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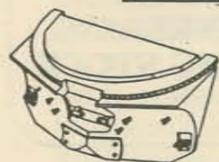
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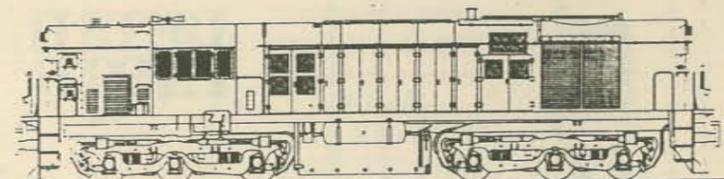
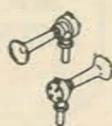
MAGAZINES and VIDEOS

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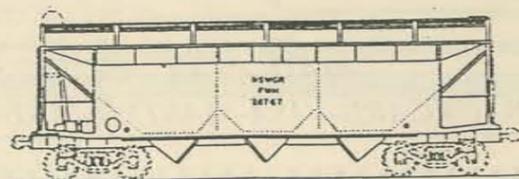
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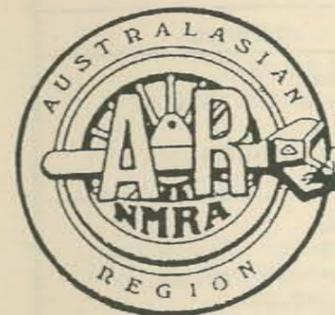
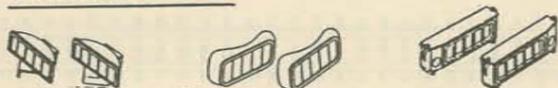
AIR HORNS



COOLING FANS

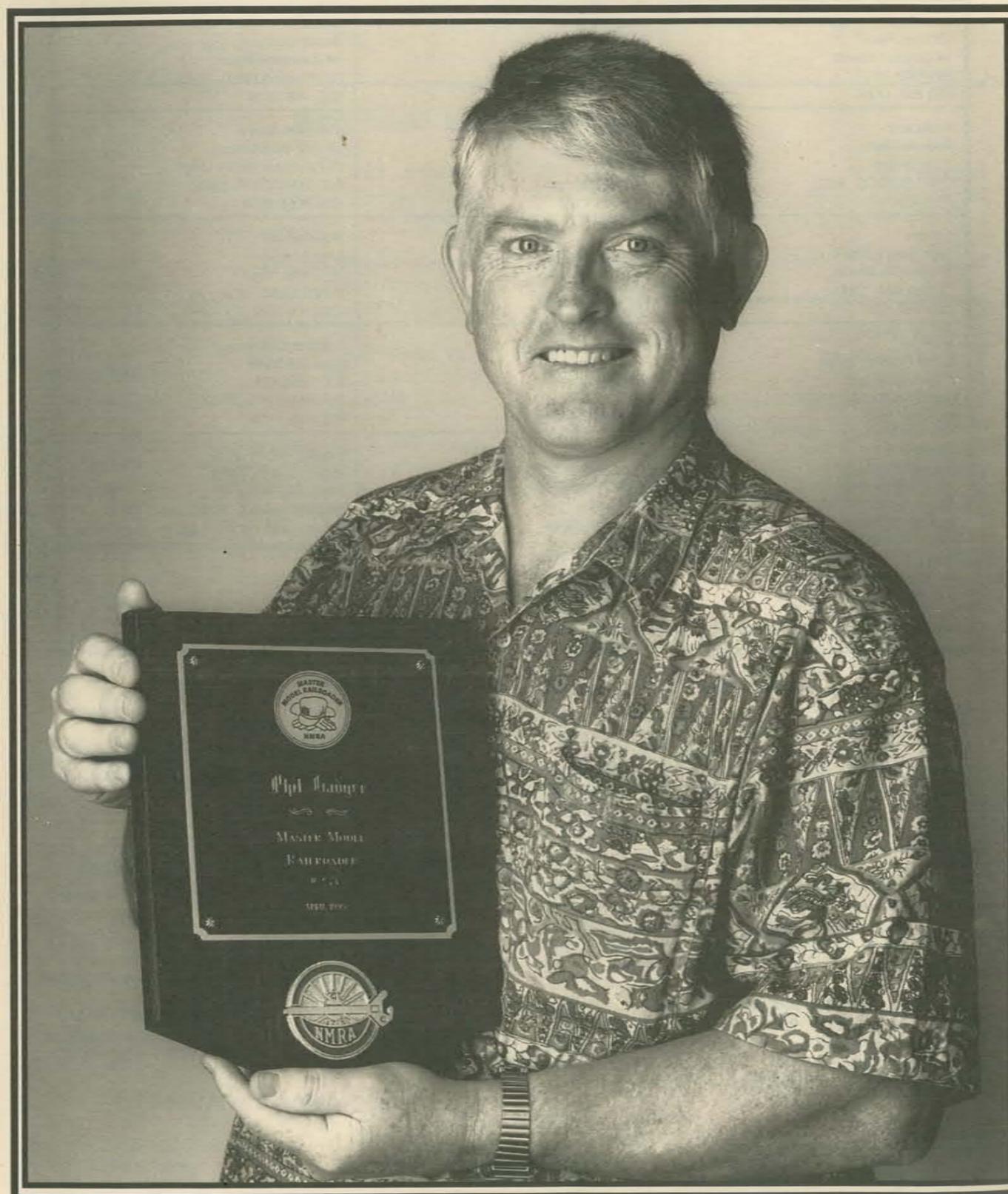


NUMBER BOARDS



Main Line

National Model Railroad Association Inc Australasian Region
Volume 12 Number 3 July, August, September 1995
Registered By Australia Post Publication # PP241613/00080



Australasian Region Directory

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Member Fred Gill MMR P.O. Box 155 BAULKHAM HILLS 2153 (02) 639 4158	N.M.R.A. Inc. P.O. Box 714 Willoughby NSW 2068	

Main Line

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 3.5" or 5.25". Most WP packages can be read at this time. This magazine is prepared on a 386DX(40) computer (540M & 105 HD's) running under DOS 6.2 and prepared on a BJ10ex Bubble Jet printer using WPWIN 5.2; WINWORD 6; MS Publisher; True Type Fonts.

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.

On The Cover

Congratulations to Phil Badger, our
6th MMR for the Australasian Region.

Deadlines For The "Main Line"
Closing dates for the next issues are:

Nov.	15th September 1995
Feb.	1st December 1995
May.	30th March 1996
Aug.	30th June 1996

These dates are Absolute!

SWITCH LIST

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Regional Meeting Schedule

12th August John Gillies 2.00 pm	ACT Lyneham 14 Earle Street (06) 248 8408	21st October Bob Best 2.00 pm	NSW Blaxland 34 Winnicoopa Road (047) 39 1953
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26th August Stuart Mitchell 11.30 pm BYO, BBQ	VIC Wendouree (Ballarat) 1068 Norman Street (053) 382 355		
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19th August Mike Hallinan 11.00 - 3.00pm	NSW Rankin Park 15 Cheshire Close (049) 52 3850		
--	--	--	--

Mike's garden layout features Rio Grande trains traveling through massive forests on hand layed track. They are all radio controlled and are a joy watch. Also visit the **Newcastle Expo**, this year presented by a new group.

9th September Peter Weller-Lewis 2.00 pm	NSW Queanbeyan 2 Hayley Close (06) 297 8232		
--	--	--	--

16th September Geoff Truman 11.30 BYO, BBQ	VIC Hoppers Crossing 12 Goodwin Close (03) 9748 7864		
--	---	--	--

23rd September Richard Roth 2.00 pm	NSW Helensburgh 1 The Crescent (042) 94 2133		
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This will be our first visit to Richards layout so here are some directions. Take Old Princes Hwy south of Waterfall **NOT** the Tollway. Turn off at Ampol Service station to Helensburgh, follow Parkes St to Junction Street, Angle right to Maidstone St and then left to The Crescent. **Stop** at #1.

14th October Ken Macleay 2.00 pm	ACT Isaacs 31 Shepherdson Place (06) 286 2624		
--	--	--	--

This is another new layout. Refer to map enclosed with this issue.

18th November John Baker 2.00 pm	NSW Kellyville 12 Roseberry Road (02) 629 2349		
--	---	--	--

John's layout has doubled in size since the last visit. If you saw the video you'll want to see the real thing.

25th November Laurie Green MMR 11.30 BYO BBQ	VIC Sunbury 20 Nambour Drive (03) 9744 5188		
--	--	--	--

9th December Sowerby Smith 1.00 pm	NSW Chatswood 174 Fullers Road (02) 411 5726		
--	---	--	--

This is our Christmas Party meeting. Sowerby has also made major changes to his layout since the last visit, including Radio Control

10th February Gary Norwood 2.00pm	NSW Blacktown 271 Vardy's Road (02) 622 5859		
---	---	--	--

See Gary's terrific HO3 layout of the D&RGW. Park across the road from Gary's in the car park out side the playing field.

6th & 7th April Narrow Gauge Convention	VIC Wantima 137-141 Mountain Hwy Contact: Grant McAdam 194 Booran Rd. Glentuntly 3163		
--	---	--	--

Hosted By The Croydon Narrow Gauge Group Inc.

13th April Bill Kerr 2.00 pm	NSW Minchinbury 122 McFarlane Drive (02) 636 1283		
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From The Editor

As you can see from our front page we now have our 6th MMR for the region. Congratulations to Phil Badger for his achievement. Phil was awarded his plaque during the Banquet at the Convention.

Fred Gill was also awarded the title of **Grand Master Model Railroader - - a world first**. Fred has obtained ALL the eleven Achievement Awards . . congratulations Fred.

To obtain an Achievement Award you do NOT have to be a contest winner but to be of a certain standard. To attain MMR you must receive seven awards, these are not just for your modelling skills but also for putting something back into the hobby.

On the subject of putting something back into the hobby why not stand for a position on the Board of Directors. Our bi-annual elections will be held in March '96. Any member wishing to stand for a position should submit a resume (with passport photo) of 150 words to be published in the next two issues of the Main Line. Stating your "Goals for the NMRA" would greatly improve your chances of election. The deadlines of the next two issues have been moved forward to allow for publishing before the close of official nominations.

The positions are: President, Vice-President, Secretary, Treasurer, Trustee, and three Ordinary Members. Notes on each position will appear in the next issue.

Please check the phone numbers in this issue, some have been changed due to Telecom adding an extra digit to numbers in some areas of Australia.

Layout Tour Video

Members who bought a copy of the video at the convention may find there is a small glitch in the section on John Saxon's layout, if you wish to have this corrected please send your video to Kevin Brown who will send you a corrected version.

If you did not buy a tape, you can purchase one from the Company Store for \$29.95.

The Editor is always looking for new articles for inclusion in the Main Line. Any size article on any subject of model or prototype railroads.

You can submit your article on computer disk in any format or send hard copy to the Editor.

Have you considered offering your layout for one of our Saturday afternoon get togethers?

Contact Glen Coventry or Gerry Hopkins to find out all about it.

Meeting Report By Gerry Hopkins MMR

In the merry month of May we made our way to the home of Ken Scales. The weather was on our side, we could move from the HO layout in the house to the N scale layout in a train room at the bottom of the garden. In the last issue of Main Line there was a good description of Ken's layout and the visit gave us a chance to see it 'for real'. The trains ran faultlessly all afternoon on both layouts.

Thank you to Ken and his wife for letting us invade their home for the afternoon.

Late News: Due to unexpected family commitments Kevin Brown has had to resign as President, Sowerby, as VP, has therefore moved to President (again). Many thanks to Kevin for the work he has put into the position for the last 18 months.

WHO WILL BE OUR REGION TRUSTEE?

Phil Knife MMR

When I was a youngster, I used to think that a "trustee" was a jail prisoner who could be trusted with special privileges. Our present Region Trustee, John Saxon, perhaps feels a bit that way, as he has been in that role since our Region was first formed in 1984 - almost like a prisoner to the role! Maybe so, but I'm sure that John would admit to having enjoyed his role, and a sense of pride in representing Australasia in the NMRA halls of power in the USA. I mention all this, because the time has come for us to prepare to elect our Trustee to take office in March next year. Those who have read April's *Bulletin* (page 16) will be aware that this process has already begun, and that I have been given responsibility for conducting the election in this Region.

Let me begin by spelling out briefly what the duties of the Region Trustee are, and some thoughts on qualifications needed. Obviously we need the right person in this role if it is to be carried out properly. Perhaps you are that person, or you are aware of someone who might be. Anyway, here is what is involved:

- The Trustee must be a current, active, committed member of the NMRA.
- The Trustee is the representative of the Australasian Region on the NMRA Board of Trustees (BOT), which is the executive, or governing, body of the Association.
- The Trustee is expected to attend the half-yearly BOT meetings (invariably in the USA) in February and July (in conjunction with the National convention).
- The Trustee is responsible to the parent NMRA for the oversight of operation of the Region.
- The Trustee is a member of the Board of Directors (BOD) of the Region.

This has a number of implications for potential Trustee candidates. The most

obvious one is financial. Overseas travel twice a year becomes a limiting factor, but the NMRA does currently reimburse the airfare (at the cheapest excursion rate). Apart from paying the airfare up front to begin with, the normal minimum stay in the USA is seven days, requiring hotel accommodation and meals. And there's the temptation to spend up big at local model shops! Trying to prise a ball-park figure out of John Saxon, the *minimum* outlay is about \$3000 per year (plus having the \$2000 or so air fare up front each time to begin with.) The second, and probably more important, implication is that the Trustee must be up to speed on our own Region activities, and have a good working knowledge of the NMRA as a whole. This will involve regular attendance at BOD meetings, which at present are held in Sydney.

Now there may well be someone out there who has the time and financial resources to attend both BOD and BOT meetings (and who does not necessarily live in Sydney - after all business and government people do this sort of thing all the time). Coupled with a genuine regard for the objects of the NMRA and a willingness to be involved in the running of a truly international organisation, this is a wonderful opportunity for the right person. In this issue of *Main Line* is a nomination form, which must be signed by the nominator, seconder and the candidate - and it goes without saying that all three must be members of the NMRA in good standing who live within the Region (although not necessarily members of AR). However, anyone who is interested in volunteering please contact me, and I will attempt to find nominators and seconders. Please read the notes accompanying the form.

Nominations close on 15 October 1995.

Who will be our next Region trustee? Perhaps you will be!

The Model Railroad Craftsman

Railcraft Flex track in stock - HO Code 70 : 55 Hon3 Code 40 : 55 : 70 N Code 55 : 40 - Yes we can supply points in all codes to order - ring for details - Good Stocks of all Micro Engineering Products

Accurail HO scale boxcars - large selection
3 Pack - AAR Single Door GN /BN \$48-00
40' Double Door - \$14-80
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40' Outside Braced - \$17-50
36' USRA Hoppers - \$15-50

Arriving during the next year - 3 packs and special runs - All limited run with individual numbers - reserve now !
40' AAR Steel M&StL - \$15-50 [January]
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ACF Covered Hopper C&NW 3 pack - \$59-50 [Feb.]
40' AAR Steel G&W - \$15-50 [March]
40' Outside Braced MKT - \$17-50 [March]
40' AAR Steel SP Overnight 3 pack - \$48-00 [April]
40' AAR Steel EL - \$15-50 [May]
40' PS 1 C&IM - \$17-50 [May]
40' AAR Steel SF Map 3 pack - \$48-00 [June]
40' AAR Steel D&RGW "Cookie Box" - \$15-50 [July]
40' AAR Steel GN,NP,GM&O - \$48-00 [Aug.]

TIMBER PRODUCTS
Foam [20 colours / 15 greens] 6.25 /pkt
Ballast - \$7-95 / pkt [10 colours / 4 grades]
Wild Weeds - \$6-95 / pkt [24 colours]

FX Weathering Effects - \$3-50
Light Rust : Medium Rust : Dark Rust
Hydraulic Fluid : Grease : Weathered Rubber
Oil : Fuel Stain

Stoney Valley Dry Pigments - \$2-75
Black : White : Rust : Raw Umber
Burnt Umber Ochre : Red Ochre : Raw
Sienna : Burnt Sienna Green Earth

Full range of Kadee couplers including the new 20 & 30 series
Kadee 28" : 33" : 36" wheel sets in stock along with most accessories
MKD5 - \$4-95 each /10 pack \$39-50
Steam Era Kadee compatible couplers - \$3-50 each /10 pack \$30-00

Greg's Garage - Resin Vehicle's
50 different Trucks and Cars from the 30's to 60'
One peices resin cars just fit wheels and paint to suit era - \$9.75 ea.

System One

Now available !

System One Command Control was designed in consultation with Model Railroaders to meet their operational needs.

All Commands are in a easy to understand and in English there are no codes to remember or explain to operators.

Decoders uses the locomotives own number as it address no conversions to remember when assigning a locomotive.

Features 2 x 5 amp power booster with selectable automatic loop sensing - ready to run the largest layout.

Scale time available on all handpieces in any ratio off 1 : 1 real time up to 24 : 1 fast time.

Controller screen can be illuminated by a simple switch No squinting to read messages during a operating session.

Walkaround Controllers are a ergonomic design featuring memory and user selectable momentum. Operate one locomotive or a lashup limited only by your nerve.

Command Station features a computer interface and software for those who wish to customize there decoders with a maximum of ease - of course the decoders can also be customized from the handpeice.

SUP-01- Starter Pack - Introductory Special.. \$1375.00

Command Station - Walkaround Controller and System Programmer - Cable Connector Panel - Power Booster featuring 2 x 5 amp stations and/or reversing block controller 1.5 amp decoder - EasyRamp Software & Computer Interface All cables to connect Control Components and Manual.

For full details contact us to organize a hands on demonstration or to receive a full information package on "System One"

See what happens when you ask for more !

Kato GP35 - Phase I
Union Pacific No. 1036
\$165-00

Northeastern scale lumber and Sheet - large selection in stock at all times

Detail Associates & Detail
West detail parts - large selection in stock at all times

L.H.C. Pemco
Southern Pacific - 2-6-0 with oil burner tender
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Computers in Model Railroading

A C Lynn Zelmer

Computer Graphics Made Simple: ZELMER FAMILY CIRCUS

The first several articles in this series, updated from a similar series in the PNR *Switchlist*, covered some of the basics of buying and using a computer. The last article was a new topic, using a digital camera. This article describes some of my attempts at preparing images, technical drawings, and special effects over the years.

Mainline readers may be aware that one of my model projects is a small, pre-1945, 'mud show' type of circus. I'm building a tiny fleet of trucks to carry the circus, all of which need signs. I could have purchased press-on lettering or even used individual decal letters to do the job, however, I live some distance from a hobby shop or drafting store... and I had a computer that should have been able to help with the job, even though I am not an artist.

There are two kinds of drawing programs for most computers. The first kind, the *paint*-or *draw* style program, allows the user to make freehand drawings and comes with a palate of artists' tools. The second kind, *CAD* (computer assisted design or drawing), simulates the use of T-square and drawing board.

Both types are available on the desktop computer, although the paint-type programs are more common for home use. While Macintosh and Amiga computers probably have the best low-cost drawing capabilities, almost any computer can be used to prepare simple drawings, track plans and other illustrations.

Zelmer FAMILY CIRCUS

My first sign (above) took about

20 minutes to complete on a DOS machine roughly three years ago and is suitable for a long narrow sign board on the side of a truck. It doesn't use fancy lettering or a circus design but I was able to print it out on paper full size with a dot matrix (medium quality) printer. A quick reduction on a photocopier produced useable copies on coloured paper for mounting on my truck.

ZELMER FAMILY CIRCUS

ZELMER FAMILY CIRCUS

Zelmer FAMILY CIRCUS

Today both software and hardware tools have improved and it takes only a minute to prepare the same sign, including the time to choose a circus type face (font), and print it on a laser printer in a variety of sizes. With the right kind of printer I could even print it the correct size on clear transparency film for use as a window or on decal paper.

I might not even need drawing software as some word processing packages will allow you to add boxes, etc., to your text.

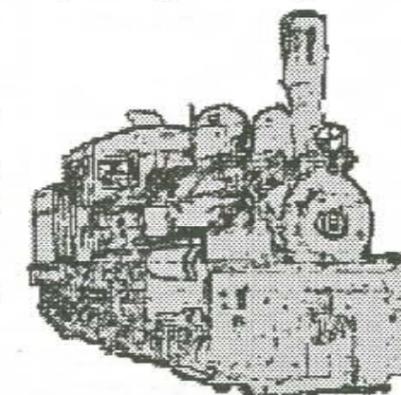


For a number of years I used a drawing similar to the one above, printed with a dot matrix printer, for my *Switchlist* 'pike' ad. While it took much longer to draw—about three hours if I remember right—and is quite crude, it was satisfactory for the purpose. It is obviously a more complex image; the engine is formed from various boxes and

circles 'filled' with black as a background colour.

I'll discuss CAD and scanners for capturing an image like the locomotive at the top of the page (the model for the crude sketch) in another article, however, the illustration below will serve as an 'teaser' for the future.

After the original b&w negative was scanned, Photoshop™ (software for manipulating photos) was used to convert the image to a line drawing, followed by Canvas™ for background elimination and shading. Total time required: approximately 1 hour.



Hillcrest Lumber #5, Vancouver Island
The software to produce these results ranges from about \$20 for 'shareware' (advertisements in consumer-oriented computer magazines) to \$1,000 plus for professional products. Adequate draw/paint software often comes free as part of some 'mouse' packages and is included with 'Windows'. Most tools require a mouse for drawing.

The best results, however, come from creative users, not the software, and one of my personal goals is to improve my skills at drawing with pencil and paper.

CONVENTION '95

For those who could not make it

LAYOUT TOURS VIDEO

A Video of the layouts on the various tours and inspections is now available from the Company Store.

60 superb mins for only \$29.95

Australasian Region Mugs are now available for only \$7.50.

A great addition to any train room.

Australasian Region Golf style shirts in Royal Blue to fit most normal modellers

from the Company Store

On a beautiful, crisp Saturday morning Modellers from all walks of life made their way to the Australasian Region Convention held at the High School at Maryong, a north western suburb of Sydney. Registrants started to arrive at 8.30 am and after signing in and collecting their "showbags" made their way to the main hall. The hall contained many commercial stands with a large variety of goods for all types of modellers. There were two layouts in the hall to entertain the visitors between clinics. These were 'Finger Ridge' an interesting layout featuring many scratch built buildings, and numerous logging trains hauled by Climax locos; and "Lost River Canyon", a whimsical layout featuring trains and bridges in three gauges. (1) HO std, (2) HOn3 and (3) HOn30". the layout is of an area in northern Idaho.

There were many clinics, some of them repeated on other days. The "feature" clinics were given by our guest W. Allen McClelland. Allen also gave the presentation at the Banquet. Although the weather was fresh, students from the school were always there to offer refreshments of tea, coffee, and cakes. Both the contest and silent auctions were very well attended. Sydney turned on a small shower during the evening layout tour on Saturday night, but the supper at John Saxon's made up for it.

SEE YOU IN MELBOURNE FOR THE NEXT CONVENTION

SYDNEY CONVENTION 1995 - Model Contest Winners

Steam Locomotives	1st	Phil Badger	N	NSWGR Garrett Loco
	2nd	Roger Hoad	Nn3	D & RGW K37 Loco
	3rd	Gavin Hince	On3	Steam Lokie
Diesel and Other	1st	Peter MacDonald	HO	VR 'T' Class Diesel
	2nd	Laurie Green	On3	NG Tank Speeder
	3rd	David Latham	HO	GE Dash 8-40 BW Diesel
Passenger Cars	1st	Peter MacDonald	HO	VR 'AW' Coach
	2nd	Phil Badger	N	NSW 'HFL' Coach
	3rd	Peter MacDonald	HO	VR 'BCE' Coach
Freight Cars	1st	David North	HO	ATSF TOFC Flat Car
	2nd	Laurie Green	On3	D & RGW Stock Car
	3rd	Laurie Green	On3	D & RGW Reefer
Cabooses	1st	Laurie Green	On3	RGS Caboose
	2nd	Paul Richie	Sn3	DSP & P 4 wheel Caboose
M O W	1st	Phil Badger	N	NSW Bogie Water Gin
Structures (On Line)	1st	Peter MacDonald	HO	VR Signal Box
	2nd	Frans Persson	HO	CN Coaling Tower
	3rd	Roger Hoad	N	D & RGW Coaling Tower
Structures (Off Line)	1st	Laurie Green	O	Tie & Timber Mill
	2nd	Laurie Green	O	Donkey Engine
	3rd	Gavin Hince	O	Dolbeer Donkey Engine
	3rd	George Paxon	O	Feed Mill
Best In Show - John Kiddell Award		David North	HO	ATSF TOFC Flat Car
Best Entry By A Modeller - John Gordon Award		Peter MacDonald	HO	VR Signal Box
Best Entry By A 'Junior' - John Lebsanft Award		Gavin Hince	O	Dolbeer Donkey Engine
Passenger Car Excellence - Wm K Walther Award		Peter MacDonald	HO	VR 'AW' Coach
Levity Contest	1st	Keith Pratt		USA Pirates V Australia Railroad
	2nd	Jenny Smith		Badger Train
	3rd	Phil Badger		Gaurd Dog Van

Photo Contest Winners

Model Photography Colour	1st	Bob Kollwyn	© Lunch Break
	2nd	Paul Richie	© South Park #5
	3rd	Tony Earp	© Ore Bins
Prototype Colour	1st	Gavin Hince	© DRGW Freight
	2nd	Ian Petherick	© Blow Down
	3rd	Ian Petheric	© Stock Cars
Model B/W	No Entries		
Prototype B/W	No Award		

WELCOME ABOARD

Please Welcome the following Members to the Australasian Region of the N.M.R.A.

MOLO, Nick 15 Harbour View Rd Hackham West. S.A 5163	HO	BAILEY, Jon 5 Ardlethan St Fisher ACT 2611	HO	BARTON, Howard 52 St Andrews Boulevard Liverpool NSW 2170	HO
DAVIS, Graham 25 Berrigans Rd Mudgeeraba Qld 4213	HOn3	EMERSON, Charles 17 Cruickshank St Bellbird NSW 2325	HO/N	DOUGLAS, Bob 74 Melville Terrace Manly Qld 4178	HO
ASPINAL, Steven 48 Maple Drive Andergrove Qld 4740	HO	JONES, Don 2/8 Avona Avenue Glebe NSW 2037	HO	ATCHISON, Avon 5 Nicolet Drive Nth Tambourine Qld 4272	HOn3
BROWN, Jan (mrs) 5 Afternoon Court St Clair NSW 2759	HO	ROACH, Arvid 6919 Harrison Lane Alexandria Va. 22306-1430	USA	JOYCE, Nick 5 Afternoon Court St Clair NSW 2759	HO
JOYCE, Sam (miss) 5 Afternoon Court St Clair NSW 2759	HO	MELLIAR-PHELPS, Michael 1/129 Pacific Highway Turrumurra NSW 2074		MacDONALD, Peter 4 Boyd Street Bacchus Marsh Vic 3340	HO
WALLACE, Mike 4a Richmond Street Cronulla NSW 2230	HO	RINGROSE, Robert 10 Gillquist Way Pakeham Vic 3810	HO	LEIGH, Simon 704/5 Jersey Road Artarmon NSW 2064	N
ZLATAROW, Fred 19 Cawara Avenue Carss Park NSW 2221	HO	MacGREGOR, Gerry 16 Woodland Road Johnsonville, Wellington NZ	HO	OWEN, Tony 44 Hicks Close Whitby, Wellington NZ	HO
CASEY, John 57 Chepana Street Lake Cathie NSW 2445	HO	O'HARE, Jackie (mrs) 6 Knight Place Castlecrag NSW 2068	HO	OTTAWAY, Stephen P.O. Box 1534 Orange NSW 2800	HO
SEK, Peter P.O. Box 284 Emerald Vic 3782	N/HO	STOKES, Bob 9 Bronzewing Street Tahmoor NSW 2573	HO	MORECROFT, Ken 14 Cannons Creek Road Cannons Creek Vic 3977	HO
MATHEWSON, Ray 28 Wilton Street Lervin NZ	HO	HARVEY, John 1 Marlee Place Narrabundah ACT 2604	HO	TIMMINS, Bob 14 Albers Road Upper Beaconsfield Vic 3808	HO
CARROLL, C.P. P.O. Box 262 Turrumurra NSW 2074	HO	CARR, Bob 22 Haywood Street Epping NSW 2121	HO	PRATTIS, John 159 Jackie Howe Cres MacArthur ACT 2904	HO

INTERCHANGE

by Graeme Hodges

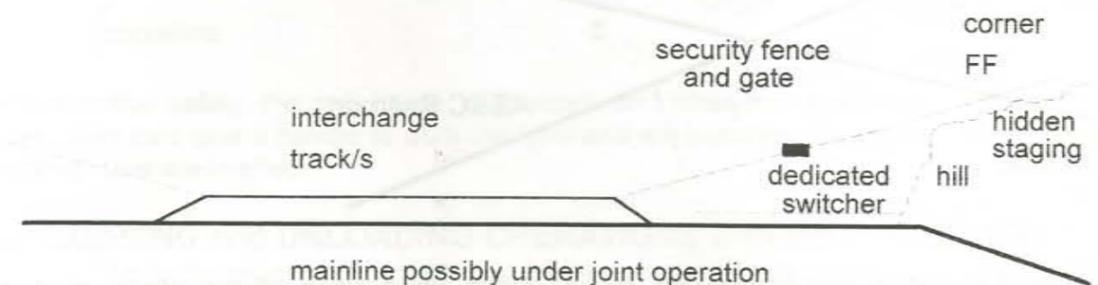
To misquote the old joke: "What's a four-letter word for interchange?" The answer is "Work! Lots of it!" The principles and practice of interchange have often been noted; for instance, Gordon Odegard's "All aboard: Interchanges", *Model Railroader*, February, 1982.

Often, the greatest amount of interchange-traffic is thought of as occurring at mainline ends, in effect making the modelled railroad a bridge route; possibly concentrating too much weight on end-to-end movements and on terminal storage/staging. But interchanges can be anywhere along the mainline; they use space most effectively, literally wherever a turnout and short length of track can be squeezed in.

Secondly, the layout of interchanges, even those of more complex kinds, is so simple and low-key in both trackwork and ancillary buildings that it does not overwhelm the equation of mainline to scenery. Compare the very different effect of almost any properly-sized factory or fully-modelled industry. Modelling them might best be kept for the corners where curve radii leave plenty of space unavailable to mainline track. Use those long, narrow stretches of mainline track for interchanges; a fence and a gate, a couple of tracks, a hill, a line of trees, even a ferry can maintain visual balance.

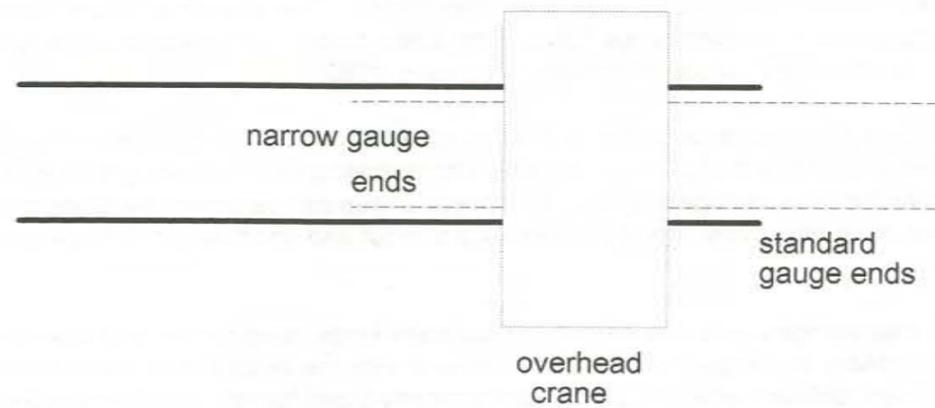
Thirdly, the actual kinds of interchange themselves are so varied and even the simplest so suggestive of an infinite number of sources and destinations that the small space required is quite disproportionate to the infinity of operational interest. Indeed, no other piece of track is as rich in practicality and possibility as the interchange.

Where mainline space is particularly tight, a spur or passing siding will suffice. It can be on trackage under joint operation between two separate roads or the main/branch of one road.



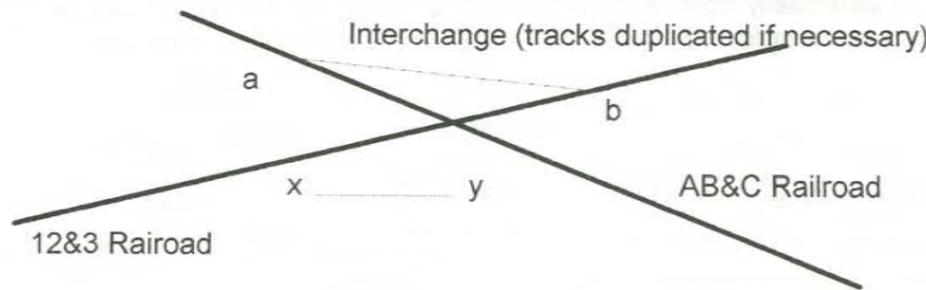
A train, travelling in either direction, of the 12&3 road drops off cars which are later picked up by a train, travelling in either direction, of the AB&C road. A passing loop is far more efficient than the spur because it allows equality between directions. When not occupied by interchange traffic, the track might allow the passage of conflicting (short) trains or short-term parking for, say, a work train. Where this layout gives extra benefit in use of space is that the actual interchange itself might be an extension from either end as shown by the dashed lines. It can go into the corner outside the mainline radius. The *Dukane & Rio Grande Western* has this kind of arrangement at Larrest where it interchanges with the large military base of Fort Frisco (shown FF). A dedicated switcher runs along this spur either pulling in or pushing out interchanged cars from the out-of-sight Fort (shown by dotted line). A security fence and gate is all that one sees of the military. But the variety and amount of traffic is very wide: troop trains, supply trains including flat cars carrying ordnance, moving in response to regular schedules or news from the actual world.

For those who like detailed trackwork and craftsman scale operation, a variation of this simple interchange is between standard and narrow gauge roads. Tracks can be either laid parallel, and one imagines the transfer of freight and passengers across the platform, or, overlapped:



Cars are pushed to the end of track by a loco of appropriate gauge, picked up by a loco of the other gauge. If one is more adventurous and prepared to fiddle, something like the truck-exchange of the East Broad Top is possible. *Model Railroader*, December, 1971 has a detailed article by Mike Iczkowski on the EBT.

For those who like to engage in interlocking and the necessity of keeping a picture of train movements, especially conflicting movements, in mind, the interchange where two tracks actually cross like this:



requires special signalling and interlocking, maybe gates which close off the inferior road, or smashboards.

Obviously, one direction on both railroads will be favoured but adding a second interchange track through x-y is not necessarily the best way to go. Parallel duplication of the interchange a-b (if possible) or use of a nearby passing loop is likely more prototypical and keeps switching/interlocking operations manageable.

To my mind, the most interesting kind of interchange, and one which incorporates all these benefits, is the car ferry. In addition and important, too, is the very fact that, being a water operation, it reinforces the sense of a place other than dry Australia.

Here are references to a few articles on prototype and model ferry operations:

Trains March, 1977 "The train that takes a barge to work: Iris G, et al"; January, 1984, Car ferry on the Mississippi; October, 1991, Car ferry.

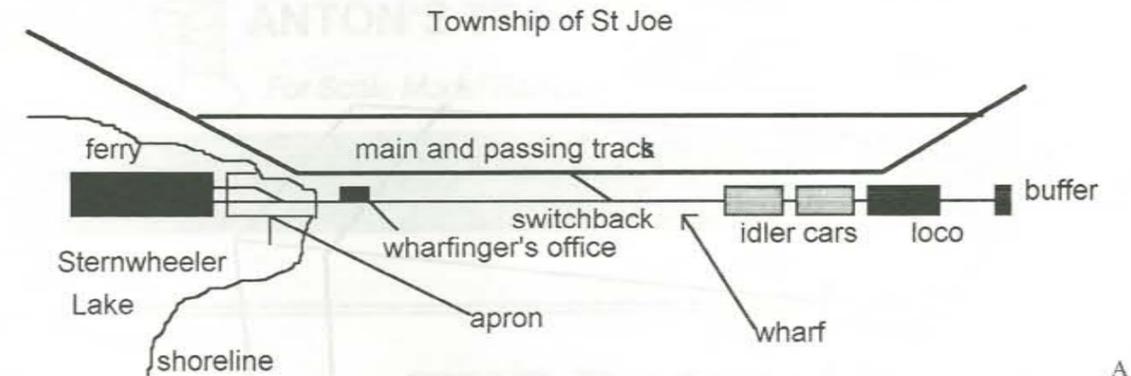
Railfan & Railroad: November 1982, January, 1983; "Mopac's Navy"; (mtc)

Model Railroader: January, 1970, "Carferry Anabel"; August, 1972, "The Harbor on the KR&D." *Railroad Model Craftsman*, May, 1993, "Building the linkspan [at Union Bay]: Pt II", and June, "The making of [ships for] Union Bay: Pt III". *The Best of Railroad Modeller*, Fall, 1975, "Cahuenga Pass & Interbay Railroad, Part 4".

(The information in these modelling magazines is basically similar; you don't need to refer to them all.)

Although the *Dukane & Rio Grande Railroad* crosses a mountain range east/west, it passes through the riverside town of St Joe where it interchanges north, to Spokane and, ultimately, Canada via the St Joe River and Sternwheeler Lake. As the shores of the Lake forbid any kind of trackwork (including that of goats), trains must take to the water. Setting, need and operation are suggested by the prototype described in the *Trains* article, March, 1977, "Iris G, et al", operating in British Columbia on Slocan Lake.

A switchback leads from the main/passing siding to the ferry wharf and apron along the layout edge, like this:



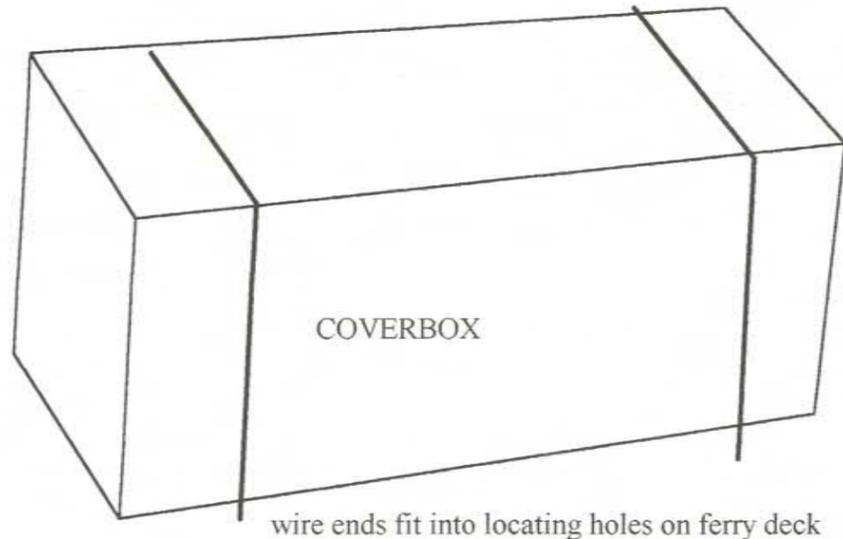
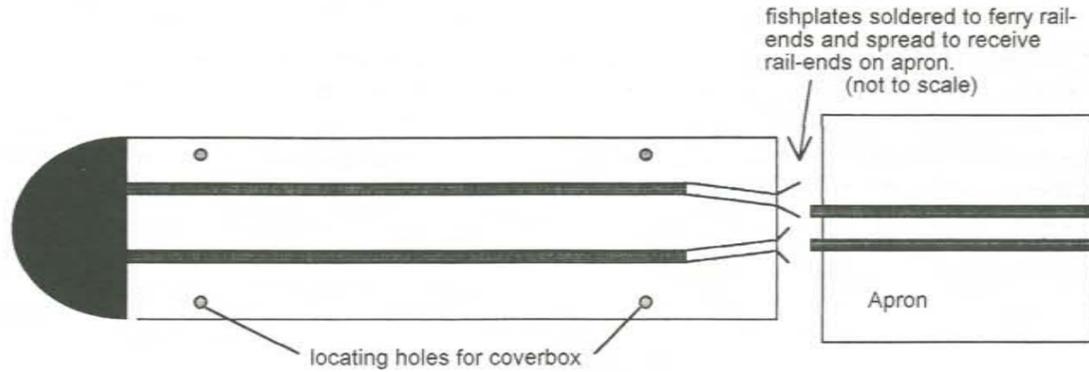
For locomotive safety, the switchback is powered no further than the frog of the turnout on the apron. Idler cars give a handle to work the ferry and are prototypically correct. Strict loading and operating rules are in effect:

LOADING and UNLOADING OPERATIONS with the FERRY SERVICE

1. No locomotives are to cross onto the ferry under any circumstances. Idler cars must be used between locomotive and ferry.
2. Loading/unloading operations must never have an imbalance of more than one car between tracks.
3. Slow speed orders apply at all times.
4. Unattended cars must not be left on the incline down to the ferry.
5. Ferry is to be loaded rear track first, unloaded from the front track first, unless otherwise instructed by the wharfinger.
6. Trains must be on time for ferry arrivals/departures.
7. Docking: ensure that all shore tracks and ferry tracks are properly aligned and connected.
8. Sailing: ensure that all moorings and lashings are properly secured before sailing.
9. Turnout to ferry track on mainline must be returned to mainline alignment after loading/unloading concludes.

The ferry is of very simple construction; a piece of three-quarter inch (19mm) composite

board, roughly shaped and overlaid with scribed-balsa planking. It carries two slightly- arced Code 100 tracks, each long enough to hold three 50' cars. It is movable. Peco Code 100 fishplates are soldered to the rail-ends on the ferry, and spread at the open end so that they will slip easily onto the rail-ends on the apron. (The last 3 or 4 inches of track on the ferry are unfixed so that they can be moved slightly to allow alignment and connection.) The ferry is moved away slightly from the apron, a cardboard coverbox placed over the cars (Rule 8). U-shaped clothes-hanger wire over its top and sides and extending half an inch or so below its bottom hold the box in position on the ferry, and the whole thing, with cars enclosed, is lifted up and away. To avoid reality-destroying scratches on the surface, the water of Sternwheeler Lake is pebble glass.



Dimensions:

Ferry: length: 2' (610mm); width: 5" (127mm);
Cover box: 1'4.5" x 4" x 4" (419mm x 102mm x 102mm)

Ferry interchange is predominantly off-line. When the ferry sails, it is carried to and unloaded by hand (through a railer) at a terminal which interchanges with traffic coming predominantly from the south; traffic which, of course, the D&RGW then transports west to the ferry at St Joe for interchange north.

The trackwork and wharf, from the end bumper to the frog on the apron, is 9'3" (2820mm) long (plus 3' (914mm) x 6.5" (165mm) for the water) but only 3" (76mm) wide; a long, narrow sliver of space along the layout edge which is a veritable powerhouse of switching and interchange work.

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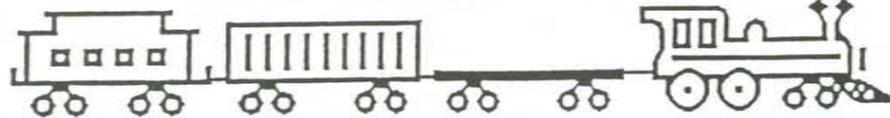
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HOW TO BUILD A LAYOUT

Tips for the Modeller with little time or little money.

By Gerry Hopkins MMR

Model Railroading is the world's second biggest hobby and a certain percentage of Model Railroaders are actually Railroad Modellers! These modellers fall into three main groups:-

1/ 25% - little money but plenty of time, e.g. unemployed, pensioners, too many kids.

2/ 50% - have got it right - almost enough time & almost enough money. This group have managed to build a model railroad of some kind.

3/ 25% - Plenty of money but not enough time, e.g. they spend all their time making money but have little time to spend it!

The basic materials are generally the same for groups 1 & 3, (the people in group 2 have already built a railroad they use the materials they feel most comfortable with), the difference is in the tools or just the use of them.

The tools fall into two groups. For group 1..... hammer - \$5.95, nails - \$10.00, wood glue - \$3.95 per tube (or Aquadhere - \$8.95 for the same amount), pencil - \$2.00, heavy duty knife - \$2.50 in Woolies, General duty wood saw - \$18.00 at BBC, some clothes pegs.

For group 3 the shopping list would be:..... electric screw driver - \$90 - \$190 (I prefer Riobi), Phillips head screws for use with power driver \$3.95 per 100 for 1 1/2 "x 8's, Hot melt glue gun - \$25 - \$100, glue sticks \$1.20 per 4" stick at BBC or \$0.70 per 8" stick at Ammsons in Artarmon, pencil - \$2.00, Stanley knife - \$8.95, 7" electric saw - \$90 - \$200, some adjustable clamps.

The wooden frame is normally of an "L Girder" construction, the timber 25 x 50 mm (1" x 2" for steam era modellers) Radiata Pine with the edge of one fastened to the larger side of the other. There are many publications on the use and building of this type of framework so I won't go into the basics here.....just the method of putting things together.

Gp 1 would be able to use the wood glue for strength with the timbers held together with nails until the glue dries and the framework is strong. Gp 3 would use the hot melt glue and a few power driven screws. The hot melt glue sets in a few minutes.....don't get any on your fingersIT'S HOT.

After the framework the next step is the track bed. NEVER use pine board if it gets damp it expands like a sponge. I strongly suggest Craftwood, it is very cheap, a sheet 8ft x 4ft x 5mm only costs \$19.00 while the same size in ply wood is around \$60.00. Ply wood is OK if you get marine quality but the Craftwood saws much cleaner with hand or circular saw. The 5mm sounds a bit thin but I normally laminate two or even three thicknesses together.

I use cardboard from old boxes to make a template, this is both cheap and quick. The craft knife can cut the cardboard very easily. I then lay sections of the template on a flat surface and build the trackbed over it. It is unusual for me to have any straight track, I use sections about 150 - 250 mm long and 50mm wide which are laminated and overlapped. I use the hot melt glue but the normal wood glue is just as strong but takes an hour to set.

I use automotive cork on top of this lamination. A sheet 4ft x 2ft x 5mm costs \$17.00 (modellers in Group 3 can purchase the same amount, already cut to width, from a hobby shop for around \$42.00). Sections 150 - 250mm long are then glued to the track bed, if you use too much glue the cork will become hard and you will lose the sound suppression benefits. As you do each section put a flat weight (any colour) on it to make sure it stays flat.

The next step is to lay the track. If at all possible, start by laying a more complex section of track and turnouts. Apply a very slight smear of glue to the cork and put the track in place. As you lay each section again use a flat weight (the same colour will do) to

hold things flat. This applies to modellers from both groups.

For most modellers the wiring is the most daunting task but if you follow a few basic rules the job becomes easier. Do NOT use telephone wire you got from a mate, it is too small and will break easily as it's normally single stranded. Use a medium duty hookup wire for most short runs but use heavy duty lighting cable for the main out from the throttles to the main line. Methods of control have been discussed in many magazines, you choose the method best suited to your needs and knowledge. Set your self a colour code and keep to it. When you run the wire to the track it's a 50/50 chance that your loco will run the right way. BUT due to the Murphy Factor 90% of the time you will get it wrong. Do not rely on the contact between rail and fish plate always wire from rail to rail.

There are many ways to form your scenery shell . 1) Use chicken wire as a frame (it's better left to the chooks). 2) Use scrunched up newspaper held in place with masking tape . (the chemicals in the ink or paper some times affects the setting properties of the plaster .. but is better than (1). 3) Styrafoam, good for large mountains and rock faces but difficult to change or adjust at a later date. 4) Cardboard lattice or webbing , this method is both quick and easy and you get a good idea of what the finished terrain will look like. It is easy to adjust and is very cheap.

I will only make suggestions for No. 4. Cut corrugated cardboard (you can get some old boxes from your local super maket) into strips about 2 or 3 foot in length and 1" wide. Use the hot melt glue to tack an end in place, this will take about 30 - 60 secs. If you use the slower glue it can be held in place with clothes pegs. Bend the strip to shape as you go and glue in place. A cross brace can be added every so often. A large section can be done in an afternoon.

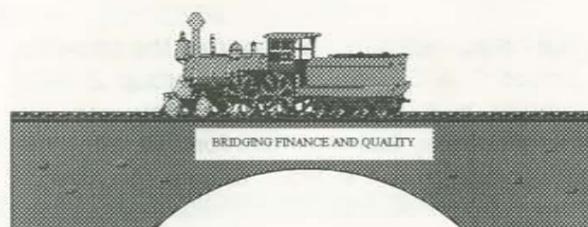
Good quality paper towel dipped in plaster is then layed over the frame work. There are many books and videos on this topic so I will let you read the books yourselves. White plaster is the worst thing in the world to colour, I add a colour pigment to mine to give a base colour, yellow ochre was used on Lost River Canyon and light grey was used on Kennebec

County. These are normally available at your hardware store.

Adding highlights to the rock work is done with a stiff artist's brush, the colours are mixed on and piece of Craftwood. The paint is cheap acrylic found at any news agent with a few special colours bought from an art supply shop.

The above hints may help modellers to get their layout started whether they be rich, poor, lazy, uncertain, sober, or workaholics. Remember the hardest part is to get started ! Once you start, don't be afraid to change things as you go . There is no right or wrong way to do your modelling the best way is the one you are most comfortable with.

Happy Modelling.



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