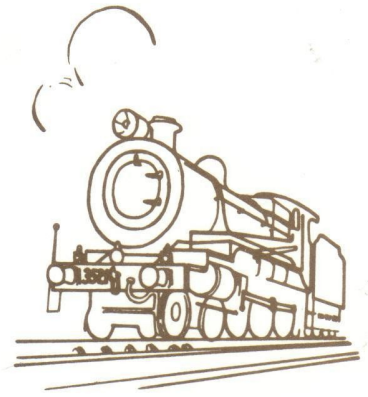


Sydney Live Steam Locomotive Society

Anthony Road, West Ryde, N.S.W.

'Newsletter'

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It is the February Running Day and Ray has 3374 all set to run on its first public outing fully completed.

Engine 3374

A short preamble about the prototype.

Engine 3374 was built by Clyde Engineering Sydney in June 1911 and was condemned in 1967.

In the early 1930's it was decided to paint two 32 class engines green for working the South Coast Daylight to Nowra. Engine 3306 "Illawarra" and 3374 "Cambewarra" colour schemes only lasted into the Second World War.

3374 was re-framed in 1941 and would have been fitted with front steps and shutters pole. During its 56 year life it would probably have received about 15 reconditioned

Ray Lee

boilers.

The full size "Cambewarra" plate was found during my apprenticeship in the early 60's while exploring the Boiler Shop at Chullora. I noticed half of a curved plate bolted to the cab of an overhead crane with "Warra" written on it.

THE PLOUGHING ENGINE PAGE 7



After removal it was found to be "Cambewarra". No one at the time placed any significance in it and I was told it was mine.

It would be a different story today.

The Model 3374.

The boiler is of 1/8" copper.

The grate is 2 3/4" x 7 3/4".

The flue tubes 3 - 1".

The fire tubes 13 - 1/2".

Copper superheater elements have 1.6mm wall thickness and have copper welded spear points.

The boiler is fitted with an in dome ball valve regulator and two Allison superior pop safety valves hidden in Ramsbottom bodies. All platework and tender tank are all from 1.6mm zinc anneal...which is very good to work with and good for paint to adhere to.

The boiler is lagged with stainless steel sheet. Cylinders are cast iron 47mm diameter x 2 7/16" stroke and fitted with clip lock rings.

The valves are bronze with very deep exhaust cavities to help get the exhaust out quickly.

Frames are from 5mm plate and along with the rods were laser cut by fellow member Wayne Fletcher from CAD drawings produced by Andrew Allison (not my forté) from my drawings.

The valve gear is Stephenson rather than Allan as I like to support the die block assembly with large bushes. Allan is all hanging on pins and bushes with no side control at all. The eccentrics have 5/16" throw with long eccentric rods driving launch links giving 5/8" valve travel in full gear.

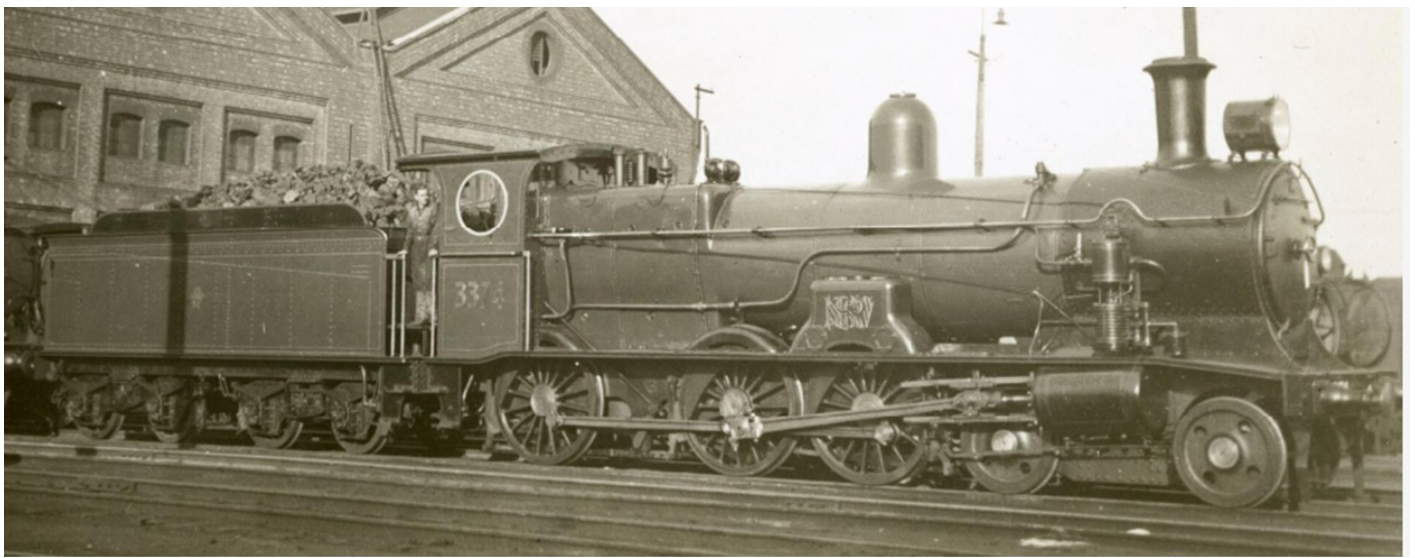
My first 5" gauge "P" class (3290) circa 1966 was sold to member John Mann on the completion of my first 59 class. It then passed into Barry Glover's ownership. It was during this period that Barry acquired the "Cambewarra" plates from Greg Bird also from the Orange Club. He must have been going to renumber the engine 3374 but never got around to it.

In 2015 Barry sold the engine to Roger Kershaw from Orange along with all the bits and pieces including the

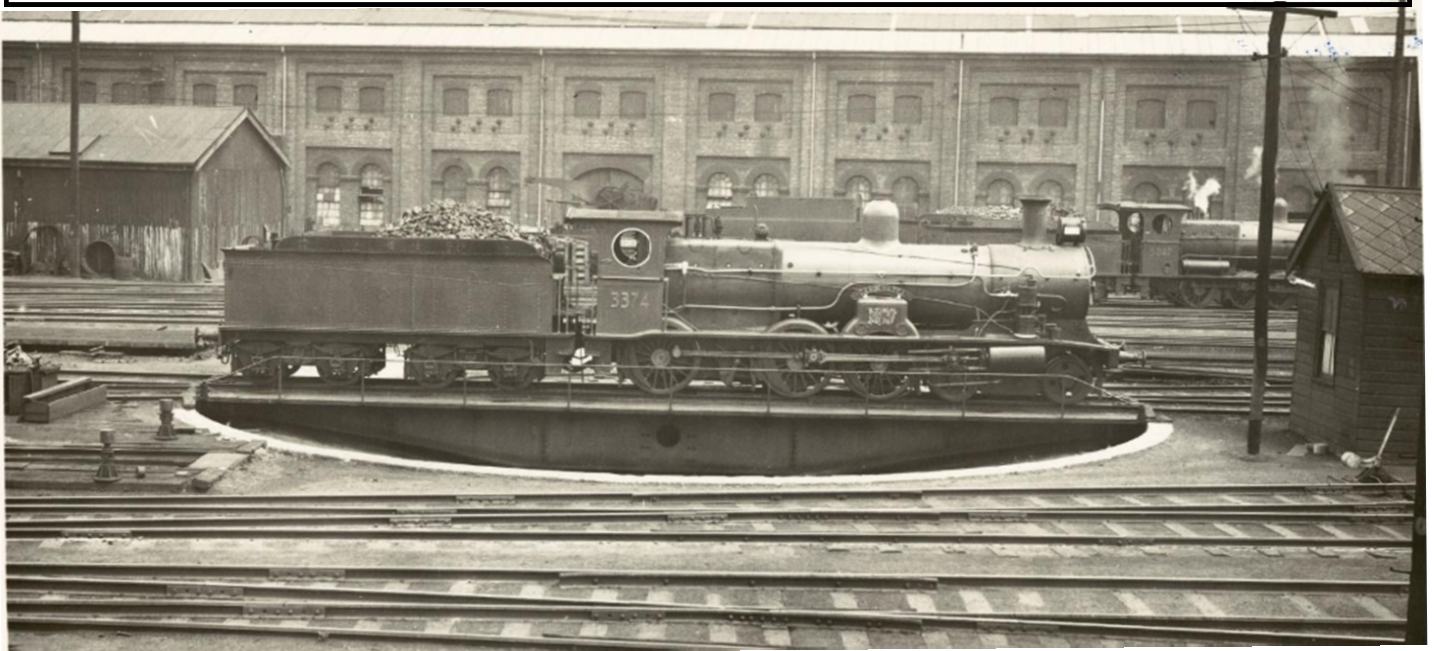


3374 behind 3306 in their fresh new green colour scheme. Photo: Online from the National Library of Australia.





Two more pictures from the National Library collection. Above 3374 is seen close up outside the erecting shop, while below it is complete with Cambewarra plates on the Eveleigh turntable.



plates. It was at the scale day at Orange in 2019 that I mentioned to Roger that I would like to build another "P" class but in green. It was then he told me about the plates he had and I was welcome to them. The rest is history. The engine is painted with 2 pack green....the same paint that was recently used on 3801. (Railway Special Green !!!!).

February Running Day

A cloudy day with lower temperatures but fortunately no rain. After a big clean up the previous weekend Mick and Scott M were busy on the Friday with extra cleaning to leave as little to be done on the morning of the running day. Their work included pressure cleaning the GL loco area, a long while since this has been so clean. Dennis O'B cleaned all the seats of the riding cars ready for their afternoon's run. Mark G and Martin D prepared the GL signalling for operation and some adjustment was needed on the elevated track repeater signals.

Running on the outer main we were treated to the sight of Ray's latest C32 now fully painted and lined, an absolute sight! This was coupled in front of Warwick's C3609 which was train engine on the Central West set of cars. Ray and Matt shared the driving of the C32 while Andrew A was the principal driver with Warwick A on the C36. The two green express locomotives looked very good running together for the first time. The second train on the outer was hauled by the Hurst mountain with Arthur at the regulator until a steam leak caused the 4-8-2 retire to loco to be replaced by David L and his Commonwealth Railways GM set and saw out the running till the end of the afternoon. The staff on the outer main included Bill P, Paul B, Craig D, Ray L and Jo-Anne as either station staff or riding guard.

We had the two big locomotives running the inner main. Ross B steamed 0-6-2 Fowler "Toneya" on the green set of cars with Ian T as guard. After some initial trouble on the bottom curve things settled down and the train ran well for the rest of the afternoon. The second train was

hauled by the Shay driven by Scott M hauling the Pullman set. The Shay ran well all afternoon always sounding good as it lifted the load out of the bottom curve and up the grade to the ticket office. Chris D was station attendant and Craig D was one of the guards throughout the afternoon.

Up on the elevated we had double B1's with Simon and Gazelle leading Garry with Impala and John L on the guards van. After a short time Simon retired his B1 with clearance problems on the curve leading into the station area. Garry had steaming troubles into the afternoon and after trying to remedy the fire in the loop he eventually retired. We had a second train with John T and the 2-8-0 J class running four cars. This ran well for the time it was on till the end of the day. Paul T, David T and James were on the station. We had plenty of passengers with most of the trains being well loaded.



Ross and Toneya in February although it was duplicated in April!



Above: Matt on 3374 leads Andrew and 3609 out of the station during the February Running Day. Scott on the Shay is behind. Below: Simon and Gazelle leads Garry and Impala with Double B1's over the recently installed eastern straight again during the February Running day.

David T had his SAR 620 class in the GL loco to do some checks and sort out some injector problems. The signal box was attended to by Mike D and Mark G. John H attended to the gate with the scanning device to check in the online bookings.

March.

This was a washout! While it did not actually rain on the afternoon the grounds were saturated and not very pleasant to have been on. Notification was given online to our intended visitors, an advantage of online bookings.

April Running Day.

This running day coincided with Easter Saturday for the first time in a long while. After all the rain through the month of March the grounds were still very soggy to the extent that an area between the flag pole and the clubhouse was roped off and some of the other high traffic parts of the ground had a lot of straw spread around to ease the impact of foot traffic. It did look rather Royal Easter Showish. Dennis O'B cleaned the riding cars. With all the dampness and mould Dennis reported that job had never been so hard! At least the sun was out making a very pleasant day.



We had two trains running on the elevated. Double Simplexes saw Simon and Ken B with their locomotives running one train with Eddie as guard. The second train had John T and the J class as train engine with Garry and his B1 Impala in the lead. After running very well for some time with well loaded trains Garry came off to sort out the fire and steaming problems. John and the J continued with the seats removed from cars 2 and 4 till Garry returned and we



Arthur and the 4-8-2 with a good load in February.

David and the double GMs on the outer main in February.



train with Peter W as guard. There were some adhesion issues early and a troublesome car that was removed from the consist and things settled down. As the afternoon went on the sound of the 38 hauling the train out of the bottom curve and up the grade was especially impressive, a delight to hear! Ross B and 0-6-2 "Toneya" ran the Pullman set as the second train on this track. Tony E was guard and as

went back to running a full train. John L was guard and also assisted James on the station.

Running on the outer main ground level we had Mick's Wolgan Valley Shay with Scott driving. The train ran well all afternoon with Jo-Anne riding as guard. The second train was a shorter consist with Warwick's C3609 running a three car train. David T was the principal driver for the afternoon with Warwick at the regulator late in the afternoon. Guard on this short train was John S and the station was attended to by Peter D and Carolyn L.

It was noted that the 36 sounded a bit clanky, since remedied, but isn't that how 36's sounded anyway?

On the inner main we had Ray L and C3803 on one

Scott and the Shay on the inner main in February. It was repeated in April on the outer main!





Ray and 3803 leaving the Inner Main station on the April running day.



Double Simplex's with Simon leading Ken down the elevated.

usual the Fowler ran well all afternoon. The inner station was controlled by Ian T and Craig D. While we only had 380 children and adults for the afternoon the trains were usually full and the queues long with few visitors choosing to sit around the ground, too damp perhaps. Mick attended to the gate checking the electronic entries. The signal box was staffed by Mike D and Martin D and Elizabeth with Joy sold drinks in the kiosk, a more normal service may be able to resume soon. Track superintendent was Neal B. and we just had sufficient members to run the afternoon. A few ex-



Above: John and 2904 on the elevated while Below: David Thomas at 3609's regulator ran 3 cars and van on the outer main.



For the information of employees and not for publication.
Instructions to Signalmen, Drivers and all concerned.

ALTERATIONS TO SIGNALLING AND SAFEWORKING

From Saturday 7 May 2022 and until further notice, a temporary colour light signal has been provided on the existing post of Park Avenue Elevated Station No. 7 Home and Starting signal in lieu of the lower quadrant arm. The signal displays STOP (red light) and CLEAR (green light) indications. In all other respects operation of the ground frame and associated equipment is unchanged.

**Signal and Telegraph Engineer, West Ryde
May 2022**



The McLaren and the new Fowler: Over 15 years of obsession!

The Ploughing Engine Ross Bishop

From time to time, reports of my ploughing engine build have appeared in SLCLS news since commencing construction in January 2015. Now, a little over seven years later, the model is finished! It is a large size for 3" scale weighing 500kgs and sporting many interesting mechanisms including a 2 speed winch with 50 metres of steel cable for ploughing in partnership with a similar engine positioned on the other side of the field. Unfortunately, the continuous wet weather has prevented me showing the engine in public yet. In fact, I've only driven it once or twice thus far!

The journey began with an opportunity purchase of castings and materials second hand from Station Road Steam (UK) sufficient for two engines. Two giant boxes weighing nearly a ton in total eventually arrived at my house — and not on a crane truck either. Luckily the driver had a sense of humour and assisted me to unload, piece by piece, onto the grass verge. There were castings, wheel rims, boiler plate, gears, shafts, spokes etc — much of which has been utilized in the build though several significant items were not; eg the crankshafts and the supplied gears were among the disappointments. Such is nature of sight unseen purchases.

Although no usable drawings accompanied the shipment, the general intentions were closely linked to the John Haining design published in *Model Engineer* in the 1980's. Haining had taken basic proportions from a GA for two engines that were supplied to Australia in 1889.

Both still exist in WA although far from being in working order. One can be found with Google Maps on the Cnr of Allardyce St and Yougenup Rd, Gnowangerup!

Haining's ME notes were a useful introduction to the subject, though the many hours of research that followed yielded so much more that I didn't know. Knowledge that created a dilemma because the castings dictated several features that did not coexist on any one engine at any one time. For example, the circular steam chest containing a balanced slide valve to Walter Charles Church Patent belonged to the Wrought Iron Boiler era (pre 1881) whereas the cast Horn Brackets, Crankshaft and concentric bevel gear drive for the rope drum is representative of much later (1900's), steel boilered machines.

My design work therefore focused upon making the best of it with good mechanical practice, quality materials and outward appearances that were thoroughly representative of John Fowler products. Indeed, I think of the end product more as a collection of John Fowler innovations spanning 50 years of steam ploughing evolution. Drawings have been done with 2D CAD with minor forays into 3D CAD, printed patterns and lost wax castings for certain details, all of which have been a new experiences. By comparison, the design work for my hard-working Fowler Loco "Toneya" consisted of an A4 envelope filled with barely legible, grubby sketches done on the kitchen table! A Traction Engine is an odd beast to make with all the machinery mounted on a black steel pipe that expands and contracts with heat and is far from flat/straight/round after 10 hrs or so of welding. And when raising steam, you can be boiling at the back while the cylinder is still stone cold.



Pounding 3/16" steel rivets into the smokebox.

Even after steam has reached 30 psi, the supporting castings remain cold. While care has been taken in the design to accommodate differential expansion so far as possible care must also be taken to raise steam slowly to give the heat a chance to warm through the patchwork of castings that support the machinery.

With internet access to Museum archives, Forums, records held by The Steam Plough Club of England and various other willing supporters, an amazing number of original drawings and photographs have appeared ensuring every component closely resembles one of John Fowler pedigree.

One exception is the water gauge. While wrestling with issues of space and practicality, detailed photos of an "Oxford Column" turned up courtesy of a UK fellow building a full-size replica ploughing engine after procuring one front wheel (in need of repair) and a rusty cylinder block from an original.

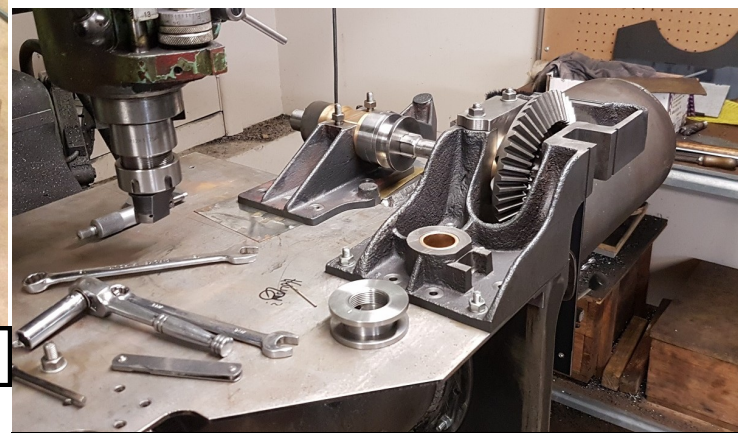
An early public display of work in the first year of construction.



The Oxfordshire Steam Ploughing Co rebuilt many of the 'old' engines in the early 1900's. Their rebuilds were readily identified by various distinguishing fittings, the water gauge being one of them.

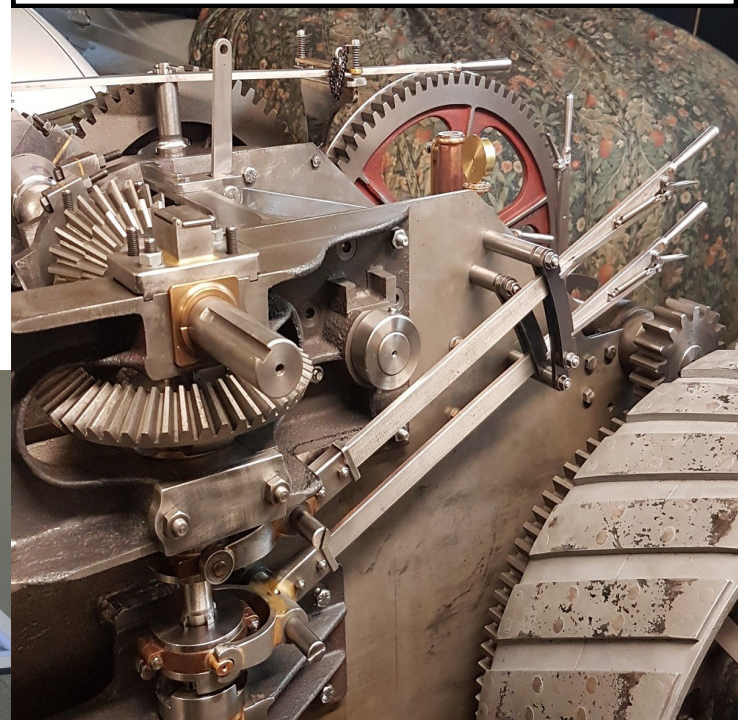
Another less common feature is the Salter Safety Valves. These are often dummied up in model form (not very well typically). These ones are fully functional with the spring located in the brass sleeve at the outer end of the lever. Of interest the Salter Brothers commenced making springs in 1760. The Company responded to the needs of the steam era with devices for pressure measurement and relief valves. The Salter Company specialized in spring balances, weighing machines as well as springs and bearings for the automotive and aviation industries. Graces Guide shows the Company still in existence and bought out as recently as 2004.

The engine carries the name "George Winwood" as a small tribute to the man whose rally I attended at age 7 with my Dad in 1968. Some things stick with you! At this point I'll let the pictures do the talking. There's about 5000 hrs workshop time

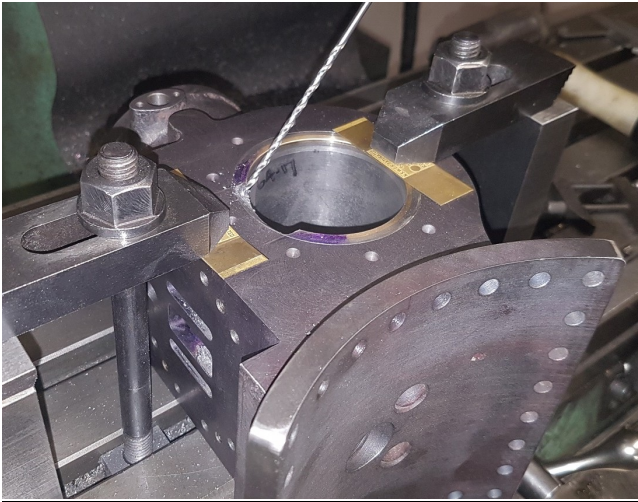


Above: The winding drum drive taking shape as it lies horizontally on the mill table.

Below: Winding drum drive nearing completion. The upper and lower levers are for the speed selection and dog clutch respectively.



in the construction and another 5000 for the design and research element of the job. Net outlay has been in the order of \$13500. Spread over the duration, the time equates to about 20 hours and \$36 per week on average.



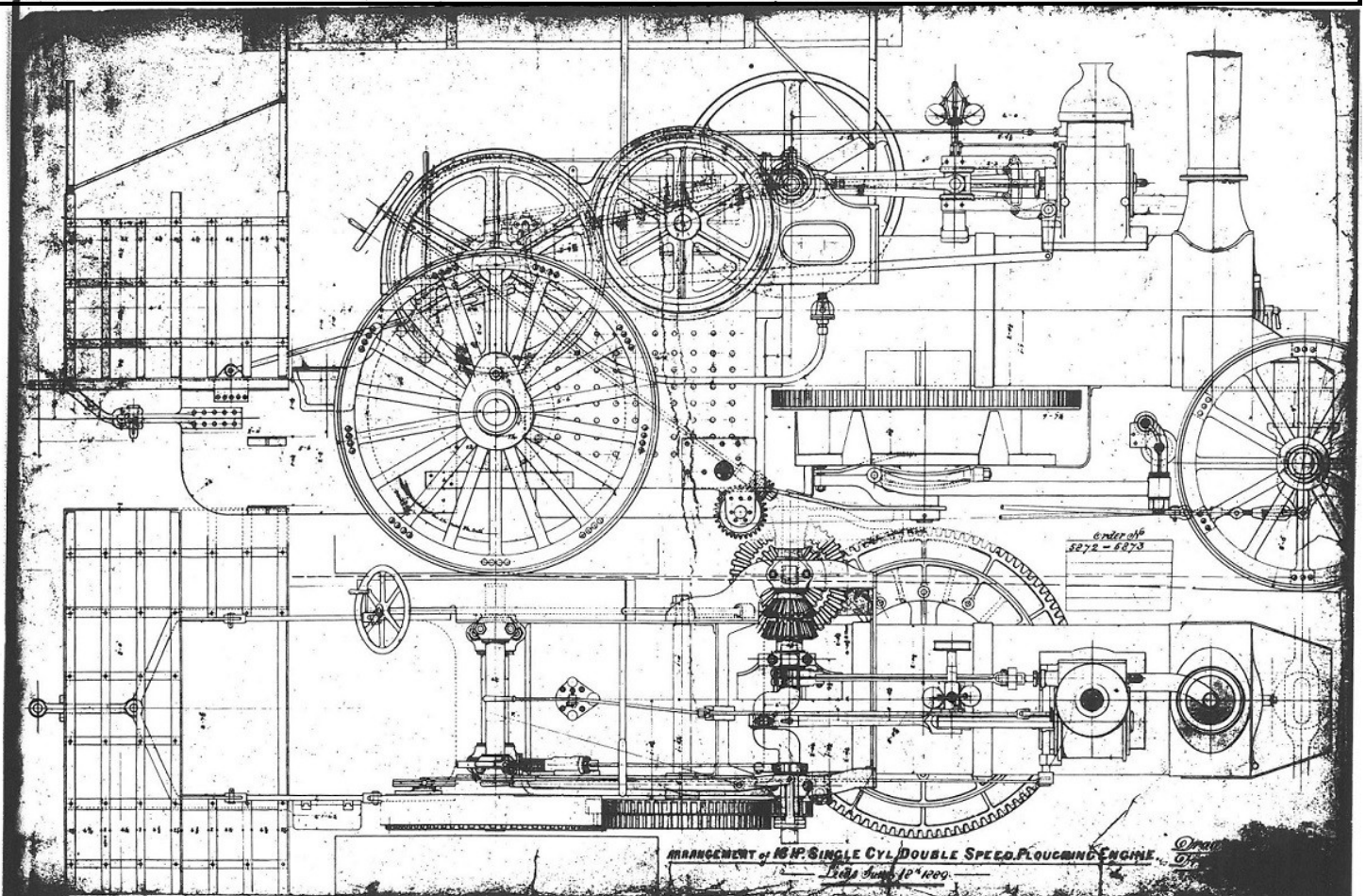
Above Right: Rear wheel hub showing spokes fitted into pockets, screwed and dowelled before being hidden from view by a cover plate to create the 'spoke-cast-in-hub look'.

Above: Machining the cylinder proceeds with drilling the transfer passages through the liner and up to the steam ports.

Right: The 'Oxford Column' and test cocks on the back head.



Fowler GA Drawing from 1889. Notice the huge wood basket as supplied on engines for Australia.

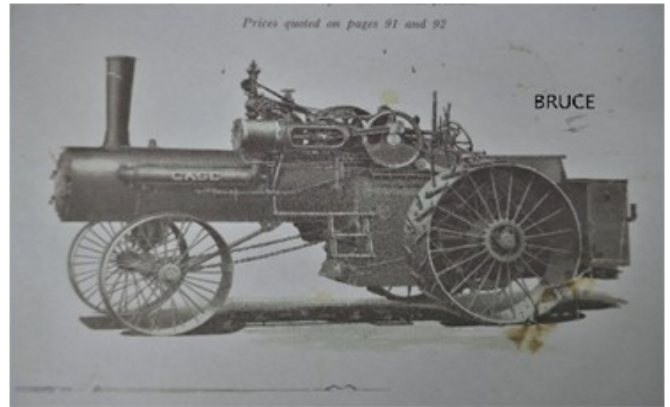


Chris Denton on Bruce's Bits

Part 4b – Bruce's Feet – Rear Wheels

I stated in Part 4a that I am not a fan of the sort of repetitious work involved in fabricating Bruce's front wheels. However compared to Bruce's rear wheels, his front wheels were a walk in the park.

I determined the actual dimensions to work with from the 1912 catalogue that gave the width and OD of the rear wheels. Again, I sourced some MS flat bar that was quite close to the correct width but was a bit generous with the thickness and some square BMS bar that looked right for the cleats. I cut the rim bars to the correct length to give me the right diameter, and, with the front wheels, handed them over to the professional rollers as explained in Part 4a. As with



diameter nuts adjacent to each other plus a small allowance for gripping them, on each flange, existed. The centre was drilled and fitted with a bronze bush at each side for the axle but their shapes differed slightly, as the hubs are not symmetrical side to side. Drilling the spoke holes was more testing as there were more of them, they were close to each other, offset by half a pitch from one side to the other, off vertical by 4.5° to match the rims, had to be true to size so that could be tapped AND the inside holes (and tappings) were blind. Again, accurately setting out the holes was probably the most challenging part. Eventually the holes were drilled more or less in the correct locations and tapped 4BA. Like before, no broken drills or taps – other than getting very dirty, I like working with cast iron.

A photo of a hub is attached (Photo 1). The dread I experienced with drilling the holes in the front rims was much reduced as I now considered myself a "gun" rim driller after practicing on the front wheels and I was using larger diameter drill bits. However, each rear wheel required 40 spoke holes drilled and countersunk with similar offsets between the rows on each side, and at approx. 4.5° off vertical AND another 80 small diameter (3/32") holes for the cleats which would be riveted on.

Second only to my drilling deficiencies is my marking-out limitations. So many holes for things at funny angles with the relative location



Photo 1



Photo 3

the front wheels, a large hammer came into play to improve on the flat ends that ensued! They were then welded up.

I sourced some larger diameter CI stock for the hubs. In a rare bit of luck a fellow modeller generously provided me with the BMS stock for the spokes – I was having trouble getting it. Whereas in the front wheels there are 32 spokes in each wheel, with a locking nut on each at the hub, the rear wheels have 40. That raised the same space problem so the BA "one size smaller" option used on the front wheels was implemented. The spokes are a bit oversize but at least that

is consistent with the front wheels.

I turned the hubs from CI stock without much problem but, as with the front wheels, they are a bit chubby. The same problem of fitting 20 even larger

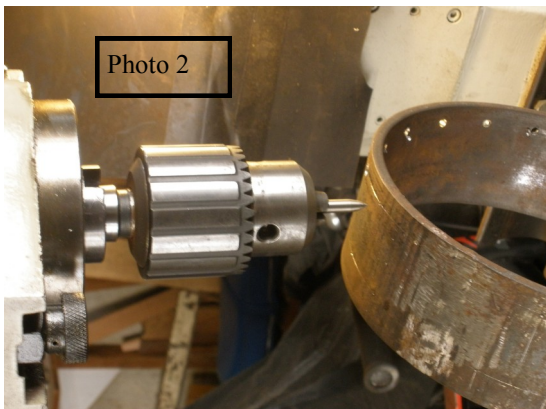


Photo 2

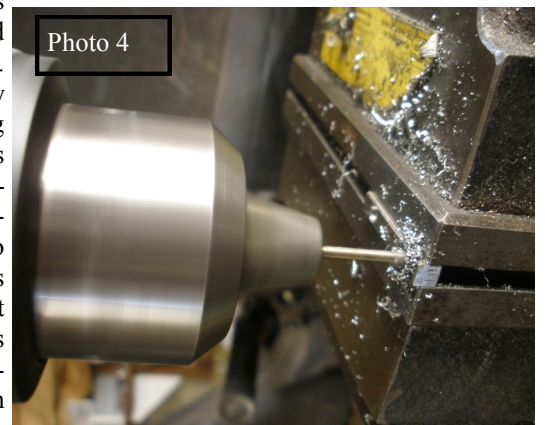


Photo 4

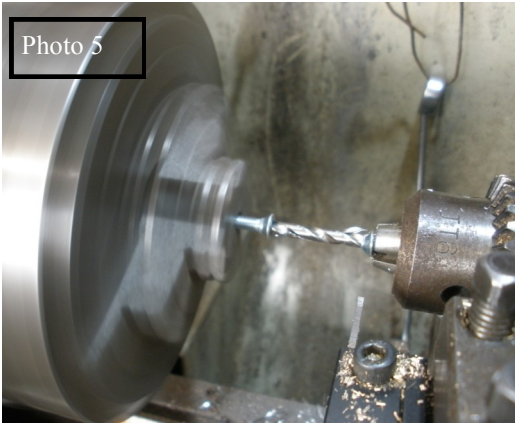


Photo 5

of spokes, cleats etc. being aesthetically critical - there was considerable consternation. I decided to drill and countersink all the spoke holes first as I was familiar with

that operation and then I could locate the cleats so they looked right in relation to the spokes. As before a few spoke holes were a little bit "out" but it will take a keen eye to find them. A photo of the "centre" used for locating spoke holes prior to drilling is attached (Photo 2)

As I was going to use the cleats to position their rivet holes it was time to make the cleats. The cleats were prepared from 3/16" BMS square bar, cut to length, each drilled with 2 off 3/32" diameter holes and countersunk with an end mill. Each cleat was then profiled on a bench grinder. The steel rivets had to be cut to length and their heads reduced slightly in diameter on the grinder to fit the milled countersunk holes. Using an estimate of the angle of the cleat to the rim and its orientation relative to the spokes, allowed me to locate the line and spacing of the outside rivet holes. All the outside rivet holes were drilled. One by one, the cleats were attached by the outside rivet, the angle adjusted with a cardboard gauge and the second rivet hole drilled in the rim using the countersunk hole in the cleat as a guide. The second rivet was then driven home. It became a tedious operation that took ages but it was successful. The only casualties were a few drill bits (in anticipation, I had purchased plenty). A photo of the cleat fabrication steps is attached. (Photo 3)

The dreaded spokes awaited. I had JUST enough 5/32" diameter BMS and had to minimise wastage. The spokes were approx. 85 mm long with a 4 BA threaded section at one end and a tapered section at the other. It was the same arrangement as for front wheels and they followed the same fabrication processes as for the front wheels. The only difference was that each spoke had to be turned down from 5/32" diameter to 4 BA diameter before threading. So the routine for ONE spoke was;- hacksaw to

length, tidy-up cut ends with a grinder/file, remove all rust prevention coating, mount in 3-jaw chuck, turn down to 4 BA diameter in threaded section, thread turned section, remove, mount set screw in 3-

jaw chuck, drill off head, dress head with a file, solder head on to spoke, pickle joint, clean up the rust from the BMS caused by the pickling, mount spoke in 3-jaw chuck, dress tapered end with file, sit back and admire ONE



Photo 7

spoke. Repeat 39 times for EACH wheel. As with the front wheels processes were "batched" to speed up the tasks. A couple of the steps are shown in the attached photos. (Photos 3, Photo 4, Photo 5, Photo 6 and Photo 7).

The rear wheels need some more work, specifically attachment of the bull gear and the addition of more "spokes" to transmit power from the bull gear to the rim. But that's for another day. A loosely assembled wheel is shown in Photo 8.

The jury is still out on whether I install lubrication cups to the hubs.

For the pedants there are (to date) approx. 250 individual pieces in each wheel.

Learning from this episode - After the front wheels 32 used to be my most despised number - now it is 40 and multiples thereof.

Part 4c - Bruce's Front arms - The Steering Bits

To co-ordinate the movements of the two front wheels I needed an axle, so maybe it was time to make the axle. Besides it gave me a break from the tedium of the repetitious work required by the wheels.

I determined the front axle could be made from 12mm dia BMS. The middle section was left parallel. Towards each end the axle was tapered down to 10mm and the final sections machined to 5/16" dia to suit the bearings in the wheel hubs (and the die in my tool box). The ends were threaded 5/16"ME to take custom made brass castellated nuts and split pins. There



Photo 6



Photo 1

Photo 2



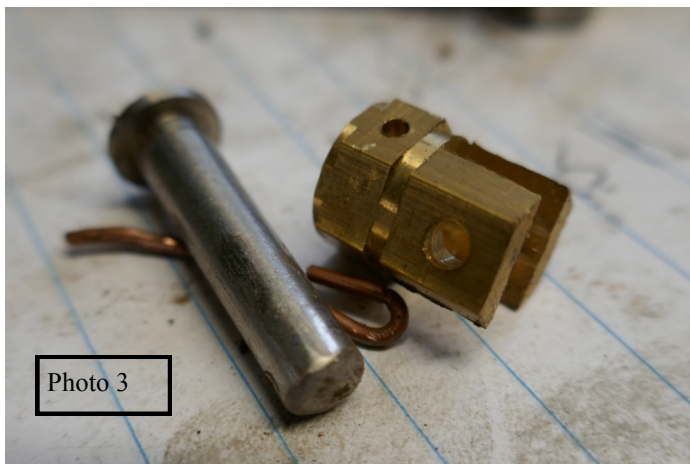
had to be a hole in the middle of the axle to take the pivot pin which I decided should be 6mm dia for no other reason that it looked right. A 6mm hole in a 12mm bar does not leave a lot of material to take the static and dynamic loading envisaged so I welded a piece of square BMS bar in the middle and dressed it. Now there was plenty of meat to work with AND to add a bronze bush – just because I could. The assembled axle is shown in Photo 1.

By the way, if you are fed up with me jumping back and forth between metric and imperial get used to it – there is more to come.

The need to attach the steering chains to the axle was the next challenge. Actually finding a suitable chain other than in a 100m length was the real (and as yet unrequited) challenge, but I digress. The original machines used brackets clamped to the axle so I went that way. The result is shown in Photo 2.

The axle was not much use without the king pin i.e. the clevis post the axle rotates in and pivots for steering purposes. Something substantial was needed so a length of rusty 1/2" BMS was found and two pieces of 6mm bar were welded to it to form the clevis. Its much less stressful to weld something with a bit of substance to it and have an angle grinder at the ready to remedy any indiscretions. The original king post included primitive spring suspension but I decided to dispense with that nicety at my scale – or so I thought. The king pin/clevis was machined, dressed and threaded without undue incident. It

Photo 3



was secured with a custom castellated nut.

There is a locating tie rod from the axle/king pin back to the boiler barrel. I decided to attach that to the pivot pin with a neat brass fitting which allowed unimpeded rocking movement of the axle as shown in Photo 3. How easy was that!

I was pretty chuffed with my efforts and undertook the final preparation of the axle and king pin before painting.

I had another look at the chain brackets. They were functional but they did not scale well and I looked like ending up with two great lumps of brass attached to the axles. I was at a loss as to my next move until I spied my welder just sitting there waiting to generate some heat, smoke and flashes of light. At this late stage welding thin gauge lugs to a nearly-completed unit that had taken considerable mental and physical effort to get to this point was tempting fate - it offered an aesthetic reward but also the possibility of tears if my welding skills failed (again). After a few trial passes, the lugs were attached and dressed up nicely. Disappointment avoided.

As I was admiring my neat solution to the attachment of the tie rod, I came to the realisation that, while it allowed free rocking movement of the axle, it impeded rotation of the king pin – damm, or words to that effect. Back to the drawing board. Another central pivot point was required on the underside of the axle for attachment of the tie rod. A hole was drilled and tapped to take a small SS post screwed and soft soldered into place so it will never come out. As I found out later this was more or less the same solution used by Case. I'm glad to see they got it right.

The axle was now ready for painting. This may have been a bit premature but I wanted to do some painting so I had something finished. The painted axle is shown in Photo 4. Learning from this episode – beware of the situation where you think everything is going well – it usually means you have not yet recognised where it is has gone belly-up.

Part 4d – Bruce's First Paint Job – Front Wheels et al

I was getting a bit bored doing (and re-doing) all the bits and pieces associated with wheels and front axle so I was up for a new challenge – painting! This also suited my procrastination with respect to getting into the boiler proper. I have feared this part of the build as, for me, it was technically the most challenging and costly if I messed it up. And there was a good chance that's exactly how it may go. Painting on the other hand gave immediate gratification, a "finished" product and mistakes were reversible and not that costly to rectify.

From what I can determine, not a lot of time was spent painting the original Case Tractors (all the original photos were black and white so that was no help!) but Case gear used to be green or unpainted from what I can determine? For a change, I chose to do something on this project the easy way and decided to coat the parts using commercial spray cans and my colour scheme. After serious consideration and all of ten minutes in the Repco catalogue, I decided to use a matt dark grey enamel (engine paint) for

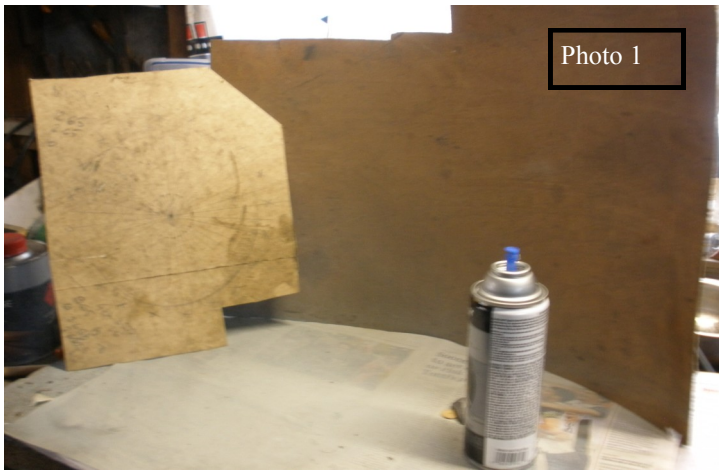


Photo 1

the wheels and axle over an etching primer. First I had to assemble the wheels. This is where I find out how the accuracy of my previous efforts. I put the rims in the lathe chuck to see how out-of-round they were. Pleasingly, they were not too bad but a bit of persuasion with a decent hammer and the vice got them into fair shape. Each spoke was then fitted into the recessed holes in the rims and some were found to be a neater fit than others due to fluctuations in the tapers and countersinking. A bit more dressing in the lathe sorted that out. I loosely assembled one wheel and it seemed OK. But how and in what sequence should the painting be done?

I devised a rudimentary spray booth on my bench as shown in Photo 1 to reduce the general mess and overspray. Did this work? The simple answer is no very well as I found out when I realised I had over-sprayed my long-suffering verniers. I am not sure they are any less accurate now, but their patina has not been improved.

Quickly moving away from my “keep it simple resolution”, I figured it would be smart to prime all the spokes nuts, and hub individually to ensure that received an even coat. Then paint the hub with its final colour, assemble the lot and finally finish off with the final colour.

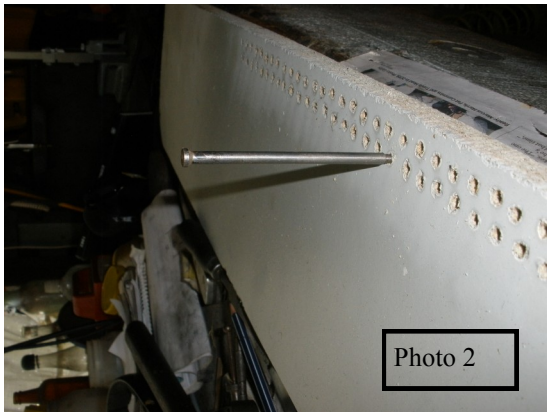


Photo 2

I persisted with this nightmare proposal by priming all the spokes in a “jig” as shown in Photo 2 and the hub and nuts separately.

Then I coated the hub with its final colour and assembled the lot in the lathe. I held the rim in the chuck and centred the hub on a mandrel (suitably sized drill) in the tailstock, refer Photo 3. The spokes were then screwed in and tightened. Tightening the spokes made a bit of a mess of the prime coat in places (as was expected). Also as expected tightening the nuts on the spokes was difficulty due to space restrictions. I then touched up the damaged primer coat and applied the final coats to the rim, spokes, nuts and hub.

During the assembly I verified my fear that the miniature

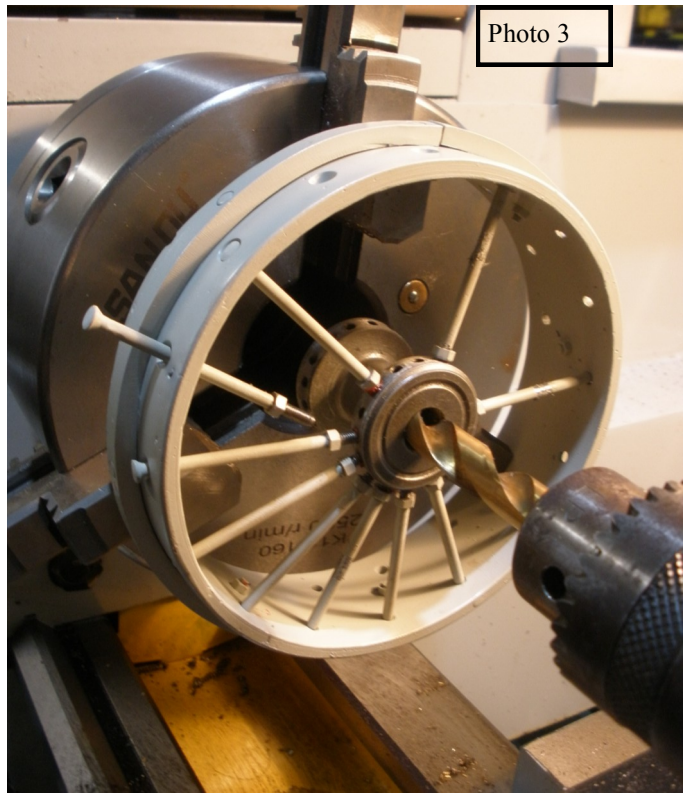


Photo 3

sealed oil caps for the front wheel hubs, which I spent so much effort making, were inaccessible. They were not fitted. It is much easier to just remove a wheel and re-grease the shaft. Also, some of the threads on the spokes were not long enough so they had to be removed, the threaded extended and replaced.

I gave up on the grand painting ideas with the second wheel and just primed the parts and assembled the wheel, as before, and sprayed the lot with the final coat. It looks exactly the same!

The front axle, pivot pin, king post, etc. were much more straightforward. They were cleaned up, masked, primed and sprayed with the final coats over a couple of hours.

The finished product is shown in Photo 4. I reckon it looks OK for a first effort.

I’m still not sure whether I will fit front suspension to that king post. I still have some paint left so who knows?

Learning from this episode – the KISS principle also applies when painting - Keep It Simple Stupid. □□□

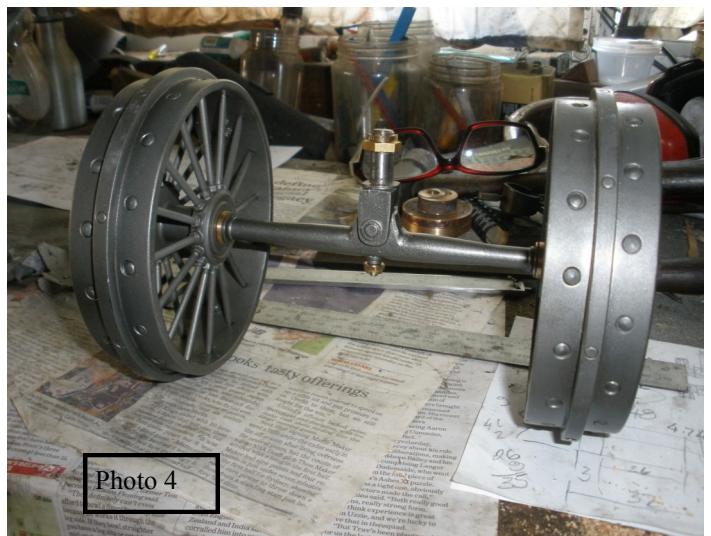


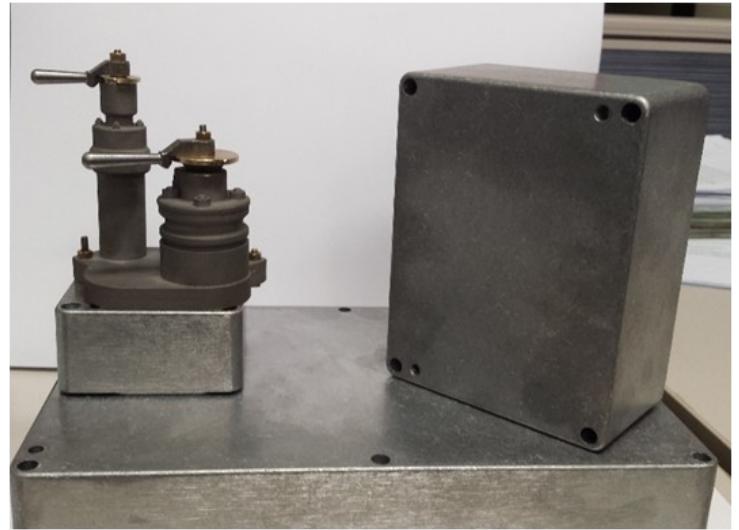
Photo 4

A Scale(ish) 8 Notch Controller David Lee

A few years ago it was suggested that I should make a scale controller for the GM diesel outline locomotives. After perusing the notion I accepted the challenge, things always seem simpler until actually embarking on the adventure, how hard could it be? Looking the various in-cab photos, it was obvious that there are a few versions ranging from the early models with the oval shaped regulator housing through to the modern dash mounted controls. I was able to obtain a cab layout drawing circa 1961, first used on GM22. Shhh, don't tell anyone it's not prototypical for GM9 or 13.

This version had a rectangular box for the regulator and reverser which made for a much easier build. I found aluminium enclosures (Jiffy boxes) of a few different sizes the perfect fit including a large one used as the base. The brake column and handles were drawn up in 3D and printed in stainless steel. Apart from a little cleaning up for the bores and skimming the base flat, it is a finished item. The handles were a similar situation with a little fettling and a square hole filed out for the control shafts to positively engage.

Next on the list was how to make the regulator which moves 80 degrees, rotate the potentiometer (rotary variable resistor) move 270 degrees. Once I calculated the ratio it was just a matter of finding the gears to replicate that same ratio. I also had to make something so the regulator had it's 8 notches. I turned up a piece of brass and spotted the 9 dimples, 10 degrees apart. The other half of



Setting the scene

the notching was to spring load a plunger. The first attempt was too hard to move through the notches so I flat-ted out the end of the plunger. The result now is nice and light, smoothly moving from one notch to the next. A



Skimming the base (the honeycomb is support material)





Above: The stand made by Ken Baker to mount the new rollers.

switch from Jaycar happens to be the perfect size for the reverser, although I still need to take the shine off the chrome.

A little modeller's license was used by placing a vacuum gauge where the speed display should be and placing a voltmeter in the so-called dash. Last thing was deciding the on a colour scheme. The original locomotives had a cream colour whilst the more modern units are basically black. The mint or apple colour was finally chosen which is the same colour I used inside the GMs. The controller proved fun to use on it's first outing at the December running day. □□□

Diary

- | | |
|---------------|--------------------------------------|
| 4 June | President's Breakfast & AGM |
| 11-13 June | Hot Pot Run Illawarra Live Steamers |
| 18 June | Public Running Day |
| 16 July | Public Running Day |
| 12-14 August | Track n Tent QSMEE |
| 20 August | Public Running Day & next Newsletter |
| 17 September | Public Running Day |
| 29-30 October | Small Gauge Festival SLSLS |

Editorial

As we move on through 2022 we are heading back to what may be considered normal still dealing with Covid, and now the flu, and having to take care of our own personal safety. I was very surprised a few weeks ago to be in a suburb some half an hour from mine to notice almost a complete lack of mask wearing, unlike my own! And then we have our March Deluge. I cannot ever remember the grounds being so absolutely saturated even accounting for the flooding event in the late 1980's. Our March running day was put off and precautions had to be taken to protect some areas of the lawn on our April running day.

Never the less we are being treated to seeing new work from some of our members. Ray's latest C32 class is now painted and lined and has been in service all decked out and looking magnificent. When the ground dries out more we will see Ross B's ploughing engine running at the grounds, something to look forward to.

With all this happening there is still plenty of maintenance to be done so there is plenty to be completed on any Saturday. Come along to give a hand with whatever you can, every little bit helps.

John Lyons - Editor

Duty Roster.

- June:** Mick Murray, Andrew Allison, Wayne Fletcher, Graeme Kirkby, John Noller, Ian Tomlinson, Glen Scott, Chris Denton, Warwick Reinhardt, David Chenery.
- July:** Evan Lister, Simon Collier, Garry Buttell, Scott Murray, Graham Tindale, Paul Brotchie, Mike Dumble, Deven Shirke, Craig Deacon, James Pritchard.
- August:** David Thomas, Bernard Courtenay, Greg Croudace, Stuart Larkin, Shaun Sorensen, David Lee, Geoff Hague, Martin Dewhurst, Ken Baker, David Coulshed.
- September:** John Hurst, John Lyons, Matthew Lee, Jim Mulholland, Martin Yule, Warwick Allison, Tony Kidson, Nigel Woolley, Bill Perrin, Eddie Jones.
- October:** Ross Bishop/Neal Bates, Tony Eyre, Jo-Anne Topp, Ray Lee, Peter Wagner, Paul Taffa, John Tulloch, John Simpson, David Judex.

Gate Roster and Track Superintendents: To be advised.



The John Fowler 16hp Single Cylinder Ploughing Engine of 1880 in 1/4 scale (3"=1ft)

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Web Page Address: <http://www.slsls.asn.au>

Public Running Day is the **THIRD** Saturday in each month from 1.30pm. Entry is \$5 adults, \$2.50 children. Rides are \$2.50 each.

To ride on the trains, enclosed footwear must be worn.