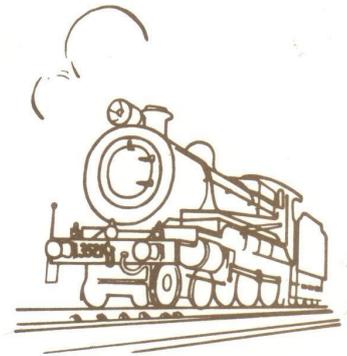


# Sydney Live Steam Locomotive Society

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

## 'Newsletter'

Volume 38. No. 4.  
November 2010



Steve Miller took this study of David Thomas talking to Garry Buttel with Impala on a test drive on 30 October.

### August Running Day.

This was our last winter running day for the season and while it was a sunny day the westerly wind was very cool and chilling. It was very fortunate though that we did not have the same very strong wind that we had experienced early in the week. Before lunch Mark Gibbons had completed remedial work on 19 points and Martin Yule did some fit up work for the ticket office table. Martin also brought along the first of the plates that will make up the brackets for the elevated station roof. These have been laser cut with an SLS shield incorporated into them. Bernie was on the gate with some help from Alan Mackellar. They were busy at the start with the initial queue extending to Anthony Road. We ran three trains on the elevated track. Jim Leishman had the Ps4, 4-6-2 out

for a run and hauled three cars for the afternoon. Jim Mulholland started out as guard but spent a good time at the regulator during the run. Paul Taffa coupled the 0-4-0 Hunslet to two cars and ran well all afternoon. The four car blue set was hauled by my Z1915, 0-6-0, with John Hurst 2-8-0 "Nigel Gresley" as train engine. We had a good solid afternoon's running with many full loads. We found that a steady run up the grade could have us arriving at the signal box as the Ps4 and its train were passing the outer ground level station allowing our train to go straight into the station. This was the first running day since the beams had been adjusted at the bottom of the grade. The beams on seven posts had been jacked up to remove the dipper effect that had developed there over the years. Some were lifted about 25mm or so. John H. reported that control of the train was easier as it did not tend get away just before heading into the curve at the



**David Thomas on V1224 takes a heavy load uphill on the inner main on the August running day.**

southern end of the ground. We also had an easier time maintaining a steady speed near the signal box as the hollow just past the Griffith Tea sign had been removed as well. Jim L. also felt that the ride was much improved.

On the inner main we saw two of our regular locomotives. Warwick had arrived early for a steam test, V1224 had its hydro test and a tone up since the last running day. David Thomas supervised the steam test and issued the new certificate. Work had included the fitting of new stainless steel superheaters and a new regulator, Warwick was happy with the work as he said at the end of the day that the locomotive steamed much better. The second inner locomotive was 2-6-2 "Mountaineer" driven by Barry Tulloch with Martin Yule sharing the driving. David Thomas had spent some time driving V1224 during the afternoon.

The outer main trains were hauled by some interesting combinations of locomotives. We had Craig Hill from Yarramundi with D5905 double heading with John Tulloch and 2-8-0 J class. D5905 was the train engine. The second train had Henry's TGR R class 4-6-2 as train en-

gine with Lionel's 2-8-0 in the lead. Arthur Hurst and Max Gay shared the driving of the 2-8-0 while Henry and Mark Gibbons looked after the R class.

Ray Lee was not driving today but he had his VR A2 4-6-0 on display in the ground level locomotive depot, the boiler is in place, the cab and running boards complete. It will not be long till it is ready to go. David Thomas showed us the motion brackets for his SA 620 class.

At the grounds today was a photographer from the Northern District Times to get some snaps to go with an article they are preparing for a feature supplement on the Society. With plenty of party groups the ladies had a busy time in the canteen. Our rides total for the day was 2978, a couple of hundred above the August average.

### **Members Run and BBQ.**

Despite the weather situation this turned out to be a successful day. The weather bureau described the weather for Victoria as "a significant weather event" and our conditions were governed by the northern edge of that system. For those of us that were at the grounds early we were treated to the sound of full size C3642 heading north on a trip with Matt Lee on the footplate. There was a good whistle as they ran through West Ryde station and another for Arthur H's benefit as it steamed through Denistone station. With the wind in the right direction we heard the attack on the grades through Eastwood and Epping, a good start to our day. I ran the Z19 with a couple of goods



**Jim Mulholland drives Jim Leishman's Ps4 on the elevated while John Tulloch and 2904 double heads with Craig Hill & 5905 drifting downhill on the outer main.**



**Arthur drives Lionel's 2-8-0 leading Max on Henry's TGR R class starting up the grade on the outer main.**

Margo W. for her part in the preparation of the food and the cleaning up afterwards.

We had nearly 30 people at the grounds that enjoyed the day despite the uncertain weather.

### **September Running Day.**

Our first spring running day turned out to be much different to what was expected. We had considered that the patronage may have been greater due to the extensive write up we were given in a recent copy of the Northern District Times. We have had larger crowds so the day was not as busy as it could have been.

There were a good number of party groups with the bottom end of the grounds being very popular. Some groups set up early, one had an order in for 100 tickets as soon as Peter Wagner was ready to open the ticket office, a good start for the day. Weather wise we were lucky, it was a nice sunny day with not much cloud and the wind was nowhere near as gusty as forecast. Martin was on the gate and was very busy for the first half an hour. Much later on there were small queues at times.

We were without some of our regular locomotives but overall we were not left short. On the elevated we ran three trains. I coupled up the Z19 in front of Brian Carter "Perseverance" 0-4-0 and five cars. David Thomas ran his B10, 2-6-0 as attached banker. We ran well all afternoon, our last load at about 4.50pm. The second long train saw John Tulloch with the 2-8-0 J class as train engine and Garry Buttell and 4-6-0 B1 "Impala" out in front. Garry was running till about 3.00pm. and just before that time John had the J come off on the swing girder at the end of the siding. They completed the lap rather slowly, Garry returned to loco and John kept the train in the siding assessing the damage to the brake gear.

Paul Taffa ran a two car train with his Hunslet and was the last train to leave the track. Most of us would well remember the early days of RTM and ARHS tours when we would have the train stop and all get out for a photo stop. We had a reminder of that on our lap following the problem with the J class. We stopped our train at the bottom of the grade to allow Gary and John's train to get a good distance ahead of us on the way up the hill. Fortunately I turned back to see a lady on the first car hop off with camera in hand to take a photo of her darling child still sitting on the carriage. She was standing on the outer main with a train about to run into the curve after dropping down the grade. With much shouting she got the message and got back on the



**1915 & John Lyons leads Brian Carter and Perserverance around the lower elevated curve on the September running day.**



**Ray Lee & 3803 on the inner main on the September running day.**

car. Arthur, driving the leading locomotive, gave us a bewildered look and as guard Henry passed he made some comment about keeping our passengers on our train! I think we may have a language problem with some of our visitors. Intending member Graham Tindale had his 3½” gauge “Maisie” on show in the elevated loco depot. On the inner ground level we had a slight variation with Barry Tulloch and Ray Lee running the two trains. Ray Lee was back on driving duties with C3803 on one train and Barry in charge of the second train with 2-6-2 “Mountaineer”. As Martin was on gate duty Barry spent most of the afternoon at the regulator. There was an oil leak which was traced to a loose union on the front left side of the locomotive. This union nut was tightened and the leak stopped. When Martin finished as gate keeper he took over from Barry and saw out the afternoon. Ray took C3803 off about 3.00pm. and Warwick finished the afternoon with V1224 hauling that train. The V had a minor brake problem on its tender but it was fixed by isolating one of the cylinders. On the outer main we had Newcastle visitor, Adam Kincade with his 44201 diesel outline locomotive. Adam was supported by Peter Shiels who rode as guard on that train. Peter brought a slab of that fruit cake for morning tea which was very much appreciated, thanks Peter. Early in the afternoon Jim and Dom Mulholland attached C3901 4-8-2 to the rear of the train as banker and rendered welcome assistance. Warwick mentioned in his report about express locomotives being used for such duties. In full size we have seen C36 and D59 locomotives used as bankers and in the UK they used 9F’s as bank engines on Lickey incline, why not something like that on our railway. The second train on

the outer track saw Lionel’s 2-8-2 running ahead of Henry’s TGR R class, 4-6-2. Arthur and Lionel shared the driving of the 2-8-2 while driving the R class and guard duty was shared by Henry and Mark Gibbons. In the ground level locomotive depot Greg Croudace had his C38 class chassis on show. Greg is putting a great deal of detail on the locomotive, it will be good to see the final result. Great work Greg. Graeme Kirkby had 4-6-2, 2401 down for a boiler test that was attended to by David Thomas.

One of the wooden fences had been replaced with a metal one during the week, it will need some attention to bring it up to scratch. Before lunch Martin fitted the brackets for the ticket sellers table and secured the steel plate covering the drain top near the bench seat.

We had a ride total of 2816 for the day which was about 700 above the September average, we are doing very well this year. The canteen helpers, Liz, Diane, Margo, Sue and Lee were kept busy all afternoon. The signal box was run by Brian, Mick, Steve Border, with Barry M. Keeping an eye on the overall operation.

We had a visit from a photographer who specializes in black and white images. He intends to place some of the shots he took on his website. [www.raymondhorsey.com](http://www.raymondhorsey.com)

By the middle of the following week he had posted some of his results. He is interested in taking some more steam loco B & W shots, possibly on a non running day. If anyone is interested let Warwick know and he can put you in contact.

### **October Running Day.**

It was suppose to be the middle of spring but the temperature and the cold westerly wind made it more like the mid winter. We were spared the rain that had initially been forecast to last into the weekend so we were thankful for that. We also competed with the Granny Smith Festival today and with the cold our numbers were down. Andrew was on the gate and after the initial opening rush he had a very easy time. Bernie relieved Andrew mid afternoon and had an equally lonely time. Barry Millner, Vic and Mark were hard at work early setting up the grounds. Mark attended to some point problems, some caused by ballast obstructions.

We had only two trains running on the elevated as we were short a couple of our regular drivers. Arthur and John H. were at the head of a five car set with 0-4-0 “Betty” blowfly and 2-8-0 “Nigel Gresley” as train engine. I ran Z1915 with David Thomas and his B10 on a three car train. I had a problem on our first revenue lap with low water level and uncoupled to retreat to the siding. David continued with a reduced load. I was able to get the water level back and re-couple to the train when David returned to the station. We had some very good loads during the afternoon, we certainly worked very hard swinging on to the grade at the bottom of the hill and into, at times, a very strong wind. Our visitors started to leave after 4.00pm. and both trains were able to finish



**Barry Tulloch prepares Mountaineer for the October running day.**

running just after 4.30pm. New member Graham Tindale was guard on our train for much of the afternoon and was relieved for the last few laps by Warwick. This was quite a different experience for our President, it is many years since he has spent any running day time on the elevated. On the inner main Matt Lee ran C3506 on one train, John T. doing some driving later in the afternoon. There was an incident late in the afternoon with a couple of passengers coming off. They were attended to by Emily and Liz. The second train was hauled by V1224 with Warwick at the regulator until Andrew A. was relieved on the gate by Bernie. Andrew finished the afternoon driving this train.

The two outer main trains were both hauled by single locomotives. Henry and his TGR R class 4-6-2 were at the head of one train while the other was "Mountaineer" with Martin Yule and Barry Tulloch sharing the driving. Mark Gibbons shared the driving and guard duties with Henry for the afternoon.

The crowd dropped away quickly no doubt they had enough of the cold wind. We gave 1954 rides for the af-

**Mark Gibbons driving Henrys R into the outer main curve on the October running day.**



ternoon which was still above the monthly average. In completing these running day reports I often forget to mention the signal box crew, over the last three running days Brian R., Nathan, Steve Border, Mick, Mark and Barry M. have kept the ground level trains running in an efficient manner. The same goes for setting up the grounds for the running day. Barry Millner and others, including Brian M. and Vic are at work early putting out the various signs, leaf clearing and general cleaning of our site. Quite often Liz and Diane have spent a lot of time before lunch preparing the canteen for the afternoon. Thank you to all involved.

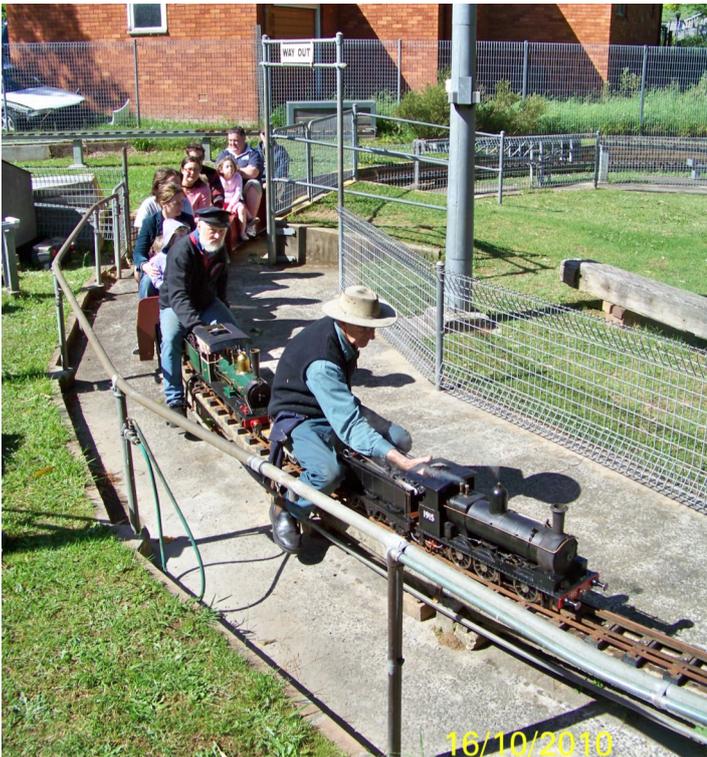
**Eraring Power Station Visit. John Lyons.**

Peter Lyons is currently managing the unit 3 outage and upgrade at Eraring power station. The station has four units and each in turn is being upgraded from 620MW to 750MW capacity. The upgrade involves work in the boiler, the fitting of more efficient burners and work on the turbines. In the week before our visit, Sunday 24<sup>th</sup>. October, unit 2 which had already been upgraded, was run up to 750MW burning less coal than that needed for the lower output. With everything opened up it was a good opportunity to see the inner workings of the station.

Our group of fourteen members and friends were ushered in signing our indemnity forms. Peter ran the orientation video covering plant safety and after a brief description of the plant's operation we were fitted out with safety vests and hard hats. The first stop was the control room where the operators keep their eye on a host of computer screens that are monitoring every facet of the running of the three working units. The Operators were very helpful in explaining the screens and what it all meant. The plant output is controlled from Sydney by its prices and the demand! From there we worked our way upwards to the level of the boiler drums. On the way we saw the conveyors running in the coal to keep the bins that feed the ball mills filled. By the time the coal is blown out of the burners it is like talcum powder and ignites in an instant. We were able to observe the burners in operation and at another level to actually look in at the fire. Pressure inside the furnace is less than atmospheric so at any of

**The burner equipment for one of the Eraring boilers.**





Above: John Lyons & 1915 leads David Thomas and the B10 into the elevated station.  
 Below: Members inspect the control room of Eraring Power-Station.



the inspection ports the draught is sucked in. All the tubes hang down from the drums into a cathedral size space containing a huge fire ball. Someone commented that if you did not lead a good life you would end up in a place like that.

Unit 3 boiler was open and we could see where the scaffolding and platforms were in place for the welding contractors to work welding the new tubes into place. This requires top class welding, each joint is radio graphed and there are dozens of them. On the way back down we saw where new burners are being fitted. These will provide for a more efficient cleaner combustion of the coal.

Into the turbine hall and here we needed our ear plugs as the other three units were hard at work supplying a big percentage of the state's electricity demand. The turbine hall is about twice the size of the Queen Victoria Building, the unit three components were spread over much of the floor area. From the walk way we could look down onto the bottom halves of each stage of the turbine. After the steam has worked the high pressure turbine it returns to the boiler for reheating before working through the intermediate and low pressure areas. After the low pressure stage the steam is condensed. The cooling water comes from Bonnel's Bay and returns to the Lake into Myuna Bay. During the summer months the outlet water temperature is monitored so as not to raise the lake temperature more than is allowed. To help limit the temperature increase a reservoir has recently been completed to allow

cooler stored water to be mixed with the outlet flow thus lowering the heat energy level of the water returning to the lake. When the station was planned it had been considered that a "white water course" could be built into the outlet as the flow rate was suitable. It did not eventuate as funding was not available at the time. When Sydney was the winner and we got the Olympic Games Pacific Power were involved in the construction of the white water course out at Penrith. They had much of the design work on file and were ready to go with the facility.

Back to the turbines. We were allowed to walk around on the floor of the turbine hall and see close up the actual components. It is amazing to see the sizes of the components and the complexity of some of them. It was very interesting to see the actual workings of our electricity generation and how coal and steam can work far more efficiently than at our grounds.

## Editorial.

We are at the end of another year and the end of the first decade of the 21<sup>st</sup> Century. Thank you to those members who have contributed to the Newsletter in the past year, we do well to put sixteen pages together for each issue. It would be very helpful to have more contributors though. Next year will see the opening of the new Rail Heritage Centre at Thirlmere and the return to service of C3801 with its new all welded steel boiler. It will be interesting to see what life the new boiler will have and how it will perform in service especially with so many fittings welded on rather than fastened with studs and nuts. As for the Heritage Centre, I have a feeling that it may end up under the umbrella of the Powerhouse Museum. At the present time we have an Office of Rail Heritage as the Railways have more heritage items than any other Government Department. A change of Government could well think that the Railways should be worried about transporting people and goods in the present time and not worrying about its past. Time will tell, I may be wrong, we will just have to see what happens. Our very best wishes to all members and friends of our Society for the Christmas season and may we all have a happy and successful New Year.

John Lyons.

**Arthur Hurst and Bettie leads John Hurst and Nigel Gresley on the elevated track on the October running day.**

Our thanks to Peter Lyons for arranging the visit and giving up his time, out of working hours, to show us around.



### **Hornsby Birthday run**

Quite a few members attended the Hornsby Birthday run either on the Friday or Saturday. Warwick went on Friday with Andrew. Lionel was there with C3811 and Andrew took his A10 and Brian M. his "Planet". There was a display of very nice models made by members and with lovely still weather the day was very pleasant indeed. There was also the Traction Engine weekend at Lake Macquarie, and we look forward to reports from John and Martin.

### **Diary**

4 December  
7 December  
18 December  
31 December  
4 January  
15 January  
1 February  
19 February  
22-25 April 2011  
28 April

SLSLS Members & Friends Evening Christmas Party  
Members meeting.  
Public Running Day  
New Years Eve run.  
Directors Meeting  
Public Running Day  
Members Meeting  
Public Running Day  
AALS Convention at LMLSLS Edgeworth.  
Post Convention Run at SLSLS (Thursday)

### **Club News.**

The Northern District Times has featured our club in a special supplement in the edition for the 1<sup>st</sup> September. It can be found online:

<http://digitaledition.northerndistricttimes.com.au/> Click on Archive and select the 1<sup>st</sup> September edition page 35-37. It is a very good coverage.

A while back the Directors approved the purchase of a new vacuum cleaner for the club house and a high pressure water cleaner to help with the riding carriage bogie cleaning and maintenance. Mark G. has been given the authority to go ahead with the upgrade of resistors in the point motors. We have had the clubhouse and signal box fumigated and as mentioned in one of the running day reports we have had one of our boundary fences replaced with a colorbond type. The standard of the work was not as we liked so some members worked on it to make it better.

John Hurst collected a number of boxes of books from a deceased estate. They are yet to be listed but the collection is extensive and contains some publications that were very expensive at the time they were published.

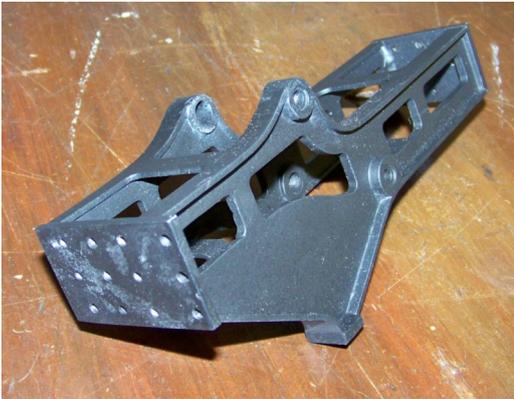
Brian M completed some mower maintenance in readiness for the coming spring and summer season, once we get some sun the growth will take off. We have installed signage on our level crossing and the foot crossing on the inner main. David T. has continued his never ending attack on the weeds in the garden on the

south east boundary. On one afternoon he had a team of 5 hard at work. I don't think David could believe his luck after many appeals for assistance. Hopefully this will be a sign of things to come David!

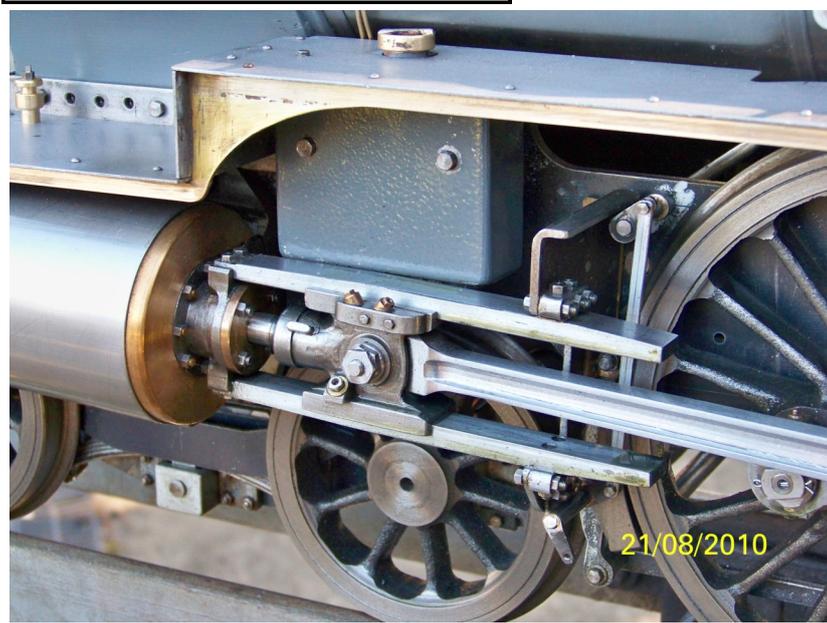
Our new concrete mixer has arrived and has had plenty of use. Our new weed killer wagon is fully operational. At the October meeting it was decided that we should have four special members days each year. The ones this year on the first Saturdays of March and September were very successful and will be maintained. Our Christmas run on the first Saturday in December will continue and a fourth day, the first Saturday in June will be added.

**Plenty of observers watch Barry Tulloch use his deadweight tester to calibrate the boiler test gauge. Photo Steve Miller.**





Above : David Thomas' Baker gear frame for his SAR 620 class.  
 Right and Below: Ray Lee's Victorian A2 taking shape.



Above: Steve Miller's B1 bogie.  
 Below: John Lyons new NSW Kf flat wagon.



Left and below: Greg Croudace's 38 class is taking fine shape. Below is some of the detail beside the smokebox.



These days are clear of activities that are run by other clubs.

Ray Lee has been working on the ground level locomotive depot giving it a thorough de-grease and clean up.

Signs have been placed on the refrigerators to remind members to pay for their drinks or ice cream before they are consumed.

### Locomotive and Rolling Stock News.

David did a hydrostatic test on Bernie's Simplex boiler. It certainly looks a nice job. John Lyons showed off his new KF flat wagon which had a run behind Z1915 on the September member's day.

John fits these with his look alike knuckle coupler which do a good job. Since that run the brake shoes have been fitted and all that is needed now is the lettering and a suitable load. John has also modified the coupling on the rear of his riding truck so hopefully he will not lose his train again. David Thomas has shown us the pair of motion brackets he has fabricated for his SAR 620 class locomotive. Early in November David had some boiler work completed with the throat plate attached to the barrel.

We had a potential new member Graham Tindale arrive with a newly acquired Maisie. Our friendly boiler inspector gave some assistance and advice and we hope to see this loco in steam soon.

Wayne F showed a partly assembled replacement boiler for his 3.5" C34 class (originally a Mackellar loco, with a reputation for some fast laps of the track).

Prospective member Steve Miller brought along his B1 bogie, which was a very nice job. The boiler is built and the tender is underway. The rest of the loco is still coming! With the number of B1's under construction Brian M. and Garry will eventually be able to organise a B1 rally. Garry Buttell has been adding lead weights to 'Impala' to improve adhesion. A few weeks ago Vic showed off his recently acquired OS built 5" gauge Rocket, it is a nicely made model with lots of detail, we look forward to see it running. David has tested Warwick's new Maxitrak Hunslet boiler. It is constructed to 2" scale so will be a little smaller to Paul T's. We can look forward to seeing the rest of the locomotive. John Tulloch has had a boiler test completed for Z2904.

### Name Badges

We are considering new name badges. They will be about \$10. We will not order any until the Directors have formally agreed on the design. However a list has been placed on the notice board for you to add your name if you want one. The final price will be quantity dependent.



A case of bottoms up when installing fishplates after the major outer main track rebuild.

### Visit to Brian Carter's Track.

Some of our members have enjoyed a day in the country at the Carters country estate. Brian has finished his track (for the time being). A club day to Brian Carter's track is planned for 2<sup>nd</sup> April 2011.

### Members News.

We can report that Max Gay has had his hip replacement operation and at the time of preparing this newsletter he is back home and recovering well, best wishes Max for a speedy recovery.

The threat of more rain saw us in the clubhouse for an early afternoon tea, with a special treat being a batch of fresh chocolate chip muffins kindly provided by Simon. Graeme Tindale is one of our new prospective members as is Steve Miller. We hope your association with the So-

Peter Wagner and Wayne Fletcher doing the BBQ honours on the members day in September.





**Pouring concrete for part of the new elevated station.  
We dodged the rain!**

city is long and enjoyable! From my calculations this makes 6 new members in 12 months! A good aspect of this is that all garden groups now consist of 9 members each!

*We received this email from Allan Cottrell:*

“Thank you for your reply of the card which you sent to me. At the moment I will not be coming down to the club because the specialist told me to follow closely to what he asked me to do to feel better. Maybe in a few weeks time.” Regards Allan.

### Works Report.

We need to thank Wendy Allison for fixing the club Australian flag. The rope had torn away from the fabric, but now all is well!

Brian Hurst was continuing with the elevated point rodding painting. The actual rodding is complete and now he is working on the signals. They do look good with a fresh coat of paint!

Mick has erected the new no climbing signage on the BBQ and tree.

Andrew has started work on fixing the BBQ (as the door fell off). Jim Leishman has bought some new bricks and by the time you read this it should be well on the way to completion for the Christmas party!

Make sure you have a look at the garden behind the ticket office. Simon has tendered this garden patch and

with all the plants in bloom it is an absolute picture. Much the same goes for the bottom end of the grounds where all of David T’s work over the past few years is now showing results and has minimised the amount of mowing and trimming we have to do on our gardening days.

### Ground level track.

The outer main has had some serious work where we lifted about 8 panels of track and 3 sets of points. All of these received new plastic sleepers, and a revamped formation now with matting under all the track. Glen, Arthur, Lionel, Brians M and R and Warwick got stuck into this job and it certainly was a big task to take on. In the end we managed to get the bits all back in place, and mostly ballasted. A few more barrow loads were needed the following week to complete the job. It was great to have such team work and have this work completed in a day! Lionel has spent some time cutting and drilling many of the new sleepers that have been used. This nearly completes the re-sleeping and upgrade of the track near the ticket office. A few points and panels remain. Peter showed us some laser profiled point rodding with components that just push together!

Next week Arthur and Lionel finished off the ballasting of the outer main, work that was not quite finished the previous week. After this Lionel cut up and drilled a large number of sleepers ready for next week. (Lionel was actually there on a Friday as well doing this!) This was much appreciated as it will allow a clear go at some more track upgrading. Mark Gibbons cleaned the points we dirtied with ballast dust and made sure they operated OK. As well some track joints were lifted on the outer and inner main to improve the ride.

Some signage was installed on the level crossing too.

Some 34 metres of track behind the club house on the outer main has been lifted, re-sleepered with new plastic sleepers, the sub surface levelled and rolled before the weed mat was replaced. Arthur’s mower and trailer moved a good quantity of ballast from the pit to the track.

Mark has re-painted the underside of the cover for the No 19 points motor he refurbished recently and reported that the inside of the box remains clean and dry. Looks like the painting and modifications to the motor are having a positive effect.

We now have a lifetime supply of relays for the Ground Level signalling, and the matching supply of spare relay sockets have started flowing. We now just need to identify a supply of reasonably priced, heavy duty, multiple core cable to allow replacement of some of the more vulnerable wiring runs – does anyone know where this type

### Duty Roster.

December.	B.Courtenay, G.Croudace, S.Larkin, N.Lyons, L.Pascoe, S.Sorensen, D.Thomas, D.Lee. G.Gunning, S. Miller.
January.	J.Hurst, A.Hurst, J.Leishman, J.Lyons, D.Mulholland, J.Mulholland, B.Rawlinson, M.Tyson, M.Yule.
February.	B.Hurst, T.Eyre, M.Lee, R.Lee, R.Smithers, P.Taffa, B.Tulloch, J.Tulloch, N.Bates.
March.	H.Spencer, A.Allison, M.Gibbons, W.Fletcher, G.Kirkby, B.Muston, J.Noller, P.Sayers, I.Tomlinson.

### Gate Roster.

December: K.Baker.	January: G Buttel.	February: S.Collier.	March: B.Courtenay
--------------------	--------------------	----------------------	--------------------

of cable can be sourced at a good price?

We have upgraded the siding behind the ticket office. This has looked decrepit for quite a while and the worry was the track would rust in contact with mud. The track was lifted, re-sleepered, the formation was filled and leveled with roadbase, geotech fabric applied and the track replaced and re-ballasted and a buffer stop fitted. Brian's Planet was unloaded and it tried out the now serviceable siding! It looks much better especially with Simon's newly blooming roses in the garden behind. Some adjustment to the inner main track where it climbs over the drain has also been made.

### **Elevated track.**

John L. has worked on adjusting the level of the beams on the western side and at the bottom curve. This has tendered to lift some of the severe depressions and drivers have reported an improvement in running. We will soon source some new steel to sort out other pieces of track that need attention.

The big work has been on the preparation for the new elevated track station. Henry and Arthur cut up the booker rod and some scrap angle and Arthur welded the assembly of the five sets of fastenings for the station posts. Lionel and Arthur with Brian M. and others have worked on the footings for each of the station posts. By the October running day the five footings were in place. Our new concrete mixer has had a good run preparing the concrete for these footings. Following the October running day the first of the new platform slabs was formed up and on the first Saturday in November the slab was poured. The truck was booked for 10.30am. but arrived at 10.20am. just as we were finishing our morning tea, the driver wanted to finish his day early. We had a good team with Lionel, Arthur, Vic, Brian M., John L., Brian H., Peter W., Garry and Warwick. True to form with a major concrete pour on it was threatening rain, but we were lucky to get it completed. The concrete is setting as these noted are prepared. Some of the signal wire has been run in orange conduit and some of the piping for the water tank has gone under the slab. The tank is to be located on the bank adjacent to the lever frame with the stand straddling the point rodding.

### **Ticket Office.**

Peter Wagner has been busy doing the architraves in the ticket office and finishing off the skirting boards. This is an extremely fine job, to a quality that far exceeds the role of our humble ticket office!

Henry has attacked the inside of the ticket office and cleaned out the old building materials and relocated these up to the shed. He also then transferred some of the running day equipment from the clubhouse into the ticket office. Henry is also organizing some brackets to consolidate the storage of some of the running day equipment.

Warwick provided the sea level sign on the ticket office, which adds a uniquely NSW touch.

Warwick also moved the table out as the new ticket office desk built by Martin Yule and has now been



**Mark Gibbons installing one of the new level crossing signs.**

fitted with the drawer. This was tested and passed by ticket sellers Peter and Brian. There is now a lot more room inside.

Following the October running day a step was formed up and poured outside the door.

### **Sydney Antique Machinery Weekend.**

#### **Brian Muston and John Lyons.**

This event is held each year on the third weekend in September at Clarendon Showground. Both myself and Brian Muston visited the show and I thank Brian for his notes that have provided the bulk of this report. It is a multi club event supported by the Campbelltown Steam Club, Quirindi Village, Kurrajong Machinery Club to name a few. The display covers a vast range of long gone power units that have played an important role in the mechanisation of farming in this country. These units were the

**The Bulldog returns to its parking spot to cool down after its load hauling display. Note the gas burner and spare steering column.**





**One of the oil engines in its working clothes.**

ones that filled the gap between the demise of agricultural steam power and the modern portable power plants or tractors with their power take-off facilities.

One event that provides quite a spectacle is the tractor pull. The tractor couples on to a sled and once underway the position of the load is changed to require a greater drawbar effort to keep things moving or stall in the attempt. When I was there on the Sunday I saw, and heard, a Lanz Bulldog having a go. As the load was increased the sound of the exhaust was like a series of shot gun blasts and with each blast a column of flame about a metre long shot out of the exhaust. Brian M. explained that the starting of these tractors was an event in its self. A large bulb at the front of the engine has to be heated with a blow torch and the steering column fitted into the fly wheel and rocked on compression till the engine fires. These engines can run in either direction so you have to see you do not get the engine running in the wrong direc-

tion giving one forward speed and a number of reverse speeds.

There were 50 or 60 tractors that showed up. They were in various sizes, ages and condition. Many were in immaculate condition having being lovingly restored to how they were in the showroom. There was a good representation of the grey Fergusons so common throughout the country half a century or more ago. Other brands included International Harvester, Chamberland, McCormack Deering, John Deer and Lanz Bulldog. There were others awaiting restoration and some, as Brian M. put it, in their working clothes showing their age.

There was a good display of the hit and miss oil engines in all shapes and sizes. Some of the makes included Lister, Sundowner, Champion. For these engines the starting ritual can be complicated. Some of the engines were set up driving some other piece of equipment such as a water pump, a generator or a shearing stand. The condition of these engines is similar to the tractors, some pristine and others definitely workers. Many of the en-

**Some beautifully restored machines.**



**These old delivery trucks looked as good as when they first carried a load.**



gines have an interesting story to tell as they have come from river beds, junk yards or farm sales. We also saw a reasonable number of restored cars and trucks. There is always a line up of junk dealers and other trade tents, one person sells the spring loaded oilers and flip top types, try getting these from local suppliers.

There was one steam traction engine, a 1924 Alchin single cylinder running during the weekend. Brian overheard a comment from a father walking with his son along a row of working hit and miss engines, "see they are steam engines you can see the steam coming out of that tank." That was condensate out of the open cooling water tank. Why not put this event in your calendar for next year, for a small gate fee there are plenty of sights to see.

**For Sale.**

Brian Rawlinson has a Drill Mill 30A series for sale. Included in the sale is a swivel machine vice and angle plates. \$300. Contact Brian to arrange an inspection. 9871 1621.

## Etching Brass Plates

By Andrew Allison

Numbers and text in various forms have been used on locomotives almost since the start of their existence. Builders plates and nameplates were soon followed by road numbers and by the end of steam, text and numerals were to be found in abundance in the form of instructional plates, depot allocations, boiler test plates, crests and emblems, pattern numbers in castings, manufacturer's plates and markings on items such as compressors, turbo generators, brake stands, fire doors, axle box covers, markings in axles and on tyres, controls, tender and boiler number plates and scheduled maintenance dates. Various different methods could be used to make these plates and markings, from direct painting, engraving, stamping, casting, fabrication or sometimes a combination such as fabricated numbers brazed onto a cast backing plate.

Various railways and manufacturers developed different styles of plates and the collection of plates and markings carried by any one locomotive is usually just as big a characteristic of the locomotive as the shape of the chimney, the livery or how even how many wheels the loco has. Just try to imagine a 38 without the standard NSWGR numbers, the builder's plates and SKF axle boxes, or a WAGR or New Zealand loco without the cast ribbed oval numberplates. The fact that many plates and numbers became collector's items as locos were withdrawn also means they are a recognisable feature and conspicuous in their absence.

Traditional methods of manufacturing plates and numerals in miniature form have been by either fabrication usually using needle files and soft solder, engraving or machining (these days by CNC), or acid etching using photo resist chemicals to transfer an image onto the plate that is to be etched. Each method has its pros and cons however it is really only etching that is suitable for producing

small size text and numerals such as on builder's plates.

When coming to the finish of building the A10, I was faced with the challenge of recreating the number and builders plates of the original. As a first step I had drawn the plates up in autoCAD. Not sure what to do next, I emailed the files to both a CNC engraver and a commercial etcher for a quote. The commercial etcher never replied, and the CNC engraver's quote was a price best forgotten. In addition, they would only be able to machine the number plates as the builder's plates were too fine for them to machine. I decided the only cost effective way was to have a go myself.

By chance I came across March 2009 'Garden Rail' magazine which had an article on etching brass nameplates using ferric chloride and positive photo resist and developer. There certainly seemed to be lots of variables and lots of experimentation required to get it right. The article concludes with saying "Do not expect to get the desired result first time. There are several variables that will affect your results, such as: The thickness in coating of the resist, the age of the resist, the strength of the UV exposure, the temperature of the chemicals. If you keep trying you can achieve the desired effect." A few quick googles for the required chemicals showed they did not seem particularly easy to obtain locally. Reading through the article several times made me consider again if the CNC engraver's quote was actually that unreasonable!

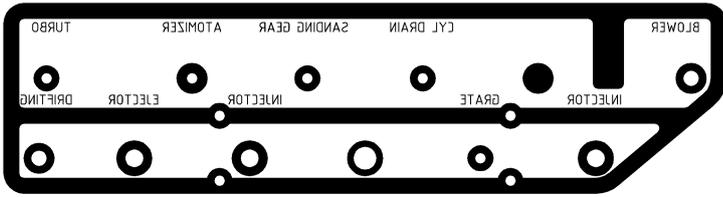
A month or so later I happened across the March 2008 issue of 'NZ model Railway Journal' in the ARHS bookshop containing an article titled 'Kaiapoi Station - Part Two' by Jason McFadden. To make the elaborate window frames, lamps and iron lacework on the station roof of his Station model he had used 0.005" brass sheet and a seemingly magical product called "Press and Peel" which you simply print your artwork onto, iron onto your brass, chuck it into the acid and hey presto! Out comes your finished station building! Now that sounded like something I could manage! Better still, the sheets of press and peel and etchant (Ammonium Persulphate) were readily available from Jaycar Electronics as they are usually used for etching printed circuit boards.

### Time to Etch!

Well it did turn out to be quite easy however there are a few tricks and problems to be aware of so hopefully the following words will be of assistance and help you to avoid some of the mistakes that I made and encourage you to have a go.



**Figure 1: The valve spindle guide plate of a South African NGG16 is a perfect example of a plate being a vital part of the locomotive's character. In model form, such a Plate would be almost impossible to produce any way other than etching. Photo: Dan Crow, used with permission under GFDL.**



**Figure 2: The NGG16 valve spindle guide drawn up in CAD from works drawings and mirror imaged ready for transfer to brass for etching.**

**What You Will Need:**

Press and Peel sheets: The press and peel sheets are not cheap but probably still far cheaper than photo resist, developer etc, at about \$35 for 5 x A4 sheets. There are 2 types of press and peel sheets, blue and wet. They both do the same job and I am not sure of the difference but as Jaycar only sells press and peel blue the decision is easy! Additional information on using the press and peel sheets is available from their website: [www.techniks.com](http://www.techniks.com)

**Figure 3: An example of a poor transfer of the press and peel blue onto the brass. The main reasons for the poor transfer are the iron temperature was not hot enough and the image is too close to the edge of the brass, which has a slightly rolled edge preventing the iron from contacting the image. Other factors such as the brass not being clean enough may also be contributing factors. The solution: scrub it off and try again!**



Etching Compound: The Ammonium Persulphate from Jaycar is about \$13 for 400g. Read the instructions on these products and get comfortable with how to use them. Alternatively you could use alternative etching compounds such as Ferric Chloride if you knew where to find them.

You will also need your artwork, some brass sheet the thickness for your completed plates, a Pyrex dish big enough to fit your brass, rubber gloves, eye protection as well as access to a photocopier or laser printer.

**Method:**

The first step is to prepare your artwork. For my plates I used autoCAD drawn from plans and photos for reference including drawing each letter and number individually to ensure it is as close to the full size as I could manage. You definitely don't have you use any CAD program, alternative ways could be to use Microsoft word or some other graphics computer program, or even hand drawn. If drawing the artwork by hand make it as large as possible and reduce it to size using a photo copier. This will ensure sharpness and accuracy. There are 2 main things to be aware of at this stage – one is that the bits you want to be left raised need to be black, and that the image must be a mirror image. For CAD programs this is easily done however for hand drawn images you can make it mirror image by copying onto a transparency, flipping it over and taking another copy.

The press and peel has a matt blue side and a shiny side. The print needs to be made on the matt blue side. You may need to do an experiment to make sure you know which way to feed it into your printer or photocopier. The techniks website contains a warning about the press and peel not working well with certain models of 'Brother' printers, so if you have a 'Brother' printer make sure it is not on the list. The printer must be a laser printer (not inkjet) and it is a good idea to fill the sheet up with multiple images allowing about 6mm between each one.

Prepare your brass sheet. The brass should be at least 6mm wider than the images you intend to iron onto it. (Unlike the example in the photos!) If the brass is too narrow the image may not transfer along the edge properly. Make sure the brass is flat and free from any burrs or bumps. The rear of the brass sheet needs to be protected from the etching solution. Lightly sand the back of the brass and then paint with an etch primer then an enamel spray paint. Cut out the image to be ironed onto the brass. Polish up

**Figure 4: The Bain Marie set up in the laundry tub. The image has been transferred to the brass and it is supported off the bottom of the Pyrex dish by clothes pegs. The dish is supported off the bottom of the tub by more pegs. The drawing was modified to make the spindle bosses solid to aid drilled out after etching. The acid level need only be deep enough to cover the plate.**

the front of the brass using water, soap and scouring pads. This will remove any oil or oxidation that will prevent the image from adhering to the brass properly. Make sure you also wash your hands well with soap so that as you handle the brass and image you are not contaminating the clean surface. Dry the brass and your

hands thoroughly with a lint free cloth as any moisture left on the brass will prevent the image from adhering.

Use masking tape to secure the image onto the brass with the matt side against the brass (shiny side up). Make sure the masking tape is not over any part of the image, or the image will not transfer onto the brass properly. Now we must divert from the instructions provided with the press and peel. The instructions with the press and peel state the iron temperature is critical to set around 300 degrees F. As we have to heat up a big lump of brass with the iron and not thin copper clad PCB, turning the iron up to max should work fine. Drain any water out of the iron to prevent any steam.

Put the brass on a solid, heat resistant surface like a block of wood and iron the Press and peel onto the brass. This will probably take around a minute or two depending on the size of your image. Where the image transfers onto the brass you will see the image show through the shiny surface. Once the brass is the same temperature as the iron and the image looks to be fully transferred, take it to the sink and quench it in water and peel off the press and peel. Your image should be fully transferred onto the brass, the right way around, in dark blue. The blue acid resist should be very firmly adhered to the brass. If the image has not fully transferred properly, scrub the brass clean again using steel wool and have another go.

When you are happy with the image, it is time to etch, so put on your goggles and rubber gloves. The etching compound works best at around 70 degrees C, so I set up my pyrex dish in laundry tub as a sort of bain marie. The Ammonium Persulphate comes as crystals and the directions say to mix 5 parts hot water to 1 part crystals. I am sure you could vary this for a faster etch time if you wanted.

The brass is then placed in the acid, face down. I used plastic clothes pegs clipped to the edge of the brass to elevate the brass and allow full circulation. This worked well however the steel springs of the pegs ceased to exist in about 30 minutes! Now it is just waiting. Keep agitating the acid with a plastic stirrer and keeping the water in the bain marie hot. It took about an hour before I was happy with the depth of etch, however this will depend on the temperature and how exact your ratios of crystals to water



**Figure 5: The finished etch showing good depth of etch as well as crisp definition on the edges and text. The plate needs to be trimmed off the sheet, bosses thickeners added and beading soldered on and painted to make it complete. Small pips have been etched in the boss centres to assist drilling.**

were.

It is important not to get too greedy with the depth of etch. As the plate is etched downwards, the sides are left exposed and it starts to cut in under your acid resisting blue. Left to undercut like this for too long and your lines will become jagged and loose definition. You can see the sign of undercutting as a little trench running along the base of the lines. As soon as you can notice this, take the plate out and rinse it off. You should manage to have an etch of about 0.006" 0.008" deep, and still with clean, crisp edges. Scrub the blue etch resist off with steel wool and admire your handiwork! All that is now left is to saw and file the excess brass around the edges off, then paint. I secured my plates on the A10 with 5 minute araldite, which so far has held up well.

The above method could also be for making scale chequer plate, and I am sure there must be other applications as well. It really is quite easy to get a good result and very rewarding and fascinating to see your plates almost seem to create themselves in the acid.

Happy etching!

**Figure 6: This picture shows two problems, 1) what happens when you try an etch without the press and peel blue adhered properly, 2) the effect of undercutting has cut a small trench around the letters and numbers and reduced the crispness of the edges on the lines and text making slightly jagged lines.**





Above: The 2010 SLSLS visit to Eraring pose for the record outside No1 turbine and generator. 750MW capacity. One of these can power Brisbane! From left: Warwick Allison, Peter Wagner, Ross Bishop, Peter Sayers, Geoff Hockey, John Shoebridge, Tony Eyre, Doug Ogle, David Thomas, Emily New, Jason New & girlfriend Brooke, Brian Muston, John Lyons and host Peter Lyons. Below: Brian Rawlinson tries out Brian Muston's new Maxitrak 'Planet' past Simon's garden behind the ticket office on the September members day.



***'Newsletter' is Published by: Sydney Live Steam Locomotive Society Co-op Ltd.***

Track location is Anthony Rd, West Ryde adjacent to the car park behind West Ryde shops. 33° 48' 15.99" S; 151° 05' 12.78" E

**Telephone:** (02) 9874 8696. **Postal Address:** The Secretary, PO Box 124, West Ryde, NSW, 1685

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

Public Running Day is the **THIRD** Saturday in each month from 1.30pm. Entry is \$2 adults, \$1 children. Rides are \$1 each.

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