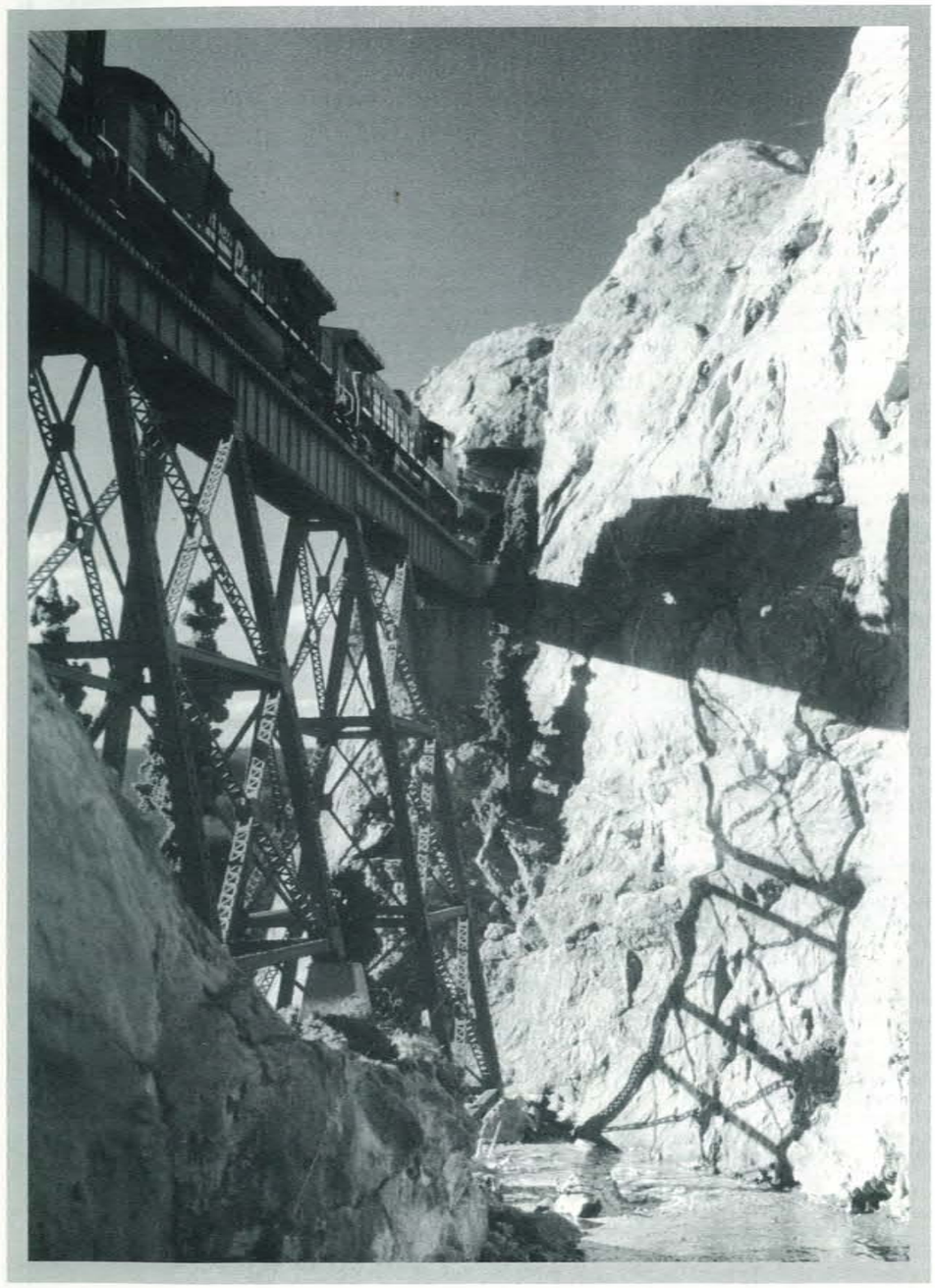
# MainLine

National Model Railroad Association Inc - *Australasian Region*

Jan-Feb-Mar 1999 Volume 16 Number 1




NMRA - SETTING THE STANDARDS IN RAILROAD MODELLING

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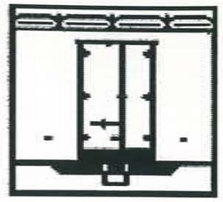
# The Masters
# Master Builder - Cars



*Conducted by Rick Shoup, MMR*

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## Master Builder - Cars

A "Car" is just about anything that runs on rails and is NOT self-propelled (if it's self-propelled, it's Motive Power). This includes freight cars, passenger cars, maintenance of way cars (including equipment such as cranes), cabooses, cable cars, un-powered (dummy) locomotives, etc.

Actually, if you have a model that is self-propelled, but is a model of something that was designed to carry something (besides itself), such as a rail car, it can be used as one of the qualifying models for either Motive Power or Cars, BUT NOT BOTH.

Contact your Regional AP chairman if you have a question about which category a particular model would fall into.

To qualify for the Master Builder - Cars

1. You must build eight operable scale models of railroad cars. "Operable" means that they must be able to roll on the track, negotiate a curve, be pulled by something, etc. It doesn't mean that every door, valve, or other moving feature of the car must work as the prototype does. However, any operating features that you can include in your car are likely to increase your score.

There must be at least four different types of car represented in the total of eight. One of these must be a passenger car. The intent of this requirement is to show that you can model a variety of types of car, not just several variations of the same type. For example, a 40' steel-side boxcar and a 36' wood side reefer would be different types of cars. On the other hand, a 40' steel-side boxcar and a 50' steel-side box car probably would not (unless you can show that there was a substantial difference in what it took to build them). Similarly, a wood deck flat car and a steel deck flat car would not be considered "different" types of cars, but a regular flat car and a depressed center flat car would, because it is a substantially different type of car to build.

"Passenger cars" include anything that would normally be found in a regular scheduled passenger train including baggage cars, express reefers, business cars, or other passenger carrying cars like a drover's caboose.

Remember, it is only four different types that are required: you could build a set of five identical passenger coaches, a box car, a tank car, a gondola and satisfy the requirement.

2. Each of the eight models must be super detailed with either commercial parts or scratch built parts (for extra points).

When looking for ways to super detail your cars, brake wheels, grab irons and ladders are good places to start - particularly by replacing the "molded on" ones that the car came with. That's where many judges start looking. Another area that many judges look for is the under-frame brake gear.

3. In addition to being super detailed, at least four of the eight models must be scratch built. The term "scratch built" implies that the modeler has done all of the necessary layout and fabrication that produce the final dimensions, appearance, and operating qualities of the model. This is a good statement of the intent and spirit of the "scratch built" requirement. Notice that it does NOT say that the use of a few commercial detail parts will disqualify the model as being "scratch built". In general, the same standard applies that is used in contest judging: "Completely Scratch Built" means that 90% or more of the model was scratch built. This means that in contest or merit judging, the model you are claiming as "scratch built" should have earned at least 14 points in that area. The following parts are specifically excluded from the scratch built requirement:

a. Wheels;
b. Couplers;
c. Light bulbs & electronics;
d. Trucks;
e. Brake fittings;
f. Marker lights & drumheads;
g. Paint, decals, etc; and
h. Basic shapes of wood, plastic, metal, etc.*

*("Basic shapes" are things that the builders of the prototype would have used as raw materials. For example, an "I" beam would be a basic shape; a commercial door or window casting would not.)

Something that you should remember if the idea of 'scratch building' intimidates you: There is very little difference between scratch building and building most craftsman kits. The big difference is that in a kit, the manufacturer has assembled the materials that you will need for you. Only the construction needs to be done from scratch. If you take someone else's plans and instructions (even those from a kit) and go to the hobby shop and buy the materials yourself and assemble them, it qualifies as scratch building. On the other hand, if you do develop your own plans, make sure that you tell the judges so, as it will earn you extra points.

4. You must earn a score of at least 87-1/2 points on four of the eight models in either an NMRA sponsored contest or in AP Merit Award judging. Note that only four of the eight must earn 87-1/2 points. The others don't even have to be judged! They do all have to be described on the Statement of Qualification (see below).

5. You must submit a Statement of Qualification (SOQ - available from the Regional AP Chairman) which includes the following:

An attachment giving a detailed description of each of the eight models, including:

a. Identification of all scratch built features
b. All commercial components used;
c. Materials used in building the model;
d. If the model is a kit, whose kit it is;
e. Verification of the Merit Awards (photocopies of the certificates); and
f. Photos of the model are helpful, though not essential.

6. Remember that your eight cars do not have to be from the same era, or part of the country. They don't even have to be the same scale. You also don't have to earn your four Merit Award certificates at the same time - you can earn one this year, another two years from now, and another the year after that.

For further information contact your Region Achievement Program Chairman Michael Flack (02) 9868 1723.
In Victoria, Laurie Green MMR (03) 9744 5188 and in the ACT, Peter Weller-Lewis (02) 6293 8282




# *MainLine*

Official Publication of the
Australasian Division
of the
**NATIONAL MODEL RAILROAD ASSOCIATION**

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**Steve Chapman**
**John Gillies**
**Mark Ward**
**Julian Israel**
**David Latham**
**Engineering Drawings**
**Gary Norwood**

SUBMISSIONS: MainLine welcomes articles, photographs, drawings, cartoons and other railroad modelling related material as contributions to the mutual enjoyment of the hobby by the membership. Matrial should have wide appeal and preferably be sent by email or post the editor. Articles may be submitted on 3.5" computer disks in any Windows based word processing format. Sharp photos, either B/W or Colour are welcome. Don't own a computer? That's fine - typewritten articles are also welcome.

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## New South Wales

| | | | |
|---|---|---|---|
| **18 April** | 2:00 pm | Sunday | |
| Don Davis | 5 Wake Place, Kings Park | | (02) 9671 4351 |
| **8 May** | 2.00 pm | Saturday | |
| Gerry Hopkins | 7 Booralie Rod Terrey Hills | | (02) 9450 1033 |
| **12-14 June** | Convention - Integral Energy Huntingwood, Blacktown | | |

## Canberra

| | | | |
|---|---|---|---|
| 17 April | 2:00 pm | Saturday | |
| John Bullen | 39 Buvelot Street, Weston, ACT | | (02) 6288 7312 |
| 15 May | 2:00 pm | Saturday | |
| John Gillies | 14 Earle Street, Lyneham, ACT | | (02) 6248 8408 |
| 19 June | 2:00 pm | Saturday | |
| Rob Anderson | 8 Purbrick Street, Chisholm, ACT | | (02) 6291 9183 |

## Victoria

| | | | |
|---|---|---|---|
| **18 April** | 11:30 am Sunday - BBQ | | |
| Ken Morecroft | Lysaught Sporting Complex Denham Rd, Tyabb | | (03) 5998 7362 |
| **2 May** | 11.30 am Sunday - BBQ | | (03) 9744 5188 |
| Laurie Green | 20 Nambour Drive, Sunbury | | |
| 11 July | 1:30 pm | Sunday | |
| Steve Cullen | 67 Mowbray Crescent, Melton | | (03) 9747 6267 |

**On the Cover**

Is this a model or a photo of the real thing? Mark Ward's photo comes close being indistinguishable from the prototype. There are more of his photos inside.

# Editorial

Well. That was the year that was. The new Mainline is one year old today and what a year it has been. It seems like less than six months ago since the first marathon 200-hour production-time magazine came out. Of course production time is now down to about 40 hours as I have gained experience. The magazine remains a black and white publication. Unfortunately there is just not the advertising dollar to support colour reproduction. Our circulation is not large enough and the current readership will not support the placement of expensive advertising by local hobby shops. So we will just have to be satisfied with minor improvements to style, from time to time.

The cover photograph this issue was taken by Mark Ward of Toowoomba, Queensland. He is a member of the Darling Downs Model Railway Club that is itself an NMRA Sustaining Member. The club has several Special Interest Groups, of which the Module group is but one. Mark too his module out into the sunshine to make the cover photo, as well as the one below. Natural lighting and a real background make it difficult to tell whether the photo is of a model or the prototype. You can see another of Marks photos on page 17 in his article on graffiti. I am sure you will hear more of both the DDMRC and Mark Ward as their fame spreads.

*Keith McCarron*


Photo Mark Ward - DDMRC



# President's Report


## My First Layout: Episode One: The Backdrop

As those who visited my place at the recent monthly meeting now know, I have a layout room and a backdrop, but nothing else. However, there were enough comments and questions about the backdrop to make me think it worthwhile to share the details with everyone.

I have a layout room that is 20 feet by 12 feet, converted from an old single car garage. The walls are brick, but they are very rough, which means it is unsuitable for attaching a backdrop to directly.

**What to Use?**

I'd done a lot of reading about suitable materials for backdrops, and I really didn't want to have to go down the route of multiple hard-board sheets formed to suit the corners and with lots of gaps to fill. Hence I wanted a material that I could apply in a single continuous roll, meaning a linear run of about 14 metres. I had seen John Saxon's backdrop using a continuous fibreglass material, but found that this was no longer available. The supplier suggested the alternative of non-corrugated laserlite, which is available in 1200mm wide by 20m long rolls. This was reasonably priced (about $20/m) but not rigid enough to be self-supporting.

Ron Cooper has used Zincalume (galvanised 0.6mm 'tin' used for flashing etc) for one section of his backdrop, and was impressed with the finish he achieved, so I went down this route. The general hardware outlets, while conversant with the material, wouldn't sell me more than an 8m length (some Occupational Health and Safety issue). I didn't want to do joins in hardboard, so I certainly wasn't going to do a join in metal! Anyway, to cut a long story short, after about 30 phone calls I found a company (Zammits Roofing) who not only cut the roll to the right width (mine is 750mm) but delivered it the next day. The price came out to about $180 for 15 metres, including delivery, and is related directly to the square metre area, so if you want wider you'll pay more.

**How to Put it Up!**

The Zincalume sure is heavy. In order to make the installation safe with the limited number of helpers available I decided to do the maximum preparation first. I installed a level 'shelf' right around the layout room, as high as I could so that the zincalume would come to just under the ceiling (see diagram). The shelves are made from two lengths of 3" x1" cut from construction plywood. I find this to be much cheaper than timber, and less prone to splitting and warping. I got mine from Pearsons Plywood at Gladesville (An 8'x 4' sheet of 17mm thick in CD grade is $51.00). I glued and screwed the pieces into a T section. These were then anchored to the brick wall. I also attached a 17mm thick batten to the walls up against the ceiling.

Once all this was in place it was a (simple!) matter of slowly unrolling the zincalume coil around the shelf. At the bottom we nailed small blocks every couple of feet to keep the bottom edge from falling off the shelf. Once around the first corner the rigidity of the zincalume kept it against the batten at the top. Once the whole coil was unrolled and sitting on the shelf we did some minor adjustments to get the corner curves looking right, then attached a top cap to the top batten. This top cap 'sandwiches' the zincalume so that it won't fall away from the batten, and also hides the variation in ceiling height. Once in place a bead of "No More Gaps" tidied up the join between zincalume and top capping. Using this method required no holes in the zincalume, and the weight is carried evenly along the whole bottom edge so there is no sign of distortion (as I had feared might have occurred if I had simply tried to nail or screw it to the wall). Also, it only took three of us to do this, although we could have done with a fourth pair of hands. Two of us could just lift the zincalume, while two more to unroll it smoothly and make sure it sits on the shelf cleanly. Some safety tips: wear heavy gloves - the zincalume edges are sharp; have a controllable band around the coil so you can unroll it in a controlled manner - if you simply cut the band as supplied, the coil will unroll and pin you against the wall (in one or more pieces).

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# Regional Roundup

## December 1998

In December Division 3 members and their partners gathered at the home of Grant McAdam for the Christmas end-of-year barbecue. Continuing our recent good form with the weather for our lunch time meetings, Melbourne turned on a glorious day. Geoff Truman, the Division 3 Superintendent, expertly attended to the barbecue while the members and their partners passed the day with fine food and in convivial company.

Following our normal convention there was no meeting during January because of the holidays and the number of exhibitions in an around Melbourne.

## February 1999

Paul Richie hosted the February meeting and quite a few of the members made the trek up to Ballarat. I am always amazed at the distance some members will travel to attend an NMRA meeting. It speaks volumes of the camaraderie that exists amongst the membership. There was a short delay before lunch started due to the gas supply running out just after cooking started. On display was Paul's home layout, which is a multilevel affair, featuring HO and HOn3. What has now become traditional amongst the Victorian members was a display of show and tell items, which includes recent acquisitions or modelling projects. Paul Richie had a ladder of HOn3 points he is building; Peter MacDonald brought along a Victorian Y class steam loco with shunters steps built from a BGM kit; Ian Mitaxa has constructed a sander which he intends to use to construct trestle bents; Laurie Green had on show his scratch built Silver Vista car in On3; Steve Cullen had constructed an O scale haberdashery store; and Grant McAdam had 2 L.J. Models HO scale cardboard building kits which were destined for a new exhibition layout "Rippon Lea". During the meeting Geoff Truman told the members that because of family and business commitments he could no longer continue as Superintendent and Grant McAdam was elected unopposed to the position. Grant thanked Geoff for his efforts on behalf of the members. Later in the afternoon the members adjourned inside to view the video footage taken by Mario Rapinett at the Liverpool exhibition.

## March 1999

Once again March saw the members on the road again to head off to Bacchus Marsh and the home of John Beaton for the monthly meeting. I know the Sydney based members of the NMRA may find this hard to believe but once again it was another perfect day for this lunch time meeting. As an ex-Sydney sider (I lived there for over 25 years) I think I can claim that I am not biased toward Melbourne when it comes to assessing this type of thing. John has a large N scale layout, situated in a garage in his backyard, which is used for timetable operating by his regular crew. Prior to lunch the items for display were brought out. Paul Richie had some PBL nippers (for removing parts from plastic sprue) and catalogues; Steve Cullen had a HOn2.5 Baldwin built from the Colonial Models kit and an O-16.5 Pecket built by a friend; Grant McAdam had an assortment of recent magazines; Laurie Green had Driwrott Creek Station, a toilet block and a water tank all in O scale; and Mario Rapinett brought along some books and an O scale narrow gauge module that he is working on. Mario wanted comments and advice from the members present as to how to do or improve the scenery and how best to light the module. Mario received plenty of input that has inspired him to go and try a number of things. One of the reasons for having the show and tell section is to encourage the members to bring along items and get feedback leading to an improvement in modelling standards. During the afternoon there was also a discussion on the Achievement Programme. Mario was surprised to learn that many of the members present were actually working away at the programme with some of them even halfway toward getting their Master Modellers.

A note about our April meeting. Ken Morecroft has arranged for members of the NMRA to once again visit the BHP Western Port Railway Society. It is requirement for members attending this meeting that no open toed shoes be worn. Ken has told me that they will arrange to supply morning and afternoon tea for the members.

Lunch will be up to the NMRA members attending and the barbecues will be once again available. Please let Ken know if you plan to be there to assist with the catering.

# Victoria

*by Grant McAdam*

# Queensland

*by Glenn Stevens*

The Division 1 combined Christmas B-B-Q and bi-monthly meeting was held on December 12 at the home of Glenn Stevens. The meeting, attended by seven members and two spouses, had an attendance lower than expected with four persons withdrawing on the day of the function. (It should be noted that Division 1 only has 29 members statewide with 19 in the South East (Sunshine Coast, Gold Coast, Toowoomba) corner, with normal attendance varying from 7 to 10 persons.

The meeting was informal with numerous discussions throughout the afternoon and evening.

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# Canberra Meetings

*by John Gillies*

## January Meeting

The meeting was held at Malcolm Risby's new home with a very good turn out considering the proximity of the meeting to Australia Day. Malcolm had a wide range of books and magazines to look at, but most of the meeting was spent discussing local plans including the coming NMREG Exhibition over the Canberra Day long weekend in March and our involvement in it. Rob Anderson has begun construction of two module bases and it was agreed that we'd construct a small N scale layout for Steve Walker so it will be a real hands on display this year.

Ken Macleay and John Prattis had privately discussed starting an operations group in Canberra prior to the meeting and Ken discussed how it might operate. His proposal was very well received and it was agreed that future meetings would be held on the first Tuesday of each month. Based on the experiences of the Sydney operations group, the first two or three meetings would be held at Ken's to gain experience operating the layout and set some ground rules for how the group will operate. Developments are noted below. Tony Payne brought his completed SD40-2F which has been painted in the Mid Atlantic Road's Green and Black paint scheme as well as a new FP45 - two very attractive locomotives.

Following a very enjoyable afternoon tea, Malcolm showed us some of his N scale collection and where he plans to build a layout in the garage. We should see an empire sometime in the future! Thanks to Malcolm for hosting the meeting.

## February Meeting

Kerry McPherson hosted the meeting and discussed some plans he's considering for a layout when he builds a new house outside Queanbeyan next year. Room for a model railway will be a key design element of the new house.

Steve Walker brought one of the module bases, track templates and his layout plan to the meeting so those present could finalise plans for constructing the layout at the NMREG Exhibition. A plan of attack was agreed and Steve will purchase the remaining items and materials. Peter Weller-Lewis' timesaver switching layout will be in operation over the weekend as part of the NMRA stand along with some display models provided by members. A tasty afternoon tea was consumed followed by more general discussions. Thanks to Kerry for hosting the meeting.

## Operations Group Meeting

Two very successful meetings have been held at Ken Macleay's with around ten people present at each meeting. Ken provided a

*Continued on Page 8/...*

# Build a Super Simple Train Detector

*by Julian Israel*

**Train detection circuitry provides a means to indicate on a fascia mounted mimic panel or computer display, the location of trains and stored carriages. e.g. Carriages stored in a classification yard or staged trains that are sitting in a passing loop or a yard.**

This is useful especially where these passing loops and yards are hidden from view by scenery, or simply by distance from the observer.

The circuitry can be simple or complex. The detection devices can vary greatly from magnets and reed switches, to optical sensors, DCC devices, etc. This article will describe the simplest and cheapest means to achieve train location.

## How it works

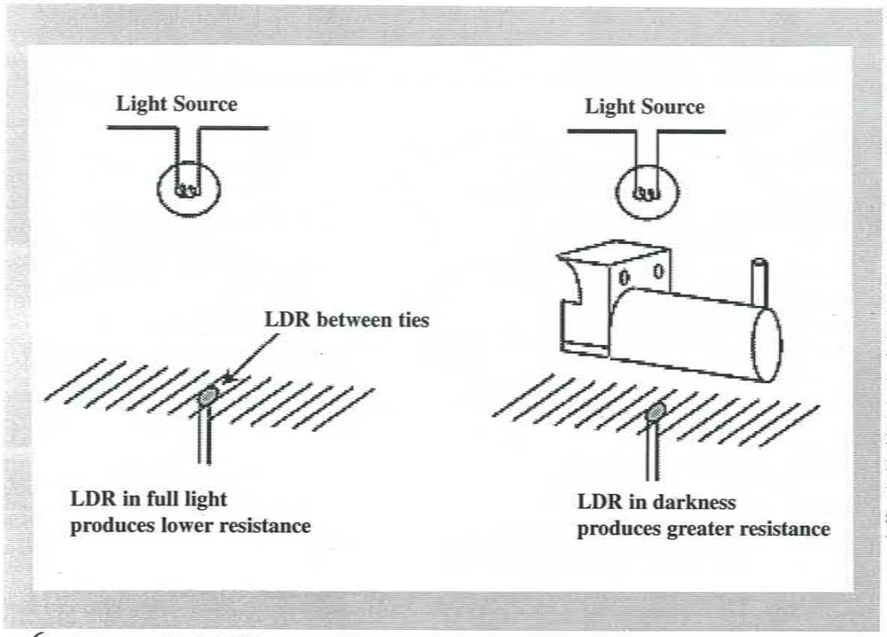
This circuit is simple enough for the beginner to use and it only has two components!

The display is provided by a LED (Light Emitting Diode) that can be any colour you choose. I have found the green LEDs to be the brightest and the way I set this up provides a "go for green" fail-safe. I will explain that later on. A LED lights up when current flows through in the correct direction, therefore these devices are polarity sensitive. This is the only thing you really need to be careful about because if you put them in the circuit the wrong way around they just won't work.

The other device is a LDR (Light Dependent Resistor) which is used as the sensor device on the track.

These devices operate in the following way. When the device is in darkness (or shade in our scenario) the resistance increases to several million ohms. When the device is under at least 10Lux of light, which in lay terms means under normal layout lighting or reasonably well lit, then the resistance falls to somewhere between 50-150 thousand ohms.

So what does that all






mean? Well lets look at Figure 1. When light falls on the LDR (which is located between the rails and between the ties) the resistance is low enough that electric current will flow from your 12volt DC supply through the LDR and through the LED thereby lighting the LED.

When a train or carriage is directly over the LDR the light intensity is diminished at the surface of the LDR causing the LDRs resistance to go up enormously, thereby blocking off the current to zero and extinguishing the LED. If the LED is chosen to be Green in colour, then the inference is, that if it is lit then the section or siding is clear, hence "go for green", if the LED is extinguished we assume that a train or carriage is occupying that section or siding. If the LED was "blown" it would also be extinguished and we therefore have a "fail-safe" circuit that prevents accidents (hopefully!).

If you were to choose a red LED then when it was lit (e.g. no trains or carriages are on the section) your first intuition would be red-light means section blocked, this of course would be wrong, so I avoided the use of red LEDs. A similar thought process made me discount yellow LEDs too.

## Components required

You will need a 12 volt DC power supply (you can probably get away with anything between 9V-15V depending on the LDR you use, the resistance of the hook-up wire and whether or not you use an optional current limiting resistor. I use a 13.8 volt DC power supply and in this circuit I have found no requirement for current limiting resistors. In fact I use the same supply that I run my slow motion point motors from, as the current drain is very small for this application.

LEDs come in a variety of sizes and shapes and colours. I have chosen to use the standard 5mm round LED. They are available from Dick Smith Electronics , Jaycar and Tandy's in Australia and Radio Shack in the USA. The Dick Smith catalogue number is Z-4087 and they cost 55 cents each or 40c for quantities of 10 or more.

The LDR is also available from the above companies, the Tandy packaging provides several LDRs of varying sizes. I chose the Dick Smith LDR which has a catalogue number of DSCD01 and costs $1.95 each or $1.70 for quantities of 10 or more.

The Dick Smith LDRs are the ideal size to fit between the ties of HO track. I model HOn3 and they are suitable for Shinohara and Rail-Craft Code 70 and Code 55 track. They would also be a good fit for standard gauge HO track up to Code 100.

## Where do LDRs go?

I have found that it makes no sense to position the LDRs too close to points or where tracks are diverging away from points. i.e. Select a position at least 6 inches away from the end of your points and ensure there is sufficient clearance to pass trains, before installing the first LDR.

For passing sidings I use at least three LDRs on the same section of track to allow me to park the train between the two end LDRs. When looking at the mimic panel (where the LEDs are placed on a track schematic), you would see three green LEDs all lit as the train approaches the section. When the train crosses the first LDR that LED will pulsate on-off as the carriages go by (due to the fact that light gets by as the couplers go across the LDR). Once the train has cleared the first LDR/LED the middle one will commence flashing and you would halt the train after the first LED goes bright but before the last LED starts to go dark. At this position the train is between the two end LDRs (the endmost LEDs are lit and the centre LED is dark) and well within the safe zone to allow you to switch the points at each end of the passing loop and let another train pass.

You can use the same concept for long sidings, stub yards etc.

## Installation on the layout

Firstly drill two small holes approximately 1mm in diameter and 3mm apart, between the ties of a section of track that has good lighting and is at an appropriate point along the section or siding.

Slide the pigtails (the ends of wire on the LDR) through the two holes and shift your ties to make room for the head of the LDR which is approximately 4mm in diameter. The top of the LDR should be flush with the top of your ties. This is important because Kay Dee or other brand coupler trip pins, may foul the head of an LDR if it is too high. The pigtails should protrude below your sub-road bed beneath the layout.

If there is insufficient light you can always rig up a small 12 volt globe over the track. This can be useful in tunnels and hidden sidings under scenery. If you have a heavily wooded area or deep cuttings where you wish to place LDRs you will need to pay attention to the placement of your overhead layout lighting.

By the way LDRs are not polarity sensitive so it doesn't matter which way around these devices are installed on the track.

Make up a mimic panel or install the LEDs on your control panel or on a fascia board on your scenery: the choice is yours. Drill 5mm diameter holes on the mimic panel and push the LED through from the back of the panel so that the head of the LED is just poking through the front of the panel. You can use a mounting bezel if you wish, but I found they reduced the brilliance of the LED.

I have made up a track schematic on the front of the mimic panel (using very thin coloured adhesive tape) with the LEDs installed in the same locations on the mimic panel as the LDRs are on the actual track.

LEDs have two ways to identify the polarity sensitive leads. Firstly the two pig-tails are of differing lengths by 1mm. The shorter lead is the cathode and the longer lead is the anode. See Fig 2. (next page) for further details. The second way to distinguish the anode from the cathode is that the plastic ring around the head of the LED has a flat side on it that is in line with the shorter lead (the cathode).

The LED will light up when current flows from the anode side to

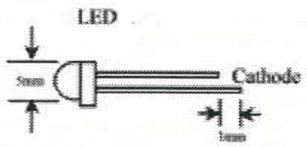



Fig 2.

positive side of the power supply is nearer the anode and the negative side is connected to the cathode of the LED.

Connect all of the cathodes of all of the LEDs in a daisy chain (linking each cathode lead to the next LEDs cathode lead) and then connect this chain back to the negative side of the power supply.

You then connect a separate lead from the anode of each LED on the mimic panel to one side of the appropriate LDR at the track-side. So if you have, say ten LEDs, you will now have ten separate wires running from the mimic panel out to the LDRs on your layout.

Finally connect the other side of each LDR in a daisy chain and back to the positive terminal of the power supply.

## Testing and Fault Finding

At this stage you should double check all of your connections and ensure that all of the LEDs have the correct polarity lead connected (e.g cathodes to negative terminal on power supply and anodes to track-side LDRs ).

OK now turn on the power supply for the smoke test! All of the LEDs should light up. Some of the LEDs maybe dimmer than others and this is probably due to your light sources. Re-arrange the lighting to maintain consistent light levels on the surface of your LDRs and/or install mini 12-volt lights over the darker regions as described earlier.

In very unusual cases it could be a cold solder joint (reheat the joints on the LED and LDR that is dim).

It could also be due to variations in the manufacture process of LDRs. If you use all the same brand and type of LDR and LEDs you should avoid this problem.

In Figure 3 bellow the electrical circuit diagram for Super Simple Track Detection is shown. This circuit and set-up will count toward your Model Railroad Engineer - Electrical, AP Award.x

*Continued from Page 5/...*

## Canberra Report

comprehensive briefing on the operation of his layout, schedule charts and notes on the trains to be operated and details of any specific operating requirements. Four trains were usually operating at any time and those present have thoroughly enjoyed themselves. We've learnt a lot already as a result of Ken's tutoring and most of us are experiencing prototypical operation for the first time. Ken's organisation and planning for the sessions has been excellent, but we've experienced some of the situations faced by real railways when operator error creeps in unexpectedly. Thanks to Ken and Carol for making us so welcome and for introducing us to something new. x



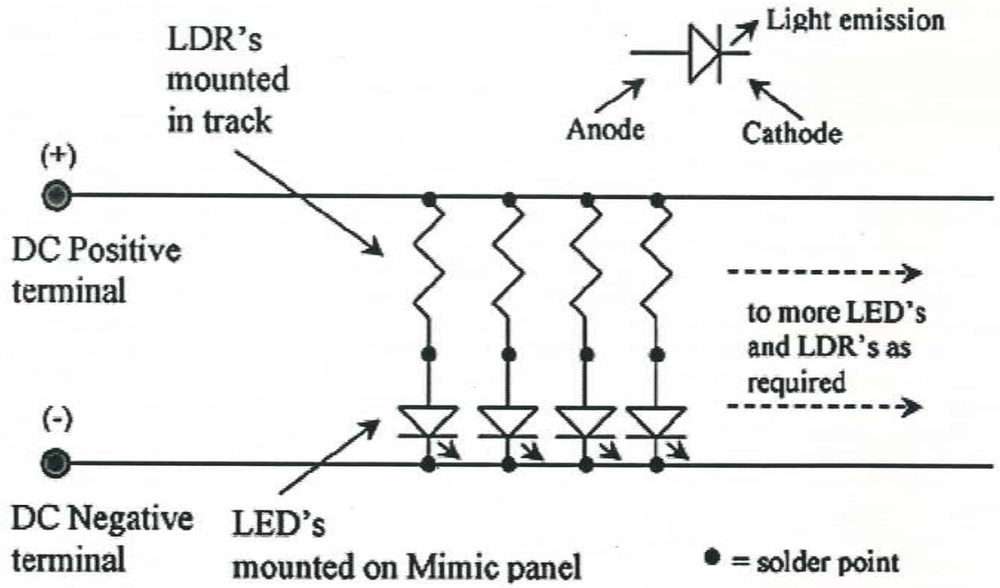



Fig 3.



*Continued from Page 4/...*

## Queensland Report

The host layout being modular, it was the centre of various discussions including:
- construction methods,
- mounting of Control panels
- pro's and con's of modular construction,
- track laying methods, particularly at the junction of two modules.

Ian Venables displayed a nearly finished scratch built B&O Class C-16a (an 0-4-0) and ended up giving a mini clinic on simulating rivets and stay bolts in brass sheet. As the result of this he has volunteered to give a clinic on soldering techniques at a future meeting.

A plus for the day was the attendance of Graham Emery, Ian Wellings and Bob Benson, all recently joined members. Sydney members will remember Bob as a GN modeller who hosted numerous meetings when he lived in Sydney. The presence of new members led to an overview of the Achievement Programme, with the Golden Spike used as an introduction. This was followed by a briefing on the scoring system, with emphasis on structures and rolling stock. These topics were used as Grahame Davis had been awarded his MB-Structures, and Graham Emery was building VR coaches for his Spirit of Progress.

There was discussion concerning the Regional office keeping the 'outposts' informed of membership changes, as I had no idea that Graham (Emery) had joined the organisation. As a result, follow-up correspondence has been sent to the Regional Office, expanding on this topic.

A small formal discussion was held regarding the type and frequency of meetings. As Division Superintendent, I was concerned that I may have been organising meetings and gatherings that suited what I wanted to do, however I was informed in (very) polite terms to keep heading in the direction the Division, was going. Following on from this, there was some discussion about the programme, with attendees adopting a five meeting calender for 1999, and in line with recent editorials and Presidents reports in Mainline, it was agreed that there will be more scheduled hands-on clinics at meetings.

The day was rounded off with a BBQ dinner prepared my wife Sandra and Sue Davis. Special thanks to them both for their work while the men 'played' in the garage. With a third of Queensland members living outside the SE corner of the state, contact is usually via notices from the Division Superintendent. Recently, however, I met again with Lynn Zelmer from Rockhampton, who is a regular visitor to Brisbane, and for the first time with Graham Hodges from Cairns, who was passing through on holidays. On both occasions we were able to meet for dinner, and it was good to catch up with them both. %

# The New Modellers Category Explained

***By Geoff Hoad***

In the last edition of MainLine you might have read a discussion paper I wrote which raised the question of an alternate competition to be considered as part of the regional convention. Well thanks to your active support and the proactive approach taken by your board of directors we are now able to announce that this will go ahead in 1999!

"Category "K" (the "K" is for kitbash - yes, we know that there are other categories, but we needed a name!)."The Modellers Category is not designed to replace the existing competition: quite the opposite. It is designed to fill a gap not fully covered by the existing competition where some people feel it is difficult for them to compete due to scratchbuilding requirements and the like. It is designed for ALL members to enter and participate and will cater for the person who wants to build a model out-of-the-box to the serious kitbasher or prototype modeller.

There are three main sections under which you can participate: Motive Power, Rolling Stock and Structures. Within these are a range of categories which are listed below.

Motive Power | Rolling Stock | Structures
Construction: Yes Yes Yes
Best Painted Model - Brass: Yes Yes No
Best Painted Model - Plastic: Yes Yes Yes
Prototype Accuracy: Yes Yes Yes
Best Detailed Plastic Model: Yes Yes Yes
Best Looking Complete Train: Combined Combined No
Multiple Engines: Yes No No

Entries will be judged using a structured judging sheet, based on the current 'official' sheet, but simplified for both the submitter and the judges! Entries will be judged and awarded points out of 100. Places will be awarded irrespective of the number of entries, provided they meet minimum requirements.

The real message here is that at last everyone in the association has the opportunity to enter a modelling competition irrespective of their skill level or experience. If you can assemble a Walthers kit or Intermountain boxcar, you're eligible. To the avid scratchbuilder and prototype modeller out there, this is your opportunity as well. For more details, contact me on (02) 9838 8590 or email me at 100233.300@compusreve.com and I will mail you more information.

# FREE CLASSIFIEDS!

Classified ads are available free to all NMRA members on a space-available basis for non-commercial use only. You can use then to buy, sell, trade or seek an item. Free ads must be 25 words or less and include Name, address, post code and telephone number. Free ads may be sent by mail to the Editor MainLine (address on page 1) or sent via e-mail. Non-member and commercial ads are not free. They will be accepted by mail only and should include a fee of 50-cents per word. All ads will be published for one issue only, unless advised otherwise. Non-member and Commercial ads must state number of times publication required and include full payment with copy. Cheques should be made out to AUSTRALASIAN REGION - NMRA Inc. Commercial Display Advertising is also available - rates displayed on page 1.

**Wanted:** To buy, borrow or copy the following magazines:
**Model Railway News April 1964**
**Model Railways February 1973**
**Model Railway Constructor May 1972**

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(H)9622-5859 (W)9685-5130 [1]

**For Sale:** 150 Model Railroader Magazines, 1956-1990, many early years include 12 issues, $1.50 ea or negotiate quantity lots. Telephone: Bruce Lovett on (02) 9498 4659 [2]

**Wanted:** To buy, Brass Locomotive: Maryland & Pennsylvania RR ten wheeler 4-6-0 Locomotive No. 28

Contact: Keith McCarron
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**Ron Drummond**
38 Bridge Ave
Chain Valley Bay 2259

**Daniel Calvert**
PO Box 13-390
Johnsonville Wellington NZ

**Graham Emery**
15 Miles Street
Bald Hills 4036

# The President and Board of Directors Welcomes Aboard the following New Members


*Continued from Page 3*


# Presidents Report

**Painting**

I gave the zincalume a quick wash with meths, then sprayed two coats of acrylic Galv. Primer followed by two coats of Acrylic Low Sheen finish blue. I've used Taubmans' Waterworks in their Satin finish. The blue might be a bit light for some, but New Zealand skies are certainly not as brilliantly blue as the Western States of the USA, and in my room it doesn't seem overpowering despite also being used on the ceiling. Brush or roller painting might be difficult as the zincalume is not supported in the middle. Obviously this doesn't matter when spraying, but I had an empty room so the overspray wasn't too much of a problem.

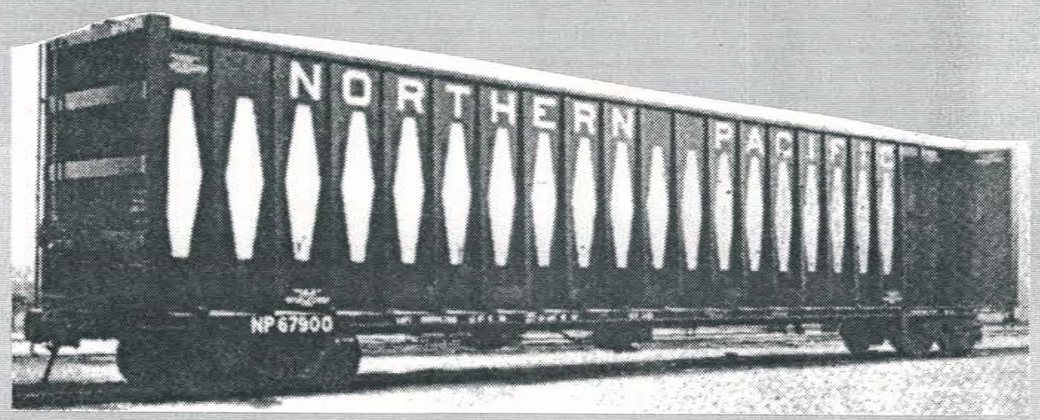
**Where to Next?**

I'm going to paint clouds onto the blue background, but any other scenery (hills, buildings etc) I will paint onto separate flats that will then stand in front of the backdrop. This will allow me to have several attempts without ruining my backdrop. It will also give added depth to the scene and allow me to change the layout in the future without having to repaint the backdrop. That way, I can use the shelf as a support for 'modules' and swap them around as and when I want. ⁂

SCRATCH BUILDING NORTHERN PACIFIC'S

# THRALL CENTREBEAM BULKHEAD FLATCARS

*By John Gillies*




Northern Pacific's 67900

**The prototype flatcars were built by Thrall Car Manufacturing Company in 1966 after acquiring the patents to a Canadian National design. They were the first centrebeam bulkhead flatcars built.**

NP leased five flatcars from Thrall in 1967 with both shippers and the NP being impressed with the efficiencies offered by the centrebeam design in transporting packaged lumber products. Although this original design met with very limited success, Thrall's later 'opera window' centrebeam design met with considerable success when it was released in 1977 and thousands of centrebeam bulkhead flatcars have been built by a number of manufactures since then. A model of the original 60 foot 'opera window' car was produced by McKean while Walthers now produces models of more recent 72 foot 'opera window' and lightweight truss centrebeam bulkhead flatcars.

After seeing a photo of NP 67900 in the 1970 Car and Locomotive Cyclopedia, I was interested in the design and wanted a model of this car. Due to its unique design and limited numbers, I realised that I would have to scratch build one as it was highly unlikely that an affordable plastic model would be produced. I had a lot of fun building this HO scale model and acquiring new modelling skills, but it did take many hours of spare time - perhaps it was because this was my first scratch built model.

I have no plans for the car and my model was built using the enclosed drawing based on available dimensional data and photographs graciously provided by fellow NPRHA member and freight car historian Tom Hoff. Enlarged photocopies of the photographs were used to determine other dimensions. I also had to build a "best guess" underframe, however the placement of the main brake system components was determined from the photographs. The model was made from styrene sheet and Evergreen styrene shapes using liquid plastic cement.

The model was built in six stages; cut out the centrebeam, build the bulkheads, construct the underframe, attach the centrebeam and bulkheads to the deck, add the centrebeam and deck load supports and conclude with final detailing. Some of the techniques used in constructing the model did not work as well as I would have liked and others were tried until a satisfactory result was achieved.

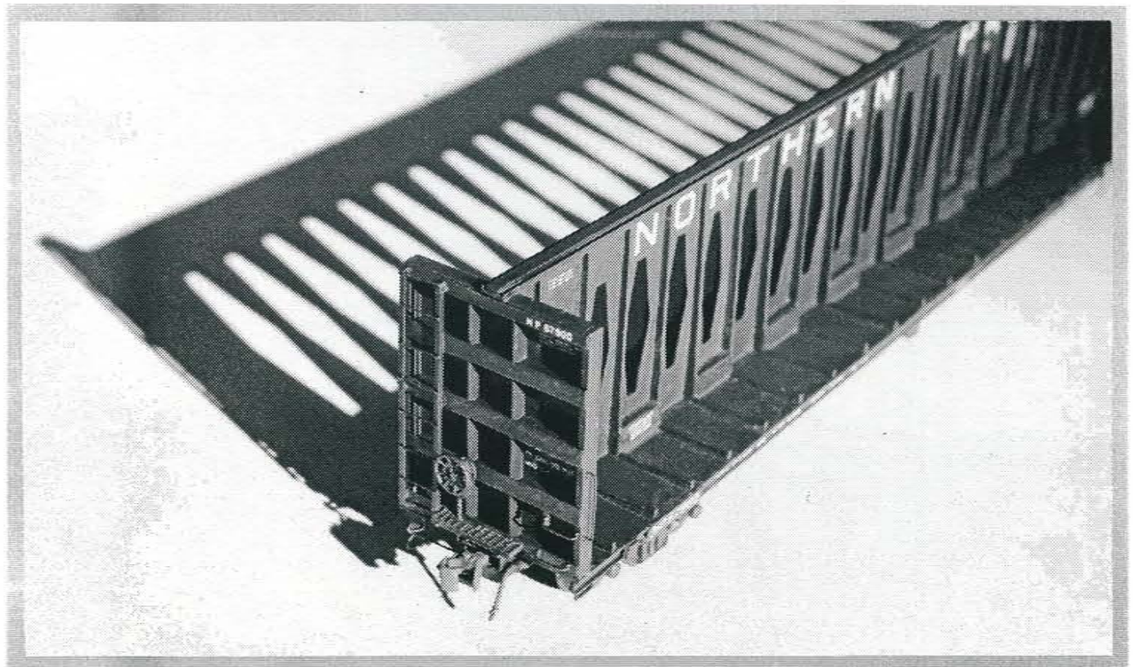
The centrebeam was cut to size from 0.020" styrene sheet and the 21 hexagonal openings were marked out. Before cutting the hexagonal openings in the centrebeam, I decided to practice on a smaller section of 0.020" styrene cut to the height of the centrebeam using two methods - trying to cut out the openings and scribing and breaking out the hexagons. I found it was difficult to consistently cut through the tops and bottoms of the hexagons using a number 11 blade or a utility knife without going beyond the dimensions of the opening. Rather than trying to cut all the way through the styrene sheet, the scribe and break method using a utility knife and gently flexing the centrebeam to break out the hexagons produced better results. Either way some clean up was required. I'd suggest you experiment to find the best method for you. After cutting out the 21 hexagonal openings from the centrebeam section, carefully clean up the openings with needle files and wet and dry paper.

The bulkheads were then built as complete units. Cut the bulkhead faces from 0.010" styrene sheet and scribe a vertical centre line to represent the weld on the surface that will face the couplers. Draw a vertical centre line on the other side of the bulkhead face to help locate the centrebeam later on. Cut four pieces of 0.100" channel to the same length as the bulkhead's height. Glue two of these to the scribed side of the bulkhead against the vertical edge with the face of the channel to the outside. Cut another four pieces of 0.100" channel to fit between those on the vertical edges and glue in place. Fill the small gaps with putty, let dry and sand smooth. Cut 0.100" strips from 0.020" styrene sheet, cut to length the two vertical braces on each bulkhead, notched slightly to fit into the 0.100" channel and glue in place on the edge. Cut the 0.100" x 0.020" strips to length for the nine horizontal braces on each bulkhead, again notching those slightly that fit into the 0.100" channel and glue in place on the edge. Cut 0.010" styrene sheet to size for the five horizontal braces, which go over the top and bottom bulkhead channel sections, and on top of the three central braces. Glue in place.

The bulkhead ladder frames were made from 1" x 2" styrene strips glued together at right angles. The frames were cut to length and then 1" x 2" brackets were glued to the frames; these were then glued to the bulkhead. Grandt Line 0.010" styrene rod was cut to length and glued across the ladder brackets for the rungs. A Cal Scale Ajax brake housing was glued to the second horizontal brace on the B end so that the chain was level with the bottom of the bulkhead. The brake wheel was thinned and set aside until the final details were added. The grab irons were formed from 0.012" brass wire, holes drilled using a pin vice and attached with ACC. Detail Associates NBW castings were cut from their shafts and glued next to the grab irons and the ladder brackets.

The deck was cut from 0.010" styrene sheet and the length was checked using the centrebeam and two completed bulkheads as guides. A centre line was drawn lengthwise on both sides of the deck to help locate the centre sill and centrebeam later on.

Kadee number 5 couplers in their draft gear boxes were glued to the ends of the car so that the distance between the pulling faces of the couplers matched the drawing.. Evergreen 1/8" styrene tube was tapped 2-56, cut to a length of 0.115" ensuring that the ends were square, and glued to the underside of the deck. The centre sill was made from two lengths of 0.100" I beam between




The centre spline really is see-through. Photo by John Gillies

the truck mounting tubes, drill for the train line and glue in place. Two further sections were cut to fit at each end between the tube and the coupler box. Cut two lengths of 0.080" channel to the same length as the deck and carefully glue these so the top web of the channel was level with the edges of the deck. The bolsters were then fabricated from styrene sheet around the truck mounting tubes and centre sill. Cross bearers of 0.080" I beam were drilled for the train line with a number 71 drill, notched at the centre sill ends, threaded with the 0.019" train line and then glued in place. Lengths of 0.060" x 0.020" were notched at the centre sill end and glued between the centre sill and side channels. MDC 2918 modern roller bearing trucks with 36" Kadee wheels were attached temporarily with Athearn 3/16" 2-56 screws. The remainder of the brake system was completed during final detailing.

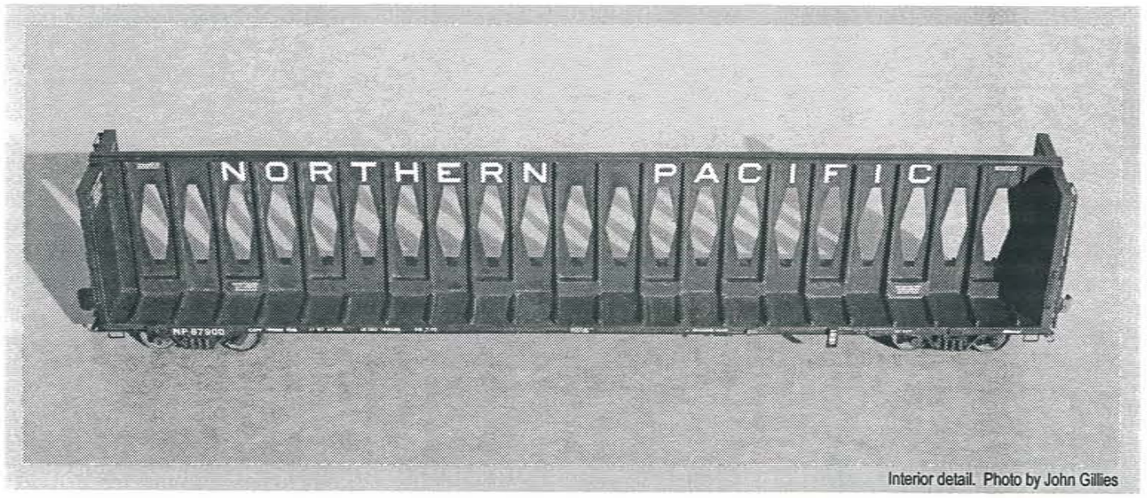
Taking care to locate the B end bulkhead at the correct end of the car, it was glued to the end of the deck. The centrebeam was placed on the deck and brought up against bulkhead using the centre lines as guides, glued to the face of the B end bulkhead and then to the deck along the centrebeam. The second bulkhead was then glued to the end of the centrebeam and the deck.

I tried two methods to cut the vertical load supports that are attached to the centrebeam. I had limited success with 0.030" x 0.100" styrene strip, which was cut to length then cut to the right angle using a NWSL Chopper. Consistently sized supports were difficult to obtain and a considerable amount of force was required to cut through the styrene. If this were continued, the base of the Chopper would have probably been damaged. Cutting 0.030" styrene sheet to the height of the centrebeam and then scribing (0.040" at the top and 0.075" at the bottom) and bending the sheet over a sharp, hard corner produced more consistent results. Some final clean up with the back edge of the utility knife blade and a mill file was required. Although only needing 44, I cut around 55 to 60 so I could check the dimensions for consistency and use the best. While laborious, I was happy with the final result.

The supports were then glued on three-foot centres between the hexagonal openings. I used a three scale foot wide spacer made of 0.030" styrene with a two scale foot wide strip of 0.020" styrene centred underneath to locate the supports before gluing them in place. The spacer's 0.020" gap allowed capillary action to run the liquid cement down the support without gluing the spacer to the support. A 3/4/5 triangle was also constructed of 0.030" styrene with 0.020" spacers on either side to ensure the supports were located at right angles to the deck. This was the most important item used in constructing the model as I initially made the mistake of trusting my eye, only to find the supports were five degrees off square after I had almost finished one side. Much time was wasted carefully removing them, repairing the centrebeam, cutting replacements and then attaching them using the square. I will never trust my eye again when it comes to right angles! Please learn by my mistake.

It was obvious from the beginning that this was going to be a very light model as there is almost nowhere to hide any weight. To add weight, old lead flashing was cut to size and glued between every second pair of the centrebeam load supports. The plates between the supports were cut from 0.005" styrene sheet and glued to the supports and deck. Using a modified dental tool a little like a palette knife (obtained with a broken tip from my dentist at no cost), Squadron green putty was used to fill the gaps between the supports, lead and the plates. Clean up any excess putty as required. Neither of the above support cutting methods were successful in cutting the deck supports from 0.030" sheet. In the end I used 0.030" square styrene with a 0.030" x 0.020" spacer at the outboard end for the deck supports. This left a triangular gap which had to be filled. Mixing a little liquid plastic cement with Squadron green putty produced the right consistency which enabled the putty to be squeezed into the triangle with the same modified dental tool with almost no clean up being required.

Brake parts were left overs from a McKean modern brake set and a Cal Scale Hydra Cushion set. The ABD valve, brake cylinder and retainer valve were glued in place using brackets cut from styrene sheet. Brake pipes of 0.010" brass wire were added with ACC. Brake levers were cut from styrene sheet with brass and styrene brake rods. The slack adjuster was made with styrene rod offcuts. Brass and styrene brake safety brackets were then added. A cut down end walk from a Cal Scale Hydra Cushion set was glued to the B end bulkhead. Coupler cut levers were bent from 0.010" brass wire and the Tichy 3040 stirrup steps were attached. Small plates cut from 0.010" sheet for the car reporting marks, bolster plate and ACI label were glued to the channel side frame. Air hoses and the brake wheel were attached. Three pieces of 0.080" channel were cut to the same length as the car over the bulkhead ends. Two were glued side by side with the third inverted and glued in the middle of the two channels on the bottom. This centrebeam cap was then glued to the ends of each bulkhead and the centrebeam was carefully glued to the centre of the cap.



Interior detail. Photo by John Gillies

After washing and air drying, the model was airbrushed with a two parts engine black, one part tarnished black mix of Polly Scale paint. Decals from five sets were used to letter the car. The large Northern Pacific road name lettering came from a Champ HC-678 woodchip car set while the reporting marks and car number came from a Microscale 87-777 NP assorted freight set. The end of car data was spliced together from Walthers covered hopper data set 705611with the capacity data being spliced from Herald King BN flatcar set F-410. Centrebeam data was obtained from Microscale MC-4035. The weathering was added using an airbrush and brush painted watercolours and thinned Polly Scale weathering colours before a clear protective finish was applied.

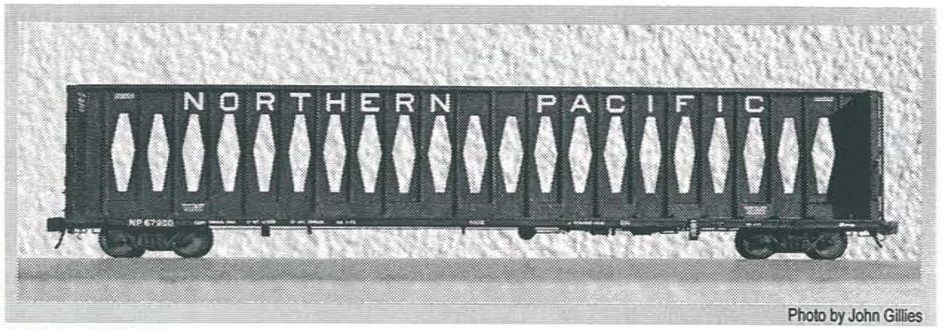


Photo by John Gillies

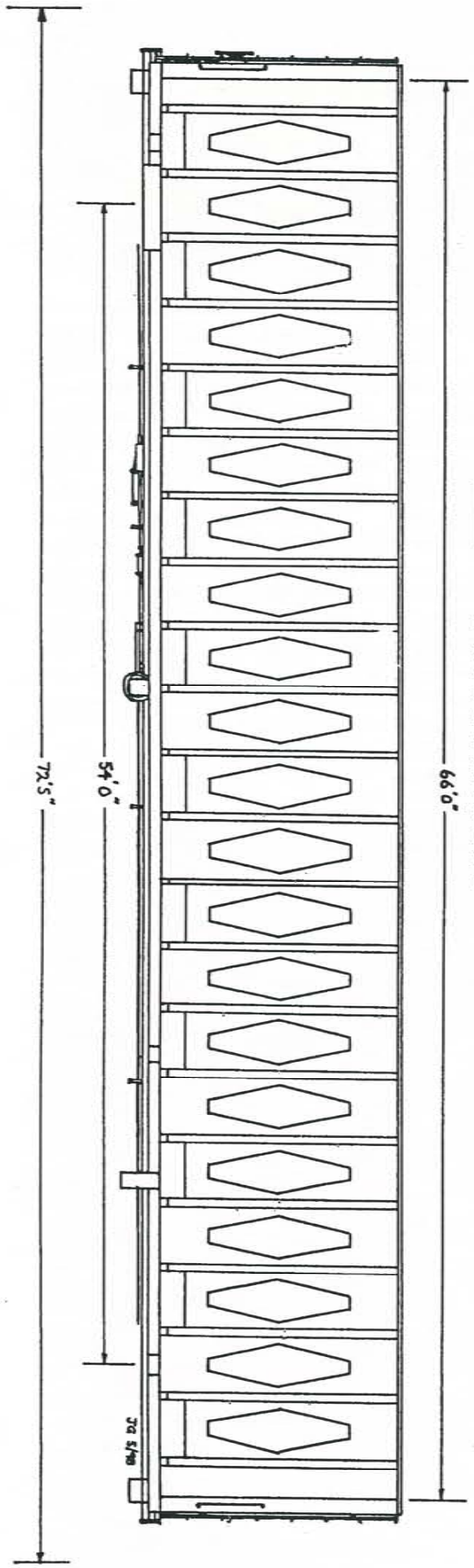
Loads were made from styrene sheet with photocopied Weyerhaeuser lettering glued on. Lead flashing was used to add weight inside the loads. Small segments of a refrigerator door magnet are glued to the rear of the loads so they will fit between the centrebeam load supports. The method is described by fellow NPRHA member Dennis Aust in his article Centerbeam Loads - Loading With Magnets, on pp.30-32 of the November 1989 issue of Mainline Modeler. Magnetic attraction through the centrebeam holds the loads together against the centrebeam using this simple method. When loaded and heading East on my layout, the car can travel anywhere in a train, however its light empty weight requires the car to run as the last car in front of the caboose when returning West for reloading.

I now have an interesting piece of NP's history on my layout as a result of my first efforts at scratch building. While you might not need a model of this flatcar on your layout, you might be able to build your own scratch built model of that car you've thought about. Go ahead, give it a try and have some fun. I did.

*See drawing next next page.*

## NP 67900 Flatcar Parts List

**Athearn**
99001 3/16" 2-56 screws
**Cal Scale**
301 Hydra-Cushion shock control set or
313 ABD set plus 351 Brake Wheel set plus Creative Model Associates 1016 40' Steel Roofwalk (for end of car walkway)
**Detail Associates**
2201 Nut/Bolt/Washer castings
2503 0.010" brass wire
2504 0.012" brass wire
2506 0.019" brass wire
**Evergreen Scale Models**
121 0.030" x 0.020"styrene strip
123 0.060" x 0.020" styrene strip
131 0.030" x 0.030" styrene strip
224 1/8" styrene tube
262 0.080" styrene channel
263 0.100" styrene channel
272 0.080" styrene I beam
272 0.100" styrene I beam
8102 1" x 2" styrene strip
**Kadee**
5 Couplers
438 Air Hoses
522 36" Wheels
**Grandt Line**
3901 0.010" styrene rod
**McKean**
10 Contemporary Brake set
**Roundhouse (MDC)**
2918 Modern Roller Bearing Trucks
**Tichy**
3040 Stirrup Steps
**Miscellaneous**
0.005" styrene sheet (ESM 9009)
0.010" styrene sheet (ESM 9010)
0.020" styrene sheet (ESM 9020)
0.030" styrene sheet (ESM 9030)
**Polly Scale**
414140 Tarnished Black
414290 Engine Black
**Decals**
Champion HC-678 NP Woodchip Car
(or Walthers 75321 NP Woodchip Car)
Herald King F-410 BN Flat Car
Microscale 87-777 NP Miscellaneous
Microscale MC-4035 Centerbeam data & Walthers 705611 Covered Hopper data




This article, and another on the prototype flatcars, was originally written for publication in the Northern Pacific Railway Historical Association's quarterly *Mainstreeter* magazine. If you model a specific prototype, you might consider joining its historical society - I have obtained a tremendous amount of information this way which I hope to put to use on my layout and building models in the years to come.



## SYDNEY CONVENTION

PROTOTYPE THINKING = BETTER MODELLING

**June 1999**
Sat 12th, Sun 13th & Mon 14th

Pre Registration Fri 11th
from 6.30pm

*Venue*
**Integral Energy**
**Convention Complex**
Huntingwood (near Blacktown)
NSW

*Keynote Speaker*
**Jack Burgess** MMR
Owner of the
Yosemite Valley Railroad
and author of more that 60 articles
incl. MR 8/87, 9/87, RMC 4/92,
3/95, MR Planning 98

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**Greystanes Motor Inn**
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$92 for 3 people
$72 per couple
incl continental b'fast

**Plumpton Motor Inn**
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# GRAFFITI

## ...and what to do about it

*by Mark Ward*


Graffiti - a scourge, but a fact of modern life - Photo Mark Ward

**As my Oma Belt's rolling stock register continues to grow, each boxcar, hopper, flatcar, etc. becomes a new challenge to weather as an independent yet somewhat themed part of the railroad's look.**

My wife assisted here, noticing that although "dirty" in appearance, what all of the rolling stock completed to-date lacked was the ever-present fact of life – Graffiti. As a result a Burlington Northern ACF covered hopper was chosen to receive this honour!

Once the basic kit is assembled, I complete my usual replacement of couplers (I use Kadee #27's mounted in their supplied boxes and then screwed to the original coupler mounting pad, which I milled back to a flat surface) and wheelsets (Kadee #521 or their intermountain 36"equivalents work well here). The weight is then also corrected to the prescribed NMRA standard for this length car. Both sides are then sprayed with Floquil Hi-Gloss creating an extremely smooth surface – perfect for decals! As this was my first attempt at a 'graffiti adventure,' I felt that the desired end result would be best achieved using decals. Microscale have a good basic choice available in this area with one dedicated graffiti sheet (243) in addition to another shared sheet (228).

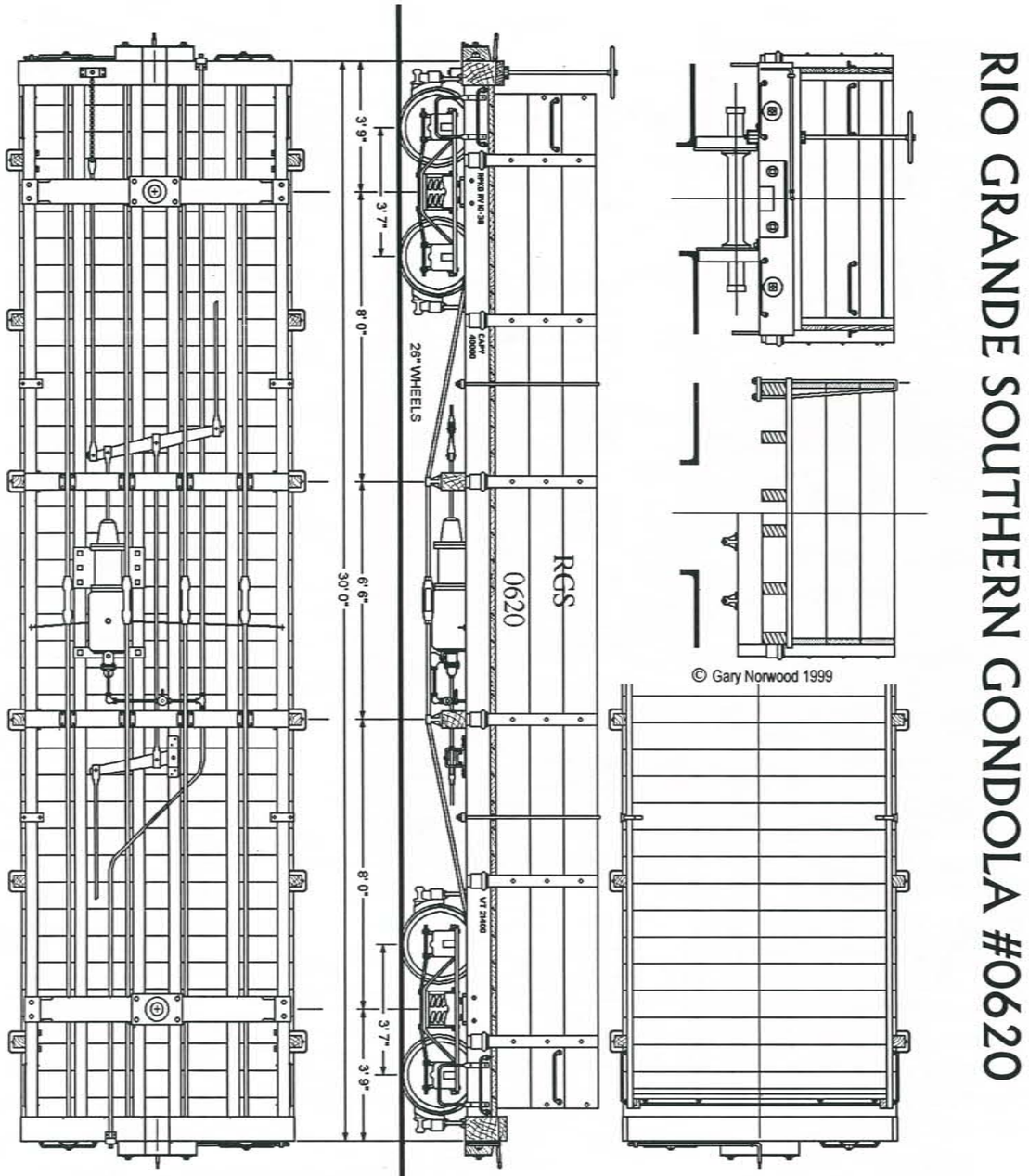
Decal application is via the usual process with close trimming of each decal selected, use of Micro-set for application and Micro-sol (after a short drying period) to achieve that "painted on" look. A couple of important steps to remember here:

- Precision in decal placement is not imperative, actually the opposite applies (i.e. don't align decal edges or place them to the correct horizontal or vertical viewpoints)
- Be random with the placement of 'messages' (to achieve that realistic 'no brain' approach!)
- Some overlap of the 'art' (to each other) gives a good feel to the finished product
- Graffiti can generally only go up to a certain height, as few of these vandals carry stepladders!

Once the decals have been applied to both sides (and ends if you desire!), again spray with Hi-Gloss to hide the decal film. The usual weathering process of washes, chalks, artist's acrylics etc, can then be completed over our newly acquired graffiti. Don't forget to apply a last coat of dullcote/matte fixative to firmly seal everything in.

Whilst you might not want a lot of rolling stock looking like this on your layout, when all is said and done, this covered hopper will be a talking point as well as adding to the variety of detail available for perusal and enjoyment. Good Luck. %

Mark Ward




# RGS FLAT CAR #0620

*by Gary Norwood*

**Originally D&RG flat car #6099, sold to RGS 5/1892.**

Initially used in service as construction flat car C-20.

Listed as flat car #620 21/10/1892.

Used under pile driver on RGS and numbered #0620 during 1906.

Rebuilt to work gondola #0620, date of rebuild not known.

The car was still in service on the RGS during 1938 & 1939.

## Photo references

Silver San Juan - Mallory Hope Ferrell.

Pages 154 & 155 - In use under pile driver in Lost Canyon 1906.

(Interesting point: the RGS never owned any pile drivers!)

Page 620 - Two views showing part of car in company with passenger cars on storage track at West Durango engine terminal 1939.

Rio Grande Southern - Right of way & Structures Volume IX - R. Robb

Page 135 - Very good view of car on storage track at West Durango engine terminal 30/06/38.

The above photographs were used to build two models of this car, one in HOn3 and Sn3.



# Proto 2000 kits

## Secrets of HO Assembly Revealed

*Ever asked yourself "How the heck am I ever going to assemble this?"* **David Latham** *has, and with 20 kits completed he knows a few of their secrets.*

I know the feeling. You have just bought your first Proto 2000 kit because all your mates have them and you have seen the fantastic detail these kits provide for a sensible cost. You get home, open the box and your heart sinks - how the heck am I able to see, then somehow attach all those small grab irons, brake gears, etc.! After assembling over 20 of these fine kits I think I might be able to shed some light in your direction.

First step is to get comfortable, a clean workbench and some proper lighting. The best light for this type of work is one (or two) of those small desk lights with the halogen globes. These provide strong directional white light, which allows black to be seen on black.

A large arsenal of tools is not really necessary. I have managed to survive with the basic set of a sharp hobby knife, small phillips and flat screwdrivers, two pairs of tweezers (one locking if possible), a flat jewellers' file and small drill bit to occasionally enlarge holes. The most important tool for these kits is either a fresh #11 scalpel (available from your friendly neighbourhood GP or dentist) or single edge razor blade! Glues needed are styrene glue (I use Revell or Humbrol with the long tip) and your preference of glue to attach weights if necessary.

I will enlighten you with some general tips and follow with some problems specific to certain models. After opening the box make sure all the sprues are present. I have had one kit deficient one sprue but Life Like sent a replacement promptly. However, nothing is worse than getting half way through a model only to come to a screeching halt because of lack of parts. First up you will notice some sprues with very delicate parts hanging off them. This is the first time you will utter profanities (under you breath if the family is present).

"Phase One" of these kits includes attaching the brake gear to the car floor ("Phase 3 and 4" in the tank cars). The brake gear is almost one very fine piece of styrene, which must be separated from the sprue. In the parts bin you may have noticed I mentioned a scalpel or single edge razor. A scalpel or razor is a much finer blade than an "Exacto" blade and as such will not impart destructive forces laterally to fine parts. The best way I have found is to slowly slice with the scalpel/blade away from one end without separating that end first. This end will then act against the pulling force when separating the part. At all times keep the sprue and part supported from beneath and take time. (Swearing as necessary is permitted, however remember that brake parts are not easily seen and can be placed in pieces and repaired out of sight.) Eventually the other end of the piece is reached. You may then separate the starting point. Tweezers can be used to carry the part and attach it in position with styrene glue. After completing several kits, trial fits are not necessary, as you know where the parts go and you know they will fit perfectly.

On some kits, when I remembered, I drilled a small hole in the side of the triple valve to accept the pipe from the air cylinder.

I use Kadee #5 couplers on all these kits and have never had to adjust their heights. It is better to use the Kadee coupler boxes and bolt them in place. I have had one LifeLike box that had been glued, break off.

"Phase Two" involves attaching doors, grab irons, etc. I never attach the stirrup steps until completion because of their fragility. Be careful of the brake rod base chain (sub-floor) that it doesn't snag on anything before (and after) attaching the brake rod and chain.

Grab irons on car sides and roof walks should be attached by applying glue from the inside for a more aesthetic finish. It is easier to separate a bulk load of grab irons from their sprues than go one at a time. Some grab irons have three attachments to the sprue. I have found it easier to slice the middle one first to relieve the pressure on the others. Again, make sure both sprue and part are supported beneath and work slowly. No need to utter abuse here, as there are several spares of the most fragile steps on each sprue, unless all these spares are already broken.

Specific kits:-

- Tank cars - apply side grab irons last; all cradle straps should be applied dry then add small amount of glue to hold in place.
- 50 foot box cars (all varieties) - need a little extra weight for NMRA standards.
- Stock cars (both varieties) - 32 grab irons!! take your time; don't attach the lowest side ladder grab iron until after the stirrup - it covers one end of the stirrup; make sure the door guides go in the upper holes and the long grab iron in the lower; the Kadee box needs the front apron removed to enable the use of the LifeLike hole in the car floor.
- Gondola - attaching Kadees is more difficult because of the built-in box - file it flush then attach Kadee.

I hope that this short presentation helps all those modellers courageous enough to sample these wonderful kits. Initially take time to separate all the fragile parts. You might have to learn some new profanities for when your housemates learn the old ones.

If anyone wants to contact me my email address is in the back pages of "Mainline".

David Latham
(CEO Fanta Se Railroad)

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