Sydney Live Steam Locomotive Society

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

'Newsletter'

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November 2022

John Simpson's very nice 'Lachlan' 3237 seen here after a visit to the weighbridge. This is a first attempt and very creditable it is too. This one is likely to attract LVR supporters! The club certainly has plenty of P class!

August Running Day.

Our last running day for the winter season started cool and cloudy and there were even a few drops of rain. This did not develop into anything and there was even some sunshine late in the afternoon. There was a good crowd, full trains and queues at all the stations.

On the elevated track Simon C ran his B1 Gazelle with two cars running very well all afternoon. We had a four car train with Brian K and his 45 class diesel outline loco running with Arthur H and his 35 4-6-0, a rebuild of the ex Ron Larkin locomotive. Later the C35 was replaced by David L's Commonwealth Railways GM. The cause of the retirement of the 35 was found to be a driving wheel shifting on its axle. Bernie C was guard on this train. Paul Taffa steamed his Hunslet hauling two cars. The station was attended to by Wayne F and John L.

On the inner GL Ross B hauled one train, the green set, The 0-6-2 Fowler ran well all the afternoon. The second train was the Pullman Set hauled by the Wolgan Valley Shay with Mick M at the regulator. As with the other train it ran well for the duration of the day. Guards alternated during the afternoon with, Paul B, Ian T and Peter D, Carol L was station Master.

Over on the outer the blue set had Craig D and his TGR

R class as train engine and Ken Baker with his 0-6-0 Simplex coupled in front. Jo-Anne was guard. They ran well and when Ken left the R class continued on by its self. The second train saw Ray L with C3803 running train engine with Warwick's C3609 in the lead. Guard was Tony E. David T relived Warwick on the C36 for a time. Late in the afternoon the C36 was retired to loco due to a broken radius rod. The outer station was looked after by Ian T and David T.

Neil Mac was down from Uralla with the 0-6-0 switcher for a hydro test and Terri gave assistance in the canteen with Liz and Joy. In the morning we had a visit from former member Maurie Haynes catching up with some of the older members. Ticket seller was Peter W and the gate with its electronic ticketing was covered by John S with some assistance from Mike D early in the afternoon. Track superintendent was Neal B and the signal box was operated by Martin D and James P. Late in the afternoon we had Garry B, Graeme K and Gai call in on their way home from the Track n Tent in Qld. There were about 750 people through the gate and about 1793 rides, a good afternoon.

Above: Mick & the Shay head downhill on the August running day. Below: 3609 + 3506 load in the outer platform while Ken and Simplex + Craig and the R pass on the outer main.
Bottom: Ross and Toneya cross the Hawkesbury bridge while behind David and the GM + Brian and the 45 class and Bernie as guard head uphill on the elevated.

September Running Day

While it was suppose to be a partly cloudy and dry day we did have some rain. It did fortunately dry up with some rain again late but otherwise it was a good day for running.

Setting up saw Arthur cleaning the track with some petrol soaked timber which was very effective. He also got all the

Simon and the B1 head out of the station area on the August running day.

carriages out and Dennis O'B cleaned all the cars down ready for our passengers. David T and Graeme K axle weighed their 620 class and 2401 respectively and John S and Warwick A drilled the last of the holes in the channel pieces for the anti tip rail fittings. At the end of the day John L moved the rolled tip rails to the channel girders ready for welding in the following weeks. Mike D was back at the grounds after some joint replacement and returned the destination board that he had been repainting. Martin D had done some signal maintenance during the week so all went well for the afternoon except for a minor issue with #44 points towards the end of the day.

On the elevated track we had a triple header of Martin Evans designed locomotives. In the lead we had David C having his first revenue run with 2-8-0 Nigel Gresley. Train engine was Garry B with his B1 Impala and in between the two we saw Simon with his 4-6-0 Gazelle, John H was guard for this four car train. Our second 4 car train was hauled by Brian K with his diesel outline 45 class with Ken B and his Simplex running in front. Bernie C. was guard. Bernie had his Blowfly in loco but it was not steamed and packed away early. Paul T ran his Hunslet with two cars and Arthur H ran the C35 to check out its reliability, eventually running with one car. Wayne F and John L were on the station with John also doing some guard duty.

On the ground level inner main Scott M was at the regulator of the three truck Shay and Mick M was on guard duty this with the green set. When the Shay headed off to loco for an early departure the train was taken over by Neal with 422 (after previously running on the inner) and Graeme's 2401. The Second train was under the control of the 0-6-2 Fowler "Toneya" belonging to Ross B. During most of the afternoon a friend of Ross was driving.

Above: David and Nigel Gresley leads Simon and the B1 'Gazelle', and then Garry with his B1 'Impala' heading up the revamped elevated straight. Left: Also in September, Paul and Hunslet

Peter D and Chris D were attending to the station.

On the outer we saw C3609 with Warwick A leading C3803, Ray L on the Central West car set and Tony E as guard. The 36 was retired to loco again early this time with a slipped return crank leaving Ray and the C38 to carry on alone. The second train had Craig D, TGR R class, running train engine with David T and his SAR 620 class having its first run in revenue service and Neil Mac and the 0-6-0 switcher leading the way. They ran well into the afternoon. Neil detached for an early departure then the 620 class had a safety valve issue seeing it blow-

Editorial

We have come to the end of another year of our operations. Despite the problems of the last two years caused by Covid-19 and the wet weather (record rain fall) we have still been able to continue to make some progress. We have seen some new locomotive completed, some old locomotives change hands and return to the Society and new members with new locomotives. Our running days are returning to something like normal and we are continuing to be able to keep our grounds maintained. The one thing that we must be aware of is that we need as much help as possible on our public running days where we have often been stretched to our limit. We need the attendance of as many of our members as possible.

On behalf of the Society could I wish all members and friends very best wishes for the Christmas season and the New Year of 2023.

John Lyons - Fill in Editor

Above: Neal and the switcher leads David and 628 and then Craig and the R in September. Below: Also September, Neal and his 422 leads Graeme and 2401 on the inner. To the left Ray and the 38 is heading off downhill on the outer.

October Running Day.

Weather wise this was the best day we have enjoyed for some time, fine, sunny but not too hot, just right! Before running started there was the usual setting up. Once again Dennis O'B cleaned all the seating surfaces of the passenger cars. Neal B and Warwick A assembled more of the components for the home signal, it is getting closer to being complete again. In the previous week John S had put more coats of paint onto the wooden post for the replacement of the rotted starter signal, #7. John Lyas visited from SASMEE and Railway Park and he even helped out on the elevated station during the afternoon. Warwick R had his Buffalo for a steam test in preparation for the Small Gauge Weekend and David T had his SAR S class for a test as well but a leaking regulator unfortunately ended that plan. Brian K was supervising these tests. Wayne Fletcher showed off the laser cut frames for Dolphur, they are very long! And Warwick R showed off a Stuart Vertical Double Cylinder Engine he is building.

Running on the elevated we had Garry with B1 Impala train engine with the 2-8-0 Nigel Gresley driven by David C on a four car set of cars. A second four car set was hauled by Brian K with his 45 class diesel outline battery loco led by Bernie C and his 0-4-0 Blowfly. The third train was a two car one with 0-4-0 Hunslet driven by Paul T. Station staff and guards were David T, Jo-Anne, Wayne F and visitor John Lyas.

ing off at a low pressure, returning to loco. The R class was able to continue on with Jo-Anne as guard. Ian T was on station duty.

David L was track super and in the signal box we had Martin D, David J, Michael W and Warwick while Martin was checking out some of the system.

In the kiosk we had the services of Liz, Joy and Terri while down at the gate John S was checking in all the on line booked visitors.

It was a good afternoon with lots of happy visitors going home at the end of the day.

Right: Neal places the pinnacle on the new signal post. Those bits are BIG closeup. Below: It's October running day and the Mountain and John have a light load up-

The 45 class had various drivers.

On the inner main the Hurst 4-8-2 mountain was on one train with, to start, Arthur H was driving with John H on the guards van. These positions were later reversed. The sound of this loco lifting its load around the turns from the bottom of the grounds is always worth listening to! The second train was hauled by Craig D and the TGR R class 4-6-2 with Ken B and his 0-6-0 simplex tank engine running well all afternoon with Peter D acting as guard. Chris D was on station duty. The outer main saw one train hauled by the Wolgan Valley Shay driven by Scott M. The locomotive ran

Left: Scott and the Shay wait for the road while Arthur and the Mountain head up the inner on the October day, while below, Bernie and the Blowfly leads Wayne on Brian's 45 class.

well all afternoon. The second train had Graeme K and 2401 4-6-2 as train engine and initially Ray L and his black C32 class. When Ray had to leave early the P class was replaced by C3609 with Warwick A driving. The 36 later suffered a LH return crank failure and retired to loco. Graeme and the 24 carried on taking a reduced load till eventually Neal B coupled up his 422 diesel outline loco running till the end of the day. Those helping on the outer were Tony E, Paul B, Neal B, Jim M and David J.
John T had the J class 2-8-0 in loco and while it was eventually in steam it did not venture out on to the tracks.

Martin replacing a globe in October.

Ihe signal box was staffed by Martin D, James P and David J. John S has mastered the online ticket checking and was down on gate duty. Ticket selling was looked after by Peter W. Liz and Joy attended to the canteen. In all it was a good afternoon but more members to assist would have made things easier for everyone.

Equipment.

Early in the year we were given a 3 in 1 Sheet Metal Machine it will bend, roll and cut light gauge sheet metal. One spindle controls each operation in turn. Ken B made a very sturdy stand for it and it is sitting at the wall at the northern end of the workshop.

Works.

Elevated track replacement. Work has continued preparing the components for the next stage of this project. The piers have been ready for some time and stored at the top end of the ground. The channel sections after being bored for the cross holes were rolled early in September, assembled then drilled for the anti-tip rail fittings. The tip rails were welded over three Saturday mornings with Chris D, John L and Scott M working together. It was good to get this completed as the team had to deal with some very changeable weather conditions. When these were completed they were relocated for storage by rail to the bottom end of the ground stored on each side of the foot bridge. Some of the old any tip rails have been re-cycled to make new channel spacers and anti-tip rail spaces to be used as the replacement work continues.

Scott and Mick Murray have been working on some twentieth century engineering improving the CCTV system for keeping a good record of out running on our public running days. We are able to see what is happening on our tracks and keep records of any incidents that may need to be kept. The Wi-Fi coverage for the grounds has been greatly upgraded to make the use of our online ticketing far more efficient.

Ground level track upgradlng is a continual process. In recent times seeing the top and bottom curves receiving treatment. At the top some of the very early track has been re-sleepered and cut into shorter lengths for easier handling. Sleepers have been replaced with stainless steel for longer service life. Members involved have included Paul B, Ken B, Scott M, Craig D and others.

A group of happy supervisors as Bernie's 3½ inch gauge 36 class boiler has a successful hydrostatic test on 8 October.

Left: David L, Neal, David J, Chris and John survey the completion of an awkward relocation of the new elevated channels.
Right: The old signal post removed and the new one erected using John's tractor, Chris , John and Simon one damp Wednesday.
Below Left: John welding , Mike painting, Jim installing side panels and supervisors Garry and Simon during the installation of additional weights to the 5ft cars. It was performed under cover of the elevated station to avoid the rain!

Small Gauge Festival 2022!

With perfect weather predicted after long periods of rain it all seemed too good to be true! A big effort on the Friday 28 October, with Garry, John H, Robert W, David T and John S, Wendy and Warwick A, and the grounds were made pristine for our visitors.

On Saturday 29, and Sunday 30 we welcomed visitors from Brisbane, Melbourne, Canberra, and Newcastle as well as more local Sydney region clubs. Simon opened up early each day at 7.30, only just beating the first arrivers. The Saturday had 12 locos attending while on Sunday we had 10, our best ever attendance. At one stage there were 8 engines on the track. Most were 3½ inch gauge but there were two 2½ inch gauge-Warwick's Ayesha and Zac's Electric Parcel Van. In the kiosk preparing our morning and afternoon teas and lunch we had Jo, Wendy, Mandy, Hana and Sue who were very much appreciated. BBQing by Jo, Neal and Ian T was gourmet class!

Garry had his Gauge 1 layout which ran various locos during the two days both steam and electric and Neal had his HO scale layout on a trailer. There was some excitement on Sunday morning when dry leaf litter in a neighbours property caught fire and the Brigade was called, but we were soon back to running! I think the pictures tell the story of the happy attendees.

The home signal post has been replaced for the elevated track with all the components fastened back in position. The new steel post had all the brackets tacked by Warwick A and fully welded by Martin Y who also looked after arranging for the post to be galvanised and then returned to the grounds. John S looked after the painting once it was ready. By the Small Gauge Weekend the work of assembling and the electrical connection was finished.

Warwick dismantling the old steel post fittings.

More Small Gauge Festival Photos

Above: The display along the cupboards in the clubhouse.
Mark O Callaghan's (CSMEE) Bolton Atlantic in German dress.
Left: Geoff Wilhelm (HME) drives Warwick's B2 with a big smile!
Below left: Simon's 2½inch gauge 2-6-2 receiving a new boiler.
Lower left: David Thomas showing David Heah (SASMEE) the ropes for his acquisition of the S class.
Below: part of the steaming bay scene.

Small Gauge Festival 2022
Photos on Pages 8 & 9.

1. **Max Gay (ILS) and his 38 class.**
2. **Phil and Lisa Woolley (LMLSLS) and their 'Doris' .**
3. **Ben Gardner (QSMEE) on Steve Malone's (QSMEE) Virginia.**
4. **Zac Lee and Sam Cilia's (WDLS) 2-4-4.**
5. **Harry Ball (SLSV) and Juliet.**
6. **Ray Lee and yet another P class.**
7. **Part of the clubhouse display with some of Dennis O 'Brien's O gauge collection.**
8. **Nigel Woolley brought along the whole family.**
9. **Graeme Kirkby with an ancient O gauge Marklin live steamer.**
10. **Harry Ball (SLSV) and Juliet.**
11. **Graeme Kirkby driving Warwick Allison's Britannia.**
12. **Neal Bate's trailer mounted HO layout with Garry Buttel's Gauge 1 behind.**
13. **Simon and Harry admire Ayesha.**
14. **Simon at speed with Ayesha.**
15. **David Lee and Zacs 2.5" gauge parcel van.**
16. **Mike Dumble and the 4F.**
17. **Wendy Allison distributing ice blocks to attendees.**
18. **Warwick Reinhardt discussing Buffalo with Steve Morris (LMLSLS).**
19. **Robert Webbr's gauge 1 collection on display.**
20. **Our refreshment crew. Mandy, Hana, Jo, Wendy and Sue.**

Small Gaug

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ge Festival

Don't look a gift horse in the mouth – it may bite you.

Chris Denton

A little while ago a club member, lets call him Mr D, offered me ownership of a bandsaw similar to the unit at the Clubhouse workshop. I could barely contain my delight as I could foresee good use for such a machine. And the price was right – free!

I was on Mr D's doorstep within hours and my enthusiasm had increased to the point that phrases such as "…blade alignment issues…", "… some parts may be missing.." and maybe even "…cracked lug…" seemed irrelevant, as was the effort getting my treasure into the back of the Forester. Reality started to cut in when I had to get the machine out of the Forester unassisted. For the first time I realised Charlie, as he had been named, was both an awkward and heavy lift for one person. Less flattering adjectives would be applied later.

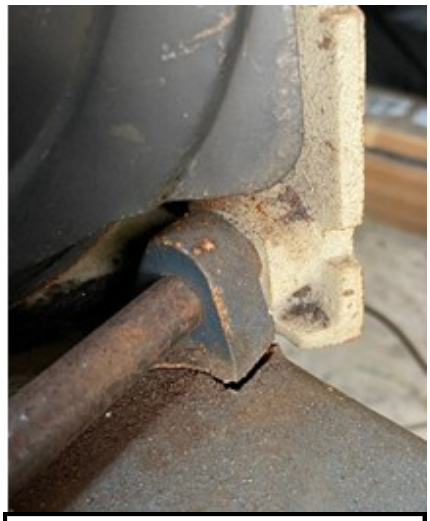


Photo 1 - Cracked lug

Charlie had been somewhat molested but a quick survey established most of him was present, but there were exceptions such as the motor mounting plate and axle, drive belt, feed stop, drive cover, etc. Nothing that could not be purchased or fabricated, if required. A plea to Mr D to keep an eye open for various bits and pieces when he was pottering around his workshop produced results – most parts did eventually emerge. Many thanks Mr D.

So it was just a matter of putting it all together, right?

The electric motor worked OK so it was installed and the power lead re-installed – getting those rubber grommets into place was a real trial but perseverance paid off. Things were going too well.

I had noted the arm was somewhat wobbly when raised, but hey, it was made in China. Closer examination revealed a mounting lug on the cast iron baseplate was holding on more by good luck than by design – it was obvious when raised but not so in its horizontal position (see Photo 1) - Hmmmm.

At this point I realised all that time watching crazies on U-tube doing dodgy things would pay off. A quick search of "How to braze cast iron" convinced me that was the way to go. After all I had an old flux-coated brazing rod laying around somewhere and some dried-up silver soldering flux – its all the same stuff, isn't it? U-tube told me heat was the critical factor and my Oxy-LPG had not been earning its keep for a while so it was time to fire it up.

A bit of subtle encouragement from a dumpy hammer removed the pivot axle and the mounting lug completely – darn. Unfortunate but not totally unexpected. Everything was removed from the baseplate so the brazing could begin. Did I mention how awkward single-handed removal of the arm is?

A summary of the lessons learnt would go something like:

- Not all fluxes are made equal,
- Have more than one brazing rod available.
- The crafty Chinese can cast very thin sections next to very thick sections.
- It is possible (easy) to melt cast iron with Oxy/LPG.
- Trying to turn a 75% OK job (see Photo 2) into a 100% good job will always end in tears.

Bottom line is that while the repair looked pretty good at one stage it looked decidedly less good after I tried to improve it. A separate bracket was thus required – I consoled myself with the fact that a bracket was probably always going to be required.

I had some spare 10mm MS strip laying about that was cut up and welded/drilled/ground into an appropriate shape. I remember thinking it would be nice if I had a bandsaw to cut the strip rather than the temperamental Aldi cut-off saw. Anyhow, give a vaguely competent person enough welding rods, an angle grinder and a can of spray paint and something presentable is possible.

Photo 2 - 75% OK job – thankfully no photos post the subsequent "improvement" attempt exist .

Photo 3 – bracket installed.

With the new bracket installed (see Photo 3) it was time to reassemble all the bits and pieces (again) – it gets much easier the more times you do it. Surprisingly, things progressed pretty well until I decided to have a look inside what I thought was a grease filled gearbox. It was oil

filled. Well, it used to be oil filled. It had decidedly less oil in it when I cracked the cover and the contents ran over the motor on its way to the garage floor. Do I recall a saying along the lines of "If its not broke, don't fix it"?

With a new blade in hand it was time to give it a go. Actually I had two blades at one point. Due to some confusion re the model numbers (not entirely my fault) I purchased the wrong blade first time around. Going to Hare and Forbes a couple of times in one day is not that hard to take.

The first couple of attempts to commission Charlie brought back to mind the "…blade alignment issue..." utterances I vaguely recalled from when I took possession. The noise of a rampant blade cutting through the back cover then jumping out of the guide rollers still haunts me. Eventually the blade stayed in place long enough to tempt me to give it a real-life test. The original feed stop had not emerged for Mr D's workshop so I decided to make one from some chunky 50x25x6 MS channel (Photo 4). Not a bad test I thought. Charlie finally did get to slice off a piece of channel especially after I realised I had not tensioned up the drive belt and that addressed the slipping issue. Can't say it was the squarest cut I have seen but it did get through and is early days yet. Plenty of time for fine-tuning.

The last job was to make an angle frame with wheels so I can move it about the workshop. Down to Bunnings with the cutting list of 2x 720mm and 2x 300mm pieces of angle. Of course it only came in 2000mm lengths so the decision was make do with short sides/ends or purchase two lengths. Silly question – I reckon the short sides/ends give it character although the extra mucking around making up the deficits made it a false economy overall.

The end result (Photo 5) is my very own mobile bandsaw albeit a bit cobbled up and with a cutting capability ripe for improvement … but plenty of character. I call it a success.

P.S. Not content with my efforts so far I decided to install a latch to hold the frame up in the vertical position and a cunning scroll attachment (idea borrowed from a modelling magazine) that allows me to lower the frame to any height above the work to make measuring the cut easier. I even used Charlie to cut the material!!!

Now to figure the easiest way to get oil back into the gearbox.

Photo 6 – latch and scroll – yes, I should have at least primed it.

Photo 5 – Charlie in all his glory.

Photo 4 – new feed stop installed – note result of oil spill in background.

Diary

3 December	West Ryde Neighbourhood Centre (Christmas lunch run) then SLSLS Christmas Party (evening).
17 December	Public Running Day
31 December	New Years Eve Run (Saturday)
21 January	Public Running Day
18 February	Public Running Day & next Newsletter
18 March	Public Running Day
6-10 April	Easter Convention, Tullamarine LSS.

Bottom curve signals and crossing

By David Lee

The initial idea for the project started around 2002 with Mark Gibbons and myself. Initially it was simply to protect the crossing on the inner and after a near miss on the bottom curve the project expanded to automate some signalling for the track out of sight of the signalbox, (see That Dreaded Crossing published August 200 3 newsletter). An initial trial with proximity switches involved removing a track-panel to mount a doubling plate on the outside of one rail and drilling through the rail head to mount the sensors.

Ways of finding an alternate way of sensing the train resulted in the present design which utilises the locomotive or carriage wheel to make contact from one rail to the insulated track blocks on the other side. This can be installed without removing the panel, a little drilling and cutting out a section of rail. The gap is filled with the insulated pieces of stainless steel rail blocks and bolted through with matching fishplates. This was trialled around 2015 on the track just before the Hawkesbury bridge and proved to be effective.

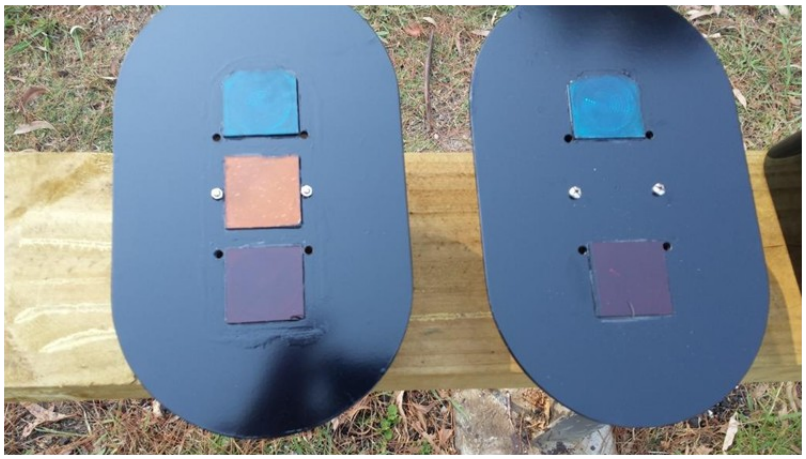
The control box and associated electronics were donated by Culter-Hammer now Eaton Electrics. This was mounted on the Hawksbury bridge and mains wired by Henry Spencer, I'm guessing around 2005, but don't quote me. Discussions with drivers and signal staff on where to place the signals was undertaken so we could calculate where the cables would have to pass and more importantly how many cables would be required.

Turning the first sod, digging the trench, started in 2018 with Peter Wagner and myself behind the clubhouse heading to the bridge. The first 60m of trench was dug mostly by hand, only 25 odd metres were dug with a trenching machine, the bit through party area between the inner and outer tracks. Conduit was laid and the first couple of cables were pulled through by 4 or 5 members using a heavy branch tied to the pull rope. This took a little more effort than originally anticipated but perseverance with perspiration prevailed. There was a further 40 or so metres of trench dug for various smaller conduit including the crossing and a cable up towards the outer station, No. 48 signal.

In 2020 the next round of trenching commenced and the system now had to include power for the CCTV cameras after successfully powering the camera behind the new toilet block, this was before the toilet block was an idea. A further 120m of trench was dug and a bit over half by machine this time. This involved the track gang removing two panels of the inner main to allow the trenching machine easy access. This day or two of digging runs across the grounds from the Hawkesbury Bridge to the mound behind the inner carriage shed and from the pedestrian bridge at the south of the grounds up to the north end of

Above: Tunnelling under the inner main .
Below: The track gang reinstating the Inner main

Right: A small snippet of the conduit laid.



The backs of the signal faces whilst Bernie was repainting them.

the inner carriage shed, No. 1 signal. Cables were pulled through shorter sections of conduit than before and all was covered back over and the track panels restored to their original place.

Over the last decade trialling signal head inners had begun. This went from ideas of multiple little LEDs to just a few LEDs and a single LED design. Some used a diffuser behind the existing lens and some without. Each idea that proved acceptable in my backyard was bought down and clipped to No. 46 signal for comparison and assessment. The signal head design and manufacture was passed to Mick Murray and the first signal was erected before and officially trialled on the August 2022 running day. Next on the list is making up 4 more signal heads. Thankfully most of the work had been done, many spare backs and hoods have been cut and shaped. Welding all the parts together is the next process to be undertaken.

Integration between the existing ground level signals and the automatic signals is a two step process. Getting a wire from the existing signals so the preceding automatic signal shows CAUTION or CLEAR before the next signal is fairly straightforward. However, changing the three ground level signals will be far more difficult. Another coloured glass and lamp base needs to be fitted plus additional wiring from the already packed junction boxes.

I would like to thank everyone that has lent a hand, dug a trench or hole, yanked on a cable or just gave input to this project. It's not finished yet, but it's close. Famous last words?? Hopefully by the time you read this either the remaining inner signals will be in place or the duplication on the outer has begun.

Some fun facts, more or less:

- Over 220m trenches
- Over 320m conduit
- Over 500m multi core cable

Toneya approaching AI98

Bruce's Bits

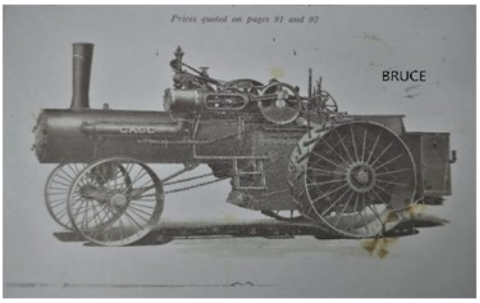
Part 5b – Bruce's Boiler Bits

The Smokebox — Chris Denton

To be consistent with my habit of avoiding doing the more difficult things, I decided to proceed with the smokebox.

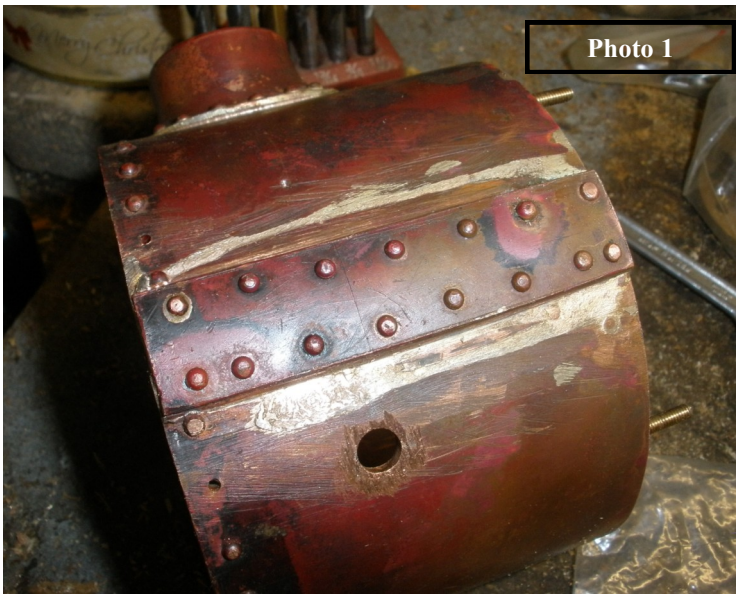
The smokebox was formed from the front section of the barrel which was hack-sawed off. It was not my intention to lag the smokebox so the problem with the oversize backplate seam had to be overcome. My solution was to rotate the seam to the horizontal mid-line of the boiler and remove half the width of the backplate. This was possible as the smokebox was not now a pressurised component. Removal of the two strips either side of the seam was not only tedious it reminded me of the effort that went into sizing and driving all the rivets and silver soldering it into place, All that wasted time, effort and cost nearly brought tears to my eyes and curses to my lips. However the result was an acceptable looking riveted seam as per the original. See Photo 1.

The funnel was next and I sourced a piece of copper pipe the right diameter. The full size version had a slight taper in the funnel. I tried unsuccessfully to expand the pipe into a taper but gave up. The funnel will be removable so I can play around with it later … sure. The bottom of the funnel was fitted with a sleeve to fit the transition piece to the smokebox and the top with a ring because it looked a bit bare without any embellishment. See Photo 2.



After drilling a hole for the funnel in the smokebox, a scrap piece of copper plate was beaten into shape for the transition piece between the funnel and smokebox. It was fitted with plenty of blind rivets for looks and was silver soldered to the body of the smokebox.

The smokebox front was next to come under scrutiny. I or-



dered 50mm x 6mm x 303mm copper strap some time ago for a job which has since been erased from my memory. I cut a strip from this, annealed it, rolled it into a ring and silver soldered the ends together. I then machined a recess to take the end cover and a Silicon ”O” ring seal and silver soldered the ring into the smokebox barrel.

The end cover was beaten from copper sheet and the edge reinforced with a formed copper strip. The end cover was fitted with hinges and screw-down locks as per the original, but I used four locks instead of the two on the original to make it twice as good! The front was fitted with a brass carved Case “eagle” emblem for a bit of brand identity.

The end of the smokebox where it attaches to the barrel was drilled and fitted with dummy rivets except in 6 places. The holes at these locations were left empty to allow fitment of 10BA round head screws to affix the smokebox to the barrel. The joint would be sealed with soft solder. The nearing-completion smokebox is shown in Photo 3.

All seemed to be progressing well which, in my experience, means you have not identified your mistake(s), yet, or a disaster is around the corner. It was probably both but the latter was the more spectacular.

I had to fit connections for the exhaust and blast tube. I machined a neat removable connection for the blast tube that included a threaded spigot and retaining nut on the inside. I used a similar construction for the exhaust – no problems. I drilled holes for the blast tube and exhaust connections. They both fitted without incident – still no problems. See Photo 4.

Just to be a bit fancy, I decided to machine a small flat on the smokebox at the exhaust connection so I had flush meeting faces.

The smokebox was still in the vice after drilling the exhaust connection hole so I slipped an end mill into the chuck and lowered it down, carefully I thought, to give the smokebox just a tickle. Tragically, the end mill dug into the copper (I hate machining copper). With a firm grip thus established, the mill had no trouble launching the whole smokebox assembly across the workshop. Inspection of the assembly, when retrieved, established a section of the smokebox was now not circular and there were some serious gouge marks.

If my neighbours were in earshot, I apologise for the expletives emerging from my shed, but I had good cause.

Mercifully annealed copper responds well to the attention of a


Photo 6

large hammer and as it was my intention to paint the smokebox, I could use the old panelbeaters' trick of filling the gouges with solder. I retain my claim to be very adept at fixing up mistakes. The repair is shown in Photo 5 does not look too flash but will be improved later. The ready-to-attach firebox is shown in Photo 6.

Learning from this episode – if you want to maintain good relations with the neighbours, sound insulate your shed.

Part 6a – Bruce's Boiler Bits – The Whistle

What would a traction engine be without a whistle? Seriously lacking comes to mind. So a whistle was required.

The specification for the whistle went something like:

- Small(ish) – sort of to scale.
- Full circumferential gap type (for no particular reason).
- Valve integral with whistle.
- Made from brass.

From my previous experience making a whistle for my Industrial Plant I realised I was not going to get a deep sonorous tone but as long as it sounded better than steam escaping from a hole I would be satisfied. I considered going back to Google school to refresh my vague understanding of the theory behind how a whistle works. However my previous foray did not enlighten me much. I vaguely recalled something about gas at high velocity passing through an orifice, past an external opening. This raised the pressure under the bell and forcing the steam out through the external opening. This then reduced the pressure under the bell and restarted the steam flow again. This cycle repeated itself at a frequency that created the desired (or undesired) tone. Well that's what I remember. I was sure a more thorough analysis would involve lots of convoluted maths which did not interest me and probably give results that would not scale properly – it was time to wing it (again).

The design was for a bell suspended on a threaded post so the gap could be adjusted by screwing the bell up and down the post. The post was part of a circular insert silver soldered into the valve body to give a fine annulus for the steam to feed up into the bell. The steam was controlled by a ball valve connection operated by a push rod. I reasoned a ball valve should be easier to make and more reliable. On the Industrial Plant I initially used a poppet valve but it had a minor, intermittent steam leak. Not content to leave well enough alone I replaced the poppet valve with a ball valve. That resulted in a less minor and persistent steam leak! I figured that was just a bit of bad luck and this one would be different.

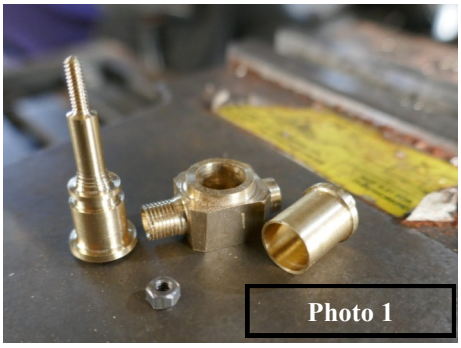


Photo 1

Overall dimensions were determined by the stock I had at hand and that resulted in a fairly small unit with the gap adjustable from 0-1mm approx. Plenty I thought. The components are shown in Photo 1.

The whistle was dually assembled and with keen anticipation, a test with compressed air (no steam available) was undertaken. To say the result was underwhelming would be an understatement. The hiss of liberated compressed air filled the shed - no identifiable whistle could be coaxed from the unit. The hiss was replaced with mutterings and bad thoughts. After much "fine tuning" it became apparent that more than a 1mm gap was required. At this point I recalled I had previously cut off a "surplus" length of the post which would have given me sufficient adjustment to give the necessary gap. More mutterings. Eventually I had to cut off the post completely and install a new longer post. The assembled modified unit is shown in Photo 2. After more fine tuning I did manage to get a bit of a squeal out of the unit rather than a hiss. Good enough for now I thought – more work would have to be done to improve the whistle's performance but that could wait for another day. Besides, I had other things to get on with get on with.


Photo 2

Lesson learnt – it is unwise to chop off your post even if its longer that you think it needs to be.

Duty Roster.

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

Gate Roster and Track Superintendents: To be advised.

Above: Emma and Garry enjoy a recently revamped 3½ inch gauge 36 class during the Small Gauge Festival.
Below: Arthur and the 4-8-2 on a heavy load on the inner main on our October running day.
Bottom: David Judex at speed on Britannia during the Small Gauge Festival.

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Web Page Address: ***https://www.slsls.asn.au***
Public Running Day is the **THIRD** Saturday in each month from 1.30pm. Entry is $6 adults, $3 children. Rides are $2.50 each.
To ride on the trains, enclosed footwear must be worn.