

7th Heaven

Journal of the Aus7 Modellers Group Inc.
No 45

\$7.70 inc GST
Autumn 2015



Karbored Flats
Train Marker Lights
Machining In O Scale
Amaroo: A Small Garage Layout
Commercial News



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Straight Down the Line - Opinion

by Paul Chisholm

Arakoola Goes O.S.

If you haven't heard about it elsewhere the Arakoola guys want to let friends and members know that the layout will be travelling to the U.K. in 2016 for the Gauge O Guild 60th Anniversary Exhibition at Telford. Those of you who are Gauge O Guild members will know about this event but for those who don't just imagine a hall bigger than AMRA Liverpool crammed with exclusively O gauge layouts, traders and workshops. So for us this is a pretty big deal and a fantastic opportunity to take Australian O Scale modelling, particularly NSWGR prototype to the "home of O gauge".

This hasn't come about quickly or easily as we have been in negotiation with the Guild for well over twelve months as well as conducting our own investigations into the myriad of practicalities, regulations and particularly the finances involved.

If you are interested in finding out more of how this all came about and keeping track of our progress as the project develops we have created a blog at <https://arakoola2telford2016.wordpress.com/> which you are welcome to take a look at or even to sign up to follow.

As you can imagine this is going to be a very expensive exercise so even though we are all making a large personal financial commitment to it we are offering you the chance to help us out with a deal we think you can't refuse. i.e. the opportunity to take part in a raffle for a Model O Kits/DJH Garratt kit with only 200 tickets to be issued at \$20 each. The blog will tell you how to do it.

So, maybe you think we are crazy and maybe we are but after a year or so of finding a host of reasons not to do it we had one of those insightful moments (maybe fuelled by some beers and pizza, see the blog) when we instead asked ourselves why not, nothing ventured; and all that sort of thing.

So, if you plan to be in the U.K. in September 2016 make time to call by and see how Arakoola stacks up besides the best of British.

Saturday July 11, 2015

Brisbane O Scale Modellers Forum

Aspley Australian Football and Sporting Club
50 Graham Road, Carseldine Brisbane
9.00 am to 4.00 pm



It doesn't all happen south of the border, come along and be part of our first Queensland get-together. Feel free to bring a model to show to others.

Featured speakers will cover a range of topics on both the prototype and O scale modelling, together with specialist O scale traders.

Aus7



A Very Happy Man

Trevor Hodges has just presented long time Aus7 member Bruce Wood with his certificate as winner of the PSM C38 in the membership promotion draw at the Forum on 21st March

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On The Cover

Hard to believe that this started as a standard Model O Kits Pc1 station building. Stephen Reynolds has worked his magic with it and reveals some of his methods in this issue.

Karbored Flats

by Stephen Reynolds



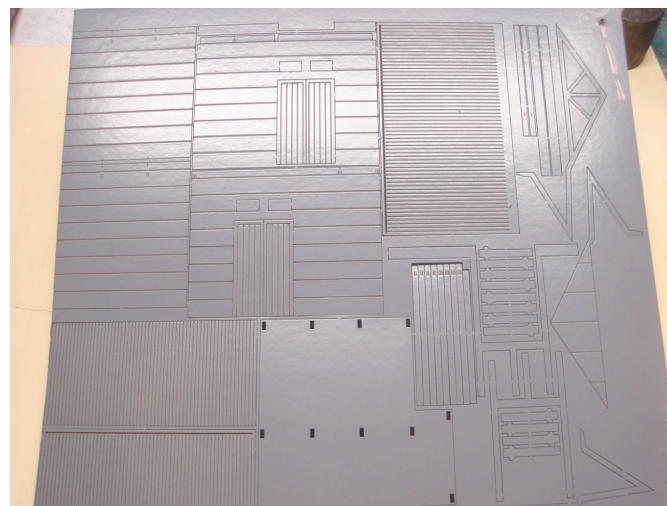
Model-O Kits competition was upon me before I had time to realize that I only had a matter of weeks to come up with an entry. I was almost not going to bother but I had already purchased the NSW PC-1 Station Building from Model-O and was eager to “have a go” at one of their kits. Besides, is time saving not one of the advantages of these flat-pack, laser-cut kits? With all the material contained in the package and cut to size, all you have to do is add glue and paint. Sort of O scales answer to IKEA.

I decided to use only what came with the kit and not to introduce any other foreign material such as scale timber or styrene but I diverted from the instructions of removing all parts from their flat-pack and took advantage of the fact that everything was contained and, well flat. You just lay the whole sheet out on the workbench. This would make it easy to achieve the finish I was after.

First I painted the one large and two small cardboard sheets of the laser-cut parts with a good coat of shellac. This step may not be necessary as the material has a very hard surface and it would only be on the edges where parting may occur. Then again in most cases the edge is where the parts are joined together and these should be sealed by glue.

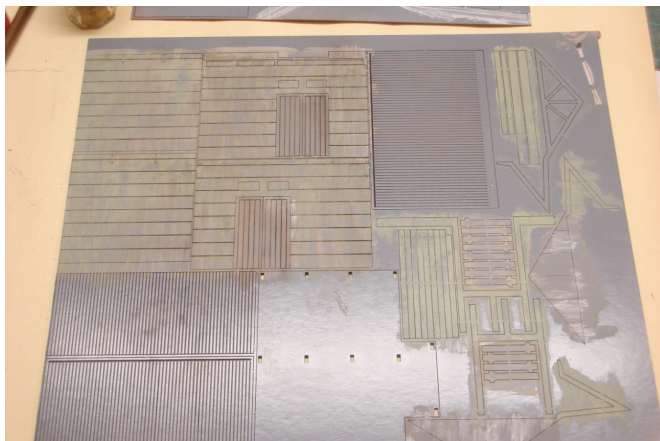
Once the shellac was dry I then sprayed the three sheets with (you guessed it) good old Export Grey Primer after which a dark wash was applied first to

create relief, emphasising the joins in the precast concrete wall panels. The wash was made of Indian ink and rubbing alcohol, mixed to taste.



shellaced and undercoated

Then, using vertical strokes, a light coat was applied of Tamiya Acrylic Paint XF-21, Sky (why would you call a green paint Sky?) to all the walls and their reinforcing beams. A colour not unlike the colour of the prototype picture that comes with the kit. This was only a light coat and the grey primer was still able to be seen through it. The doors, concrete piers and gable infills were also given the first application of paint



First and final coat to the precast walls applied and weathering has started.

The roof proved interesting for me as I was trying to represent aged corrugated asbestos roofing sheets. Fortunately I only had to look over my back fence to see a perfect example of the prototype. Starting with the dark undercoat base I applied India ink for relief, next ash from my fire place to give colour and texture, black and rust weathering powders and finally talcum powder to lighten the appearance. The precast reinforcing beams were glued on next, making sure they were both vertical and horizontal on their appropriate wall.



A view of the roof in the bottom left hand corner and the start of attaching the outside reinforcing beams.

I wanted the finished building to have the appearance of abandonment and heavily vandalised, so graffiti would play a big part in achieving this look.

I waited till I had the beams in place before starting to deface the building with graffiti. Using a fine tip marking pen and water colour pencils, it was fun. The biggest problems were trying to think of examples of this anti-social behaviour. I found newspaper articles and the internet helpful. There are copies of local tags (whatever that means) and the more intense colourful subjects on the water tank, come from Broad Gauge Bodies decals. By this time I could not progress any further with the kit in its current 'flat pack' state, so I started to remove the sections and assemble them.



Back wall and gables assembled. Doors distressed and infills above the doors with broken glass and cobwebs.

The roof and awning were next as well as the concrete piers. I wanted to capture the look of the terracotta ridge capping that was on so many of the prototypes. Sticking with my original objective of using only material that was supplied in the kit I used the right angle edging of the styrene sheet that came with the kit. I cut this into a 2 scale ft wide strip then cut the strip into 1 scale ft lengths. Then glued these 'piggyback' style across the roof cap and painted them terracotta. That just about completed the basic kit. All that was left was to place the building in a scene.



Front wall with roof brackets and roof truss in place. Note the door handle.



Roof, awning and ridge cap

To comply with the rules of the competition the diorama had to be a least 300x300. A piece of ply was cut to this size and the building was set in the middle not parallel

to any side. I didn't want to fill this whole area with unnecessary scenery. So I only modelled the station platform as wide as the awning and the same area at the back.



The platform, just layers of form card and the black areas that were not to be scened.

All that was left now was to let my imagination run wild. Adding lots of junk and rubbish to enhance the rundown abandonment look. A Model O Kit water tank and one of their platform seats is amongst layers of timber, paper, rubble, scenic material as well as a goat and a hen, under the back loading platform.

The Model O Pc1 station was a fun kit to construct and it will not be my last. It was a shame there were not more entries in this competition as it is one sure way that you will push yourself to improve your modelling.

References;

Stone Colour Paint Scheme for NSWGR
James Mcinerney - Branchline Modeller # 1
Concrete Buildings of NSWGR
Stephen Ottaway - Australian Journal of Railway Modelling # 7
P.C. Station Building Conversion.
Stephen Ottaway - Australia Journal of Railway Modelling # 11
A NSWGR Pc3 Concrete Station
Trevor Hodges - 7 th Heaven # 22 & 23



TRAIN MARKER LIGHTS

From the NSW Rules and Regulations with Comments by Derick Cullen

With the advent of DCC, sound and light equipped model rollingstock is becoming frequent. One of the questions this raises is how did the prototype use lighting, particularly at the head and tail of trains. One of the uses of lighting was for what the NSW railways called "Train Signals". The following is an extract from the PTC of NSW Rules and Regulations issued 1 July 1973. However, the rules were little different over the second half of the 20th century, and should serve for the popular steam/diesel era. I have interspersed the quotations with comments. A graphic is provided that I hope will summarise the rules for modelling purposes.

Rules 149 – 152

149. (a) For the information of station masters, signalmen, and other employees, each train must carry head signals consisting of lamps or lights in daylight and lights during dark or in foggy weather, as Prescribed in the Regulations.

Comment: I guess a "lamp" is an oil lamp, whereas a "light" is an electric light and is more effective in fog.

(b) Engines employed exclusively in station yards and sidings for shunting purposes must display two red lights at each end after sunset or in foggy weather.

Comment: the ability to display two red lights on each end simultaneously may be a modelling challenge, given that many DCC installations are "direction sensitive".

150. (a) Every complete train travelling on the line must have a white disc or tail lights (where prescribed) at the rear of the last vehicle during daylight and tail lights during dark and in foggy weather as prescribed in the Regulations.

Comment: the disc (which could be a triangle!) and red tail lights were an indication that the train was "complete" and that no vehicles had detached in the section.

(b) The prescribed tail lights must be exhibited on multiple unit electric trains during daylight and dark.

Comment: emus were exempt from the tail disc rule. Additionally emus operating within the Sydney metro area had 5 marker lights that were lit in various combinations to indicate to signalmen on what route they were operating. These indications are not covered in the regulations or in this note.

(c) When a train is assisted by a bank engine in the rear, the tail disc or tail lights must be carried on both the bank engine and at the rear of the last vehicle of the train.

Comment: On many sections where banking in the rear was permitted, the engine was not coupled and could drop off the train after the grade had been conquered but before the station in advance was reached. Thus there could be two "trains" in the section, the train being assisted and the now light bank engine, hence the need to mark the end of both, see 150(d)(i). In most (all?) cases where the bank engine could drop off, the driver needed to be in possession of a bank engine key.

(d) (i) A light engine when on any running line must carry a tail disc in the rear during daylight and tail lights during dark or in foggy weather, except shunting engines which must carry lights as Prescribed in Rule 149 (b).

(ii) When two or more light engines run coupled, the tail disc or tail lights must be carried on the rear of the last engine only.

(iii) An engine hauling vehicles must not carry a tail disc or tail lights on the rear of the engine.

Comment: the rear markers on an engine must be independently controllable from those on the front.

(e) When it becomes necessary in an emergency to assist a train in the rear the tail disc or tail lights of the train must be removed or extinguished while the train is being assisted and not again exhibited until the trains are divided.

Comment: this is an unlikely scenario on most model railways, and the extra effort to make tail lights on a guards van or trailing coach independently switchable may not be worth the effort. But see rule 206.

151. The guard, or where two guards are employed the guard at the rear of the train, must see that the tail disc or tail lights are properly exhibited when required.

152. Unless instructions are issued to the contrary by the Chief Operations Manager (Rail), every signalman must carefully watch each train as it passes to assure himself that the train is in order and complete with tail disc or tail lights and that no portion of the train has become detached.

Rule 153: Special Trains

Comment: Rule 153 deals with running special trains. The circumstances explained are, in my opinion, likely to be very rare given the use of telegraph / teleprinter and telephone notification of trains to be run. Given that many goods trains were conditional, but when they were to run were in the twice daily notifications of trains to run. I expect trains that preceded such did not carry the additional "train signal". However, model lighting fiends will be delighted (!) to know that an additional light was required.

153. (a) When practicable a printed or written notice must be issued for special trains in sufficient time for all concerned to be advised of their running. When special trains have to run at short notice and the issue of a printed or written advice is not practicable, particulars must be telegraphed or telephoned to the employees concerned.

(b) As it is not always practicable to convey these particulars to all employees it is necessary that members of the staff be prepared at all times for the running of special trains.

(c) Special discs and additional lights must be provided to indicate the running of special trains on the sections and during the hours prescribed by the Chief Operations Manager (Rail), namely:

(i) A red disc or a red flag in daylight or an additional red tail light during dark or in foggy weather, carried on the centre bracket at the rear of the last vehicle of a train or light engine, indicates that a special train is to follow.

(ii) On single lines a white disc with black cross in daylight or a white tail light carried on the centre bracket during dark or in foggy weather, in addition to the red tail lights at the rear of the last vehicle, denotes that a special train is due to run in the opposite direction over the same line before the next ordinary or special train.

Comment: I have seen only one train with the white with black cross tail disc, a goods into Canberra just before one of the ARHS steam specials was about to depart.

(d) The train signal notifying the running of a special train must be carried for all special trains and for all conditional trains unless they have been notified to run regularly.

(c) The station master at the station at which the display of a special disc or additional tail light becomes necessary must ensure that this is done and that the guard of the train preceding the special or conditional train is informed of the description and destination of the latter train. The guard of the preceding train must display the special disc or additional tail light, inform the employee in charge of each station at which his train stops of the description and destination of the special train, and remove the special disc or additional tail light from his own train when it is no longer required.

Comment: how to organise an optional light might cause some head scratching. On the other hand tail discs and triangles could be "semi-removable" if implemented with self-stick paper.

Rule 206. Working of Trains

Comment: This long and tightly written rule details the use of lights when trains are refuged on double track lines or have to cross on single lines. Why the Rules did not consider these as train signals, but as part of the rules for working trains is a bit of a mystery. While the rule is long and involved, there are two basic principles underlying all the clauses: don't freak out an approaching train crew, and provide the signalman an indication where vehicles are on the running tracks. Displaying lights of any hue on vehicles is likely to meet the needs of the signalman, but the crew of an approaching train could not necessarily distinguish which track in a number of parallel tracks vehicles were standing. And so the use of white markers at the rear (on double track lines) and front and back (on single lines) on a train stopped in a loop on the side nearest the clear running line, and red on the other told approaching crews they were in no danger of a rear-ender. The use of dead-end refuges and putting a train over on the other main for crossing purposes, both of which can still happen on "Board of Trade" layout stations, consume most of the verbiage and exceptions for the generally straightforward use of head and tail markers.

The model lighting fiend will find that all four markers on a train have to be independently controlled as to on/off status and colour to model this rule. Under some

circumstances additional lights are needed temporarily on vehicles on running lines.

206. (a) During dark or in foggy weather, when a train is shunted from one running line to another or is placed in a refuge or other siding for another train to pass, the former train must be placed inside the Home signal to protect it from any approaching trains and the head and tail lights must be extinguished or altered as prescribed herein. In the case of light engines unaccompanied by a Traffic employee the observer must carry out the duties Prescribed for the guard and the driver must satisfy himself that the observer has done so. The driver will be responsible for the prompt exhibition of the lights at his end of the train and the guard will similarly be responsible at his.

(b) On double lines, trains which proceed from a running line into an adjacent loop refuge siding or are hauled (engine leading) into an adjacent deadend refuge siding for another train to pass, must have at the rear of the last vehicle a white tail light on the side nearer the running line, and a red tail light on the side farther from the running line. The head lights on the engine in the loop refuge siding must continue to be exhibited but those on the front of the engine in the deadend refuge siding must be extinguished.

(c) (i) On double lines, before a train is shunted from one running line to another, the driver must exhibit two red lights in front of the engine and extinguish all other head lights which his engine may be carrying. The red lights must be kept exhibited until the whole of the train has again been shunted to its proper running line.

(ii) Immediately a train has been shunted from one running line to another, the guard must change the tail lights from red to white, and before the train recrosses to its proper running line, the red tail lights must again be exhibited.

(iii) When the engine or engine and a portion of the train have to be detached while a train is standing on the wrong line, the employee who uncouples the engine or vehicles must place two red lights on the leading vehicle of the remaining portion of the train before the engine, or engine and leading portion of the train, are moved. When the engine only is detached the driver must ensure that the lights are exhibited on the leading vehicle.

(d) When a train has been set back across the running lines into a deadend refuge siding adjacent to the line used by trains running in the opposite direction a white light must be exhibited on the front of the engine on the side nearer the main running line and a red light on the side farther from the main running line and the tail lights on the vehicle nearest the deadend must be extinguished.

(e) When a train is shunted into a siding other than as prescribed in clauses (b) and (d), the tail lights must be extinguished so that they will not be exhibited to a following train.

(f) Before a train or vehicles are shunted from a siding on to a running line, or from one running line to another,

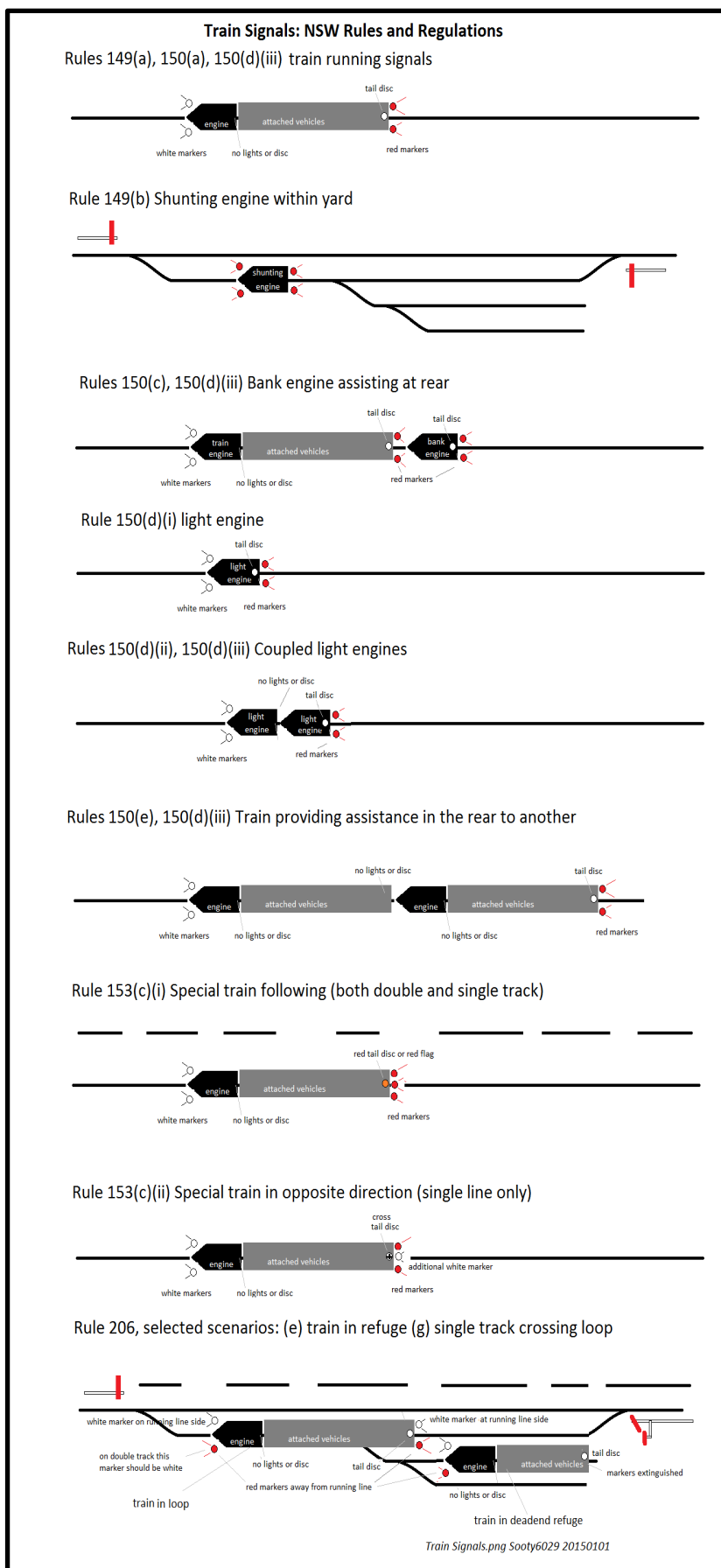
to stand there, the shunter or other employee in charge must, after sunset or in foggy weather see that two red lights are placed on one or both ends of the stationary train or vehicles to show towards trains or vehicles which may approach and collide with them. When two red lights are required only on one end of the stationary vehicles, two white lights must be placed on the opposite end to indicate the location of the vehicles to the signalman and drivers approaching on an adjacent line. The lights must be exhibited until the vehicles are shunted clear of the running lines.

(g) At crossing places on single lines, after sunset and in foggy weather, when a train is standing on a running line waiting for another train to cross or pass, and such train is clear of the fouling points, a white light must be exhibited at each end of the train on the side nearer the clear running line, and a red light at each end of the train on the side farther from the clear running line. If the engine, or the engine and a portion of the train, have to be detached, the employee who uncouples the engine or vehicles must place the red light and the white light on the leading vehicle of the remaining portion before the engine of the engine and portion of the train are moved. When the engine only is detached the driver must see that the lights exhibited on the leading vehicle.

Automation? I have had some experience using DCC with sound and light equipped rollingstock. Under some circumstances (unfamiliarity with the model railway, the function mapping of various features on different motive power, different handset layout, momentum effects and so forth) I find the workload in just running a train, keeping it out of the way of other trains, and checking on route settings can be significant. Modelling the train signals, especially if they have to be changed on the road as needed by rule 206, will add to the workload. Also installing DCC switchable lighting on all vehicles likely to be "trailing" is a big ask. A possible modeller's shortcut might be to install lighting in trailing vehicles that is automatically switched, for example by trackside magnets activating reed switches or opto switched. Working through a single track crossing loop could be automated, for example. Maybe some combination of standard programming of decoder functions in combination with macro facilities might simplify setting lights before leaving the terminal?

Reference

Public transport Commission of New South Wales, Rail Division, "Rules and Regulations", to take effect 1 July 1973.



Machining In O-Scale

Trevor Hodges

A number of years ago I began to consider purchasing two pieces of workshop equipment that, up till then, I'd managed to survive without; a small bench-top mill and a lathe. Before I go any further I need to be up front and admit that my formal experience with metal-work machine tools consists of two terms of high-school metal work classes in Year 7. I'm not kidding! I don't have a mentor in metal work techniques or traditions, however I do have two friends who bought similar machines in the same time period as myself and over the last 20 years or so I've occasionally read articles on workshop techniques in magazines such as *Model Railway Journal* and *Australian Model Engineering*. As this was the sum total of my familiarity with such "sophisticated" machinery at the time I made my purchases I also bought some "how to" books and borrowed a book from a friend entitled *Tabletop Machining*. So why did I spend money on such equipment when I'd managed perfectly well up till then without it? My motivations for buying these tools were many and varied, however they are probably best summed up by the phrase "it was the right time". I found that I was spending more and more time carrying out tasks by hand that, even with my limited experience, I knew would be much more accurate and simpler to carry out using a mill or a lathe. Most of the modellers I really admire were familiar with and used such tools. As some of them readily admitted to being self taught I thought that if they could do it so could I.

It would probably come as no surprise that, first in thinking about and then in researching the types of machines I was likely to buy, my head was filled with visions of turning out beautifully crafted scratch built steam locomotives. So far the reality has been far more mundane: I've found lots of uses for my new toys but thus far not a single locomotive has emerged from *Hodges Engineering*. I imagine that this will come in time. However, even at this early "absolute beginner" stage of my machining

career, there have been a few surprises and I thought it might be worthwhile to take a quick look at some of these and in so doing offer a modicum of guidance to anyone who might be thinking about plunging into the world of machine tools.

Surprise #1 - The attitude of other modellers

I've long held the view that you can build any number of kits to an extremely high level of finish and no one thinks you're anything special, but if you build one slightly wonky wagon from scratch everyone thinks you're a modelling genius. Well I've discovered there's a corollary to this inverse law of adulation and it emerges in the presence of machine tools. Namely that while everyone might admire you for scratch building just about anything this only holds true if you do this on a tray balanced on your knees in front of the TV with nothing more sophisticated than a steel rule, one needle file and some sticky tape. If you use machine tools you're ever so slightly "suspect", as if you're cheating by throwing money at the problem. While I am exaggerating just a little, I've been slightly taken aback by the number of people who have said to me that they would never go to such expensive and elaborate lengths as buying a mill or a lathe. I can assure you that if I added up the amount I have spent on both machines and all their attendant accessories I would still get some change from the cost of one Precision Scale C38 locomotive.

Surprise #2 - The Cost of Accessories

Perhaps this shouldn't have come as any surprise at all but no matter what model or make of machine you end up purchasing the purchase price of the machine is only the start. While you can buy package deals where you get a range of accessories when you buy the machine, in general you will find that before you can do too much machining you will need to buy and learn how to use a surprising range of quite expensive accessories. For

the record I purchased a Sieg X2 Mill (Photo 1) and a Sherline long bed lathe (Photo 2). The lathe came as a package deal although I still had to buy a few more parts, whereas the mill came with not much more than some Allen keys and a couple of spanners. There was little printed material with the mill that gave guidance on what I would need to actually start milling anything but I eventually nussed it out.

Surprise #3 - The learning curve

I knew from the start that the learning curve would be quite steep if I was to get any use out of my new machines however there has been quite a gap between what I have actually learned and what I expected to learn. What I expected to learn was arcane details about the properties of metals and the art of precision measurement. What I've actually learnt is that, while there's an enormous amount of information out there about machining to help the beginner in the form of books, magazines and online help videos (there are thousands of such videos on Youtube) there is not a great deal directed at modellers who work in smaller scales such as HO and O and who use electricity as their means of propulsion. It appears that when you move from using hand tools to working with machines such as lathes and mills you morph from being a "modeller" and start to become a model "engineer" and the focus seems to be on making large, "ride on" locomotives and live steam engines. You will find lots of articles on how to machine large wheel castings (by "large" I mean 15-20cm diameter) and live steam brass fittings but very little on making tiny detail parts for an O-scale locomotive. The lesson I took from this is that you need to be flexible and adapt what you can learn from the broad range of sources available and adapt these to your own modelling needs.

Surprise #4 - You gotta know how to hold 'em

Perhaps the biggest surprise was that, while I expected to have my

attention focussed on the cutting tool of the machine I was working with, in fact most of my time and attention has been devoted to working out how to hold and secure firmly in place the work-piece while the machining is carried out. Any trained machinist reading this will probably shake his (or her) head at what I'm about to say but, to be honest, the purpose of the cutting part of the machine (be it an end mill or a carbide tipped cutting tool) tends to be fairly self-evident. What's more these parts are sold in a state that, for the most part, are relatively straightforward to install, set up and get ready to use: this is metal work, not rocket science. However the art of holding firmly in place the work piece that is to be cut and shaped is, in my very humble opinion, where the success or failure of a job is determined. So put to one side visions you may have of flying shards of metal, before you can get to that you have to work out how to hold the bloody object your working on still so you don't do some serious damage to it or yourself!

Surprise #5 – In Joe Martin's book *Tabletop Machining* he states that he spends about 90% of his time using a mill with the lathe only coming into use for the other 10%. I didn't really credit this at the time but it turns out to be a fairly accurate summary of the use I have made of my machines. So if you want to take my advice about which machine to buy first it would be get a mill and only buy a lathe when you find a job you can't do on the mill.

Reality Check

After approximately two years I've found the machines have become an invaluable aid to my modelling however this doesn't mean I wouldn't do things differently if I had my time over again. The first thing I would change is to have purchased a Sherline mill in preference to the Sieg machine. The Sieg X2 mill is a Chinese sourced product of dubious quality which only really became usable after I purchased an upgrade kit from the US supplier *Little Machine Shop* to replace the torsion spring that comes as standard on the X2. The Sieg machine is a much larger object weighing in at over 60kg and I almost gave myself a hernia trying to move it when I recently sold my home. Sherline

products are small, less powerful machines however they are suitable for 99% of work you're ever likely to do in O-scale. In addition to this, Sherline produce an astonishing range of accessories designed to work with their machines. A second thing I might change is not to have purchased a lathe at all, at least not at this stage of my career as a machinist. If I'm frank about it I've barely turned the lathe on since the day I set it up. There have been a number of personal factors that have limited the modelling projects I've been able to tackle over the last couple of years however I'm yet to be convinced that I couldn't have put off buying a lathe for a number of years.

A Practical Example Of Milling

Recently I've been trying to reduce the number of unbuilt rolling stock kits residing in my storage cupboard. There were about 6 or 7 Waratah S wagon kits in this cupboard so I decided that working on a couple of these would be a good way to make a start on making the cupboard a little less full. As I have written in previous articles I install sprung W irons on all my 4 wheel wagons and recently I've been fitting the new Protocraft couplers to my rolling stock. Fitting these items to the Waratah wagon bodies requires some modification and the mill is an ideal machine to carry out this work.

I recently worked on an O-Aust BWH kit on which I wanted to install Protocraft couplers. I needed to raise the coupler height and to achieve this I milled about 2mm from the coupler pad on the wagon body (see photo 1). To hold the wagon in place I used the commonly available clamping set that can be purchased from a number of suppliers and is recommended to use with this machine. Even a casual glance at this clamping set up will tell you it really isn't suitable. The chances of the wagon body being damaged are pretty high using such an unsuitable clamping method on a fragile urethane cast body such as this. Not only did I have to work extremely carefully not to damage the body but also had to remove it from the milling table to work on each end which is a recipe for inaccuracies and mistakes. When I

started work on the S wagons, and reached the stage where I needed to mill the modifications into the wagon body, I constructed a jig (Photo 3) to hold the body firmly in place while at the same time allowing access to all the areas where the work was to be carried out without removing the work piece from the mill table.

The jig is made with a base of good, flat luan plywood with two large holes either end to allow it to be bolted to the milling table. I used stripwood to form a fence that runs around both the inside and outside the inverted wagon's side walls. In the centre I glued a block of 2x1 radiata pine that was almost the same thickness as the depth of the wagon's interior. This acts as a support for the centre of the wagon when it is secured to the jig. I drilled four holes near the centreline of the jig to allow four counter sunk bolts to be inserted from underneath. I drilled two holes in short lengths of some 12mmx3mm aluminium bar stock to allow the bolts to pass through. When these are slid onto the inverted wagon they will hold it in place and will bear down on the block of pine allowing it to be held firmly in place with little chance of damage or movement while the milling is taking place (photo 4). When the wagon is secured in place the jig can be bolted to the mill's table ready for the milling job to start. Compared to the construction of the jig actually milling the modifications to the wagon body was quite a simple job, however it was made infinitely easier and quicker by making sure the body could not move during the operation and by being able to access all the areas to be worked on without having to unclamp and move the body after each step in the milling process (Photo 5).

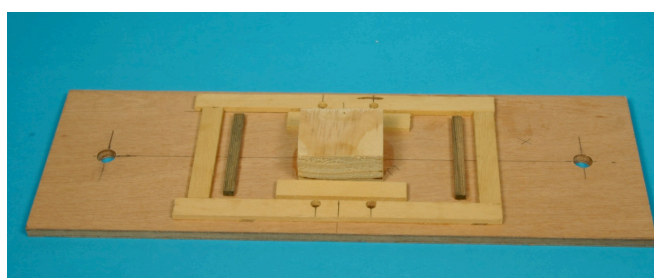
Conclusion

Just like an argument there are always two sides to any decision and trying to decide whether you need machine tools like lathes and mills to work in O-scale fits into this category. Whether you "need" such machines really depends on what sort of work you intend doing in your hobby activity however having them in your work shop tends to affect the direction your modelling takes and the jobs you're willing to tackle. Assessing the need is no simple

matter because before I got my mill I wouldn't have been game to tackle some jobs so I only *really* started to need it after I bought it. I've found this repeats my experience with other tools I've purchased like my woodwork router and my much loved mitre saw. I have a feeling that the lathe will come into its own when I finally begin building my first scratch built locomotive. The materials, plans, parts and wheels for a NSWZ 20 have gradually been accumulating in that same storage cupboard for years and it's probably time to make a start. I suspect I'll soon discover how much use I'll make of the lathe once I start this project. In the end the decision about whether you buy such machines is up to you but one of the motivations to buy mine was to eventually teach myself enough skills to build myself a C38 from scratch. When Precision Scale announced their plan to release this locomotive in brass I agonised for ages about whether to buy the machines or the loco: I ended up deciding to buy both.

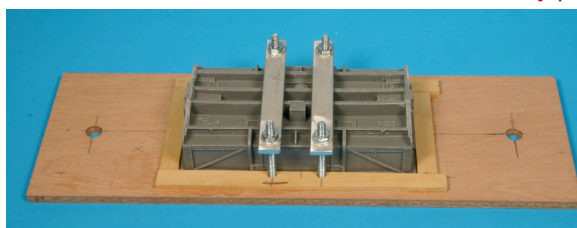


This is the Sherline lathe I purchased. I would definitely recommend buying the digital readout that can be purchased as an option. These are available as separate items for the mill I purchased but the ones I've seen cost more than the mill itself so I'm evaluating my options. The lathe is mounted on a piece of 16mm mdf and can easily be lifted from the workbench and stored underneath.

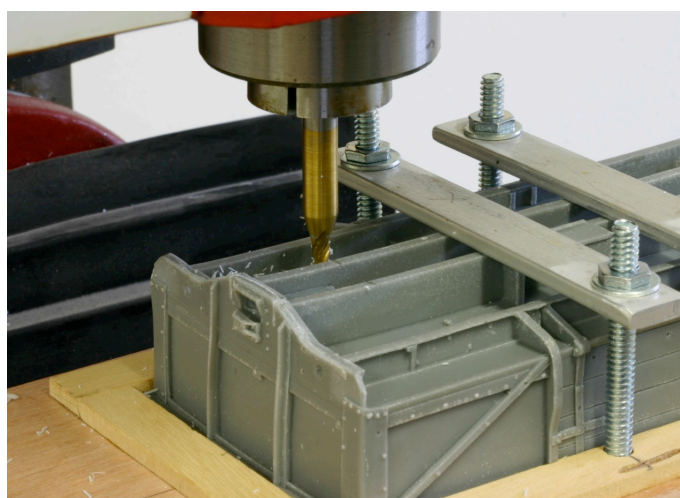
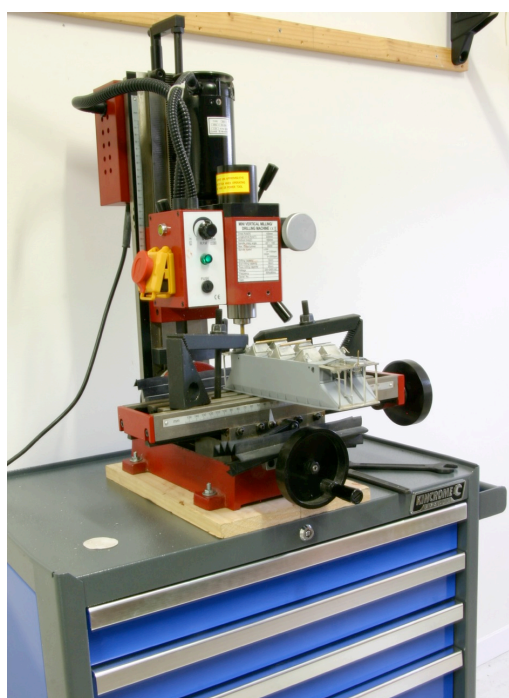


The jig made to hold the S wagon body. This took about 3 hours to make and it can be used over and over as I work on my pile of unbuilt

After selling my home recently I lost access to a specially constructed wooden bench I had constructed to mount my mill on. To allow continued access to the mill I mounted it on top of a Kincrome tool chest which I picked



The jig with the S wagon body clamped in place but prior to being bolted to the milling table.



The jig and wagon body being milled.



Amazoo

A Small Garage Layout With Lot's of Shunting
Paul Chisholm

When I made the move to O scale about twelve years ago I had a small HO layout along one side wall of my single car garage. Now I don't want you to get the wrong idea when I call it a layout. No sweeping curves and long straights carrying speeding RUB sets or strings of shambling S and K wagons. It just went from end to end over a distance of about five metres and was comprised of a terminal station, passing loop, goods road and a loco depot with a turntable and shed based on Valley Heights. Even though the trains didn't go far it gave plenty of scope for shunting around my quite extensive collection of HO rolling stock and locos.

However over the years enthusiasm waned a bit as family and career took up more time and gradually the layout disappeared below a growing collection of household overflow. It had become storage shelving! Also I had moved on to O and my modelling activity was concentrated on kit and scratch building locos and rolling stock for that "someday" O scale layout and my association with Stringybark Creek and then Arakoola made up for not having a home layout of my own. I gradually became resigned to the fact that I probably never would.

Then one day early in 2014 we decided that the clutter in the garage had reached critical mass (the car hadn't been in there for fifteen years) and some serious culling had to be done. It was during this stressful process that the old layout was revealed. Having all that stuff piled on top for so long hadn't done it much good so there was no chance of resurrecting it even if I had

wanted to. It didn't take long for all that lovingly laid but now crooked and buckled trackwork to be lifted, ballast and scenery scraped back, wiring torn out and everything else done to reduce it to bare boards. But now we had something never before experienced; more storage room than we had stuff to fill it with and every so often I would take advantage of this luxury by putting down one or two lengths of O scale flex track and giving a loco or wagon a short run up and down. Then, having observed this, one day my wife must have been feeling sorry for me and she made a fateful suggestion. "Why don't you build some sort of layout on there?" And after a few weeks of token resistance so as not to appear too eager I grudgingly accepted the offer!

Now here was a challenge. Many, many times I had tried to convince prospective HO to O converters that you don't need a small hall to build an interesting layout and that in O scale "less is more". There have also been several articles on this topic in 7th Heaven over the years. Now I had to put it into practice. Once I had accepted the limitations and begun to work within them I found it wasn't that hard.

So, what did I have to start with? A flat particle board surface 5 metres long and 50cm wide. What did I want? A terminal branch line station with a loop to run around trains and some storage sidings to provide shunting interest. Simple.

First thing done was to rip up the particle board which had started to disintegrate. I wanted to replace this with



Back to bare boards. What I had after the HO layout was torn up and the new plywood surface fixed ready for action.



high density foam but none was available locally at the time and in my impatience I elected to use 6mm ply. First mistake. This has decided to take on a slight roller coast effect between cross braces even though I had installed twice as many as previously. It also is very noisy.

The track plan was then laid out using cardboard templates to help locate points and track spacing to get the best positioning. The track was then laid on 3mm MDF roadbed. I used Old Pullman code 125 flex track, the same as on Arakoola. Normally for a yard like this I would lay the track without any roadbed to give that typical buried in dirt and ash type appearance but because I was hand building the points on a 3mm MDF base I had to use this as roadbed for the track to build it up to the same level. This unprototypical built up appearance was then overcome by cutting other sections of MDF to shape and glueing them down between the tracks to bring the adjacent ground level up to the tops of the sleepers. The four #6 points were hand built using the methods outlined by Roger Porter in his article in 7th Heaven issues 24 and 25. This was a little time consuming but most enjoyable and well worth the effort.

One of the things I most dislike about layout building is wiring and having eliminated a lot of it by using DCC I didn't want to get involved with powered point motors.

In any case being only five metres long and the points located toward the centre it only takes a step to the right or left to be right there next to the point anyway. I would also be walking alongside the train using an NCE radio controller as well. So I decided to use Bullfrog push/pull actuators which locate in the face of the layout skirting. My article about them in 7th Heaven 42 shows how they work but I believe they are no longer available.

I had a lot of trouble getting the ballast to look right and after a couple of false starts with various grades and colours of commercial ballast I found a mixture of HO ballast and dirt from the end of my street gave the best result. This was secured with the usual thinned PVA glue. Even so I still went over the track with several washes of diluted earth coloured acrylic house paint to tone down the plastic look of the sleepers and get it to all blend together into that yard look I was after. The sides of the rail were also treated with a rust colour but given the overall wash this probably wasn't needed.

Scenery is pretty sparse as it's mostly flat yard but I put in a bit of raised ground at the end where the main line enters using foam former and glue soaked kitchen wipes, formed a road and applied various mixtures of Woodland Scenics fine and coarse turf and clump foliage along with some dyed sawdust mixtures I made a long time ago and have been waiting to find a use for. Trees are the usual twisted wire and gap filler with



tea seed cushion filler to form the foliage base. A spray adhesive was applied and coarse turf sprinkled over. When this dried an overspray of White Knight Colourbond Rivergum and Mist Green touched up any bare patches. They are not the best trees I have ever seen but will have to do for now.

The station platform is a piece of pine shelving cut to size and MDF for the sloped ends. This had some fine builders sand sprinkled over glue to give the typical crushed quartz appearance and once dry this was treated with a thinned acrylic paint wash followed by various shades of ground up pastel brushed over to relieve the uniformity. The building is on loan from Arakoola as is the gents toilet, the loco water tank and column and the yard crane. The timber and ash buffers are scratchbuilt. The timber platform face is from Model O Kits. A few details such as fences, telegraph pole, level crossing and general clutter complete the scene.



The final touch needed was the back scene and a few months were spent deciding how to approach this. Finally I had to admit to my artistic limitations and purchased Barinore left and right from the Haskell range. These were applied to sections of corflute and attached to the wall behind the layout using Velcro strips so that they can be removed and reused later if needed elsewhere. Only problem is that the light switch was covered over and I haven't had time to get it relocated yet so one of the trees in that area has a subtle yellow dot on it that switches the light on and off if pressed the right way!

Operation of the layout is limited to trains entering from the branch line, being shunted and sorted to one of the two dead end roads off the loop or the end past the water tank. Then the reverse process of forming outgoing trains for departure. The engine has to return

tender first. This sounds simple but can provide hours of operation very easily when the mixture of hook, auto and screw coupled vehicles and locos, with and without buffers has to be dealt with. Combined with a short run around space, things can get very complicated. Some would find this frustrating but since the layout was intended to be basically a place for shunting it has certainly achieved its purpose. All that was needed then was a name and I couldn't come up with anything better than the name of my street which is Amaroo. Yes, I know there was a real Amaroo station near Molong in the Central West.

I have enjoyed (mostly) building this little layout because it gave me a chance to put into practice some of the things I had been reading about for years. I didn't want it to take too long and I managed it in twelve months. Of course no layout is ever finished but I am content with the way it is at present so probably won't develop it any further. Besides now I'm too busy trying to shunt those wagons.





Pictures on previous pages show the station, the loco service area at the end of the line and the daily mixed train arriving. Opposite is another view of the mixed drifting into the platform



Passenger accommodation on the mixed is taken care of by the CR that has come all the way through from Sydney on the mail train.



Even here at the end of the line an occasional diesel interloper arrives. In this case 4404 is about to depart on a wheat train.

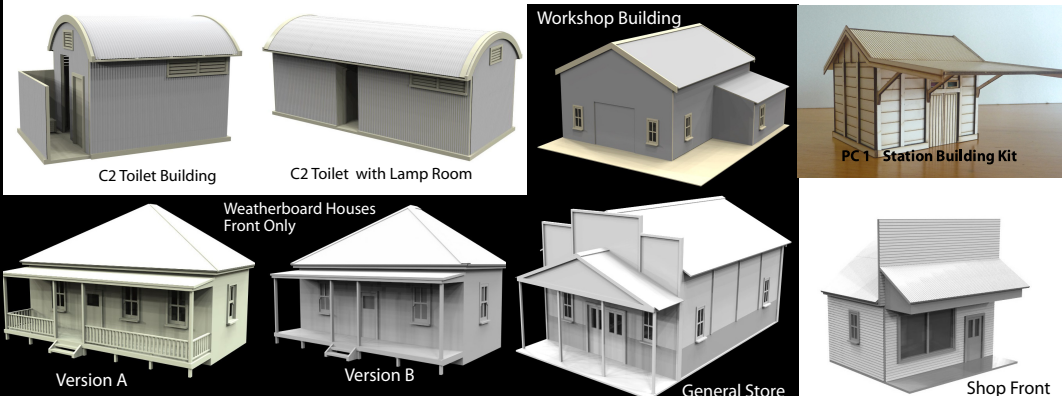
The mixed passenger service on the line is supplemented by the daily rail motor, seen here leaving town and giving a warning blast of the horn to the ute driver who doesn't seem to be paying much attention.



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Commercial News

Trevor Hodges

Model O Kits

ModelOKits, PO Box 379, Sydney, NSW, 1700, (02) 97073390, 0404935663, <http://www.modelokits.com> & sales@modelokits.com have announced that they are now stocking the roller track gauges originally produced as an Aus7 product. These have been unavailable for a number of years. A two pack of gauges is \$25, while a 4 pack is \$48.

Kits currently in stock include a limited run of the ICV end door wagon for \$210 per kit. PHG, BWF, LV, CW, K and U wagons are all in stock. There are less than 10 AD60 Garratt kits available. The C36 class order book will be closing soon. The pilot should be available for viewing in May with delivery expected in July, 2015. Upcoming releases are expected at the following times; the HG Guards Van, 3rd quarter 2015; FS/BS Carriages; 4th quarter 2015; LHG Guards Van, first quarter 2016.

The following kits are planned for future release: a BBW, a Steel BD and the TRC wagon.

O-Aust Kits

O-Aust Kits info@oaustkits.com.au, and via the web site at www.oaustkits.com.au, at PO Box 743, Albany Creek, Qld, 4035, mob 0419680584 or (07) 3298 6283 have advised that the first release of 10,000 gallon tank cars sold out at the Aus7 Forum in March. New stocks of these kits should be available by the end of April. The C30T locomotive, HCX, BHG and MHG kits also sold out at the Forum and will be progressively restocked as resources permit.

The announced D50 class upgrade will now be limited to

producing an etched chassis which can replace the brass or stainless steel ones originally supplied by Century Models. The etch will also include rods and spacers. The previously announced LFX and BX passenger cars are still on target for release mid-2015. New kits for Victorian modellers this year will be the BB/BP bogie box van and the IA and IC 4 wheel open wagons.

Announcement from Peter Krause, proprietor of O-Aust Kits

It is with regret that I have to advise that due to personal circumstances, I have made the decision to exit the manufacture and sale of model railway kits under the O-Aust Kits and Century Models brands. It will be business as usual up to and including the 2015 AMRA Liverpool Exhibition, after which I will be progressively winding down my involvement in the business. It is expected that this process could take up to 6 months after Liverpool to finalise. All ready-to-run orders that are currently placed will be completed but no new orders are being accepted.

Most kits and stock items will continue to be available until October but only recent releases will be re-stocked if sold out prior to October. Proposed new kits that have already been announced will be completed, even if this process requires a continuation of business beyond October to finalise.

The future of O-Aust Kits and Century Models beyond October is yet to be determined but there have already been some expressions of interest from persons who may be in a position to continue production of kits under the O-Aust Kits and Century Models brands.

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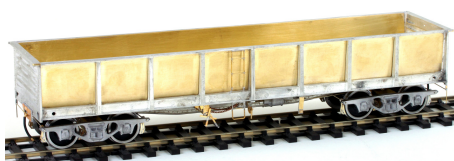
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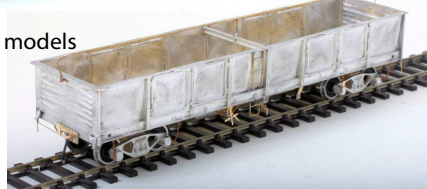


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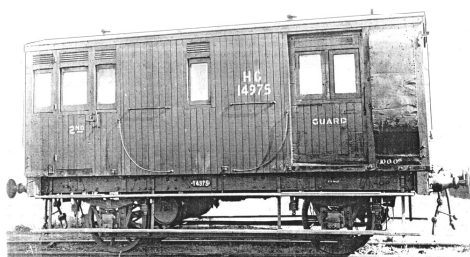
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- HG Guards Van Quarter 2-3 , 2015

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RU	WHEAT HOPPER WAGON	\$165.00	\$600.00
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S	OPEN WAGON	\$125.00	
PHG	BRAKE VAN (Now Available)	\$449.00	
ICV	INSULATED COVERED WAGON (includes buffers and couplers)	\$210.00	
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