7th Heaven

Journal of the Aus7 Modellers Group Inc.
No 70

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Commercial News

ModelOkits Business Update

Following a challenging 18 months in our main packaging business, we have recently sold resulting in the need to relocate the Hobby Shop from Yagoona to a new location. We are moving to a larger shop located just off Pennant Hills Rd Thornleigh (complex next to McDonalds), around 250m from Thornleigh Station.

We are presently finalising the renovations at the new shop which have been delayed by Covid19 restrictions on construction and hope to be in and set-up by the end of September 21. Covid restrictions will determine when the shop will be open again, however by the end of September we will be in a better position to deal with online and phone orders.

Whilst I have to work in the sold business until early 2022, going forward Rod and I will be focused on developing the Hobby Shop and further developing our range of O scale products, making use of our recently acquired Formlabs 3D resin printer, laser cutter and Vacuum forming equipment. We have a long list of projects for new products and revamped existing kits.

We plan to increase the range of products we manufacture and stock, with a focus on supply of materials for modellers in a number of scales. Consequently we are changing the name of the Hobby business to "ScaleModelco" and the hobby shop will be named "Scalemodelco Hobby Centre" to appeal to a broader range of modellers. We will continue with ModelOkits as one of our O scale brand names. We are hoping to make visiting our hobby shop more of an experience with more modelling displays and from time-to-time modelling demonstrations and talks.

We will be establishing a new website and online store under www.scalemodelco.com.au. This will not occur until 2022, so until then we will continue under our existing website at www.modelokits.com

We will publish more details on location and opening times once we are fully relocated. We can still be contacted at sales@modelokits.com or by mobile on 0404 935 663.

Model Railroad Craftsman 40 Class Upgrade Kit from Gary Spencer Salt

For all those holding these kits there is now an upgrade for the bogies side frames, bolster, springs, brakes and screwdriver for the retainer screws allowing the use of the standard bogies supplied with the Atlas locomotive. They have unequal centres to match the original bogies but are in the style of the Australian locomotive. While these have been ready for a while personal issues have delayed any action so as a practical gift the upgrade will include a motor to allow the animation of the fan in conjunction with an ESU sound decoder.

Please contact me at raf.tucano@gmail with your preferred mailing address and the kits will be sent at no charge.

Straight Down the Line - Opinion

by Trevor Hodges

By my calculations this edition of 7th Heaven brings us to the 70th issue of our group's newsletter since the groups inception in early 2004. I might be biased but I feel this is a remarkable achievement for a group who I would guess has averaged a membership that hovers around ninety members through those years. I know Paul and I are always carrying on at members to write something but in spite of Paul's dire, and completely accurate predictions that he can't publish a magazine without articles we still seem to have managed to get enough material together for seventy issues even if they sometimes emerge a little late. He was telling me in the lead up to issue #70 that he was hoping this issue would pretty much get us back on schedule after the disruptions caused by Covid. On behalf of the membership can I thank Paul and everyone who has written an article for the magazine for their efforts and continued support. Take the time to write something yourself or perhaps make contact with an author to thank them for their efforts. Having someone say thanks is always appreciated and believe me, an all too rare occurrence.

Speaking of Covid, a member (he will know who he is) recently contacted me and expressed his concerns re the group's future, declining membership, the difficulty of getting people to pay their subscription in July without having a Forum to attend to pay in cash and a range of other concerns in the light of Covid and the cancellation of the Oct 2020 Forum. I responded to his concerns in my usual manner with boundless patience and consideration for his feelings and then told him the best thing he could do was write an article for 7th Heaven. So be warned, even if you contact me about something you want to have a download about you will still be asked to write something for 7th Heaven.

Speaking of membership renewals: all memberships fell due at the end of July, 2021. In the correspondence with the member I mentioned earlier he raised the issue of getting a credit card facility. I did say we'd look into this however can I once again repeat what I've always said about this? While getting a credit card facility has certain conveniences for members, for a group with 80 members it really just isn't viable in cost terms. PayPal allows you to link a credit card to your payment account and I would suggest that signing up to PayPal is just about as easy as falling off a log. There is also the option of direct transfer of funds into the groups account: BSB – 062 233 Acc No 10172076, cheques and of course cash, if and when Covid allows us to hold a Forum. This will be the last issue of 7th Heaven you will receive if you haven't renewed your membership for 2021/22.

As most of you will no doubt be aware the executive and I consulted and came to the conclusion that attempting to hold a Forum this coming October really wasn't viable. At the time of writing the entire state of NSW is in lockdown and even if this were to end a few days from now, there would be rolling and ever changing sets of restrictions around gatherings. I apologize for this but there was really no other choice. We'll evaluate whether we can hold a Forum in April 2022 early in the new year.

Membership of the Aus7 Modellers Group costs just $AU40 per year or $AU57 for overseas members. Memberships are due for renewal by June 30th no matter what time of year you joined. Please forward payment to the Treasurer, Anthony Furniss at PO Box 179 Budgewoi NSW 2262. For renewal and new membership forms follow the link on the Aus7 Blog at http://aus7.org/2014/10/12/welcome/
If membership is not renewed this is the last issue you will receive. To receive all four issues per year you need to renew before September 30th.

Renewals can also be done through online banking. to the Aus7 account BSB 062-233 Account Number 1017 2076 Be sure to supply your name.

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Advertisements
Full Page: $125 Half Page: $65
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Please contact the Secretary for for any membership, advertising or back issue enquiries. For matters related to the twice yearly Forum contact the President.

All advertisements must comply with the Trades Practices Act.

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Back Issues
Issues 34 onward only available at $7.70 each plus $2.00 p&h for one or two copies, $4.00 p&h for three or more copies.

On The Cover
Something a little different for this cover Trevor's vessel Louise moored at Morpeth Wharf. A few more glimpses on page 18

Scratch Building a NZEA Flat Wagon

Michael Parker

.When I recently posted an image on Facebook of my finished model I realised that an explanation on motivation and method would probably help other like minded members.

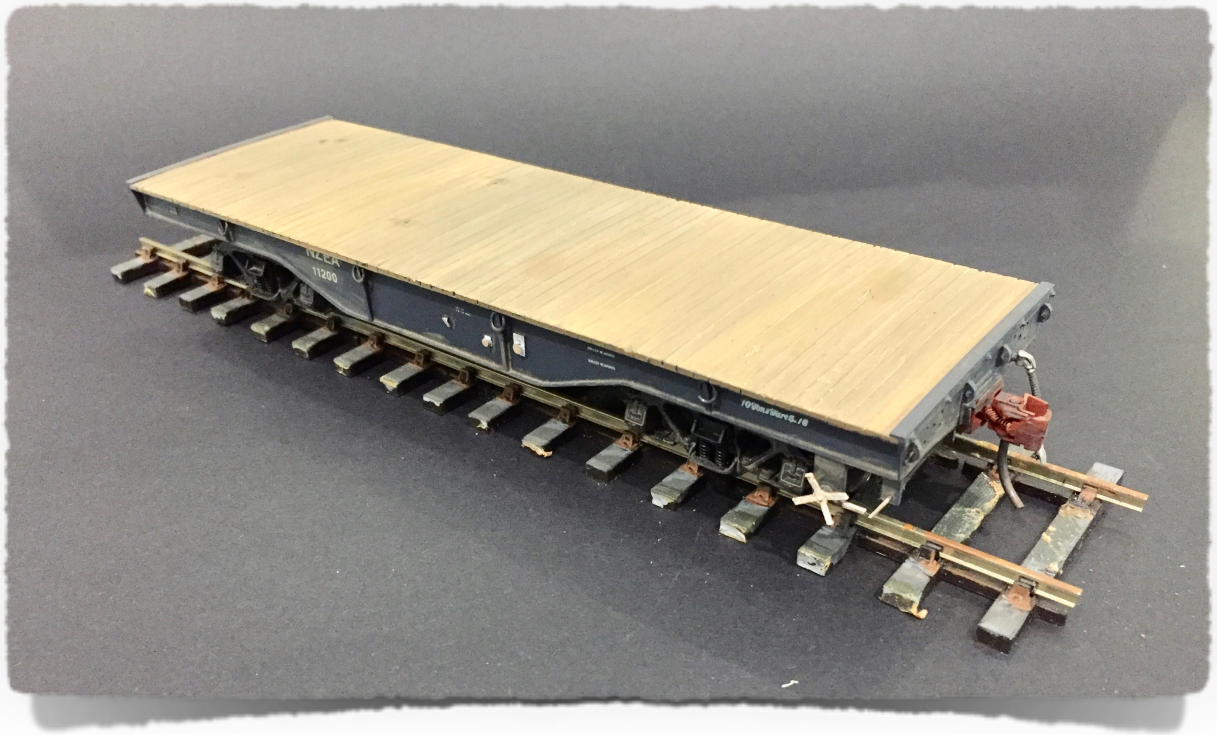
As I am always limited in space I tend to build small layouts, this makes corresponding small rolling stock necessary. In most cases when dealing with 7mm models I stick with four wheelers. However, I do occassionally venture into the bogie wagon area, and in this case went looking for a short bogie wagon that would suit my purpose.

After trolling through my many books, I came across a picture of NZEA 11189 at Port Kembla dated 27/2/81. This image is on page 41 of Railway Freight Wagons in New South Wales 1982 by John Beckhaus. If you turn to page 42 Para 2 you will find the basic dimensions, and a few other useful pieces of information.

I actually built this wagon some years ago, and only added a few forgotten details recently. However when I decided to go ahead with the build, the first thing I sought was a drawing, and for that I wrote to the ARHS (NSW Division), as I was a member at the time. Unfortunately, I never heard back, but to be fair I was aware that at the time they were extremely short staffed and were possibly unable to help me. So what to do?

One of my duties or talents in the RAAF was working as a Photographic Interpreter, and in this role one has to study and analyse all types of details on aerial and sometimes hand held photos, this includes accurately scaling the photo in order to measure various items of interest, which helps to compile an intelligence assessment for senior staff and air crew. Therefore the question arises, can a photo like the one on page 41 be accurately scaled? I will not pretend that there is not any difficulties in doing so, but armed with the information on page 42, you can come very close. In fact it is possible as you will see to come up with your own drawing, which in my case was sufficient to build the model.

To begin, you can only accurately scale a photograph if it is taken perpendicular to the axis of the camera. Plus the camera needs to be set at a reasonable distance from the subject, and use a standard lens (50mm in the old type of pre-digital camera). A wide angle lens will create distortions the further you move away from the centre, in other words the angle creates the distortion. Therefore knowing this we can see what we have to start with.



We know the wagon is 9140mm long and 2900mm wide. We also know that the bogie centres are 5790mm and that the height above rail is 1240mm. To transfer all of these figures to our model we only have to divide by 43.5, to get a length of 210 and a width of 66.6mm.

We also know that the the wagons are built on a “well frame” chassis. This is the shape of the wide side frames, which are designed in a similar way to a bridge. The extra width which is supported along its length adds strength to the chassis. The cut outs at both ends are to allow for the swing of the bogies. So we can work out the depth of the chassis by measuring the height of the bogie mounting point, and subtracting this from our overall height of 28.5 mm, subtracting the thickness of the deck material and underframe along with the bogie mounting plate and the remainder is the depth of the chassis main beam at the point where the bogies sit.

I started with a plain sheet of Evergreen styrene measuring 208mm (2mm short) x 66.5mm. I should add here that the deck is 1mm thick scribed sheet at 3mm intervals. After I cut it out I opened up the plank edges with a hobby knife to more define the individual planks, then I lightly stressed the surface with a razor saw, and cut out small dents and grooves to show some wear.

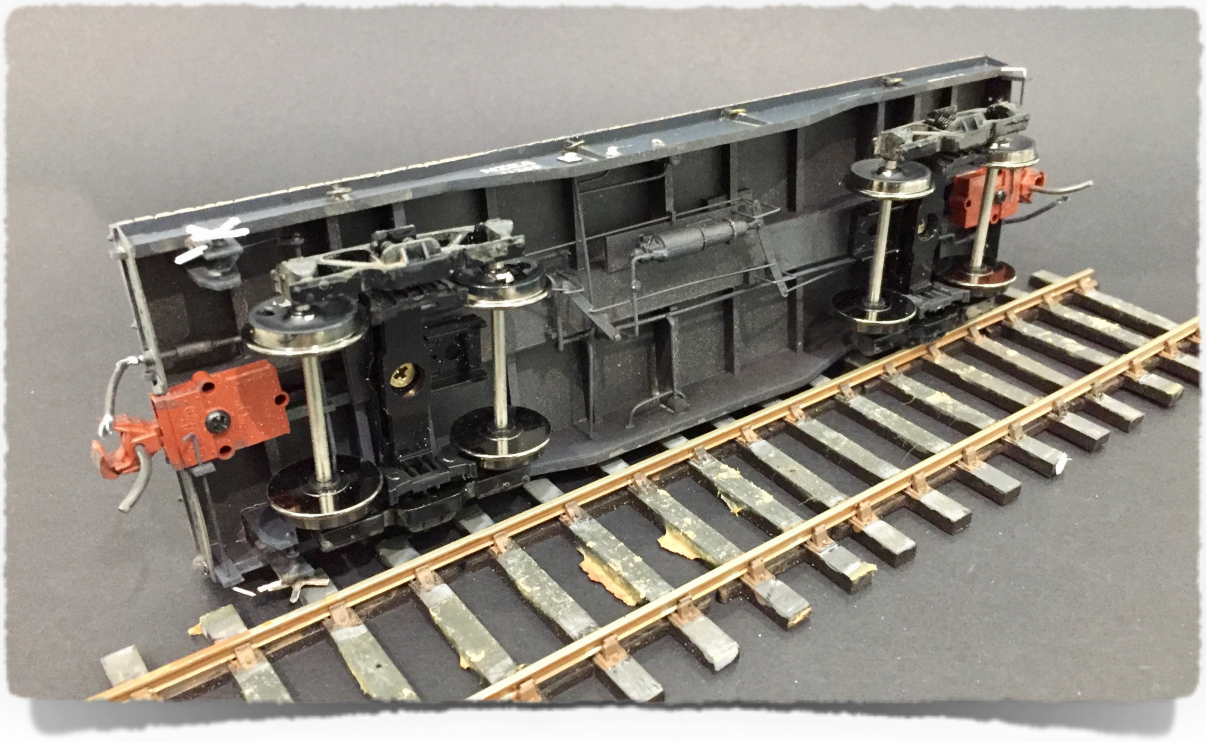
After finding the centre I added two lengths of Evergreen number 169 that are 6.3mm x 2mm strips, which were set 12mm apart to allow for the fitting of Kadee Couplers later. These strips run the length of the model. The setting of 12mm overall creates a well down the centre, and once I had all the mounting pads in place I filled it with roofing lead.

Next came the side beams. I cut these from 1mm plain sheet, they measure 208mm x 15mm at the widest point. I came up with 7.mm x 54mm for the cut aways, and created the angle by coming back towards the centre to74mm, joining the two made the angle. Next I glued 2.5mm x .5mm strip along the entire length of the bottom of the beam. I then made the gussets from 2mm x 1mm strip, but they had to be filed at an angle from the bottom as the bottom trim is only 1mm at this point.

Next came the end plates or head stocks. This plate is cut from 1mm plain sheet, at 66mm x 11mm at its widest point. If you study the photos you will see that the end plate is angled from the deck at 66mm down to 62mm at the edge. I made the widest point 12mm wide at the centre to allow for a Kadee coupler box, and once cut out I angled it from that point back to the outer edge of 8mm thus creating the desired angle. I lined the coupler pocket cutout with 1.5mm angle, and added 2.5mm angle along the top to protect the edge of the deck. I worked out where buffers would have been, and then drilled the mounting holes to show where the buffers have been removed. I also added tie down gussets by shaping 1mm strip and drilling a 1mm hole through the centre.

I drilled 1mm holes in the top of the side gussets and added small rings (from Spotlight) for tie downs. I also fabricated the various details that show along the sides from small sections of Evergreen strip.

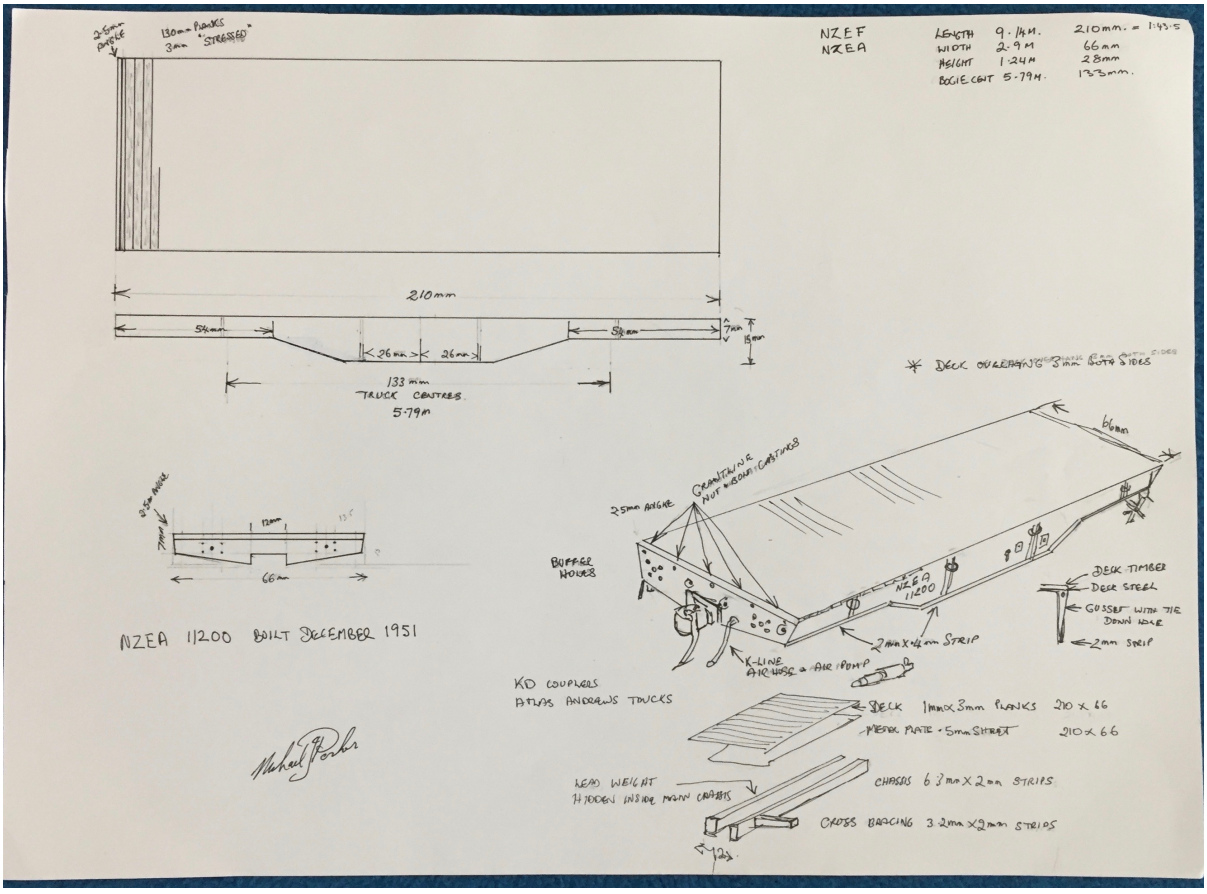
Hand brake blocks and details are all made from Evergreen strip, and the brake details fitted to the underside of the model are a combination of A line brake cylinder, fabricated levers from plastic strip, using a Calscale diagram to determine where the various pipes and levers go. Brass wire was used for the pipe work. Coupler release lever bracket is plastic strip, and brass wire bent to shape. I used a small section of plastic tube to act as a connector for the



brake pipe and the brass wire. Trucks are Atlas sprung metal Andrews. The model is sprayed in German grey from Tamiya, and the deck is hand painted with Humbrol leather, the decals are from Microsoft.

I always find the task of describing a scratch build as daunting, because one can never be sure if something is missing, or if the entire saga is understandable. Hopefully the attached photos and line drawing will help to make sense of my work. Incidentaly I have since found a line drawing on the internet, but it is very small, blurred and difficult to read. I did however check some of the key dimensions with my own and I am not too disappointed. Enjoy your modelling no matter what you attempt.

Cheers Michael.



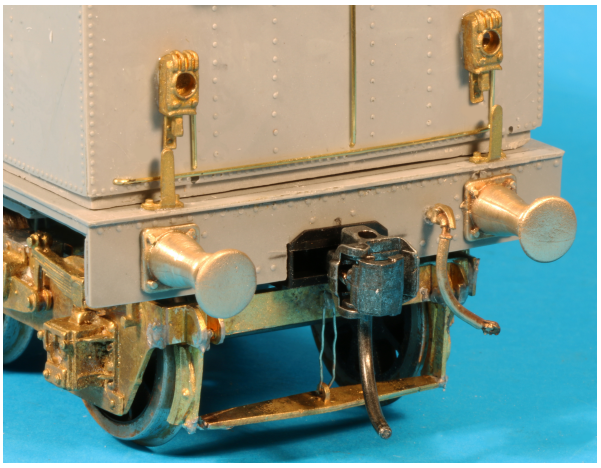
Simple Machining Operations In O-Scale #1

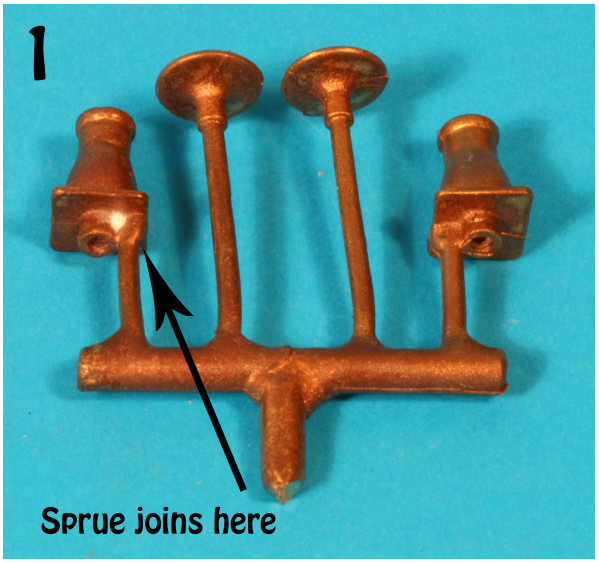
Cleaning Up Century Models Buffer Housings

Trevor Hodges

Introduction

I've included a #1 in the title of this article in spite of being unsure whether there will ever be a #2. Machining and making things from metal is a hobby all on its own which could occupy an enthusiast for as many hours as he or she might wish to devote to it. I'm primarily a railway hobbyist with a side interest in metal work, mostly limited to how I can apply metal working skills and machinery to constructing the models I wish to build. However, I find that the vast majority of articles and online resources, even if they are related to rail modeling topics, focus on scales that are much larger than O-scale (1:43.5 or 1:48). While there are some very good books from publishers such as Wild Swan available to guide the scratch builder by authors such as Geoff Holt and Guy Williams, these tend to focus on hand tools with little specific guidance on how one might use machine tools to ease the process. The primary difference between a piece of brass you might wish to machine for a large, live steam project and one intended for a 1:43.5 or 1:48 scale project is primarily size: the metal itself will probably be exactly the same in both cases; however holding a piece of metal in the very small sizes we are most likely working with is rarely addressed in articles or books devoted to the larger scales.





Work holding - that is, holding the piece of metal you wish to machine flat, square and level to the cutting blade - is 90% of the challenge in machining. Beginning machinists (and I include myself in this group) always tend to focus on the size and quality of the machine they should buy or the level of precision they've heard a particular machine is capable of. They know names like Sherline, Myford or Bridgeport and tend to overlook the accessories and fixtures they'll need to hold and cut the metal. Lathes and mills, even if they come as a package like my Sherline lathe did, arrive with almost nothing that will allow you to carry out the operations you probably had in mind before you purchased the machines. If it's an O-scale steam locomotive you'd like to build this is likely to be turning a funnel or steam dome or milling up your own side rods or chassis frames. I know this because these are exactly the parts I wanted to make when I purchased the machines I currently own.

In spite of everything I've just written about not zeroing in on the machines to the exclusion of all the accessories and tools you'll need you're possibly asking yourself what specific machines I purchased and have I found them worthwhile spending money on. Just so you know I own

- A Sherline long bed mini-lathe which was part of a package deal Sherline offer with a range of parts and accessories you will need to get started. At the same time I also purchased a couple of other accessories I

thought I'd need that I've never used. My advice would be to buy a package deal if this makes things cheaper but put off buying any expensive accessories till after you have the machine and have used it for a while. However one thing I'd highly recommend is getting any machine you buy with a Digital Read Out (DRO) if this is offered. I got my Sherline with a DRO and it has been the most sensible decision I made.

- I purchased a 2nd hand (this lathe was manufactured in the late 40s) Myford ML7 lathe about three years ago not so much because I needed it but because my partner Louise saw it for sale on Gumtree and asked if I was interested. I managed to pick it up for less than the Sherline lathe cost and it really is a world class machine in spite of its age. It sat unused for pretty much 2 years mainly because I had not planned to buy one but now I have it up and running and have purchased lots of parts and tools for it I wouldn't be without it.

- I purchased a Seig X2 mill about the same time as the Sherline lathe. I have used this machine far more often that the lathes but it's been a struggle to get it to do what I want from the day I unpacked it in spite of doing some common upgrades to get better performance. My advice would be don't buy a Sig machine no matter how cheap it is. I plan to upgrade and get a better machine with a DRO as soon as I can afford to do so.

While these machines give me the ability to do quite a number of the things I envisaged before buying them, the machine itself is irrelevant if you don't know how to carry out an operation and/or don't have a way of holding and cutting the part you want to work on. As far as knowledge goes, perhaps the easiest way of finding things out is Youtube. I've pretty much stopped watching free to air TV these days: I just watch metalworking and woodworking videos on YouTube in the evenings and yes, I can do so because my long suffering partner doesn't have to share my viewing habits because she works as an online counselor most nights. I won't go into whether she believes I might be in need of her services after discovering my online viewing habits!

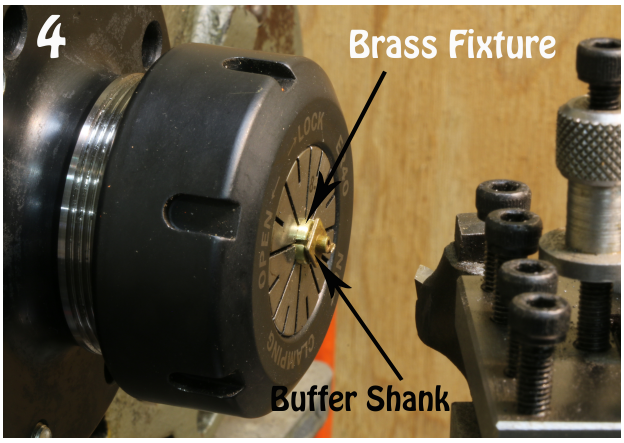
I subscribe to quite a few machinists but I would recommend:

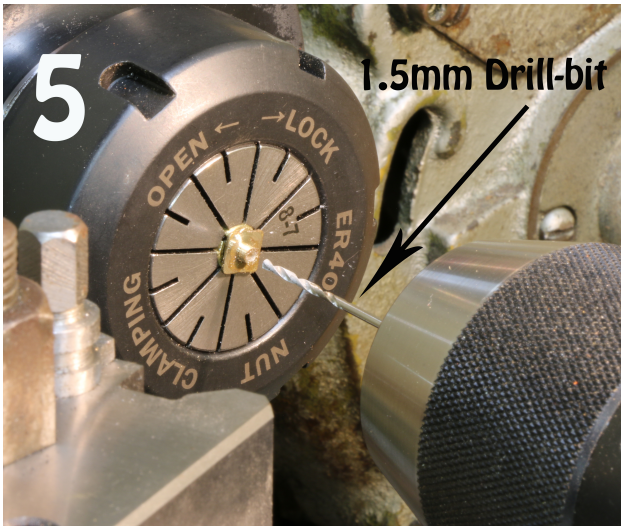
- Quinn Dunki who calls herself Blondihacks on YouTube https://www.youtube.com/channel/UC7Jf7t6BL4e74O53dL6arSw

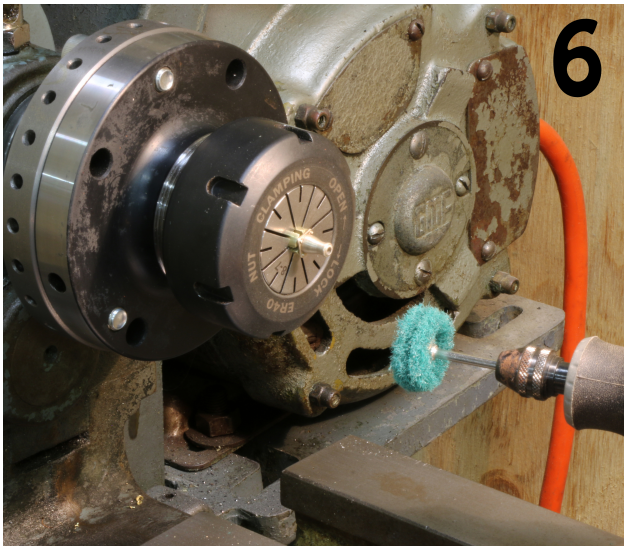
- Mr Crispin, a quite eccentric young man in the way only the English can be https://www.youtube.com/channel/UCnQutQ6D8efdWkbpj56OS7g

- Adam Booth who calls himself Abom79 https://www.youtube.com/channel/UCw3UZn1tcVe7pH3R6C3Gcng Adam is a professional "old school" machinist who works in the industry and cuts some serious metal. However, in spite of the size of the projects he works on a lot of the things he does have application for the little projects I attempt.

- Mark Presling https://www.youtube.com/channel/UCYfDX1Gno-PuJ-QWLbH09Sg who, while having less actual machining in his videos because I think he believes this to be boring, has loads of great ideas about processes and materials. Anyway he's an Aussie, he's funny and







"Errata"

In Roger Porter's coupler article in the last issue the drill size noted should read " 1.8 mm" not" 0.8 mm."

Phrase "E" should read "upwards" not "downwards".

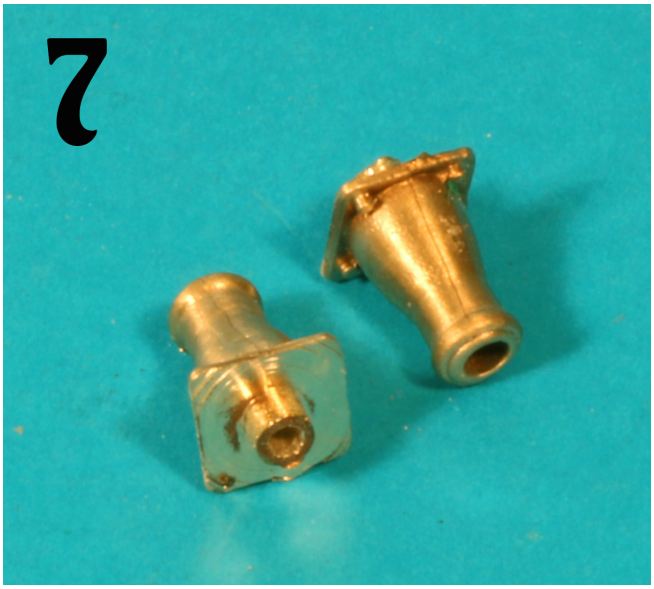
he answers my dumb questions without complaint via email.

A question you might be asking yourself is – do I need a lathe or a mill if I'm working in 1:43.5 or 1:48? The simple answer to this is no – a lathe or mill is not needed to build the kits available in these scales. You can build almost everything you need to populate a layout with the commonly available kits and r.t.r. locomotives available on the market right now. However, asking whether you need a lathe or a mill in these scales is not the same thing as asking "will owning a mill or a lathe help me build the kits I want to build"? The answer to this is a definite yes: mills and lathes can most definitely help in some areas of kit construction. What about if you wish to build something that isn't available as a kit? Styrene and wood are materials from which you can build just about any model using hand tools but if you want to make locomotive with a working chassis you'll most likely wish to make it from metal and that requires tools that can cut, shape or print that metal. The subject of printing metal parts with appropriate 3D printers is outside the scope of my interest or expertise so for this article and any follow ups I'll be concentrating on hand operated mills and lathes.

A Simple Turning Operation

There are plenty of readily available books and online videos that will do a far better job than me of explaining the broad field of metal turning. However, I bet none of them will explain how an operation is carried out using the buffer shank on a Century Models NSWGR D50 class kit as an example. I've been building 7mm kits for over 20 years and almost all of them have been supplied with a cast brass sprue of parts to assemble the buffers needed that resemble those in photo 1. It's long been a bit of a peeve of mine that the sprue where the molten brass is delivered to fill the mould arrives via the buffer shank, the part of the casting that is used to glue the buffer assembly into the buffer beam. I understand why this is the case and I can't suggest a better location for the sprue to be cut however, getting these shanks cleaned up by hand is a fairly laborious task and has always been one of my least favourite modelling jobs. Of course at this point, if you follow my logic, the thought occurs: I have two lathes and a mill, there must be some way to use them to make this job a lot easier! Following in the footsteps of Steve Kerrigan, being an "ideas man" is easy: it's coming up with a practical and repeatable solution to a problem that's hard.

The bottle shape of the buffer housing shown in photo 2 is the thing that makes mounting these in a lathe so they can be drilled and turned so difficult. They need to be held firmly enough so they can be drilled out with two different drill bits (1.5mm from the rear face and just over 2mm from the front about half way through to clear the small spring supplied with the kit) and so that the mounting shank can be turned down so that it ends up round and concentric with the drilled holes. Any fixture designed to hold these parts needs to holding them firmly enough to allow an interrupted cut to be machined. This type of cut is when the part isn't remotely concentric and as the part turns in the lathe it comes round and bashes into the cutting tool once per revolution. After you cut the part from the sprue you're left with a large lump of brass on one side of the buffer



shank which, if it is to be machined, requires an interrupted cut. It's not possible to mount such a small, curved part like this directly into a lathe chuck, no matter how large or accurate the lathe might be. What's needed is a fixture of some kind specifically machined to hold the part securely while the machining operations can be carried out.

I imagine an experienced machinist could turn up a fixture that exactly matches the shape of the bottle shank but I'm not an experience machinist so the problem was coming up with a way to hold the buffer housing firmly and level so that it could be machined using drill bits and some brass rod. My solution was to make two fixtures from approximately 30mm lengths of 8mm diameter brass rod which I purchased from a K&S stand at a hobby shop (photo 3). I made two separate fixtures to hold the parts from either end. The first fixture was drilled right through at 4.3mm diameter which matches the diameter of the top of the "bottle". I then drilled a 5.5mm hole (the diameter of the base of the bottle) at one end to a depth of 5mm after which I used a hand hack saw to make two 25mm long cuts down the length of the brass rod at 90 degrees to each other. When the fixture is mounted in the lathe's collet chuck these slits will allow firm, even pressure to be applied to both ends of the bottle shaped casting, holding it securely enough to allow it to be machined. Photo 4 shows the fixture mounted in the lathe prior to the casting having the brass lump machined away from the shank. You may be able to see one of the slits I cut with the hack saw (there's only a couple of millimeters of the fixture showing) on the side of the brass rod nearest to the camera. After the shank was machined to make it round I drilled right through the casting with a 1.5mm drill bit which is just large enough to clear the shank of the buffer (Photo 5)

The second fixture was simpler to make because it was made to hold the recently machined rear shank on the back side of the casting. The machined shank on the rear of the buffer casting ends up about 2.6 or 2.7mm in diameter once the remnants of the sprue are machined away but because it now has parallel sides it is much easier to hold in a fixture. I drilled a 2.5mm hole all the way through the 8mm diameter brass rod and then repeated the hack saw cutting operation on this fixture so that when mounted in the lathe it would

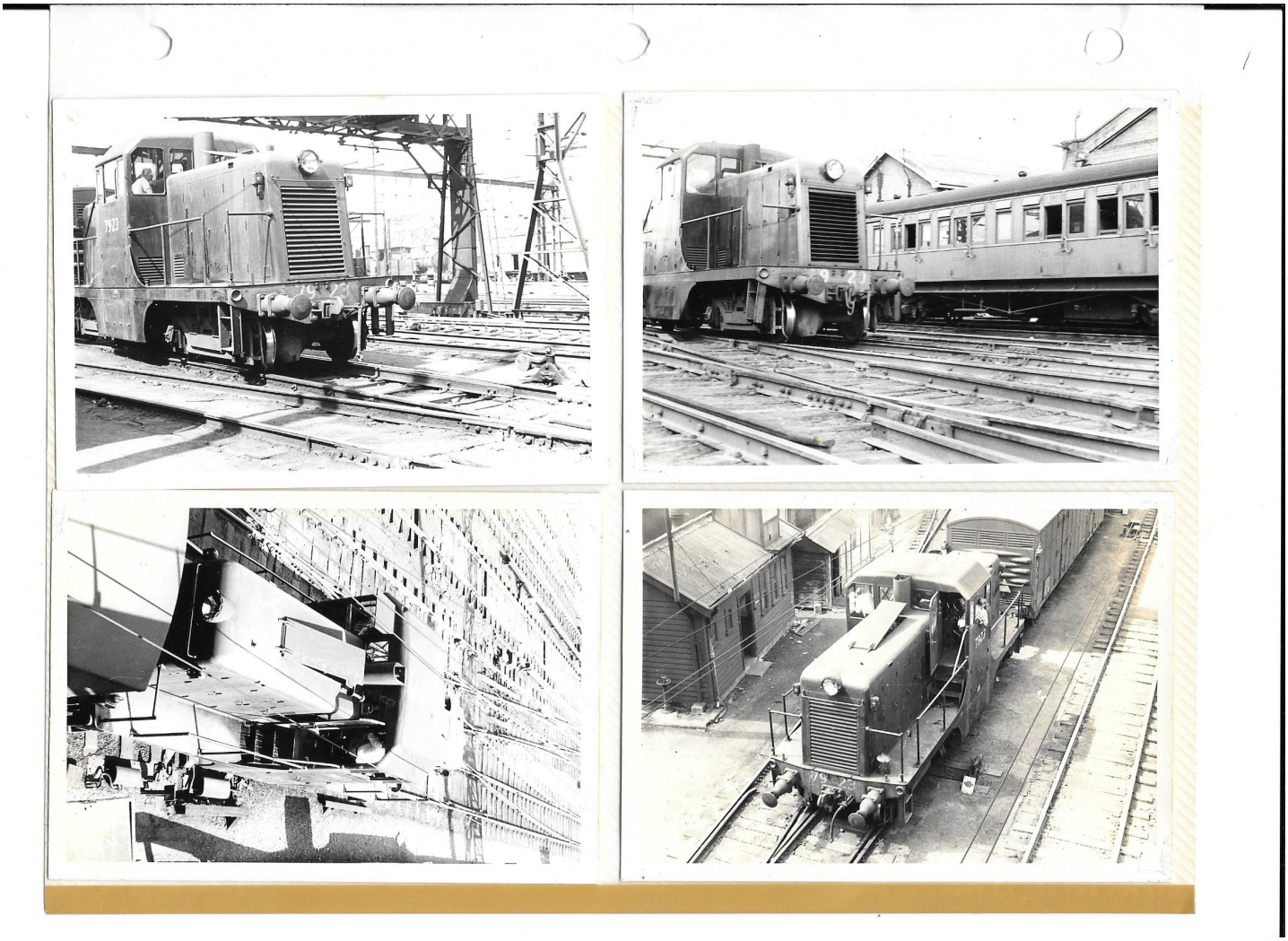
hold the rear shank firmly enough to allow the front 2.2mm hole to be drilled out to clear the spring and to allow the casting to be polished with an abrasive wheel held in a Dremel tool (Photo 6). Polishing the casting to this type of high sheen isn't strictly necessary but I like to ensure that the parts are pretty much ready for paint and polishing the castings at this stage while they're in the lathe is much simpler than after they're fixed in place on the locomotive.

Conclusion

When you remove the parts from these small fixtures you're left with two clean, machined parts that are ready to be assembled into a working buffer (Photo 7). The work required to turn out parts using fixtures such as this took no more than about forty minutes to complete four. However, this would leave you with the mistaken impression that you can get a lathe and be producing nice, shiny parts with very little trouble or expense. I spent literally dozens of hours watching YouTube machining videos to come up with my design for these fixtures, after which I spent probably four or five hours making and refining the fixtures themselves until they were able to be used to do what I wanted them to. In addition to this I spent hundreds of dollars and weeks waiting for various parts and tools to arrive from the four corners of the globe so I could install the ER40 collet chuck you can see in the photos on my 69 year old Myford lathe, thus allowing me to securely hold the fixtures I'd made which in turn hold the brass buffer castings. This is what I was referring to earlier when I wrote that the actual machine (lathe or mill) is pretty much irrelevant to the process until you have the knowledge, tools and equipment you need to allow you to produce a part. Any lathe worth owning can hold a fixture like this, the work and expense is in getting to the point where you have the fixture that's ready to be held in the lathe.

So is it worth all the effort and expense to acquire a lathe or a mill and the accessories needed to achieve something that I've been doing by hand for the past 20 years far more cheaply and with a lot less hassle? Well I could get all pious and say learning is its own reward blah, blah, blah. Of course that's true but I set out to clean up these parts on my lathe because I'm lazy and I don't like the pain in my fingers I feel after I've been sitting at the work bench filing the bloody castings for an hour or so. But even more than this is that I just loved the whole journey of planning and learning how to do this type of operation. I learnt so much along the way and while I wouldn't have spent all the money required to get a collet chuck for my lathe if all I was doing was this one project, I now have the chuck which will make carrying out some other operations I have planned a whole lot easier in the future. Without people like Quinn Dunki, Mark Presling and Adam Booth on YouTube I'd probably never have got much further than unpacking my Sherline lathe and bolting it to a bench.

See Bruce Lovett's article on page 14



Two Baldwin Might Have Beens

Jim Longworth

EM Baldwin 2ft gauge 6-wheel locomotive with outside connecting rods in yellow livery with a white roof, Macknade sugar mill, nd, J Browning. Note the storing of potentially useful items along the side foot board.

EM Baldwin 2ft gauge 4-wheel locomotive in yellow, Goondi (Innisfail) sugar mill No.1, 1 September 1980, D Mewes. Many EM Baldwin's had outside coupling rods. However this one opens up the potential for modelling outside framed locomotives as well, as happened to be the case with the two models herein.

eBay

Searching eBay under the key phrase of 'O scale model trains' [and even limiting the 'Item Location' to 'Australia Only'], will often produce offers selling old 4-wheel or 6-wheel rigid frame diesel shunting locomotives at low prices. While of overseas prototypes, might they be a cheap source of models that can be suitable for kit bashing into free-lance Australian locomotives? I have thus far kit-bashed two such.

E M Baldwin

The firm of E M Baldwin, of Castle Hill, Sydney, built and modified a vast number of small and large diesel locomotives for the Australian sugar cane; mining; and construction industries.[1] Many of the locomotives have a sort of maker's stylistic resemblance. While the firm did not produce any standard gauge locomotives for the NSW government railways; slightly bending history creates an imaginary space in the market that the firm might have filled.

An Atlas 6-wheel Diesel Shunter

One purchase was an Atlas 6-wheel diesel shunter. All of the handrails around the foot board had been broken off, as had the single horn, and the front light globe was missing.

Work on adapting started with cutting, filing, and scraping off the cast-on: front and rear lights; front and rear coupler lifters; two apparently useless plastic upstands on the plate behind the cab; exhaust pipe; horn stub; 'Plymouth' from above the radiator; cab door handrails; and all door latches. The painted on 'Union Pacific' and '24' were sanded off.

The old dusty body was deep cleaned in a friend's ultrasonic cleaning bath, undercoated, and given a generic yellow paint scheme with Tamiya TS-47 'Chrome Yellow', with Tamiya X-7 bright 'Red' front and rear buffer beams and foot board edging. The garish silver outside frames were resprayed black.

The cab roof and insides of the cab were painted white.

The original couplers were replaced with Kadee ones, which were fitted into the original coupler spaces after fabricating a pair of suitable support brackets out of shims of various thickness styrene sheet.

Front pairs of handrail newel posts were made from long sewing pins. To get nice looking topknots, a blob of Super Glue Gel was dobbed on the head of the pins. The pins were painted white and inserted into the original handrail holes either side of the shunter's front side steps. Other handrail holes were just left as holes, regrettably. Cab door handrails and various door handles were fabricated from short pieces of tie wire bent to their required shapes and superglued into drilled holes. A pair of unidentified air reservoirs were mounted on the engine hood, together with a large old-fashioned front headlight, and an exhaust pipe extension. The roof was decorated with a set of unidentified two tone air horns and 2-way radio aerial (pin-board pin) complete with tennis ball on top.

An 0 scale Atlas 6-wheel diesel shunter as recently illustrated on the www.

Detail of the back wire basket and items stowed therein, 2021, Bob Gibbs.

A hinged roof ventilation flap was added to cool the crews working in Australia's hot summers. A 7mm (1ft) deep wire mesh basket was fabricated by soldering very fine brass mesh to 0.8mm diameter brass wire and fitted on top of the plate across the back of the cab for the crew to store all manner of useful items in. A scrap rear light was fitted.
Unfortunately most of the cabin is occupied by an enormous cast lead weight. Thus there was no need to add any weight to the model to enhance traction! Cab windows were glazed with flat styrene sheet, with some of the side windows being left open for visual variety.
As the model is American 0 scale it is presumably of 1:48 (¼in to the ft) scale, so ¼in/ft scale; not NSW's 0 scale of 7mm/ft, crew members would be required. A 1:48 figurine was found and glued in place sitting on an imaginary seat with his right arm protruding through an open cab-side window.

A Lima 4-wheel Diesel Shunter

Another purchase was a very old Lima 4-wheel diesel shunter. It was in better external condition than the Atlas and ran; but ran very noisily as it ground its way along the track. A replacement chassis with a can motor is understood to be available sometimes from Strathpeffer Junction, for those who might wish to try and make their locomotive run quieter.

My Atlas 6-wheel diesel shunter as modified, 2021, Bob Gibbs.

Work on adapting started with scraping off the cast-on: lights; buffers; handrails; and door latches. I should have scraped the lettering off the builder's plates; but didn't. The original couplers were replaced with Kadee ones, simply screwed into the original coupler pockets sitting on top of the original mounting blocks.
A cab floor was cut from sheet styrene and glued in place on top of the chassis, and a styrene sheet firewall cut to fill in the space between the motor compartment and cabin. A pair of crew seats were fabricated from sheet styrene. Clear glazing was fitted inside the cab windows. Again to give variety a side window was left open, and on the other side the window in the cabin door was left open.
As the model was presumably built to 7mm/ft scale, an Andian Models[2] sitting crew member was bought from Model O Kits, painted, and installed inside an open cab-side window, with his head turned to the left looking out through the open window. This time he sits on a visible, therefore modelled seat.

An 0 scale Lima 4-wheel diesel shunter as recently illustrated on the www.

External detailing included fitting: a large old-fashioned front headlight; two air tanks; a bright red fire extinguisher; exhaust pipe extension; 2-way radio aerial (dressmaker's pin) complete with tennis ball on top; rear facing light bracket; tool box across the cab back wall; two bags of sand on the front buffer beam; and a pair of re-railing ramps on the side foot board. A short length of fine chain, from a cheap necklace I found on a railway station platform decades ago, was draped over a dogspike which had been superglued into a drilled hole in the cab back. Handrails and door handles were fabricated from short pieces of brass wire, bent to their required shapes.

To increase traction, a large lump of lead was bashed into shape and fitted inside the bonnet with lengths of styrene strip glued in to hold the weight in place.

A white roof and generic yellow paint scheme in Tamiya TS-47 'Chrome Yellow', with bright red front and rear buffer beams finished off the modifications creating my interpretation of a generic EM Baldwin shunter. I unintentionally picked up the model while the paint was still wet, so my thumbprint is embossed on the back of the cabin – oh well!

My Lima 4-wheel diesel shunter as modified, 2021, Bob Gibbs.

An Optional Extra

An 00 scale Thomas the Tank Engine face was dug out of the scrap box and can be attached to the centre of either locomotive's radiator with a blob of UHU YellowTac. Thereby either shunter can be transformed into what my grandchildren will accept as a passable trusty, tame, and friendly diesel. A fitting companion to my anthropomorphic THOMAS and PERCY.[3]

Conclusion

Thinking beyond adapting these two models, there are many other 0 scale model locomotives potentially suitable for adapting that likewise might be acquirable on the cheap. An Atlas Trainmaster RSD 4/5 model is already known to be adaptable into a look-alike NSWGR 40 Class.[4] Rivarossi made an industrial 4-wheel diesel shunter which appears like it could have been of EM Baldwin origin. There are several English and European model 4-wheel and 6-wheel rigid frame diesel shunters available on eBay, eg, by Dapol, Heljan, and Lionel; but to my eye they do not share EM Baldwin characteristics.

An anthropomorphic Atlas!, 2021.

Acknowledgements

Patience from Judy my wife, and assistance from Bob Gibbs, David Mews, John Parker, and Lynn Zelmer is appreciated and acknowledged. Thanks also to eBay for facilitating the increase in my locomotive fleet and expanding my imagination.

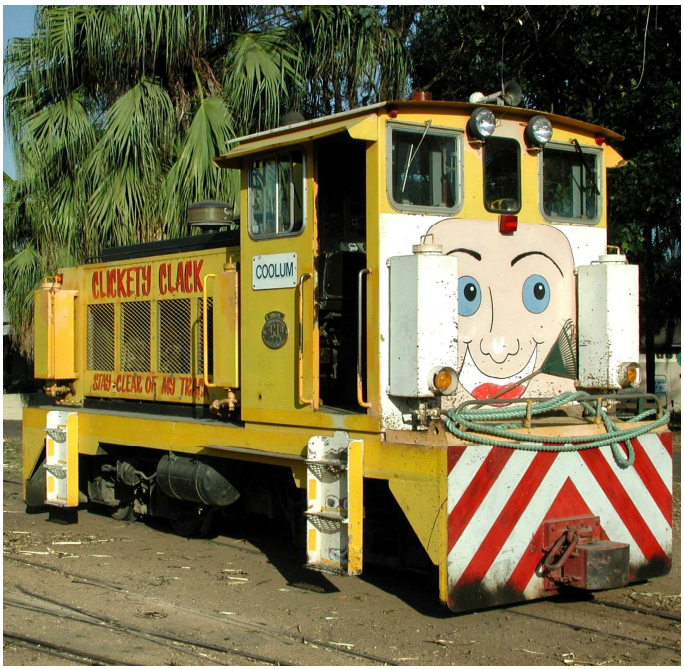
References

[1] Wilson C, 2002, *Built by Baldwin*, LRRSA.

[2] Chisholm P, Review: Andian Models 0 Scale Figures, *7th Heaven*, Autumn 2018.

[3] Longworth J, For the Grandchildren – of Course, *7th Heaven*, Autumn 2016.

[4] Parker JRB, Building a "near enough" 0 Scale NSWGR 40 Class, *7th Heaven*, Autumn 2012; Flynn P, The Saga of 4010, *7th Heaven*, Winter 2020.



For anyone doubting the appropriateness of adding an anthropomorphic face to a prototypical EM Baldwin diesel, COOLUM wore one, nd, L Zelmer. Note also the shelf across the back of the cab with railing for storing potentially useful items on.

44 TONS OF CONVERSION - PLUS.

Bruce Lovett

Stephen Preston's article in the 7th Heaven issue No. 68 on converting a lovely brass GE 44 ton O Scale diesel loco into a N.S.W.G.R. 79 Class diesel was well written and illustrated. Stephen, you are a very brave man ! To wield a Dremel tool to a mint brass diesel loco takes a very, very steady hand AND A LOT OF COURAGE! If I may, I would like to add some further information to Stephen's excellent article.

In 1943 I was attending North Sydney Technical High School, which, incidentally was opposite North Sydney Railway Station. A friend of mine at school, whose father worked for the N.S.W.G.R., told me that four GE 44 ton diesel locos had arrived from the U.S.A. This was in the middle of the second World War and although security was still tight, the arrival of the diesels was common knowledge amongst those interested in the local railway system.

On a number of occasions after school I would buy a ticket at North Sydney Station costing one penny and travel to Central Station where I would buy a platform ticket, also costing one penny, then spend a most enjoyable hour or so at the end of Platform 1 watching the goings on of trains entering and leaving different platforms. To add to the enjoyment was watching the 30 Class tank engines and two of the 79 Class diesels shuffling carriages and mail vans back and forth.

The first time I saw a 79 Class it was still painted the blue grey colour that the U.S. Navy used on their aircraft and the letters USA and the number painted in white on each side of the cab underneath the windows. Later they were painted black all over with red buffer beams and white numbers on the cab sides and buffer beams as Stephen described in his article.

In O Scale model form both of these small locos have tons of power as each truck (the U.S.A. term) has a can motor mounted vertically. The W&R Enterprises model weighs in at a whopping 1.6 kilos. This comes about by thick brass construction, a gearbox on each axle and a large lead weight hidden under the cab in the oil tank . Compared to the W&R model the RY model is a lightweight weighing in at 0.58 kilos. On each truck the motor drives down onto one axle and the power is transferred to the other axle via two Delrin plastic chains with a much smaller weight in the fuel tank. Nevertheless , I have coupled 12 weighted box cars and a caboose to this loco and it has walked away as if there was nothing behind. As for it's heavyweight brother – well !

There are notable differences between the two models which makes me think that the W&R model was an early version either Phase 1 or 2 while the RY model was identified by Stephen as a Phase 4. All told GE produced 386 models between 1940 and 1956 so there is bound to be differences between batches. These differences can be seen in the 'photos of my two models. Yes, I know one is painted and the other isn't, however, this will be rectified as it is on my short list of "things to do".

I have included some black and white 'photos of 7920 and 7923 I shot at Central Station in 1950 which gives you some idea of the detail on top of the short hoods. Some of the background detail is also interesting. See page 10.

By now you will have gathered that I like the 44 tonners and if you ever have the chance to buy one of these models you won't be sorry as they run like a Swiss clock.

Finally, being U.S.A. models they are built to a scale of ¼" equals 1'-0", NOT 7mm Scale. However, everything in the U.S.A. is BIG, so these models won't look out of place shunting 7 mm scale carriages around your model of Sydney Central Station.

Enjoy.

Bruce Lovett

Squeezing One Out - Making of the NSW Federation Dunny

Lee E J Styger

1.0 - Introduction
My previous article in 7th Heaven, "New South Wales Federation Dunny - An Exercise in CAD Solid Modelling", went through the stages to construct a virtual model (i.e. CAD) designed to be physically outputted as a 3D printed model. Sooner or later however, all that screen time needs to degenerate into making something physical, and this article finishes off the story by covering the "real" model making sequence of the dunniy.

2.0 - Background on the Prototype
The dunny is actually a model of a prototype, albeit in my back garden. It makes a nice little structure to model, and typical of so many commonly seen from many train windows even today. The surprising thing during the measurement stage, was just how big these little structures are in the flesh. I doubt I would have got anywhere near the same outcome winging the design, because I would have guessed that it should have been much smaller and it would have ended up being unconvincing. With this in mind, I am fast coming to the hypothesis it is easier to model a prototype that guess an approximation.

3.0 - The Modelling Sequence
The following images and notes provide a brief description of the modelling sequence.

Figure 1.0 - The rendered CAD model. This is where the previous article finished off and it represents the transition point from a virtual modelling environment to a physical one.

Figure 2.0 - This rather complex image illustrated the triangulated approximation of the CAD solid model as it is exported to a .stl file for 3D printing. As complex as this would first appear, its actually no more complex than sending something off to a document printer or sending an email. In reality, you never get to see this image unless you request them from the machine.

Figure 3.0 - Return of "the kit of bits". In theory, the 3D printer could easily have made all of the components of this model in a single, solid build. In reality, a "kit of bits" is more preferable for the physical model making element.

Figure 4.0 - I spent about a year and a half finding the right 3D printing technology (they are truly not all the same) and also the right supplier who understands what we need as modellers. My quest and soap box rant is that we have all of this advance manufacturing technology at our fingertips and yet so many great models are let down by poor finishing.

The root cause of much of the poor finishing on 3D models is a function of the wrong choice of technology and not the modellers capability. For example so many 3D printed models show "sausage layers" from extrusion type systems, that because of the nature of the materials, make it near impossible to finish without losing precious detail. Similarly, poor surface definition and rough surfaces result from some of the powder systems. Also, the associated powder build materials that have a similar effect on final model quality as the extrusion type technologies.

There is also a myth out there about "engineering plastics" from some of these systems. Whereas this might be technically correct, they are not processed in the same way as injection mouldings (i.e. high injection forces and melting temperatures, along with specific thermal cycling) and their like for like match (off machine) is at best questionable. I use a liquid resin system (and, once again, it is important to note that not all resin 3D printing systems are the same) that enables super fine detail and off machine surface quality more akin to the sort of quality we would get off-tool from a low-volume injection moulding. This image shows the model "off machine" with a single coat of primer and a light top coat. There was no surface finishing.

Figures 5.0 and 6.0 - The finished dunny in all its glory. The gravel base is chinchilla dust (not made from real chinchillas as it happens, but how was I to know). The ground cover is a mix of everything I have ever picked up from shows over the years and added in small clumps.

Two points of interest are the creepers at the back of the dunny, which are made from a bun hairnet picked up at the local chemist. The hairnet and the base of the foliage, have been covered with dried tealeaves. I was sceptical of using dried tealeaves, but they really lift the model and make a big difference to the scenic edges.

The scene was then sprayed with matt varnish and I gave it a bit of dusting with weathering powders. The sign, reads "'0" Scale Modellers" and it is straight off the 3D printer. The letters are about 1mm heigh.

4.0 - Conclusions
Overall, this was a fun project and I hope it has given some insight into the wonderful world of CAD modelling and the degeneration into doing something physical.

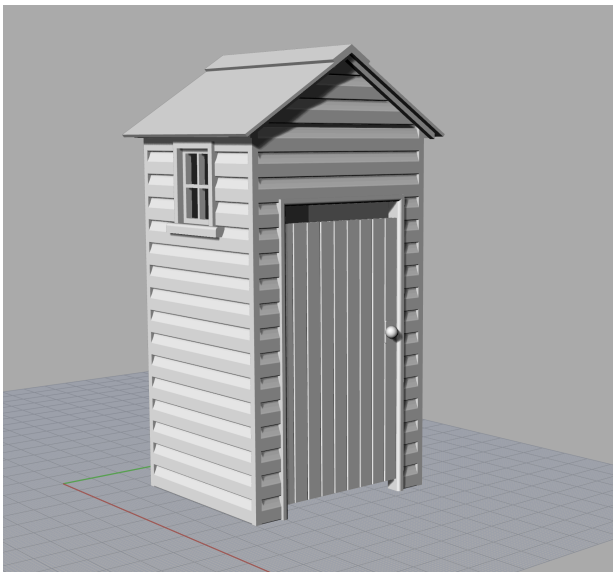


Fig. 1

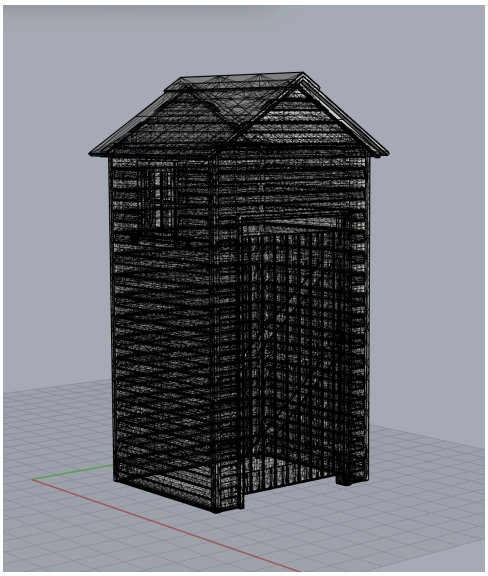


Fig. 2

Fig. 3

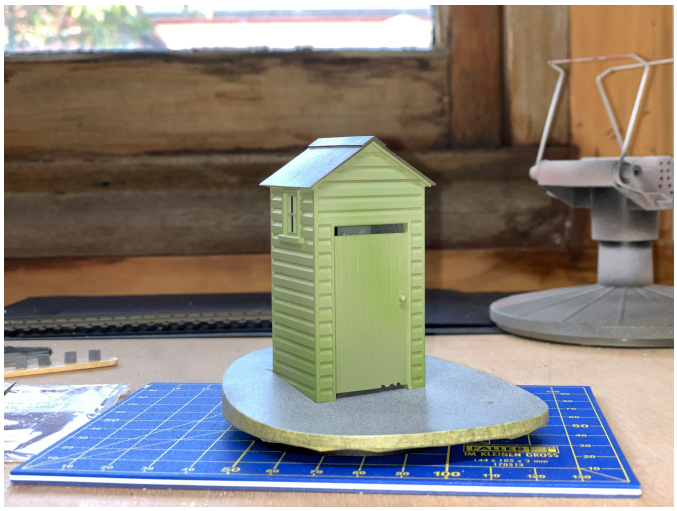


Fig. 4

Fig. 5

Fig.6

Showcase

Two projects from Bruce Lovett

This is a model of a U.S.A. type water tower to a scale of ¼ " equals 1"- 0". The tank, part of the roof and part of the frame were built by the late Jack MacMicking. For the tank Jack used two circles of ½" plywood joined inside by a piece of 1"square timber, then glued individual pieces of strip wood around the circles. Brass wire was tensioned around the "drum", glued in place and completed with turnbuckles.

I completed the roof by gluing 515 individual real wood shingles in place. The frame was completed with diagonal bracing and tension rods of steel wire with 14B.A. nuts glued on the ends. The spout is a brass casting with brass chain and ring, the lever at the top and chain are brass which was used to open and close the valve. The pulley wheels came from Kerroby Models with brass wire for the steel ropes and counterweights. After painting it was weathered and gloss clear polyurethane streaked down the sides to represent leakage.

This is a Plasticville USA kit my wife gave me for my birthday. It is made of heavy plastic to a scale of ¼"equals 1'-00". Assembly was straight forward with good directions and additional detail was added with a chain and ring to the chute, brass wire and counterweights and the pulley wheels came from Kerroby Models. After painting it was weathered and plenty of real coal and coal dust placed around the area. In the track under the tower is an open rectangular hole where the coal was dumped from a hopper car into a bin underneath and conveyed by a bucket system at the back to the top where it was tipped into the large hopper.

It is a rather imposing structure on my layout !

Sailing On!

I started considering the Morpeth line as a serious modelling proposition as far back as 2003. Before I'd built a single model or laid a piece of track on any of the various iterations of the layouts I would end up building around this theme I knew with absolute clarity that I wanted a ship (or ships if truth be told) model on the layout I would eventually come to call "Morpeth". I detailed in my In The Loop column in the April 2021 issue of AMRM some of the background to building the Louise from a Caldercraft kit of the Talacre. Space constraints in that issue didn't really allow the publication of more than one photo of the Louise so here are a few more shots to fill out the picture a little. These photos show the ship really just placed next to the truncated pier running out from Morpeth. I'd planned to eventually install some type of "water" around the ship and dress up the pier with some cargo and junk. However, as I mentioned at the most recent Forum, my partner Louise and I are in the process of selling our separate properties with the aim of moving further north so this means that the water on this particular pier is unlikely to ever get poured. The reason for this is that my current model of Morpeth is going to be dismantled shortly and after the relocation we'll be building a new home and a very, very large shed. My plan at this stage is to build a much more accurate version of Morpeth and included in this plan is the likelihood of a much longer pier or possibly a wharf. As I've always said, there is no such thing as a "permanent" layout, all layouts are built with varying levels of impermanence.

Trevor Hodges

Vale – Dave Morris.

Trevor Hodges

I was saddened to learn of the death of my good friend Dave Morris on August 19, 2021 of organ failure brought on by respiratory complications in a hospital in Thailand where he lived with his third wife Daw and two step daughters. Dave had moved to Thailand several years ago to build a new life around his new family. He had been a lifelong smoker and had been struggling with respiratory problems for some time but at the time of writing his death does not appear to be related to Covid-19.

I first met Dave at an O-Gauge Modellers Workshop in Thornleigh in Sydney around 2002, not long after he'd purchased the rolling stock segment of Century Models, which he had re-launched as the Waratah Model Railway Company. There are two things I took away from that first encounter with Dave; the Grizzly Adams beard and his passion for his new rolling stock business. That beard was his most striking visual feature, the thing that everyone who ever met him will remember and was one of the reasons he acquired the nickname Grizz. Like most other things in Dave's life, he was passionate about his beard and spent a considerable amount of time lavishing it with care and attention. It would have won best in show if entered at the Royal Easter Show and would have acquired its own Instagram account if Dave had come from a younger generation.

When I met Dave he worked as a shunter at Enfield yard on the NSW Railways and it was here that he acquired his passion for the railway rolling stock of his home state. He was a fierce, life-long unionist and like millions of others, a product of the post war immigrant experience. He came to love his adopted state with a passion that might be difficult for those born here to comprehend at times, but that was Dave all over: when he took something on there were no half measures and if you didn't share the enthusiasm then perhaps it might be best if you stepped aside to avoid getting pushed. He was a man of fierce passions: NSWR rolling stock, Norton and Indian motorcycles, his beloved dog Bonnie, NSW coin collecting, Stringybark Creek, Arakoola and NSW outline railway modelling. He was also a man of fierce anger who at times struggled with mental health and the health issues associated with his weight problems and smoking over many years.

If the measure of a man is in his actions and not his words then Dave should be remembered for the contribution he made to this hobby and the key role he played in the transformation of 1:43.5 (7mm) scale modelling from a niche activity carried out by very few into a broadly based, viable modeling scale. Through his ownership of the Waratah Model Railway Co, with his business partner Chris Harris, Dave kept the growing number of O-scale modellers supplied with a developing range of rolling stock and line-side kits for well over a decade. He took the pioneering efforts of others and helped build a scale. However, without a doubt it is his involvement and leadership in the building and exhibiting of Stringybark Creek, the NSWR outline 1:43.5 layout seen by many thousands at exhibitions over something like eight years that stands as his enduring legacy to this hobby. The layout emerged through the efforts of a group of mostly Sydney based modellers Dave recruited following the publication of his now famous (some might say infamous) "Gunnas Need Not Apply" letter to the editor in 7th Heaven. Stringybark Creek was the result and, while not the first NSW outline 7mm exhibition layout, it was certainly the most widely seen and led to the development of Arakoola, another truly massive and awe-inspiring O-scale layout. I think it's fair to say that without Dave there would have been no Stringybark Creek and 7mm modelling and more broadly the hobby would have been poorer as a result. These layouts got 7mm modelling in front of the board spectrum of hobbyists and general public, making the scale tangible and letting everyone with an interest come to the realization that not all outstanding scale railway modelling comes in a HO package.

Dave would be the first to admit that he could sometimes be difficult to live and get along with. However, he was as passionate about his friendships as he was about his other enthusiasms. He taught me lessons about loyalty and keeping your promises in a world that no longer seems to value such virtues in the way it once did. He once drove 500km to keep a promise to my mother and she thought the sun shone out of him. I always regarded her as a fairly astute judge of character so in my book this says a lot. Dave Morris was a man who was many things to many people but he was never, ever a gunna. I loved him, was proud to call him my friend and I already miss him like Hell.

Scale Model Co. — Hobby Centre

Following the sale of our main packaging business we have had to relocate the Hobby Shop from Yagoona to a new location. We are moving to a larger shop located just off Pennant Hills Rd Thornleigh (complex next to McDonalds), around 250m from Thornleigh Station.

We are presently finalising the renovations at the new shop and hope to be set-up by the end of September 21. Covid restrictions will determine when the shop will be open again, however by the end of September we will be in a better position to deal with online and phone orders.

Going forward Rod and I will be focused on developing the Hobby Shop and further developing our range of O scale products, making use of our recently acquired Formlabs 3D resin printer, laser cutter and Vacuum forming equipment. We have a long list of projects for new products and revamped existing kits.

We plan to increase the range of products we manufacture and stock, with a focus on supply of materials for modellers in a number of scales. Consequently we are changing the name of the Hobby business to "ScaleModelco" and the hobby shop will be named "Scalemodelco Hobby Centre" to appeal to a broader range of modellers. We will continue with ModelOkits as one of our O scale brand names. We are hoping to make visiting our hobby shop more of an experience with more modelling displays and from time-to-time modelling demonstrations and talks.

We will be establishing a new website and online store under www.scalemodelco.com.au. This will not occur until 2022, so until then we will continue under our existing website at www.modelokits.com

We will publish more details on location and opening times once we are fully relocated.
We can still be contacted at sales@modelokits.com or by mobile on 0404 935 663. See you all soon, Glenn.

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- Mininatur Scenery Materials
- Mount Albert lumber
- Tortoise Switch Motors
- ESU
- Proses tools, Jigs and rolling roads range of tools
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Our new shop will be opening soon at Thornleigh. More information coming soon!

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