



MAIN LINE

OFFICIAL PUBLICATION OF THE AUSTRALASIAN REGION



VOL 2 NO 3

JULY, AUGUST, SEPTEMBER, 1985

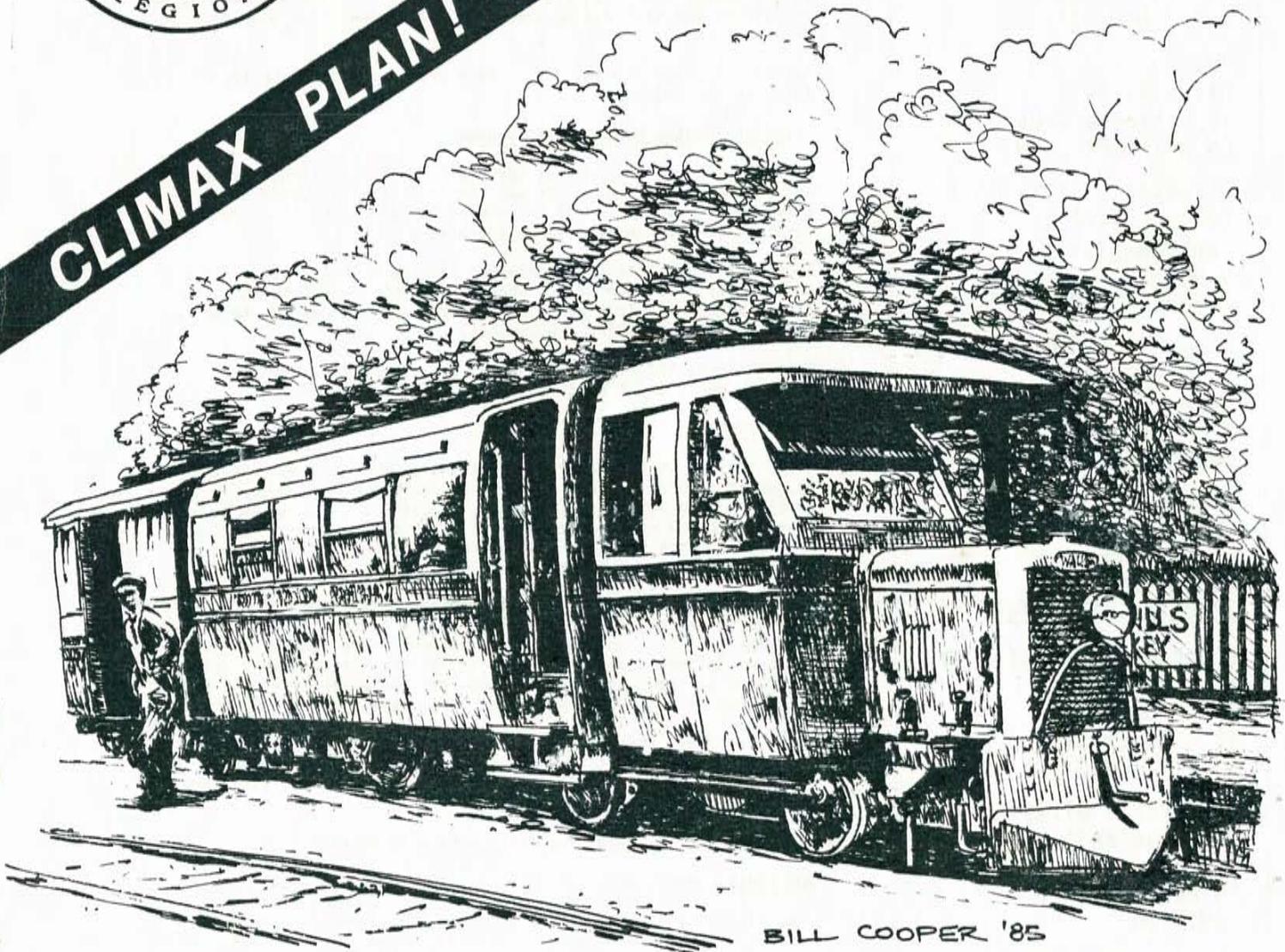
EDITOR *Bill Cooper*

BUSINESS ADDRESS *P.O. Box 155, Baulkham Hills*

N.S.W. 2153, AUSTRALIA

REGISTERED BY AUSTRALIA POST - PUBLN # NBH 7190

CLIMAX PLAN!



1932 Walker articulated railcar and van of the Irish 3ft. gauge Clogher Valley Railway, which expired in 1942. The car found a new home on the County Donegal, itself now long defunct, but survives, at rest in the Belfast Transport Museum.

DIRECTORY

President & AR Trustee -

John Saxon
122b Castle Hill Rd
WEST PENNANT HILLS
NSW 2120

Vice President -

Fred Gill
P.O. Box 155
BAULKHAM HILLS
NSW 2153

Secretary -

Phil Knife
97 Leichhardt St
RUSE NSW 2560

Treasurer -

Clive Riley
16 Wisteria Cres
CHERRYBROOK NSW 2120

Director - Division I (Queensland)

Ian Venables
7 Aberfoyle St
KENMORE QLD 4069

Director - Division II (ACT & NSW)

Peter Weller-Lewis
33 Hayley Cres
QUEANBEYAN NSW 2620

Director - Division III (Victoria/Tasmania)

Max Gottliebse
PO Box 205
BORONIA VIC 3155

Director - Division IV (SA, WA & NT)

Ray Brownbill
12 Signett St
HALLETT COVE SA 5158

Director - Division V (New Zealand)

Keith Oman
15 Patterson St
HAMILTON

Main Line Editor & Tape/Slide Despatcher

Bill Cooper
2 Mason Ave
CHELTENHAM NSW 2119

Main Line Editor

With great regret, I have to advise that Fred Gill has had to step down as Editor of the Main Line on medical advice. We all trust his illness is only temporary and wish him a speedy recovery. Fred's untiring work with the assistance of his wife Jean has lifted the magazine to a professional standard and he will be missed. Fred continues however as Vice-President of the Region.

I am very pleased that Bill Cooper has accepted appointment as Editor. Bill is a modeller of repute and is Head Teacher of Aerial Navigation at Sydney T.F.E. This issue of the magazine has been rushed (although late) and I am sure we will soon see evidence of Bill's abilities in the publication field as well.

Queensland Director

Ian Venables has kindly accepted appointment as Division I Director following Brian Marstaeller's resignation. Ian is well known in Brisbane and will be an asset to the Region.

50th Anniversary Convention - Milwaukee

Is regrettably over. It was my first U.S. Convention with over 2,200 registered and was said by the experienced convention attendees to be one of the best ever.

Because of space limitations, I have provided a separate report later in the magazine.

Board of Trustee Meeting - Milwaukee

As AR Trustee, I attended 2½ days (& nights) of meetings of the BOT and various committees. It was the first time in years that every Region was represented and AR received a pat on the back from the meeting for our progress since inception.

Nothing earth-shattering eventuated and the Bulletin will in due course have a full report. There was a lot of discussion with little apparent effect and I believe future meetings are to be re-organised to streamline proceedings.

Nevertheless, the scenes were set for further improvements in the NMRA for decision at next years March & July meetings.

Exhibitions

I was invited on the weekend of 7 & 8 September to co-judge the layouts and modelling entries of the Combined Hunter Region Rail Modellers Association exhibition at Newcastle. Its on again next year and if you want to see some first class layouts, clinics and models you might not see in Sydney or Melbourne, I recommend the 2 hour easy drive each way as well worth-while.

We are again attending as a Region at the AMRA Liverpool NSW Exhibition and this time we are awarding a prize of our own, styled the NMRA Australasian Region Encouragement Award, to the layout which we believe shows great promise for the future - this obviously might not be the best layout on show but one which evidences the likelihood of being best next year or perhaps the year after.

In Easter 1986, the New Zealand Association of Model Railway Clubs are sponsoring their 11th Biennial Convention in Wellington. The last convention, in Hamilton, drew 330 attendees and a visit over Easter next year is recommended.

The next issue of Main Line will carry more details.

Our First Convention

I am pleased to report that plans are well advanced for the Regions first convention to be held at Macquarie University, Sydney on 17 May, 1986 with local layout visits the next day.

We plan to have clinics, films, videos, slides a surprise exhibition layout, a hobby shop and a silent auction followed by a banquet. The ladies will also be catered for and accomodation where necessary will be arranged.

Put these dates in your diary now - 17 and 18 May, 1986. It will be a great event.

Until next time.

JOHN

EDITORIAL

TOLERANCE

By Bill Cooper

No, this is not about slop in the running gear of a Rivarossi loco. Rather, it addresses our attitude towards our fellow modellers.

EXTERNAL INTOLERANCE

Modelling, including model railways and especially the operation of models is today a much more credible pastime than it once was. Purchase and operation of ready-to-run or kit-built models by adults was widely held to be evidence of a retarded maturity, or even to be a bit strange. For instance in the mid-50's, MODEL RAILROADER mentioned the case of a local government candidate whose (successful) opponent's ad asked 'Do you really want a Mayor who plays trains?'

Fortunately this attitude has receded and such leisure activities are correctly perceived as therapeutic. Escape from reality is good for you and modelling is a much safer, healthier method than such traditional adult methods as getting stoned.

Of course, the really dedicated modeller does not and probably never has cared what other people think. They know what they want to do and are quite oblivious of any dissent. But the less committed majority may be swayed, to the extent either of not starting or not revealing their interest at all. There is some consolation in the psychiatrist's axiom 'Satisfaction in adulthood comes from the realisation of childhood dreams!' So there.

INTERNAL INTOLERANCE

Yet the very people most stung by the rubbishing from the great unwashed are often themselves guilty of substantial bias towards the efforts and interests of others. Again, from the MODEL RAILROADER at about the same time as the last quotation, stated the photo caption 'They don't know what it takes!' Who is interested in modelling highways, trucks and buses (when there are lovely trains about?) The now, obvious answer is 'a lot of people'. Highway vehicles are more relevant and accessible today, especially for younger modellers, than the beloved steam trains of us older guys and some beautiful modelling is done, aided by superb kits and parts.

/cont.

'Modern Image' has received its share of bucketing from the steam brigade, though diesels have now gained some grudging acceptance, assisted by such landmark articles as Model Railroader's 'Diesels, I like 'em!' Other examples abound ... US prototype buffs may despise 4-wheel stock and so on.

AGGRESSION IS OK, BUT...

Now, in what may appear to be a complete about-face, it can be said that there is NOTHING WRONG with specialized, factional interest and with being vocal about it. The hobby is simply so vast that some concentration of research and effort is essential if anything worthwhile is to be done. Further discussion with others helps in decision making, by bouncing ideas off people. The persuader is frequently just trying to persuade himself, rather than the poor persuadee.

TOLERANCE IS BEST

So, by all means, go to it, harangue people about Shay locos... or Phase II GP7's, or whatever, PROVIDING you keep an open mind, receptive to other people's ideas. At the next exhibition, don't storm past the military/aircraft/ship models on display. Stop and look. Ask questions. Get people to share their ideas. You may be astonished at how well some techniques translate from one hobby to another. Check out other hobby books. For example, one of the best-organized, informative Kalmbach modelling books is titled 'Building Model Airliners'.

Tolerance of the ideas of others, how they do things, is an endearing feature which benefits everybody, not least the person displaying it.

* * * * *



All Leading Lines of Kits and Parts Stocked
N, TT, HO, HON³, OO, 1/4"

SCENIC ASSESSORIES - BOOKS - MAGAZINES
Drop us a line for our latest Price List
MAIL ORDER AND BANKCARD WELCOME

ALCE'S HOBBY SHOP
SHOP 6, 20 McFARLANE STREET, MERRYLANDS, NSW
PO Box 257, MERRYLANDS, 2160 PHONE (02) 682 3775

A SIX POINT PLAN TO KEEP THE HOBBY ON THE RIGHT TRACK

1. Don't just complain.
2. Know what you are doing.
3. Put on a happy face.
4. Attract more people to model railroading.
5. Upgrade the model railroad image.
6. Encourage people to like model railroads.

- from John G. Lebsanft.

WHEEL-TO-RAIL ELECTRICAL CONTACT.....AN ANSWER

Ever had the problem of trying to run your trains after they have been standing still for a long period? Normally you have to take on the task of cleaning the tops of your rail with an abrasive rubber pad or some other time-consuming cleaning method.

Well, that problem no longer exists on my layout as I have solved all dirt problems in one press of a button. I now use a product called ARCHER TV TUNER CLEANER (catalog number 64-2320) which is sold in all TANDY Stores. It comes in a handy pressure pak can and retails for about \$4.49. There is also a small length of plastic tubing that can be used for directing the liquid to a given point.

When I decide to run any trains that have not been used for awhile, I spray the rail ahead of the locomotive for about a foot or so. You can either use the plastic tubing to direct it onto the rail heads or else just spray the whole track, including the ballast. To date I have not had any problems with ballast or track by using this method. Now I run the locomotive back and forwards a couple of times and then send the train off on its way. The wheels of the locomotive spread the cleaner along the track and it cleans away all dirt and grease from both the rail tops and the wheels. Try it, it works for me.

- by John Saxon

RESISTANCE SOLDERING (OR A BETTER WAY TO JOIN METAL)

Most RR modelers use the old soldering iron for all their metal joining work, some also use a small blow-torch or similar. The results vary and because not all of us are successful, our use of super glue or ACC is increasing. I don't know about you but I find that ACC does not always do the job. A few years ago I became aware of resistance soldering, resistance what? you say. Resistance soldering is the use of low voltage and high current to heat the objects to be soldered. Such a unit comprises a transformer with a number of taps, a pair of tweezers or a probe and earth strap.

Basically the electrical current flows down one side of the tweezers or the probe through the work and up the other side of the tweezers or the earth strap. The current is turned on by a foot control and by pulsing you are able to accurately control the heat. The multi tapping on transformer allows you to set the unit for light jobs or heavy jobs. NO you can't get electrocuted but if you momentarily short the tweezers etc you will get lots of sparks, the first time or two scares hell out of you. The use of the tweezers allows you to hold one part of the job and sometimes even both and use the other hand to feed the solder, etc. As the heat is very local and intense one can work quickly, with little heat build up and best of all, other parts don't fall off as easily. I find that I can solder a headlight on and the marker lamps don't fall off, or join two pipes with no hassles. I must be honest - if the tweezers short then light wire etc can be cut or damaged. In fact one lesson you should try when first using resistance soldering, is to take a small piece of brass, hold it in the tweezers and turn on the power. Right before your very eyes it will melt and/or vaporise and that is only after a few seconds. One of the good attributes is this very intense heat in a very small area, it gives you time to do the job and get out before everything else heats up and falls off etc. Once the foot switch is released there is NO more heat. A nice safety angle, no hot iron or burning blowtorch to worry about. Safe for kids too!!!

In actual use resistance soldering is no different to other methods. You still have to have clean work, use flux and of course solder plus practice. I find the more I use the gear the better I am able to do all those little difficult jobs. The tweezers allow you to continue to hold the job while the solder hardens, which is quickly because you didn't use any excess heat. The probe allows you to do nice and easy joins ie boiler bands or the walls in the Suydam "Black Bart Mine". The probe is for heavy work as it provides lots of heat, the tweezers by their very nature are for light work.

What is the cost you ask, well I bought my unit about three years ago and the cost then was about \$150. How can you justify such cost, well go and buy a good soldering iron (one with heat control), also you can use it for a multitude of non railroad related tasks. Jewellery can be repaired very easily, I repaired an old silver sugar bowl and the repair is virtually indistinguishable. A very good article on the use of such a tool is the March/April 1981 edition of Mainline Modeler Magazine. Where do you buy a unit? I bought mine from the Loco Shop in Melbourne, as well, I believe they are available from Royston Electronics in Sydney, Melbourne and Adelaide. Try it - you might like it.

Kerry Mcpherson.

* * * * *
 * REVIEW OF * * * *
 * * * * * *
TAPE SLIDE CLINICS
 * * * * * *
 * * * * * *

CONTINUED -- Available for \$6 from Bill Cooper

780-50 "STYRENE AND OTHER STUFF"

By Al Turner

106 Slides, 40 minute cassette

Author Al Turner is noted for his famous Turner Brothers Circus, but he is also a Master Model Railroader. Al shows how to use ordinary household plastic packaging and structure modelling parts to make building interior furniture. How about an over stuffed chair from a tooth-brush container? Or how about making chairs from plastic model stock...bedposts from porch railings, pillow sacks from potato sacks? Al provides a wealth of ideas for use of various plastic parts in applications where they were never intended. He also shows his modular building construction, where-in the entire outside wall and roof assembly lifts off the interior building assembly, making it easier to see detail. Nor are some of his fabulous circus wagons neglected.

Women who are interested in the doll house craze will like this clinic too, for it stimulates the imagination and shows how one can build something from nothing. You may never throw away anything plastic again!

780-51 "IDENTIFYING AND EXPLAINING STEAM LOCOMOTIVE PARTS"

By Joe Kurilec

249 slides, cassette, 75 mins.

Ever wondered what that funny looking thingamajig is on a steam locomotive? And if you knew, did you know its function? And if so, did you know the many alternate locations it could be and was placed? Joe goes up one side and down the other, including cab and tender, explaining everything from over-fire jets to blow down funnels to tender dog-houses. His photography includes everything from antique 0.4.0s to articulated behemoths along with a good selection of model locomotives. A thorough going and detailing clinic.

780-53 BE IT EVER SO HUMBLE, THERE'S NO PLACE LIKE HOME

By Palmer Kloster

130 slides, 50 minute tape

People on your layout? Of course, they add life to a scene. But where do they live? Palmer's clinic concentrates on

Tape/Slides (continued)

780-53 Victorian houses, not only because they span the steam-diesel age, but because their design, with fancy finials and gingerbread are a challenge and a joy to model.

Palmer covers the complete planning, building, and assembly of a Victorian house in HO scale, including materials, cutting and assembly.....methods, and some very neat tricks. He also shows a number of real Victorians and their frills and fancies. Most of the methods shown are applicable to the design and building of any structure, so add to a modeller's knowledge and skill. A great companion piece to 780-50 STYRENE AND OTHER THINGS by Al Turner.

780-53 OVERHEAD SYSTEMS FOR OPERATION

By Hal Riegger

84 slides, 35 mins

This clinic is for those interested in trolley or (particularly) heavy electric traction such as those electrified portions of the Milwaukee Road, Conrail, etc. Hal discusses both trolley and catenary systems, how they work and how they can be made and installed on the layout, including poles, methods of following curves, making pole brackets and wiring blocks and swing-away sections. One of the advantages of an overhead system is that two different power units can be run independently in the same section of track, and Hal shows how.

Hal has many shots of model railroads operating modified electric locomotives on his own N scale layout, the Penn Valley & Sierra Western which is built in a full scale Western Pacific maintenance-of-way box car.

S Y D N E Y M E E T I N G

The next meeting of the Region in Sydney is to be held at John Saxon's home on Saturday afternoon 19 October, 1985 from 2.30 p.m. to 5.00 p.m. approximately.

All are welcome. There will be slides, a video and a general natter. Perhaps even the Cedar Valley could be operating! Tea & Coffee will be provided.

Remember, 122B Castle Hill Road, West Pennant Hills (Telephone No. 84 7383) at 2.30 p.m. Saturday 19 October, 1985.

A MODEL RAILROADER'S MECCA

That's what Milwaukee was in July/August 1985!

When you get over 2,200 model railroaders together for a week or so in the one city, you need to be certain that your organising committee is going to do a great job.

Well, they succeeded. The organisation associated with 48 layout visits in a fleet of 50 yellow school buses; an average of 40 clinics per day for 6 days; a banquet for 2,000 people; model contests; a steam fan trip; museum visits; a trade show of dozens of model RR manufacturers; uncounted numbers of hobby shop and discounters and a ladies program with all sorts of interesting events can only be imagined if not experienced.

It was a wow!

But to get the best from it, you also need to stay at the Convention Hotel for the social side as well. We did and enjoyed it but those at the more remote locations with children might not have enjoyed it so much.

The Convention Hotel was the Marc Plaza built in the 1920's and in the process of restoration and most people stayed there. It was a five minute walk to the Mecca Centre, an absolutely huge entertainment venue where all of the Convention happenings occurred, including the Banquet on the Saturday night.

The first Saturday afternoon and the Sunday was taken up with Board of Trustee meetings. Saturday night was spent at an informal dinner at Mike Carlson's home (the Bulletin Editor) where we also viewed his 84 ft x 19 ft layout with a seven level double helical-spectacular!

From Monday on, our time was spent on layout tours (some great, some not-so-great); clinics by such celebrities as John Armstrong, Allan McClelland, Art Curren, Tony Koester & Bruce Chubb; a fan trip behind a C & NW 4-6-0 and 2 F 3's; a visit to the Illinois Railroad Museum, a ride behind a Frisco Decapod & in the 1936 Nebraska Zephyr - a duplicate of the famous Burlington Zephyr) and on -and on - it was an exhausting week.

The Banquet on the Saturday night was well attended with eight of the original charter members from 1935 on hand to receive special awards. Very moving.

Most nights were spent in the company of new and old friends over dinner and then after the last clinic, in the Bombay Bicycle Club (a bar at the Marc Plaza) for a nightcap before bed.

We had such a great time that despite the exchange rate, we are saving madly to attend the Boston Convention in 1986. It looks like it will be a winner as well.

Why don't you think about it also? Or Eugene, Oregon in 1987? If you can stretch to afford it, its an experience you will never forget.

JOHN SAXON

DIRECTORS' REPORTS

NSW & ACT - From Peter Weller-Lewis

Elk Run, the layout featured in the last issue of Main Line, was exhibited recently at the Malkara exhibition in Canberra. With assistance from Ian MacFarlane, Darryl Chandler & I provided those attending with views of long trains running in prototypical fashion and at prototypical speeds. We received many favourable comments on this presentation and are looking forward to further exhibitions when more of the detailed scenery will have been completed.

During the exhibition, we distributed all NMRA application forms in hand and are hopeful of attracting new members. We continue to meet regularly and the last meeting was at the home of John Bailey, where the usual good time was had by all who attended.

New Zealand - from Keith Oman

The Hutt Valley Model Railroaders Area Meet

On Friday 28th July, we headed south calling at most of the known Hobby shops on the way en route to the Hutt Valley area meet. Saturday morning, we registered and met several club members and visitors. There were 3 very good clinics held in the morning, covering baseboard construction and handlaying track, point control operation and superdetailing locos.

Saturday afternoon was layout tours with 6 layouts on view; varying from early NZR to American short lines to large American layouts. Layout tours in my view are always good value but have one bad disadvantage in that you take away some ideas which usually involve rebuilding part of your own layout!

The weekend was a very enjoyable one apart from the weather; it didn't just rain, it really rained and blew and on the way home it snowed but that all in the fun of Model Rail Roding.

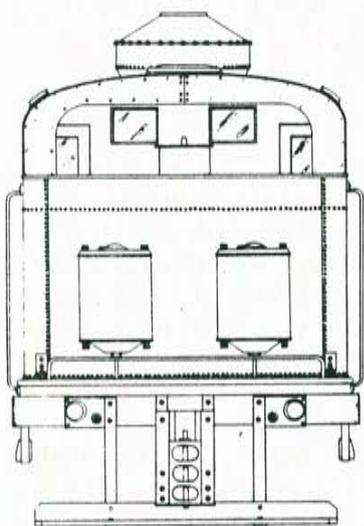
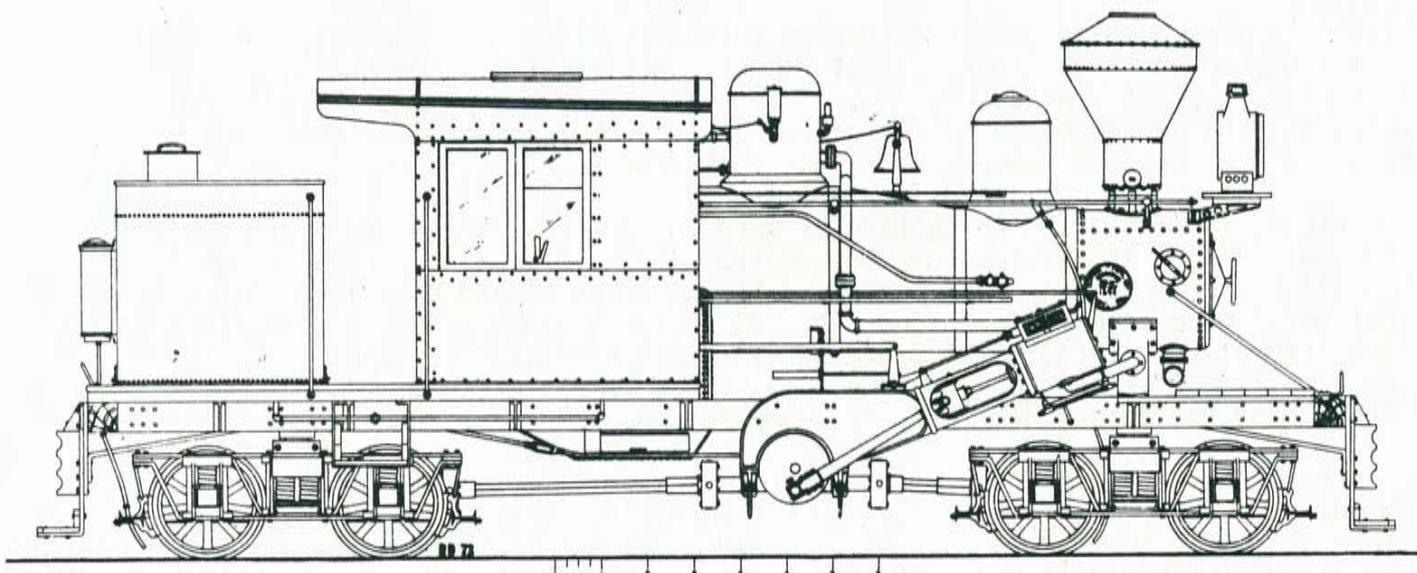
Victoria - from Max Gottliebsen

Our monthly meetings continue to improve. At the last meeting at John Yourn's, we had 13 members plus 5 visitors - a good roll-up. We inspected John's layout under construction and were impressed by his scenery in the process of being taken to the floor in places. The line is U.S. inspired and features narrow gauge as well as standard trackage. We later viewed some RR videos and all-in-all, had an enjoyable time.

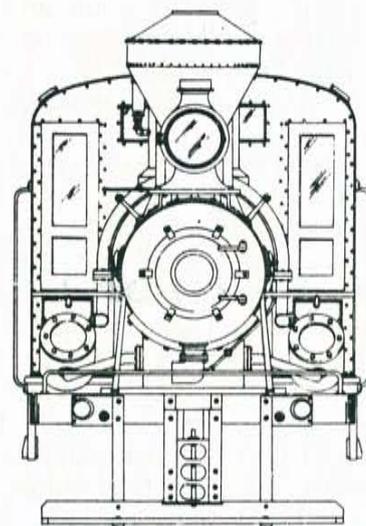
The next meeting will be at Peter Grants at 47 Forest Park Road, Upwey on Friday 4 October - all are welcome.

We are now going to exhibit our own layout in the March A.M.R.A. Exhibition at Camberwell - look for details in the next Main Line.

Finally a reminder that I have the new Regional patches for sale at \$5 each. They are selling well, so don't miss out!



CLIMAX PATENT
GEARED LOCOMOTIVE



DRAWN BY: RICHARD DUNN

JANUARY 1973

CLIMAX #1694

BUILT, JUNE 1928
WEIGHT, 25 TONS
DRIVERS, 29"
CYLINDERS, 9"x12"

CONSTRUCTED FOR THE FORRESTS COMMISSION, MELBOURNE, AUSTRALIA.
THIS LOCOMOTIVE WAS USED ON THE TYERS VALLEY TRAM IN VICTORIA
AND HAD A TRACK GAUGE OF 30".

THIS LOCOMOTIVE IS NOW IN A MUSEUM COLLECTION NEAR MELBOURNE.

ALTHOUGH THIS ENGINE WAS 30" GAUGE, THE TRUCK BOLSTERS WERE
THE SAME ONES USED FOR A 36" GAUGE LOCOMOTIVE. THE SMALLER
TRACK GAUGE WAS ACCOMPLISHED BY USING 3" COLLARS ON THE AXLES
BETWEEN THE JOURNAL BOX AND THE DRIVER.

STIRRUP STEPS - A DIFFERENT LOOK

by C A Forter, Jr. (USA)

STEPS! A simple word - means different things to different people - to a model railroader we can begin to narrow it down to caboose steps, tender steps, locomotive steps or car steps. Now we're getting somewhere, and the somewhere we're getting is to one of my pet peeves in this most interesting hobby - maybe even my pettest peeve. I'll explain further.

Car steps, stirrup steps in particular hardly ever look like a scale model of the real thing - at least to me they don't. Most, if not all, of the plastic beauties you find these days seemed to be ruined by molded on stirrup steps that have a cross-section of about 4" x 6" on the average - that's just too big! Even some of the craftsman kits provide you with a "stick" of staples which measure about 2" x 3". Some of the kits give you a strip of brass and direct you to bend the steps "per sketch". HMMMMMMMM!

According to my records, the first scratch-built car I ever made was in 1950, following a Ma&Pa box car plan in MODEL RAILROADER. I tried to make the stirrup steps look like the plan (Figure 1). I made them out of .010" brass strip stock and glued in the middle step. The whole thing was then glued to the car. The car is still on my layout and those stirrup steps are still on it! Although they are quite obviously too heavy in cross-section they still look pretty good. I must confess that in several moves around the country two of the middle step have disappeared.

When I started to scratch-build some more cars recently I decided to scratch-build the stirrup steps. So I went the same way as I did 30 years ago, I twisted the ends of .010" stock and glued the steps onto the car sides. The first two cars I sent out in interchange were well received but word came back that some of the pretty little stirrup steps had come off in transit. Either the glue I used (same brand - different tube) wasn't as sticky or I had a basic design flaw - most likely it was the latter. So I sat down to update the design. I tried a thinner stock after deciding .010" was too heavy. My first try was a beer can stock, about .004", but the aluminium was just too flimsy for my fumbling finger to work with. INTO the goody box and lo and behold, a veritable plethora of .005" brass sheet I bought in 1952 just in case I might need it someday. Now I was getting somewhere, the stiffness problem was solved and I had no trouble in forming the steps.

Next - how to keep the darn things on the cars through the USA mail service. How are they done in real life? They either weld them on or bolt them on. Since my attempts at "welding" (glue) hadn't worked, the obvious answer (only took 30 years to come up with!) had to be to bolt them on! I had a stock of Grandt Line n/b/w castings on hand so I began to experiment. I found that the narrowest strip of .005" brass I could drill #75 holes in consistently was about .038" or .040". So a design standard was decided upon - .005" stock, .040" wide. This results in about 1/2" x 3 1/2" cross-section, still too wide, but a practical solution.

So the solution consists of a step fastened to the side of the car with an adhesive of some sort then pinned in place with one or two n/b/w castings on each leg. I use 5-minute epoxy when I want to feel really secure, but I have had good results with any of the "instant" cements and even with good old Ambroid. So far the new approach has worked and I have been flattered to receive enquiries from modelers who have seen the cars, and some from modelers who have only seen pictures of cars, as to where I got the steps. After sending out a few samples and a description as to how it is done, I decided that more of you might be interested. And so, down to the nitty-gritty!

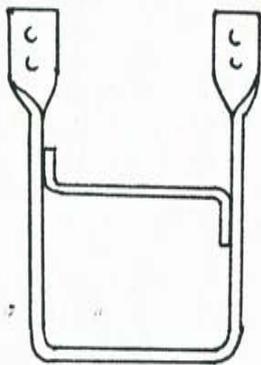


FIG. 1

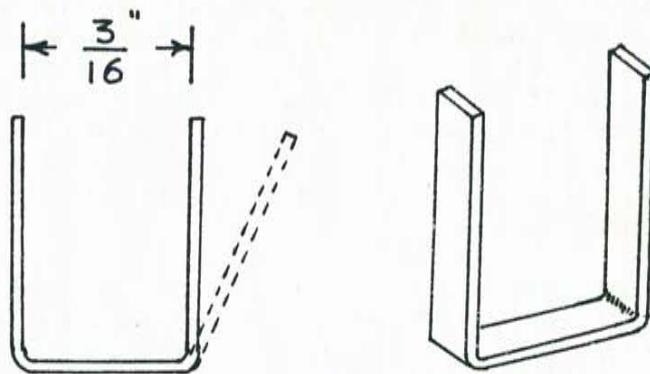


FIG. 2

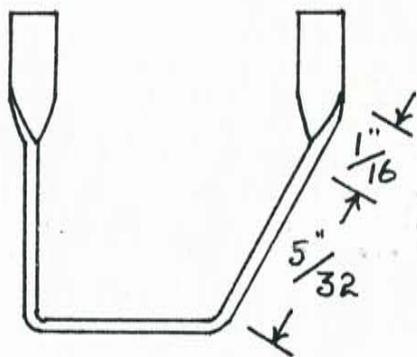


FIG. 3

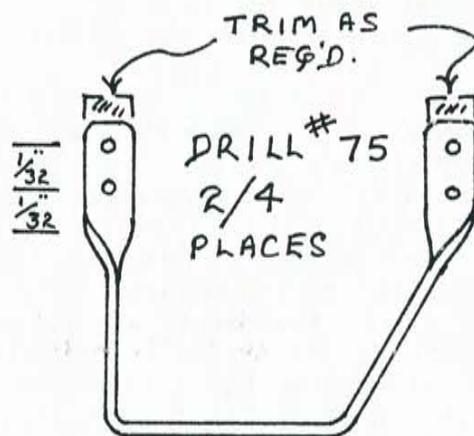


FIG. 4

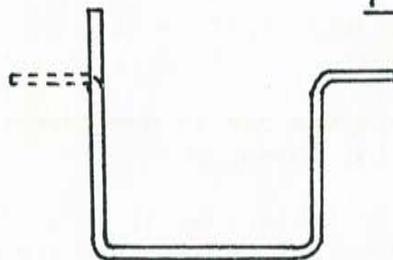


FIG. 6

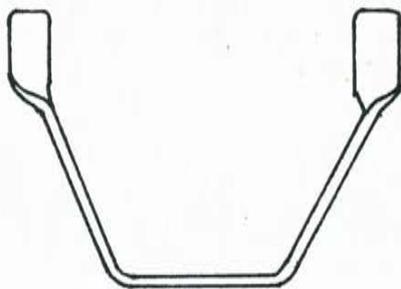


FIG. 5

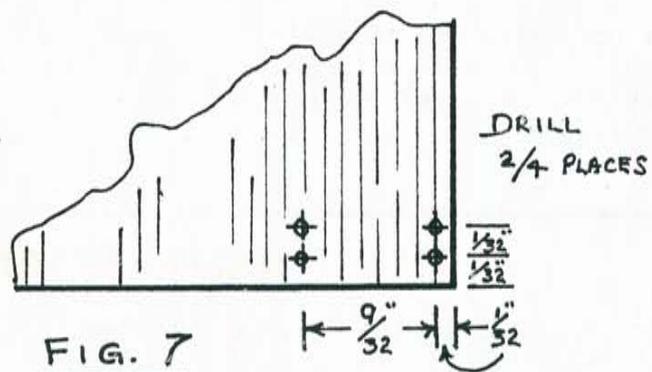


FIG. 7

My .005" stock is about 6" wide so I shear off a few 1" wide strips. Next cut off a bunch of .040" strips and you are ready to go. Grab a piece of this stock approximately in the middle with a pair of small flat nose pliers so positioned that you can bend up both ends and form a U shape about 3/16" wide inside the bend (Figure 2). Open up one leg at an angle of about 30°. To put the twist on the ends grab the straight leg of the step with the pliers with about 1/8" held in the jaws. With another pair grab onto the leg about 1/16" further out and twist 90°. Now do the same thing with the "opened up" leg only grab it about 3/32" out. I don't suppose it makes a lot of difference, but I try to twist each leg in the opposite direction of the other (Figure 3). Incidentally, although I show the twisted ends as being parallel, this is not necessary, the splayed out leg can continue at the 30° angle, it's up to you and your prototype.

Now turn up the twisted ends so they lay perfectly flat in the same plane. Center punch the "bolt" holes. Sometimes I put two holes in each leg (Figure 4) and sometimes only one (Figure 5). It's your choice but put the hole closest to the bend 1/32" from the bend and line up the other hole so that they are in a line parallel to the bottom of the step. If you use two holes in each leg another 1.32" should do it. When you center punch for the holes the stock will bend and you will have to straighten it again. Be careful to get the punch marks in the center of the strip as there is not much margin for error. Now drill a #75 hole through each punch mark, clean up the burrs and trim the ends to suit.

Now to install them. Be sure the steps are lined up properly and glue them with the method of your choice. Once the adhesive is dry drill through the bolt holes again with a #75 drill deep enough to allow the n/b/w castings to be inserted through the step and into the car side. A 3/32" sprue on the castings is usually adequate. Put a drop of adhesive on the n/b/w casting and press it home. I find that after trying several sizes of the n/b/w castings by Grandt that I prefer the #5046 for detail and visibility.

Figure 5 illustrates the middle step under a reefer door where both ends are flared out. A couple of other variations for use on tank cars or hoppers are shown in Figure 6.

Figure 7 shows another degree of refinement which I found simplifies the installation somewhat. I make a little drill jig that lets me pre-drill the bolt holes in the car side. This allows you to assemble the steps and n/b/w castings first and then pop them onto the car in one operation. This allows you to glue the whole assembly on the car in one operation.

By now someone is sure to be asking why all this trouble when there are commercial steps on the market that look pretty good and are easier to install. Yep, there sure are, Tuttle and Grandt line to name a couple, and I have used both, but to me they don't look as good and mine are a heck of a lot cheaper if you don't count the time spent - and I don't after all, it is a hobby, right?

Why not "step up" to making your own steps and step us your enjoyment of the hobby. As a matter of interest clip the stirrup steps off one of those plastic cars and put a set of these on and see how much better it looks. You may be surprised!

DEADLINE FOR CONTRIBUTIONS

Contributions in the form of articles, tips, drawings, etc, are welcome from all members. All material for publication **MUST** be submitted to the Editor for consideration by the first of February, May, August or November. All items received will be acknowledged upon receipt.★



Full Range Available



SHINOHARA

"THE COMPLETE TRACKAGE SYSTEM"

HO... CODE 100 and 70... and now

CODE 83

for the modeller who is only satisfied with
prototypical trackwork!

★ OVER 200 NEW AND USED BRASS LOCOS IN STOCK
S.A.E. FOR LIST

Agents for . . .

- ★ WALTHERS
- ★ BEMO HOe, HOm
- ★ MASHIMA MOTORS
- ★ SAGAMI MOTORS
- ★ ALCO MODELS (AUST)



"WE DEAL WITH ALL THE BRASS HOUSES IN U.S.A."

Soon to be released from **ALCO**
MODELS

V.R. "NA" CLASS "PUFFING BILLY" in HO_n2½ and HO_n3
"O" GAUGE TO FOLLOW

CUSTOM PAINTING AND DETAILING SERVICE AVAILABLE



AUSTRALIAN AGENTS



The Home of New and Used Brass

THE LOCOMOTIVE WORKSHOP

P.O. BOX 173, BORONIA, VICTORIA 3155

Phone: 762-3189

"BETTER PRICES" — "BETTER SERVICE"



MAIN LINE

If undeliverable, return to

N M R A
Australasian Region
PO Box 155
BAULKHAM HILLS NSW 2153

Registered by Australia Post
Publication No NBH 7190

POSTAGE
PAID
AUSTRALIA

HOW TO JOIN THE NMRA

You can join both the National Model Railroad Association and the Australasian Region by completing the application form below and mailing it with your payment to the Baulkham Hills address.

The cost of \$35 for one year's membership includes the \$US20 for the NMRA and \$A5 for the Region. Unfortunately with today's exchange rates, airmail postage and bank drafts, \$US20 plus \$A5 equals \$A35!

PLEASE PRINT

Name _____

Address _____

City & State _____ Postcode _____

Primary Scale _____ New Renewal

NMRA # _____ NMRA expiration date _____

AR Annual \$ 5.00

AR 5 years \$ 20.00

AR Life \$100.00

AR and NMRA Annual \$ 35.00

Total enclosed _____

Send to: NMRA - Australasian Division: PO Box 155, BAULKHAM HILLS NSW 2153