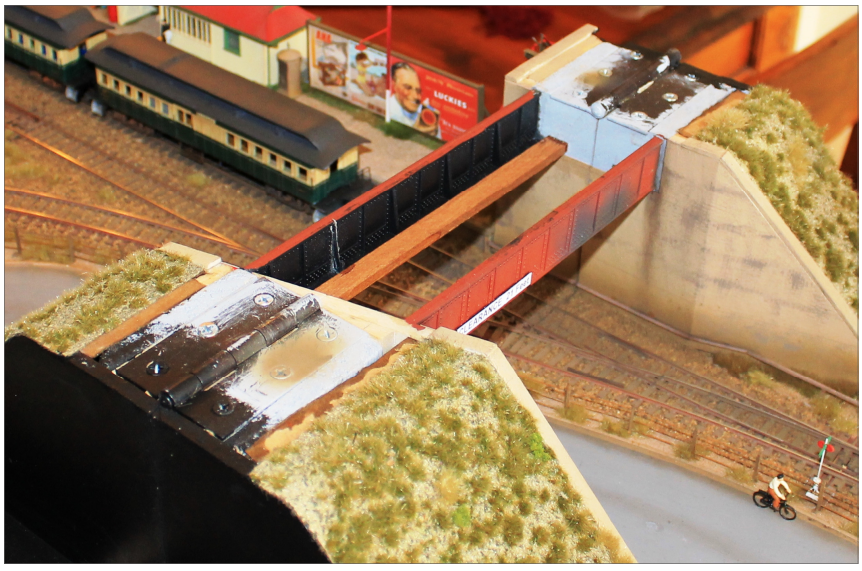
SARMA SALES

See Don Worby

SARMA Pin Badges	$7.00
"Rails and the River" Medallion	$15.00
Bogies:	
40 ton Round Lid, Solid Wheels	$11.80
ANR XC	$11.80
W Car Bogies	$11.80
SEM Axles 10.5 x 25 mm	$1.10
Decals for SAR M, MG	$2.50
SEM GY Kit	$15.00
SEM UB Van Kit	$21.00
SEM E Wagon Kit	$22.00
Kadee #5 Couplers	$4.60
Kadee #158 Whisker Couplers	$5.20
Delrin Bearings	$5.30
11'6" Underframe Kits	$8.80
PVA Glue, 2 litres	$20.00
No. 2 self tapping screws, packs of 100:	
4.5 mm	$7.00
6 mm	$8.00
9.5 mm	$10.00
Packs of 20:	
2-56 UNC 3/8" pan head screws	$4.00
2-56 UNC nuts	$5.00
SARMA Shirts (do you have one?)	$30.00

Commercial Street

Peter Pickering



Visitors to the Convention (most of SARMA?) would have seen Commercial Street, Gavin Thrum's latest creation. The fold-up British layout created so much interest at last year's Convention that Gavin was asked to produce a similar Australian layout for this year. Because Buffer Stop doesn't come out until a week after the Convention, I was allowed to take pictures and publish them.

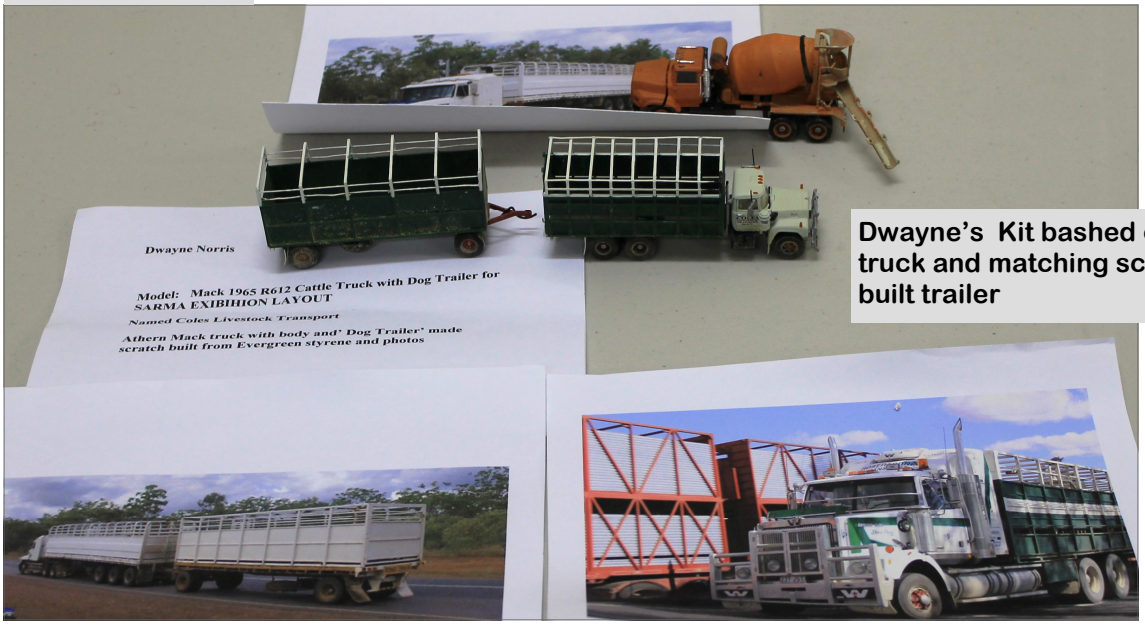
The top picture shows the station with a short train hauled by a P class; just the thing for a small layout. But what interested me more was the compact oil terminal with fencing made from aluminium flywire and copper wire. The bottom two pictures show Gavin's treatment of a hinge cover. Just look at the detail on the bridge, especially the Stobie poles with lights attached—sorry about the background; the layout was set up in Gavin's dining room. ■

AD 8 Pt.Germein Rd crossing

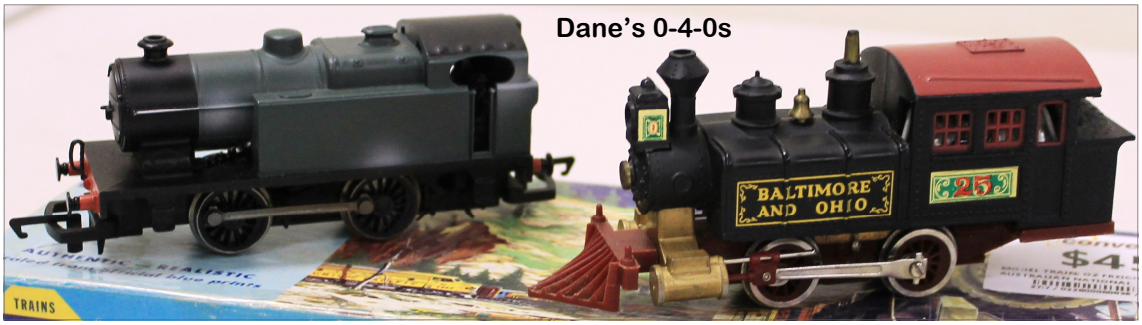
5114 Gladstone grain

Pirie grain Bungama


YN 2 Crystal Brook

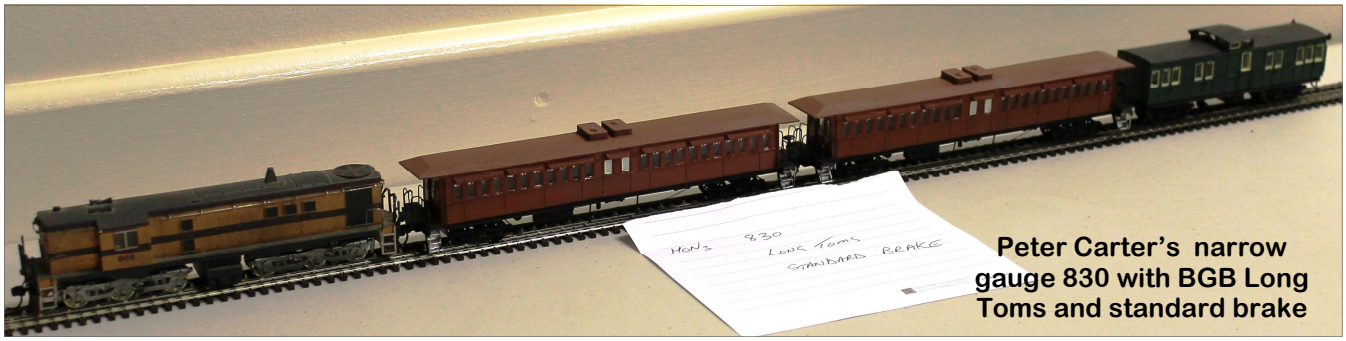


Dwayne's Kit bashed cattle truck and matching scratch-built trailer



Dane's 0-4-0s

Allan's crew car converted from a BGB Bluebird kit



Peter Carter's narrow gauge 830 with BGB Long Toms and standard brake

Dylan's Southern Railways Q class loco convincingly weathered with acrylic paints and powder paints

Peter P's Great Western 2-8-0T and City Class out-side frame 4-4-0 steam locos plus two London Brighton & South Coast (later Southern) Railway Terriers

In a Pichi Richi Shed

Gates, vines and triple headed Stony in the Barossa