MAIN LINE

National Model Railroad Association Incorporated
Australasian Region

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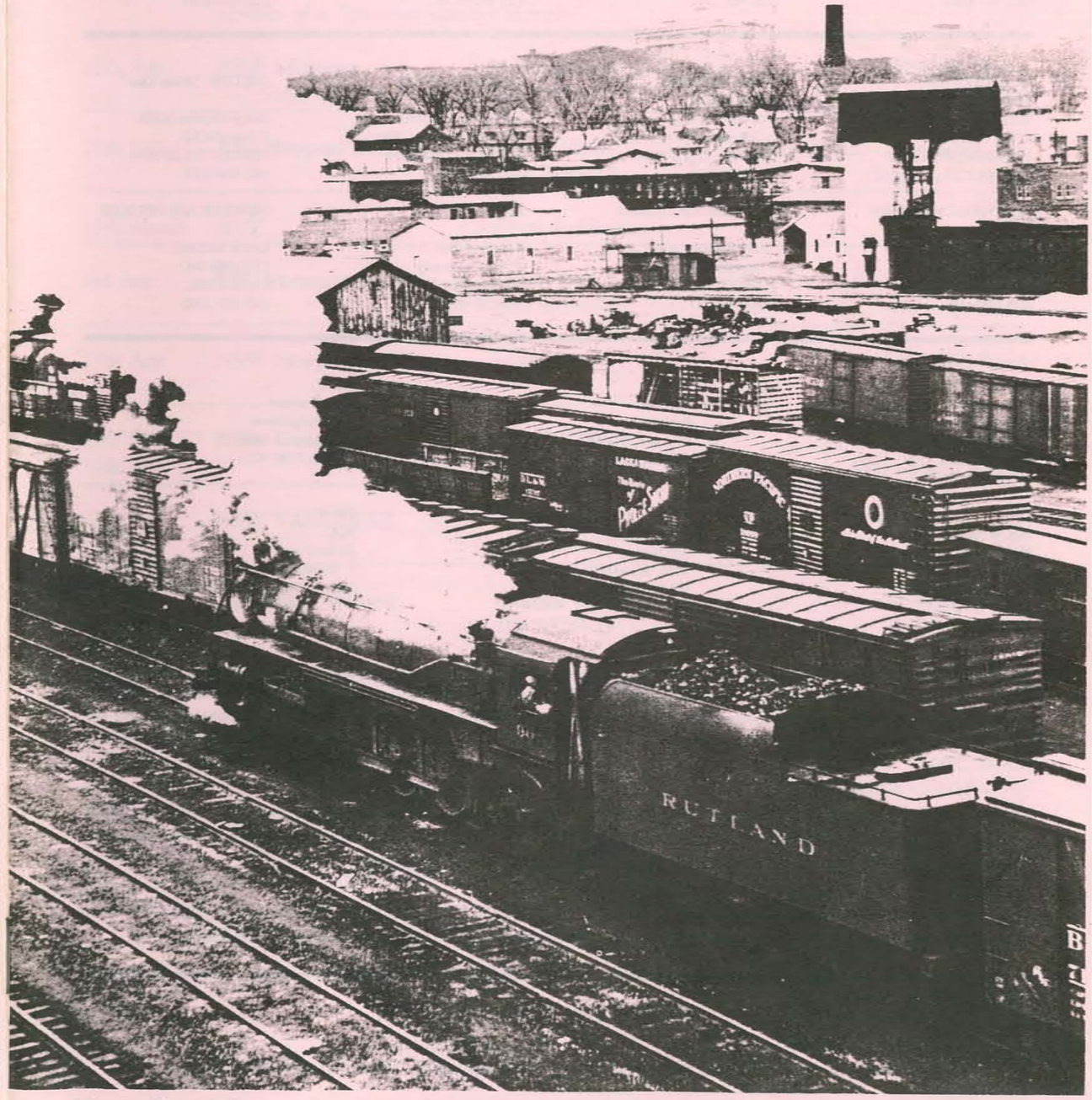

The Railroad Shop at Rensselaer Polytechnic Institute helps support the development of the Rensselaer Model Railroad's NEB&W Layout as a Historical and Educational Display

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Main Line is the official journal of the Australasian Region of the National Model Railroad Association Incorporated. It is published four times per year in approximately February, May, August, and November. Articles, letters, members classified advertisements and club notices are solicited from the membership and are considered to be donated free for the benefit of the hobby. They should be mailed to:- THE EDITOR, Main Line, 7 Booralie Road, TERREY HILLS. N.S.W. 2084.

Articles can be submitted on a computer disk (IBM) 3.5" or 5.25". Most WP packages can be read at this time. This magazine is prepared on a 386SX(25) computer (105M & 40M HD's) and prepared on a BJ10EX Bubble Jet printer and a Kyosera FS1500 laser printer (HP Laserjet III) using Wordperfect 5.1 and Drawperfect 1.1.

Paid advertising is welcomed. Current rates for four issues are $130 for a full page, $70 for a half page, $40 for a quarter page and $150 for the back cover. All enquiries regarding advertising should be directed to the Editor.

Front Cover

This month's cover is used with the kind permission of **Rensselear Model Railroad Club.**

REGIONAL MEETING SCHEDULE

21st Nov	**VIC Maryborough**	Peter Myers (054) 61 2323	19 Marjorca Road 11.30am BYO, BBQ.
5th Dec	**QLD Acacia Ridge** Pacific Belt Lines	Don Palmer (07) 273 8794	Cnr Bradman & Dulacca Sts Start at 2.00 pm
12th Dec **X'MAS MEETING**	**NSW Thirlmere** "Toad Hall" *Visit the train museum until 2.00pm then walk 50 metres to Ian's weekend retreat and partake of a "gourmet sausage sizzzzle".*	Train Museum & Ian Hopkins 18 Mason Street	Thirlmere
13th Feb	**NSW Mosman** "G" Scale Garden layout	Ian Henderson (02) 9692815	7 Mitchell Road Mosman
20th Feb	**VIC Hoppers Crossing**	Gavin Hince (03) 7496974	"The Glades" 16 Johnson Ave Hoppers Crossing
13th March	**ACT**	Canberra Exhibition	
3rd Apr	**VIC Vermont South**	Rob Dall (03) 8016034	7 Murchison Avenue Vermont South
17th Apr	**NSW Newport**	Mike Bartlett	30 Nullaburra Road Newport
15th May 16th May	**NSW Westmead**	**CONVENTION** SEE DETAILS IN CENTRE FOLD	Uni of Western Sydney Westmead Campus
12th Jun	**NSW VAUCLUSE**	George Paxon (02) 337 6093	31 Hopetoun Ave Vaucluse
3rd Jul	**VIC North Balwyn**	Graeme Nitz (03) 8576959	20 Alpha Street North Balwyn

WAYBILL

Presidents Report

By Sowerby Smith

We are now the National Model Railroad Association Incorporated. October the 2nd was the official day our registration came through. We all owe a vote of thanks to Phil Knife who did the donkey work of pulling it all together and rewriting our constitution to comply with the requirements and to John Saxon for being the instigator and for his work reviewing our submission to Corporate Affairs. Thank you both. (Members wanting a copy should contact Phil Knife)

I must also welcome our three new "ordinary" members who have joined the Board of Directors to represent your interests and to keep the rest of us in line. Welcome to Gerry Hopkins, Fred Gill and Laurie McLean. The vote was very close and my thanks to Jack MacMicking and Roger Johns for their willingness to nominate for the positions.

Member Aid Officer: Laurie McLean has volunteered for this most important new job. He is available to assist ALL members, new or old, who need help or advice on any matter associated with their membership, their prototype or modelling problems. If he can't help himself, he will be able to advise further avenues or people to contact. Remember however that initial questions regarding membership costs, renewal dates, etc. should continue to be directed to Jack MacMicking.

Librarian. Well known On3 modeller George Paxon has taken on this role. This now includes the Tape/Slide program and the videos as well as the loaning out of our range of books and magazines. If George can't help you he will certainly know who can. Please give him a call. In the next issue we will publish a full list of what is available in the T/S clinics, videos and books. All we ask is that you pay postage both ways, there is no other cost to our members.

Queensland Superintendent: Don Palmer of Pacific Belt Lines has taken over the role from Ian Venables who has done a stirling job in Queensland for many years. Most will know that Don lives and works at Acacia Ridge. He will welcome all members so make a visit or give him a call soon, he is there to help you.

WA/NT Superintendent: Bob Nelson has volunteered to press on as our representative for Western Australia and Northern Territory and his address and telephone number appear once again on page two. We know Bob is a long way from South Australia so we have appointed a superintendent in Adelaide, Richard Ash his details also appear on page 2.

As you can see by the 4 page supplement in this issue the Convention planning is coming along well and the venue has been chosen. Very central to our membership base in Sydney and very easy to get to by public transport and road for our interstate and O.S. delegates. The University of Western Sydney, Westmead Campus.

Its less than 3 minutes walk from Westmead station so you have no excuses for not coming! You don't even need transport to go on the layout tours and inspections. Just as in the States we will be providing buses. You will have to book your inspections and tours early as no cars are allowed. It is all part of us trying to bring you a more professional and interesting 2 days. Our Convention Dinner is going to be part of our Saturday and will be Roving Roast Style served at the venue before the evening highlights. We'll all need lots of stamina to cope with the program Garry Spencer-Salt is lining up for us, it's going to be a great weekend.

We now have Bankcard/Mastercard/Visa Card facilities to ease the pain of parting with money for the convention and you can also renew membership and purchase items from the Company Store with your plastic.

As this is the last magazine before Christmas may I take this opportunity to wish all our members Merry Christmas and a Happy and Prosperous New Year.

TRUSTEE REPORT - COLUMBUS

By John Saxon.

With apologies for missing the last **Main Line**, here is a brief report on the Columbus meetings.

1. A committee to review the appeal of the Bulletin to the membership has been established at last. Australasian Region members are not the only ones dissatisfied in this area! The Bulletin editorship and production will be put out to tender from next year.

2. 13 videos in the PAL format will be available to us in February on a program called "All About Trains". This has been presented in the US on the public broadcasting network and is apparently good.

3. A new HO clearance gauge for contemporary freight cars is under development.

4. The NMRA is receiving increased co-operation from G scale manufacturers in agreeing commonality on such important items as coupler height, clearances, minimum radius, etc. Better late than never!

5. The Building is paid for (Provided outstanding pledges to the 400 Program are honoured) but continuing funding will be required for maintenance, meeting new government regulations and improving the library facilities where there is still a large backlog of uncatalogued books, magazines, slides and films donated by the membership. To date there have been 35 new products brought to market with assistance from the library archives.

6. The new insurance program where $US15,000 cover will be provided for a premium of $US80 pa will also be available to overseas members, i.e. us!

7. US government regulations in the areas of employee health, product liability, workers compensation insurance and environmental matters are impacting the small manufacturers. Many of the products we have been used to seeing available may soon disappear for ever.

8. Overall membership of the NMRA is continuing to grow but our Region is languishing. Latest primary scale distribution is HO 79%, N 12%, O 6% and S 1.5%. 97% of the 67% of the membership that responded to the latest survey listed standard gauge as their primary gauge.

9. I have been appointed to the NMRA Program Audit Committee. This committee has authority to assess the performance of all departments of the NMRA, not just the financial area. So if you have any complaints or suggestions I will, as always, like to hear from you.

Meeting Reports

AUGUST

August 22nd and it's of to Newcastle at the crack of dawn. Our display stand in the back of the station wagon and foot to the floor. This year a new venue. Right along side the old hall is the Newcastle Basketball Stadium in Broadmeadow. Very Big with two huge halls.

There were lots of layouts, over 30 in fact. I know because we were providing the judges for the model contest and layouts.

Laurie McLean had his Durango module on our stand and it generated a great deal of interest and lots of enquiries regarding membership. Laurie manned it for the weekend and that will go towards his MMR in the Association Volunteer section. So there can be big benefits by getting in there and helping out. John Saxon's flashing crossing badges went down well and all too soon he sold out. Laurie sold his for a $3.00 profit by all accounts!

...John Saxon's "Flashing Crossing" badges went down well and soon sold out...

Back to the show, Gerry Hopkins had his Kennebeck County there and just happened to pick up Best Layout in Show for his trouble. Laurie Green and Phill Badger were their and presented clinics to the assembled throngs during the weekend. We will be seeing Laurie Greens new layout at the convention next year and that wil be a real highlight.

As usual the standard of the layouts at Newcastle was the best in the state and if you missed it this year please mark your diaries for next August as it really is not to be missed. The members who travelled up from Victoria were very pleased with what they saw.

After the close of the show, myself, Laurie McLean and Garry Norwood stayed to help present the prizes and at about 9pm I headed off back to Sydney. A very long but enjoyable day.

SEPTEMBER

About sixty members descended on my place on the 12th September. Just a few changes to the layout

since the last visit of the club. I have extended across the entrance door with a lift up section along the wall of my workshop and through the end wall of the room into the storeroom with a double track reversing loop. The loop is protected from the dirt and mess of the storeroom with a long cardboard snow shed.

The rest of the layout is basically unchanged with just a few new structures and the odd building relocated. It is still 1950 somewhere in Oregon and the SP still reins supreme. Three conventional DC cabs and Zero one running as a cab just to confuse new operators.

Highlights of the day were the formal votes needed for us to incorporate and a couple of mini clinics. One by Gary Spencer-Salt demonstrating "Wild Weeds" on part of the newly sceniced area of my layout. Gerry Hopkins kept on harassing Gary by running trains through the scene during his demos. Gary Norwood held court in the family room demonstrating how he achieves his contest standard shingle roofs of almost scale thickness. Both clinics ran at least twice so all the members got to see both.

The spare bedroom was busy with Bring and Buy stands. Upstairs, videos ran most of the day. Jenny had been cooking since dawn and mid afternoon we all adjourned to the dinning room for refreshments.

My thanks to Jenny for feeding the hoards and to the clinic presenters for fleshing out the afternoon.

OCTOBER

October 17th and it was off to Epping for Michael Flacks layout visit. This was the first time I had been to Michael's layout and I was not disappointed. Set in his garage under the house in the northern Sydney Suburb of Epping. It is based on the San Juan Central, a layout Malcolm Furlow built and turned into a book. Quite amazing to see the amount of railroad packed into such a small area. Based on a folded dogbone plan with easy walkround and plenty of space for us to stand and look.

There is elsewhere in this edition a short article by Michael that describes in more detail the features of the layout. Suffice to say it is very complete and is beautifully modelled. Michael is about to go into hospital for a double bypass heart operation, so to have finished the layout to such a high standard in such a short time ($1^1/_2$ yrs) is a great credit to him. On display were several O Gauge British prototype models of very high standard.

The first of our Pre Convention raffles was a great success and was a sellout within 30 minutes of being opened. Gerry Hopkins was the fortunate recipient of scenery materials. Our thanks to Garry Spencer-Salt for his help with the prize.

After our short meeting most of the group enjoyed an afternoon tea that had been prepared by Carol Flack. Unfortunately I had a family commitment and had to dash of just before tea.

Our thanks to Michael and Carol for the invitation to their home and I am sure you will all join me in wishing Michael a speed recovery from his surgery.

NOVEMBER

Under threatening skies the train pulled away from the platform just as we arrived. You guessed it I missed the 10.30am departure by at most 30 seconds to a be greeted with a few choice words for dallying in the newsagent's from Jenny. Next time I'll leave 1/2 an hour earlier.

There was nothing we could do. So, after few minutes thought, it was of to Mount Victoria for Devonshire tea, hot scones with home made jam and fresh cream. Meanwhile back on the train a surprise was in store at the bottom of the Zig Zag. 3801 with an excursion from Sydney pulled in and pile of enthusiasts detrained(?) and joined the Zig Zag for the trip to the top station.

We returned in good time from our tea break to see the magnificent 4-8-0 arrive with lots of sound and fury and four very full passenger cars in tow. Then off to Gerry Hopkins' bush block for a picnic lunch and BBQ. Just as we arrived so did the rain and despite that, about 30-40 members, family and friends enjoyed a very pleasant afternoon in the bush. As lunch ended the rain stopped and out came the sun. Five minutes of meeting were followed by a quick pre-convention raffle for a magnificent bunch of flowers from the Hopkins' wild bush garden, The bunch was won by Fred Gill. This raised a few extra dollars to fund our May 93 weekend bash.

3.30pm and the whistle of 3801 was heard from across the valley and 30 people raced over the road to stand on the bank as she thundered by -- 45mph and accelerating up hill with four cars behind her. What a super sound - sight - smell. After 3801 passed the members headed off home in bright sunshine. I would like to thank Gerry and Lauris Hopkins for their hospitality and inviting us to share their weekend retreat.

Sowerby Smith

Welcome aboard

Phil Badger
35 Solomon St
Mt Waverly VIC 3149

Ron Bertrum
10 Abundance Rd
Medowie NSW 2301

Duane Foster
P.O. Box 360
Rozelle NSW 2039

Vic Love
69 Oaklands Rd
Hazelbrook NSW 2779

Ian Kirby
27 Immarna Ave
West Wollongong NSW 2500

Pete Coleman
13 Humble Court
Kambah ACT 2902

David O'Hearn
44 Callabonna St
Kaleen ACT 2617

John Collins
9 Upper Cliff Rd
Northwood NSW 2061

Please welcome these new members to our association.

You will soon be able to pay your membership with your credit card.

Bob Kollwyn
7 Second Ave
Toongabbie NSW 2146

Allan Garbutt
20 Orchard Ave
Winston Hills NSW 2153

Division 3 Report

by Paul Richie

On Saturday, August 8th, Laurie Green's home was the destination of the Victorian members. This was our first visit to see Laurie's new layout under construction - HOn3 of course; this time a model of Vance Junction on the R.G.S. The frame is square tube to stand the strain of an exhibition layout. The planning of design is meticulous, the finished layout will be most impressive.

Laurie's method of impressing grain in scale lumber is using a small length of threaded rod in a handle, run the thread down with the grain, almost instantly grained lumber without any burrs.

One of the members brought along one of the G&D box car kits. They certainly are "state of the art" and the decals are excellent.

Many thanks to Laurie for his hospitality and the afternoon tea.

By the time you read this report Laurie will have received his first Achievement Award, Master Builder Cars. The first of many! Congratulations Laurie. (Master Builder - Structures, is currently being processed - Editor)

LESS THAN CAR LOAD

This is a new section for the magazine and is a follow on of the "Discussion Topics" in the last issue. A number of members have answered a few points and raised a few, but that does not stop you from putting your 'two bobs worth' in.

From Paul Richie;

1. Is there a white ink cartridge for the Canon BJ-10 printer or can I clean and fill a used one with suitable ink; also, could I use Walthers decal paper or is it too thick?

You can refill your old cartridge with suitable inks in assorted colours, red, blue, green, and brown. There are a number of companies who refill toner and ink cartridges, try the ones in your area. The BJ10e & ex (& BJ20) can take single sheets of paper up to 110gsm so they may take the decal sheet.

2. Do you know if there is anyone in Sydney - or Melbourne - who is an agent for some of the U.S. software for modellers? (for planning railroads, designing and drawing buildings etc).

Graeme Nitz of Victoria has a Data Base of "North American Diesels", produced in HO over the passed 10 years. He says that a listing of passenger and freight stock would be a mammoth job.

Someone may wish to form a SIG to implement this task, Greame could advise on the setup of a data base.

From Gerry Hopkins:

I have set up a data base of our Australasian Membership using the data supplied on your membership form. I have added such information as Merit Awards, Golden Spike Awards, and Achievement Awards, this information is gathered from the Contest Results and from Achievement Award records. This will enable us to reward people who may not know they have enough merit awards to qualify for an Achievement Award. This list will also give the Contest and AP Chairmen a pool for judges when required.

Did you know that many of the newer Personal Copiers can print straight onto a business card. You can prepare your own railroad pass or visitors card on a computer and reduce it down to the required 3.5 X 2.1 inches to copy onto the card.

F S & R K R

Franklin, Sommerset & Kennebec Railroad

The Valet Twelcots

Gerry and Laurie Hopkins
7 Boorallie Road
Terrey Hills NSW 2084
Tel (02) 450 1033

PASS

ISSUED TO: _____

You can use the same technique to produce your own decals, but make sure the original is printed by a laser printer or a bubble jet printer.

If you have a pass and would like to exchange it please drop me a line and I can mention it in this column in future issues.

From Gary Norwood:-

Modelling Materials - Sources

STYRENE FOAM

Expanded or "stretched" styrene foam produced by Dow Corning U.S.A.
Distributed in Australia by :-

Pabco Products
16 Davis Road
Wetherill Park
604 0444

Sold under the brand name of "Roofmate". Common sheet size is 1200mm x 600mm. Thickness either 25mm or 50mm. Available from Pabco, hardware stores and building supply outlets. Very rigid, dense foam material, pale blue in colour. Can be joined using "liquid nails".

HYDROCAL

Yes, Hydrocal can be purchased in Australia. About 2.5 times harder than cornice cement.
Distributed in Australia by :-

Boral Australian Gypsum
Investo Division
33 Grand Avenue
Camelia
638 05271

Price - Expensive!! $57 for 22.5kg bag. Sold as Patternstone B ...used mainly for investment castings; also as Patternstone H ...harder grade than B.

LATEX RUBBER

Various grades are available from several outlets in Sydney.
Best sources are:-
Daystar Pty Ltd
369 Princes Hwy, Rockdale. 567 3328

Daystar Pty Ltd
18 Artisan Road, Seven Hills. 674 3323

Alderson Arts & crafts
264 Railway Pde, Kogarah. 587 2699

Handicrafts Of Australia
10 Hamilton Road, Fairfield. 727 6790

EPOXY RESIN (WATER)

Better choice than "polyester" resin. Epoxy resins do not have the dreadful smell problem associated with polyester resins. One brand available locally is "Ultra - Glo". This comes as a two pack liquid and is mixed in equal parts. Has to be stirred to mix evenly. Mixing by this method introduces masses of bubbles into the mixture. Pour into desired area and de-aerate by introducing heat. This causes bubbles to expand and rise to the surface. Heat can be provided by hair drier, gas torch, or in desperate cases by striking matches close to the surface. It can be dyed by using very small quantities of Floquil Paint.

Available from:-

Handicrafts of Australia
10 Hamilton Road
Fairfield
727 6790

Most people would be aware of some of the above products. For those who do not know, this could save some wasted time trying to find out. Some of the above information was researched by the late Denis Everingham of Prospect Model Railroad Club.

Which Body Are you?

Once there were four people named Everybody, Somebody, Nobody, and Anybody. When there was an important job to be done, Everybody was sure Somebody would do it, but Nobody did it. When Nobody did it, Everybody got angry because Anybody could have done it. So it ended up that Everybody blamed Somebody when Nobody did what Anybody could have done in the first place.

Which body are you?

COMPANY STORE SUPPLIES

Shirley MacMicking is anxious to fill orders for any of the following items whilst still in stock. Remember, much of the stock will be sold at the upcoming Convention on 15th May so don't delay, contact Shirley soon!

ITEMS	PRICE EACH	POST /PKG
Track Gauges: O, HO, N, On3, HOn3 & Sn3	$5.00	50c
Cloth Badges: Member, Life Member	$5.00	50c
Lapel Emblems: Gold & Silver	$8.00	$2.50
3 Inch Decals: (Inside/Outside)	$2.00 pair	50c
Belt Buckles: Brass & Pewter	$19.00	$5.00
Large Logos: (For framing)	$2.00	$2.00
Pittsburgh Convention Clinics Booklet:	$15.00	$3.00
Turnout Templates: Sets of O or HO	$5.00	$2.00
Data Books in Quality Three Ring Binder	$35.00	Ask for Quote.

Orders should be addressed to Mrs Shirley MacMicking at 247 Eastern Valley Way, Middle Cove NSW 2068 or telephone (02) 958 5988. Cheques should be made payable to NMRA.

INTERCHANGE

By Laurie McLean - Member Aid Officer

The Interchange is a new, regular column which will be information for new members & assistance for those members wanting assistance.

The newly created position of **Member Aid Officer** will be providing information and contacts for those of us who are starting off or those on a siding wanting to be shunted & put onto the mainline passenger.

Also, those members in country areas, interstate or in New Zealand will be able to benefit and be more involved as we gear up to provide better things.

Firstly, Peter Weller-Lewis has offered to be the local Member Aid Officer for our members around Canberra - thanks Peter. Secondly, Richard Ash from South Australia has requested more info about helping and being involved and I have written to him with ideas and information.

The Board Of Directors (BOD) are to set guidelines and policy for the position of M.A.O. However it is basically one to provide a welcome and assistance to members. I believe the membership will grow and become stronger because of the interchange of friendship and help, because those of us not in the Sydney Metro area will genuinely benefit by having local help. The helpers being "**Model Railroad Agents**" who will be kept informed and likewise call for info or help for fellow members.

To this end it would be greatly appreciated if everyone could supply **up to date** information to any member of the BOD who will catalogue the data (scale, gauge, prototype followed, etc) so that when a member is seeking information , he/she can be given the names of fellow members who can be contacted by mail. I am sure that nobody would object to this, however if there is a problem then could you please advise the BOD.

To conclude, we hope to be able to provide :-

1. A short video to welcome new members (1993)
2. This column for members.
3. A contact list updated annually (expert assistance)
4. Local area Member Aid Assistants (R.R. Agents)
5. Build up your video library.
6. What are your thoughts ???

- Looking forward to additional assistance and if you require help then just write.

BUILDING THE C & EI 55 TON COMPOSITE GONDOLA

By George Paxon

This Chicago and Eastern Illinois Railroad gondola was built in about 1925 to a design typical of the World War I era. The C & E I was a small but successful Midwest U. S. railroad whose primary business in the early days was moving coal from the newly discovered southern Illinois coal fields north to the steel mills and export loading facilities on Lake Michigan at Chicago. Much of the C & EI still exists. It was owned for many years by the considerably larger Missouri Pacific System and was absorbed into the parent road in 1976 and, later, the Missouri Pacific was merged into the Union Pacific Railroad. A section of the C & EI was sold to the Louisville and Nashville Railroad and that section is now a part of the CSX System.

....This gondola is typical of the era....

This gondola is typical of the era and is almost identical to cars built for the Milwaukee, the Chicago, Burlington and Quincy, and other railroads.

These cars must have been well designed as many of the original cars lasted into the 1960's. Long life was rare for gondolas due to the substantial abuse they encountered. The floors were subject to nailing when the cars were used for moving heavy equipment or pipe and steel products. When bulk commodities were hauled, often loading and/or unloading was by clamshell crane which damaged sides, ends and floor. Often bulk loads such as coal, limestone, blue metal, or ore arrived at the destination frozen due to rain and freezing weather encountered enroute. Imaginative schemes were then employed to break up the commodities for unloading which included everything from pounding the outside of the cars with hand-held sledge hammers, ramming the sides or battering the top edge of the car with the bucket of a front loader or crane, to elaborate vibrators capable of grabbing the car side and shaking the entire car hard enough to free the load. Gondolas were also used extensively for moving scrap metal and the loading and unloading operations for scrap were equally destructive.

The C & EI gondolas were modified several times during their service life. The wood planks in the composite sides and ends were replaced with steel sheets. The original steel drop doors on most cars were replaced quite early with solid wood floors. Although no information is available to support the assumption, it is likely that some of the cars also had the solid wood floors later replaced with steel plates. The ends were modified again with the original diagonal steel bracing and the added steel sheets replaced by one piece corrugated dreadnought steel ends. Brakes were originally Westinghouse type K with the one piece cylinder and air storage reservoir and vertical brake staff. During one modification, the more modern Westinghouse type AB, with the more familiar separate cylinder, storage reservoir, and regulator and a horizontally mounted Ajax brake wheel assembly, replaced the original brake system. Likewise the original Andrews trucks were replaced with the improved Bettendorf pattern.

...the modeller can choose from several versions...

As a result of the modification history, the modeller can choose from several versions of the car to fit any time frame from the World War I era through the 1960's.

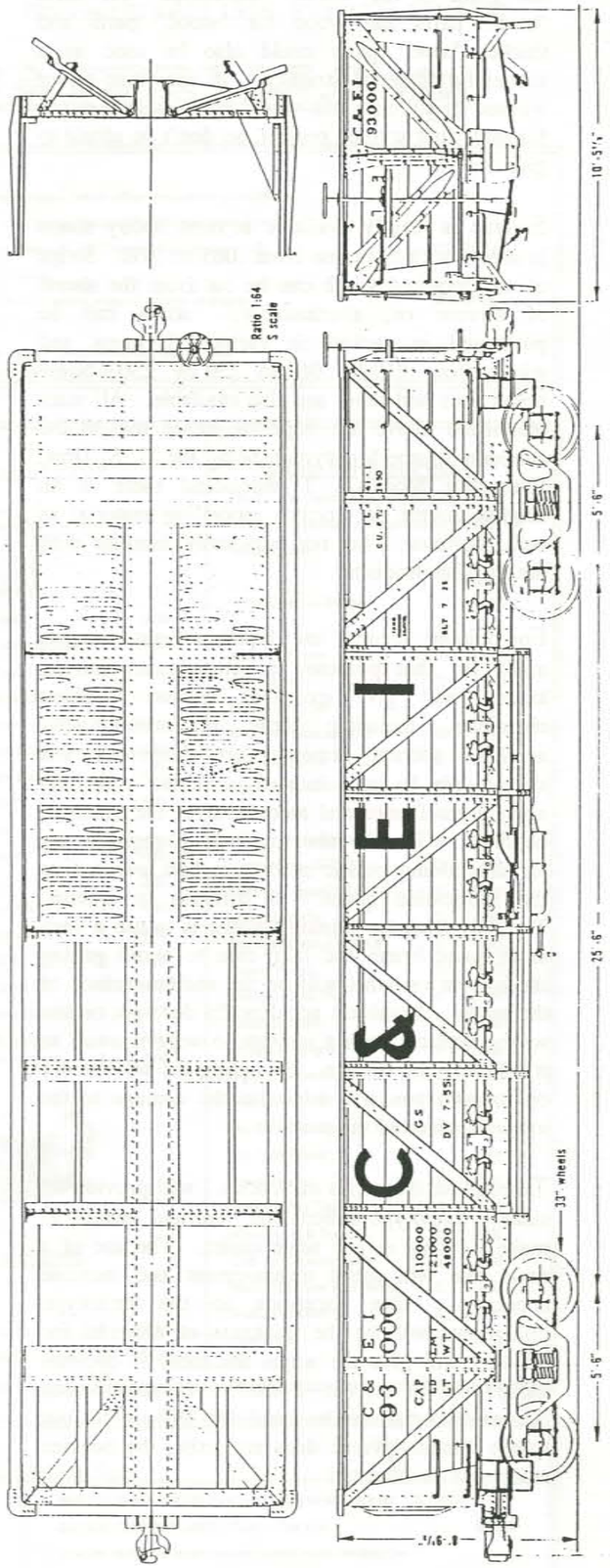
My era of interest is the 1930's; therefore, I did a pick and choose exercise from the known variations and elected to build the car with the original composite wood and steel sides and ends, with a solid wood floor, with the original type K brake system, and with Andrews trucks. There probably are not many combinations of modifications that would be incorrect, as the cars were probably modified over a considerable period of time as wear and tear made major shopping of individual cars necessary. Several versions of the car probably co-existed at any point in time, also.

This C & EI gondola has a busy and complex appearance; however, it is simple to build if you take your time and measure carefully. It has approximately 400 parts most all of which can be built from scratch. Purchased parts can be limited to bogies, couplers, and the cylinder, wheel and ratchet and pawl for the brake system. This car won a first prize in freight cars for me at the recent Australasian Region NMRA mini-convention in Sydney, and it could do the same for you.

Prepare for construction by carefully studying the plans in Figure 1. These plans are from the February 1977 issue of Model Railroader. The May 1959 issue of Model Railroader also has a construction article on a more modern version of this car. Get a feel for how the prototype car was put together. Try to envisage the shape of and material used for each part and how it was joined to adjacent parts. Accomplishing this mental exercise can add much realism to the completed model. Pay particular attention to the thickness of the various materials used in the construction of the prototype. Also consider the appropriate texture for the various parts based on the material from which each prototype part was made. These two items, thickness and texture, do much to make the model look real. Steel sheeting on a model that scales six inches thick and obvious wood grain in "steel" parts distract from an otherwise well built model.

It will prove handy to obtain a few copies of the plans to exactly the scale you will use for the model. I use a copy machine with the capability to enlarge and reduce the size of copies to make drawing copies of the exact scale. Use a scale rule and trial and error to arrive at the correct copy machine settings to produce the exact scale drawing. Run a copy, check a known dimension with the rule, and adjust the settings until the drawing is accurate. If you cannot get access to such a machine, telephone me and I will make copies for you.

I built my model from styrene in "O" gauge. Styrene will make an excellent modelling medium for this car in any scale. A model could also be built of wood, but "steel" parts would require careful repetitive sanding and sealing to eliminate



the grain of the wood. Cardstock for most "steel" parts and wood for "wood" parts and thicker "steel" parts could also be used as a successful material strategy. If you have never worked in styrene, this would be an excellent car for your first styrene project, so don't be afraid to give it a go.

Styrene is readily available at most hobby shops in sheets with thickness from .005 to .100. Strips of any required width can be cut from the sheets of styrene or, alternatively, strips can be purchased in packets in various thickness and widths from .010 by .060 to .250 by .250. Some round rods and tubes are also available. All sizes mentioned above are imperial inches due to the common source for styrene being the U. S. firm, Evergreen Models. I understand there is an English source for styrene modelling material as well, however I am not personally familiar with the English products.

For joining styrene use liquid solvent cements made for that purpose, or straight acetone or ketone will give excellent results. These chemicals, including those in commercially available solvent cements, are dangerous and should only be used in well ventilated areas and away from flames and stored out of the reach of children. Glue in tubes such as youngsters use for assembling plastic models is best avoided as the application quantity is difficult to control. The only trick for joining styrene is to use a very small paint brush and take care to avoid getting the solvent on what will be the visible surface of the model. If solvent accidentally does get on the wrong surface, do not attempt to wipe it away as it will mar the surface. By letting the solvent dry on its own you will minimise the damage to the visible surface of the parts.

Throughout the series of articles I will provide all sizes in prototype dimensions, feet and inches, to make working in any scale easier. The use of a scale rule will speed measurement and increase accuracy. One exception to the prototype dimensions will be the thickness of material for which I will give the actual thickness in decimal inches of the styrene I used. In some cases thinner material can be used for HO or N, but where thinner styrene does not exist, the heavier stock may be essential.

Gather a supply of styrene, or other building materials of your choice, and the necessary purchased parts you will need such as bogies, couplers, and brake gear. Spend some time studying the plans and in a following issue we will begin work on the car.

To Be Continued

South Pacific Lines

For our meeting in October we visited the layout of Michael Flack. Following is the 'Publicity Handout' of the layout. - Editor.

The South Pacific Line is a narrow gauge railroad in Southern California stretching from the edge of the deserts intop the hills. It was to have reached the Pacific Ocean, but finance ran out well short of this destination.

The year is 1905, a short while before the line is swallowed by big brother Southern Pacific. Wood burning locomotives are still in existence, although a recent acquisition of a 4-6-0 oil burner is to herald a new age - notice the new oil facility!

Two of the passenger cars have been upgraded to closed vestibules for the comfort of the tourists who are coming into the area. A group of 'city' bicyclists can be seen in the town, whilst bathing and swimming are also popular.

The area served by the railway supports a minor industry of O'Burns Mill; although cattle, mining and a nearby logging company are the mainstays of the freight traffic - a supply train on 3 flats can be seen moving essentials for the logging camp before the winter snows set in.

The town still shows signs of the of the frontier image. With 2 hotels, 2 undertakers and a cemetery amonst the modest buildings. There is no permanent church, although services are held in the local furniture store on alternate Sundays.

Future developments may lean towards the South Pacific Coast Railway although I enjoyed building this way from 'rivet counting' - always trying to remember "Model Railroading Is Fun", when it ceases to be that, I will take up 'go-cart racing'

DESTINATION DURANGO - PART 5

By Laurie McLean

Elixirs and Lubricants are being partaken of, the railroad men have completed the yard which services the locomitives. Ranch whiskey is freely flowing round the superintendents office and the men are in fine voice. Some, who started somewhat earlier, are showing inebriated signs.....one lost the sole of his boot and part of his toes due to the corrosive potency of the brew!

Word had it that the ranch whiskey was darn good stuff for boiler cleans, well knowing it burnt

...one lost the sole of his boot and part of his toes due to the corrosive potency of the brew!..

off ulcers, destroyed kidneys and generally relieved all pain including frost bite!

The railroad reached Durango in July 1881 and the town was well under construction to meet the railroads arrival. The "three foot between the rails" had finally come to the new town and with it brought prosperity. The 200 population of Animas City, to the north, had reduced significally virtually overnight and pulled up roots to move to the new railhead town. There wasn't going to be much left in a town which didn't have a railroad.

With the influx of people, naturally buildings were needed, and pretty darn fast at that. The early days and years saw the traditional false fronted timber structures so commonly seen in the west. These gradually made way for the newer brick and stone. A large fire destroyed much of the down town in the early years and made the point that brick and mortar were to be the way ahead. The minerals of the area were a long term mining matter and as such buildings would reflect the wealth and prosperity.

Construction has started on module #2 of "Durango" and we will take a look at available kits and other methods used in building a town.

The "Design Preservations" building kits offer a very good range of quality low priced kits. These can be easily kit bashed and interchanged with other parts and scratchbuilding materials. For instance, my first city block contains "Carol's Corner Cafe", "National Bank", 2 each of the "Walker Building" and the other corner cafe.

All the fronts of the kits were sanded and glued side by side and gave a scale block front of 120 feet. The prototype was 5 times longer, however size restrictions require the city blocks to be condensed so that the railroad yard that was behind the main street had, proportioanlly, the number of vehicle roads crossing the yard.

When joining different buildings together the two edges should be filed as the moulding method has an angle at the edges to allow for easy removal

...If a gap still gives problems then a down pipe or electrical conduit will conceal it...

after casting. There is an exception however and it is when one edge has brickwork wrapping around the edge. Here a preferred method is to file the mating piece to suit the brickwork edge section so that the gap will not be noticed. If a gap still gives a problem then a down pipe or electrical conduit line will conceal it and add to the detailing.

In the next issue some sketches will provide some useful tips in construction methods I use and how to super detail the buildings.

TOWARDS LIGHTWEIGHT LAYOUTS

By Lyndon Spence

Part 5 - Miscellaneous Finishing Ideas (Mainly Roads)

Expanded Styrene Foam Scenery

In previous issues, I've been using expanded styrene foam to build scenery (and in part one, even complete layouts). To me, its' greatest advantages are ease of use, quick results and its' lightweight, flexible nature. This issue I'd like to toss around a few ideas of finishing road surfaces to illustrate how you can continue the lightweight, flexible theme.

Road Finishing

Good results can be obtained with a wire brush for final shaping of your road. A little bit of practise and you'll be carving and shaping anything from a meandering country road to a major highway. Don't forget to shape the road to include the crown and the side drainage ditches. A final sanding can then achieve a smooth surface (or perhaps you may want a good-size pot hole here and there). After the forming or shaping process, there are four main types of road finishes that can be easily achieved:

1. Dirt
2. Gravel
3. Concrete and
4. Bitumen

Try these techniques:

1. DIRT
Dirt roads can be simulated a number of ways. You can simply paint the foam surface with plastic paint and then sift either real dirt or sand on it while it is still wet. Another method is to mix up a slurry of sifted material and paint and apply it with a brush or trowel. While the paint is setting up, roll an old vehicle through it a couple of times to simulate ruts and gullies in the road.

2. GRAVEL
Ever used carborundum or emery cloth or sandpaper as a finished surface? Investigate it at your local hardware store. You'll be amazed at the huge variety of grades and colours available. It's cheap and can be obtained in either sheet or roll form. Cut it with scissors and glue it directly to your roadbed with white P.V.A. glue. If you're clever enough to get a good colour, you won't even have to paint it, although spraying it with your air-brush is quick and easy enough to do (I wouldn't recommend hand painting it!). Incidently this type of material can also be used for car parks, railway station platforms and even tar-type roofing papers.

3. CONCRETE
Use thin cardboard or styrene sheet cut and glued into position. Paint and then add drawn-in expansion joints, dividing lines and weathering.

4. BITUMEN
One of my favourite methods here and compliments the flexibility and damage resistance of the foam scenery. If you read last issue's article in this series, you'll now know I don't mind a little bit of scrounging around the neighbourhood. Well here's your chance to help re-cycle Australia's junk. Any motor vehicle tire service usually has tucked away in a back corner of the property a pile of tyres and tubes ready to be carted away. Have a look for old tyre tubes, truck tubes are best. Make a template of your road pattern out of newspaper, then transfer the pattern to the tubes which then can be cut out with heavy-duty scissors of shears. It's easier to cut along the circumference of the tube for straight roads and the side walls for a curved road or anything in-between. The rubber can then be glued to your pre-shaped foam road: it will naturally follow the contours up and down. It's almost the right colour immediately: if you like you can leave final colouring, line marking and weathering to another time.

Experimenting

In part three of this series, I discussed the advantages of completely removable scenery sections. Until you build that town, industry, harbour, magnificent rocky mountains or whatever, why not fill the proposed site with some temporary foam scenery. If you're not happy with the results, scrap it and do it again; if you ARE happy, the worst thing that can happen is that temporary void-filling section just may stay a little longer. The point is; experiment! experiment!

This has been the final part in this series of articles, but I'm sure there are plenty of ideas out there, don't keep them to yourself, share them with us in a future issue!

DIVERSIONS

By Andrew Wells

As the title suggests, this article does not directly relate to model railroading, but I hope you find it interesting to read about a couple of recreation activities that do relate to railroading.

The first concerns a Computer Simulation (all right then, Computer Game) called Railroad Tycoon. You may have noticed this advertised within the last year in MR. Being interested in computers in general, and looking for something other than a 'shoot-em-up' game, I thought I would try this one.

Railroad Tycoon is an involved simulation of railroading, including aspects of locomotive scheduling, right of way planning and maintenance and financial wheeling and dealing.

Firstly you get the choice to operate within one of four geographical areas

- Western USA - from the Missisippi to the Pacific
- Eastern USA - from Carolina north to Maine and west to the Missisippi
- The United Kingdom
- Europe

I have spent most of the time in the USA, with a preference for the West (I will explain why later).

Depending on which area you choose you get different locomotives and resources. If you start off in the Eastern USA in 1830 all you have to work with is a B&O 'Grasshopper' - it seems to take forever to get anywhere. Starting in the Western USA in the 1850's at least lets you start off with an American 4-4-0. The locomotive rosters seem quite reasonable; as time goes by you get the choice of Ten Wheelers, Moguls, Consolidations and Pacifics, all of which have different hauling characteristics. These are accurate enough to make you arrange your locos to suit the cargoes and terrain over which you have built.

Building rail is the hard part. You have to survey to determine the best route - do you choose a water level route or go for broke over the mountains and hope to tunnel later. The terrain is quite accurate, although simplified. The Rockies are definitely as much of a problem here as for the original roads. Working in the Eastern USA means you have expensive acquisitions for right of way if the farmers have got there first. In the west there is plenty of desert that comes free.

The only thing that is not true to life is the population and resource base (otherwise the game would always be the same). When you start off a new railroad, towns are randomly populated. Hence you cant always rely on the major population bases being in the New England area - New York may be a sleepy fishing village while Bangor Maine is a thriving industrial centre. There are about one hundred named locations in each scenario, and they are geographically correct. I have found this the most interesting part; being unfamiliar with a lot of the Eastern roads I have found that having built to places such as Altoona and Utica I am prompted to dig deeper about the real railroading that went on there.

Resources are randomly set up at the start of a new simulation, and don't change. In the USA you get wood, coal and petroleum as basic resources. Everything else develops as time goes by. Hence you will find that grain and livestock become available as farms establish. Different towns have processing facilities which take the resources and turn them into other loads. Thus you can take coal to a Steel Mill, take steel to a factory, then manufactured goods to a town, before returning for more coal. Towns all generate mail and passengers, dependent on their size. If you service a town well it grows faster than the general rate, so you can add longer and more frequent trains. You can also use your railroad funds to build processing plants, e.g. to place a steel mill halfway between a coal source and a major town.

Once you have set up each train timetable with destinations and load changes, the trains will run themselves. However you still need to keep track of load availability, running costs and train routing. Trains will automatically sort themselves out to share single trackage, but probably not in the way you

want; the automatic scheduler sees no problem in having a slow freight holding up the mail train, but you will want to push the mail through as its earning power is directly related to how fast you can deliver the mail, whereas you get the same for coal no matter how long it takes to deliver.

The basic aim of Railroad Tycoon is to make more money to build a bigger railroad, to make more money. The only way to get money in is to move loads to where they are wanted. You have to spend to build track, stations, new trains and to maintain your railroad.

Just when you thought it was all getting a bit complicated there is another twist: three other railroads start up against you. They automatically build to towns also, and it is very frustrating to be at the end of a long distance building program to find that one of the three automatic roads has beaten you to a new town or resource. You can still build there, but you wont get as much traffic, and the competition keeps the payments down. These competing roads are run by such figures as Cornelius Vanderbilt, Jay Gould and Jim Hill. Gould will try to buy you out, while Jim Hill just keeps on building track (usually to everywhere you were planning to go).

The overall state of the economy also plays a part, particularly as interest rates on borrowed money move up and down.

The program is well set up, so you can remove a lot of the complications to start with - for instance trains will stop and wait in imaginary sidings when they meet at the basic level, so you don't have to worry about signals. The program runs under DOS on IBM-compatible machines, and will work with any screen, although EGA colour is best.

It may seem a bit out of the mainstream to be considering railroading with a computer game, but perhaps you have someone who doesn't share your love of model railroading. This may be just the way to bridge that generation gap. I have a young friend of ten who has spent hours playing at the basic level, and who is really into coal trains - the words 'Consolidation' and 'Challenger' now mean something special to him.

If this sort of thing interests you I know you wont be disappointed with Railroad Tycoon. It is available from most computer shops, and is about $65.

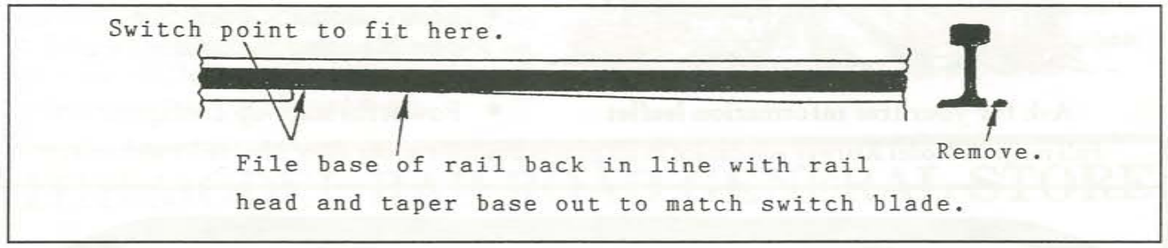
SCRATCHBUILDING TURNOUTS

REQUIREMENTS:
Nickel silver rail of the appropriate code, rail joiners, track spikes, small pieces of circuit board for switch blade tie, piece of nickel silver or brass shim as base for frog, wood ties cut to required lengths as indicated on turnout diagram, (stained if required) N.R.M.A. track gauge, photocopy of turnout diagram, copy of N.R.M.A Standards: S-2, S-3, S-4, RP-12/1 to 7, RP-13/5 to 8.

The following tools will be found helpful, although each modeller will have his or her own methods and should follow them. Dremel Moto Tool with disc cutter, tinsnips, various medium and coarse files, small fine files to remove ragged edges on switch blades, fine nose pliers for spiking rail, broader pliers for bending rails, which glue, smooth jaw vyce.

METHOD:
Prepare the track base to match up with the adjacent track bed, then position the photocopy of the turnout, (either the N.M.R.A diagram or one drawn from data in Standard RP-12) and glue in position on the track bed, cover with greaseproof paper and weighted flat board and leave to dry.

The wood ties, cut to the required lengths are now glued down as indicated in the diagram, weighted and allowed to dry. Using a sanding block and fine sandpaper, lightly sand the tops of the ties to bring them level. Lay the stock rails in position and mark them where it is necessary to file the base to provide clearance for the switch blades. Remove and file the base of the rails as shown in fig 1, then replace and spike down about every sixth tie to hold in position.



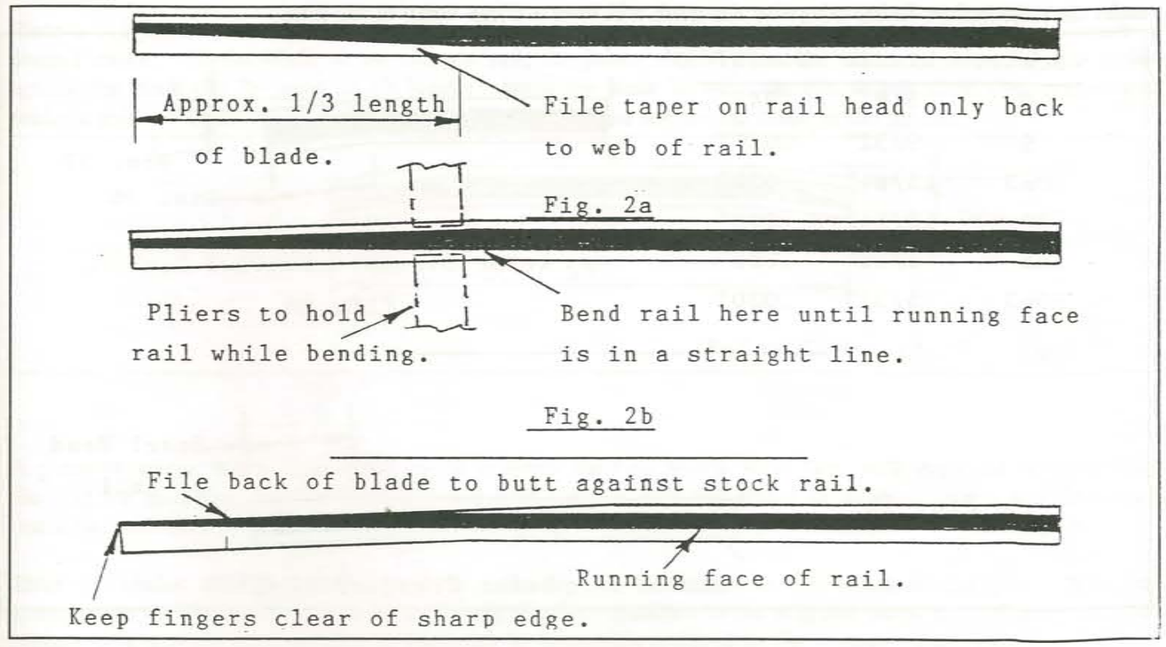
SWITCHBLADES:
With a length of rail, first file back the head of the running side, starting at the end and tapering for a third of the blade length, filing along the rail. Fig. 2a.

Step two is to hold the blade in a pair of pliers at the end of the taper and gently bend the rail until the filed section is in line with the running face of te rail. Fig. 2b. Then file the back of the rail until a long taper is obtained from the point of the switch to the heel. The blade should now lie against the stock rail. When filing the back, again work along the rail from the switch point towards the heel to obtain a straight flat face, Fig 2c. Filing across can result in hips and hollows. Remember to makes the blades R.H. & L.H.

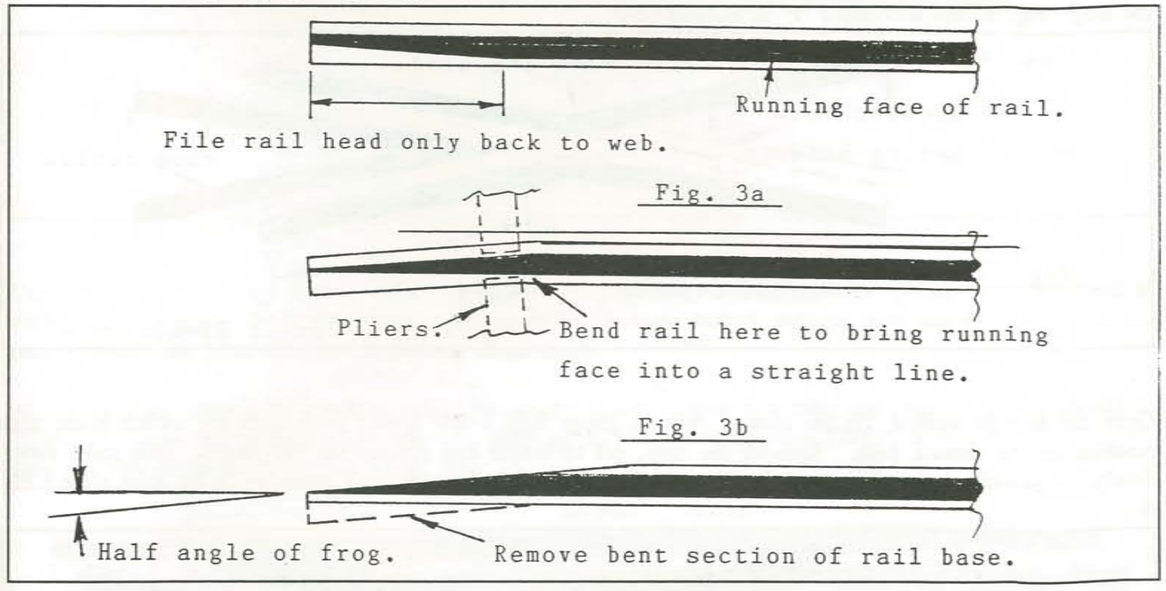
WARNING
The switch point of the blade is now razor sharp so keep fingers etc. clear while filing as a nasty cut can occur.

Once the switch blades are filed to shape, they should then be cut to the required length. If the blades are cut to length before filing and the point damaged, after rectifying the damage then the blade is short.

TURNOUT FROG:
Using the remainder of the rail from the blades, file the head of the rail at a taper similar to the first stage of forming the blades, although for a much shorter length, about 1/2" to 1" depending on scale, Fig. 3a, again using piers, bend the rail to obtain a straight line along the running face, Fig 3b, then file the back of the rails. Also with the frog, file the base of the rail to be in line with the rail head, Fig 3c. Repeat these steps to make the other rail of the frog, but for the opposite hand.



NOTE:
If the bent base section of the rail isn't removed, it will prevent the wing rail being positioned correctly, resulting in the flangeway spacing being too wide.

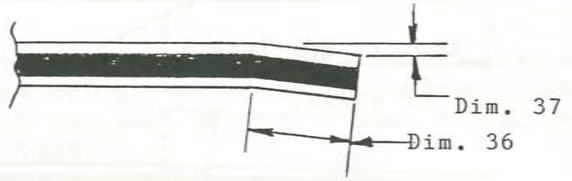


WING AND CLOSURE RAILS:
Again two rails are required, R.H & L.H. Bend the end of the wing rails as shown in Fig. 4a, them file the head at a slight angle as shown in Fig. 4b. and detailed in standard Rp-13.8. This provides a smooth lead-in for wheels training through the turnout.

ASSEMBLY:
Check that both stock rails are correctly positioned over the template and the gauge is correct prior to the switch points. Place the pieces of rail for the frog in position and check the gauge is correct, then spike down loosely allowing the rails to be moved along until they meet at the frog point. Check the gauge again and when correct, spike down after placing the piece of nickel silver or brass shim under the frog. Notch the ties

under the shim before fixing otherwise the track will have a slight hump at the frog.

Scale.	Dim.36	Dim.37
0	3/8"	.045"
S	9/32"	.037"
On3	15/64"	.032"
HO	13/64"	.030"
Sn3	3/16"	.030"
HOn3	5/32"	.020"



Refer Standard RP-13.8

Fig. 4a

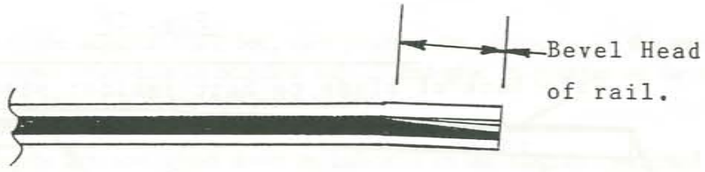


Fig. 4b

Refer Srandard RP-13.8

As shown in Standard RP-13.7, measure the length from the frog point back to the ends of the wing rails and mark. Place the wing/closure rail in position and mark where the gauge line crisses the closure rail, this is where the rail is bent to keep the closure rail in gauge and the wings rail at correct flangeway distance from the frog. Fig. 5, and dimension 'F' in Standard S-3.

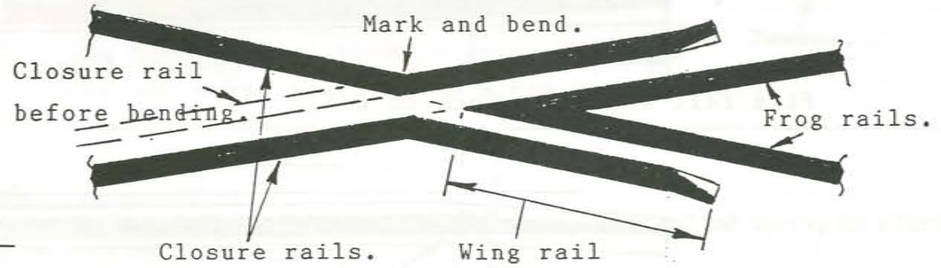
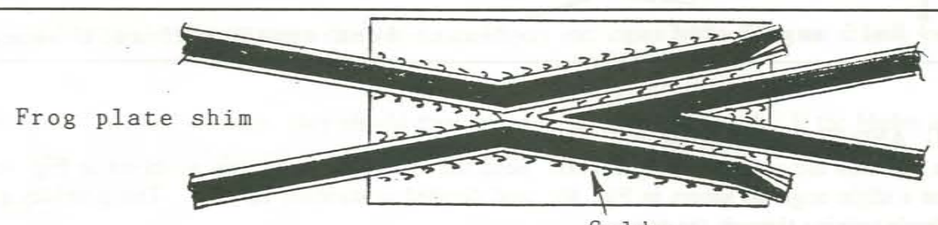


Fig. 5

Once the frog is located, fix the closure rails to gauge with a few spikes then mark the switch blade heel position on the closure rails. Remove the rails, cut to length and replace on the turnout, then spike down firmly. Again check the gauge and flangeway clearances then solder the frog assembly to the shim plate. Fig 6.



After spiking down all the rails, cut two short lengths of rail to serve as guard rails. These are shown in Fig. 7, and Standard RP-13.6, and position as shown in Rp-13.5. Spike these down, checking for flangeway clearance and "Span", dimensions 'S' in Standard S-3.

Place a rail joiner over the heel of each switch blade, then lightly solder the joiner to the blade to ensure it doesn't move. Fit the blade to the closure rail, the joiner should allow the blade to pivot and also to lay against the stock rail for most of it's length. Mark the blade between the two switch stand ties, remove and solder a shim of nickel silver under each blade, Fig. 8, then replace the blade in the turnout.

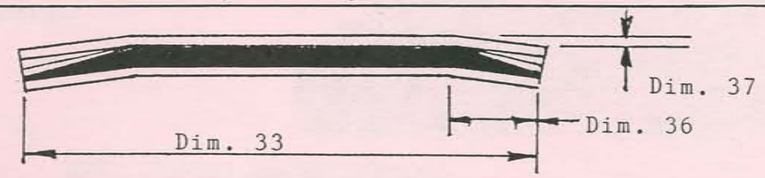


Fig. 7

Refer Satndard RP-13.6

A piece of circuit board is trimmed to fit between the two switch stand ties, with gaps cut in the copper sheeting for insulating the switch blades and drill through both the nickel silver blade strips and the circuit board tie, with the blades set at the Switch Point Spread, dimension 'P', Standard S-2 7 S-3 and Fig. 9.

Rivet the blades and the circuit board tie, allowing for movement as the switch is changed. With this arrangement, each blade and closure rail is electrically connected to the adjusted stock rail. Finally cut both closure rails near the frog, so that the frog may be seperatley powered by the position of the switch.

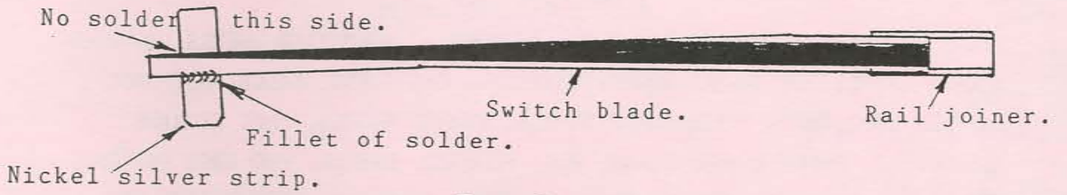
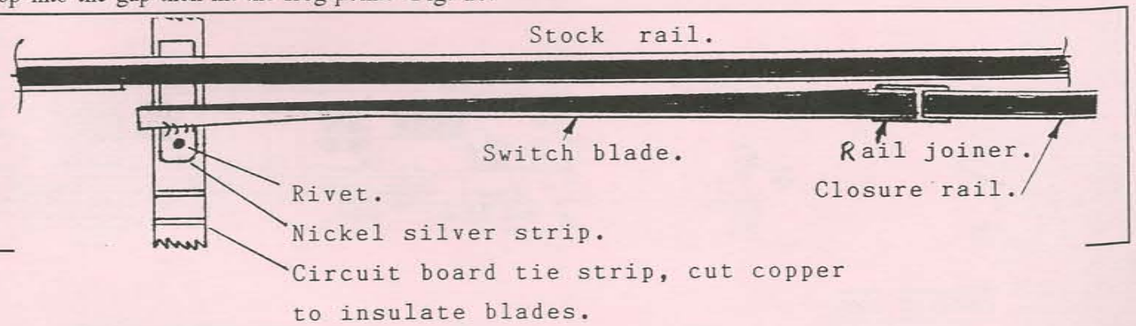


Fig. 8

Connect the throw tie bar to the switch machine or slide switch required to throw the turnout, and check all wiring and rail gaps. With the turnout working correctly apply ballast, making sure that the flangeways and moving blades are clear of ballast to prevent derailments.

Also to prevent damage to the frog point, particually if the turnout is a long one, the flangeway should be filled in between the wing rails and the frog point up to the height of wheel flange, so that the weel doesn't drop into the gap then hit the frog point. Fig. 10.



Enjoy building turnouts, it makes track laying more interesting, and the more you build the better you becomes.

Jack MacMicking