Sydney Live Steam Locomotive Society

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

'Newsletter'

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Brian Carter with Perserverence on the elevated track, passes John Tulloch working the J hard uphill on the outer main.

Running Day Reports

November 2007 Running Day Report.

Absolutely beautiful weather today for the last spring-time running day for 2006. It brought out the crowds for our charity day for RedKite. There were small but constant queues at the gate which was manned (or is it girled?) by our RedKite volunteers. There were a number of parties and everyone seemed to have a good time. We totalled 2361 rides which gave the group a reasonable result for the day, the best result we have had for them for some years.

Mark Gibbons attended initially to a few points problems, which then ran OK the rest of the afternoon. Matt Lee had his original P class tender (for his 25class) and it looks very nice indeed. Simon had some water cut frames for a Springbok, which he obtained at a good price and are excellent quality too!
Brian Muston has supplied some more new flags for the trains, which now makes a full set.

First out was Brian Kilgour, 2-8-0 Nigel Gresley successfully trying out his new char grate on the elevated (read more about this type of grate in the Feature articles). Brian hauled two cars.

Next out running was Warwick's V1224 onto the inner main. It was manned by David Thomas & Steve Border for most of the latter part of the afternoon, and was the only train to run on the inner.

Jim Leishman at work on the PS4 on the November running day.

December 2007 Running Day Report.

Our first summer running day seemed at risk during the week beforehand with very hot weather and a day or two of total fire ban. Some rain on Friday eased the fire problem and Saturday dawned cloudy, threatening rain. As I drove in from Seven Hills there were a few drops of rain, but getting closer to West Ryde the weather brightened up. There were three or four party groups and not many other casual visitors, it made for a very relaxed, easy day.

On the elevated track Jim Leishman had the ten wheeler, 4-6-0 running again pulling three cars and a guards van. I shared driving and guard duty with Jim. John B. Hurst, Nigel Gresley, pulled three cars and a van. Jim Mulholland ran 0-6-0 Pansy with two cars and shared the driving with his brother, Don. Gary Buttel was having a good run light engine with his 3½" C36 class till a serious failure bent the RH connecting rod.

The inner track was the domain of the 1½" scale locomotives for the early part of the afternoon. Warwick, WAGR V1224 was on one train while Henry and the TGR R class was on the second. Well into the afternoon Henry came off and was replaced by Barry Tulloch with 2-6-2 Mountaineer, Martin Yule assisted with the driving. The outer track was catered for by two C38's. Ray Lee, C3803, ran one train while Lionel Pascoe C3811 was in command of the second. When Ray and C3803 came off John Tulloch eventually took over with J class 2-8-0 and ran till the end of the day.

We gave 1376 rides for the day with some trains almost empty and others chock a block full! It was not a bad result for a December run.

The public didn't want to go and the last services on the inner and outer continued to haul passengers until quite late.

So ends the 2006 running year! We did 20,510 rides overall this year. This is about average, but would never have been a record because of the loss of the July running day to rain.

On the outer we had Ray Lee C3803 on one train, and John Tulloch 2904 and Matt Lee 3506 on the other. Matt came off about 4pm leaving JT to finish the passenger hauling on a reduced load.

Also on the elevated we had Brian Carter with his 0-4-0 "Perseverance" with 2 cars. Jim Lieshman had the PS4 4-6-2 back on the job, and this took 4 cars while John Hurst, 2-8-0 Nigel Gresley did his regular double head with Ken Baker & Simplex, also on 4 cars.

The total number of rides was pretty good seeing we were one train short.

Lionel steamed up 3811. Initial gauge glass problems were fixed by Max, but then injector trouble kept Lionel in loco.

The girls had a busy day in the kiosk, and I spoke to a lot of very happy people when they were on their way out.

Graeme Kirkby, whistle at the ready, on guard duty.

January 2007 Running Day Report.

Mid summer running day, it was hot! It was a surprise that a total fire ban was not in place and we were very thankful that it was not quite as bad as the following day turned out. There was one very big party group well set up under the trees near the Hawkesbury bridge. The other party groups each had a shady spot and the open spaces were very empty. Alan Mackellar was on the gate and after the initial influx had a very relaxed time.

We ran two trains on the elevated, John B. Hurst, Nigel Gresley 2-8-0 on one and Jim Leishman 4-6-2 Ps4 at work again. Both trains took three cars and a guards van. I shared the driving and guard duty with Jim, it was hot work. Before the end of the day Simon Collier

had some footplate experience on the Ps4. Paul Taffa had the 0-4-0 Hunslet in loco but did not steam it.

First out on the outer main was Matthew and Ray Lee with C3803. This was joined by Warwick's V1224 with Andrew Allison at the regulator running on the inner. The second train on the outer was the TGR R class with Henry. Max Gay shared the footplate duties with Henry. The forth train was on the inner with Mountaineer driven by Martin Yule, Barry Tulloch and David Thomas at various times. Because of the low passenger offerings 3 laps was the order of the day, and the end result was that most trains were reasonably full. Some trains had a spell during the day and rested in sidings in the shade.

Max Gay driving Henry Spencer's TGR R class passes Barry Tulloch and Mountaineer waiting in the headshunt for action!

About mid afternoon Ray Lee and C3803 came off and was replaced by Andrew and V1224 which ran to loco, turned, and then came back onto the outer main for the rest of the day. Soon after the R class and Henry came off and it was V1224 alone on the outer and Mountaineer alone on the inner.
We had a passenger fall off near the end of the day with a grazed knee that needed some dressing.
There were a couple of point and signal problems that were rectified or worked around.

The ride total was 859 rides for the day. The breeze came up in the afternoon and although not particularly cooler, it was welcome relief. We also had a small grass fire, which seemed to want to burn under the fence. Graeme Kirkby managed to scale the fence to spot the water dousing, and it was soon out. It just goes to show how flammable the grass is on these dry days. We also had visitors from the Newcastle and Illawarra clubs.

An extra special thanks to Jane, Emma and Sarah Noller, Chris Hurst, Sue Carter, Wendy & Jennifer Allison for assisting with the kiosk in the absence on holiday of our regulars. It was very much appreciated. I am told the most popular sale was bottled water. They sold only one cup of tea!

For those involved in putting carriages away in the elevated carriage shed, two simple rules will help everyone. The first is to always put the carriage in the designated spot as shown in the diagram on the door (otherwise they don't fit), and secondly, always couple them up. Loose cars are a nightmare to retrieve. (You can guess what we spent the packing up doing!)

Christmas Party and New Years Eve Run

After a hot Friday complete with fire ban, Saturday started ban free, but very humid. Our Orange friends were down early (as usual) with C3088T and a branch line goods consist with EHO at the rear soon operating on the outer main.

The weather turned cooler, which was a welcome relief. David Lee brought down his Gm class battery diesel which is almost ready for service. It is a true A1A-A1A with 4 bogie suspended motors. Alan Mackellar had a model of a marine engine he is building. This looked almost complete except for valve gear and is (as always) a

Lionel Pascoe steams up 3811 in December.

Barry Tulloch waits on Mountaineer to shunt back onto a train.

very nice piece of work. Brian Muston brought along his string of wagons which included some non air coal hoppers, CHG, some John Fell open D wagons, and a working bogie cattle wagon, complete with live cattle.

We had a steady stream of visitors who popped in during the afternoon and quite a few of us stayed on for a BBQ tea, cooked between the hail and showers!

There were a couple of interesting videos courtesy of Barry Millner. By 8.30pm. we were on our way home! A quiet and enjoyable evening, making the most of the inclement weather.

The New Years Eve evening was attended by 6 people, and very pleasant it was too.

Ray Lee intently prepares 3803.

What's Doing!

2007 Interclub Run

SLSLS will be hosting the first interclub run this year. It is on 30 June (the last Saturday in June) and we will be sending out the usual invitations to clubs and an ad in AME. Members are encouraged to also bring some locos, don't leave it all to the visitors! It might be a good occasion to re-run the 3½ inch gauge display we did at the last Convention!

First Aid Box

The first aid kit has had a makeover and can now cope with just about anything, including burns, stings, grazes and the like.

2007 Convention

Don't forget that convention registration forms are in the clubhouse too.

We have submitted our motions for the AALS AGM to correct the wheel standards (both 5 & 7¼ inch) and to include the steaming up air fittings in the Code. The air fittings was passed many years ago, but due to an administrative oversight were never included in the COP.

Members News

Simon Collier has been admitted as a provisional member of the Society at the January Directors meeting. Welcome Simon!

Condolences. Neville Amy's wife passed away lately. Neville, the Society extends our sympathy to you and your family. RIP.

Loco and Rolling Stock News

Not quite locos or rolling stock, but news on the mower fleet has always been an SLSLS feature! It was decided to replace the Toro lawnmower with a new 4 stroke Victa. This has a Honda motor and appears a much improved version to the other Victas we have. We are also investigating the purchase of a 4 stroke whipper snipper with (at last) a bump head. This will the beginning of our transition to 4 stroke. This purchase has been delayed un-

til the shed is complete (so we can put it somewhere!)

Boiler inspections of a 36 and 57 boiler (ex Don Jones') were under way by Brian (and a lot of on lookers!)
Simon brought along his Springbok castings, frames and other pieces. The water cutting is impressive!

Matthew Lee had a hydrostatic test on C3506 and we have seen the six wheel P class tender for the Z25 we is building. David Thomas is progressing well with his SA 620 class and shows off some pieces from time to time. Lately we have seen a laser cut steel wheel complete with crankpin and axle.

Chris Hurst & Emma Noller assist a kiosk customer on the hot January Running Day

Many hands make light work on a 36 class boiler test.

Max Gay brought along his C38 class reverser stand, complete with left hand acme thread. We have also seen the steam operated cylinder drains, and the Franklin reverser mechanism, complete with tiny spur gears. A work of art.
Mick Murray brought along his re-engined Tinkerbelle which now runs very sweetly after the petrol to battery conversion. There was some trouble with the electronics shutting down if overhot. Mick has fitted a fan and it seems to have solved the problem. Both Henry and Warwick have had a go at the controls, and very pleasant it was too!
Warwick has shown his chassis for a WAGR DA van. This is an advertising wagon for IXL apricots.

Left: Max Gays 3 ½ inch gauge Franklin power reverser.
Below: Andrew Allison shunts the carriage shed with V1224.

Missing Patterns

Jeff Sorenson has lent some 30T patterns to someone and he forgets who. These include patterns for cylinders, cylinder covers, steam chests, driving and bogie wheels and eccentric straps.
Jeff would like these back! If you have them or you know who does, Please let Jeff know ASAP.
His phone number is 02 9548 2531.

Left: John Hurst riding guard on an elevated train in January.
Above: Brian Muston's 4 wheel coal hopper and CHG brake van.
Below: David Lee and his (almost) working GM.

Below: A marine engine, the work of Allan Mackellar.

Works Reports

Elevated Track

Planning is under way to improve the standard of the elevated track. It has been in operation for more than thirty years and most of us that run on this track realise that work needs to be undertaken.

Ground Level Railway

We had a problem with 19 points and Mark Gibbons attended to this. This turned into a much bigger job than anticipated as a defective micro switch was the culprit and these are awkward to replace. Additionally it was discovered that the armature had a high resistance earth fault, so that was changed too. Some time later a defective micro switch was also replaced on 44 points.

A Signal Box key has been provided on the key ring in the old clubhouse. Anyone using this must be very careful that when the power is applied in the signal box, and points are operated, they do go over and the red transit lights stop flashing. If they do not detect, then the first approach is to turn off the power!!! Ballast, twigs, leaves and ballast can all obstruct points, and ideally they should be visually inspected before the power is turned on.

Henry and Warwick drilled a load of

After an unscheduled stop, Bernie gives Ray the right away to start up the outer main grade.

Jim Leishman rolling downhill on the November running day.

sleepers, and after lunch, the crew lifted the shunting neck and removed all the old sleepers and screwed on the nice new plastic ones! I have been told that this means that the track standard for the siding will be unsuitably high! The following weekend was taken up with the levelling of the shunting neck formation. Some rearrangement of the gradient was accomplished with the use of the boning rods, and the curvature was also adjusted. The alignment is now much more pleasing to the eye. Some fill was obtained from the entrance to the new carriage shed, so I suppose a start has also been made on the excavation for that! With all the work, the siding is now slightly longer. A substantial effort saw a lot of ballast barrowed down to the site, the bulk of the work was done. Thanks to Henry, Brian R, John Tulloch, Paul T, and Simon for their assistance.

Warning to Drivers

Drivers when traversing the shunting neck may mistake the track for the outer main given the high quality of its alignment. The buffer stop is NOT provided with a red light! When running at night, keep a watchful eye on the road ahead!

Henry and Warwick with some help from Brian and Mick attended to some resleepering and formation correction on the outer main near 46 signal. This is now much better aligned!

Excavation on the new carriage shed site has commenced. This involved removal of some vegetation to make use of a trip to the tip that had to happen.

Ground Improvements

The remaining pathway near the new shed, was concreted, resulting in all the ground work in this area complete.

Additionally the remaining spoil and rubbish at the top of the grounds was removed to the tip before Christmas as well as taking the old shed frame and any other surplus steel, plus the old bridge decking to the tip for recycling. This certainly tidied the place up and makes it easier to swing cars with trailers for loading and unloading. A reminder is that no parking is permitted within the grounds on running days. This is to permit ready access to all who use the facilities. Any cars should be in the unloading positions and NOT near the fence preventing cars swinging and reversing!

The remaining piece of concreting was the driveway and there was a reasonably early start on the excavation and by 10am, most of the spoil was out, and after morning tea the reinforcement was placed. An order for 1.2m³ of Readymix was placed and arrived just after midday. It took less than an hour to place it all and screed it off. Jim

Editorial.

Warwick's article "Decision Points" elsewhere in this Newsletter is very pertinent at this time regarding the future of rail heritage and mainline steam running in this state. The NSW railways under whatever title currently in vogue are saddled with more heritage items, fixed or moveable, than any other government department. The Office of Rail Heritage with their own agenda and consultants hopefully will be prepared to listen to the voices of the many people who have been involved in rail preservation for many years. One big problem that I see is that many of us are involved in more than one kindred organisation. The RTM have a Members and Volunteers information forum this month, when is it, when our running day is in full swing, its hard to be in two places at once.

With most groups, being a member is easy, but, making a valuable contribution requires much more dedication. The balance between paid work responsibilities and family matters sometimes leaves little time for extra activities. We all often say, why don't "they" do something about this or that. When we are part of the "they", we should look to see what we could do.

As for "The Large Erecting Shop" there may still be time to lobby our parliamentary representatives. If the lobbying is measured and well thought out results can be what we want. When the Carr government came to office many years ago a group of well organised Industrial Arts teachers saw the subject Industrial Technology reinstated for the HSC. We just have to make an effort to do something.

John Lyons.

Garden Roster

March. B.Courtenay, K.Baker, , N.Lyons, L.Pascoe, J.Sorrensen, N.Sorrensen, S.Sorrensen, D.Thomas, D.Lee.
April J.L.Hurst, A.Cottrell, J.B.Hurst, J.Leishman, J.Lyons, B.Rawlinson, M.Tyson, M.Yule, Stuart Larkin.
May B.Hurst, G.Croudace, T.Eyre, M.Lee, R.Lee, R.Smithers, B.Tulloch, J.Tulloch. P.Taffa.
June H.Spencer, A.Allison, M.Gibbons, W.Fletcher, M.Gay, G.Kirkby, B.Muston, J.Noller, P.Sayer.

Gate Roster

March. Peter Sayer April. Rob Smithers. May. Neil Sorensen. June. Jeff Sorensen.

and Mark did the work with the float, working off a plank for some parts. The concrete had only a half barrrow surplus, which was soon placed in another wanting spot. After Brian Hurst had done the edges, the job was done and off to a late lunch, thanks to Brian Rawlinson who had collected the pies and placed them in the oven for us.

Bill Richards has obtained a new BBQ plate. The original one had a big crack in it and it was touch and go whether the last loading of steaks and bangers would hold up under the strain! A strong back has been welded on to try and prevent it sagging in the middle (the natural state of all BBQ plates!)

George Robertson has repaired the flat tyre on the wheel barrow. We have discovered that the wheel is red! (rather than that grey concrete colour).

Brian Rawlinson & Henry Spencer doing up fishplates on the upgraded and relaid siding.

With the temperatures well down, there was a good gardening effort performed by Henry's team. Graeme Kirkby had made a good start mid week and filled the trailer with lawn clippings. There was a lot of pruning done to get the drooping branches heavy with leaves back above head height. A couple of old stumps were removed and quite a lot of raking was conducted. A lot of the rakings found there ways onto the gardens, which was good.

Brian Hurst has excavated more fence posts and is continuing on with the final work to finish off this project. He has scrubbed off the rust and painted them with cold gal before surrounding them with concrete. He has worked his way up to the ground frame, and there are not too many left to do!

David Thomas is continuing on and has done some more gardening and plantings. The bank is slowly being transformed and it will be great to have greenery hide the ugly fence and concrete bank.
We are pleased to see the grass slowly but surely spreading over the top of the grounds. Some runners planted by Brian Hurst have taken off, and the brown dirt is slowly becoming grass green.

Toolshed.

By now most will know the previous shed contractor had gone out of business. He returned our deposit. After a fair bit of ringing around Henry obtained a quote from another contractor which we accepted after some argy bargy.

This will be for a constructed on site job, and by the time you read this, work should have commenced.

We decided to replace a roof beam on the existing old clubhouse with a UB as the old one was split and we needed to relocate the support to the new shed corner. This had the advantage of only needing 2 supports, so it opened up the area as well. Bill arranged delivery. We cut it to length, and drilled the holes for the attachment of the shed rafters. It received some cold gal before erection.
This job was largely complete by lunch the Saturday after the December running day, and has even been painted and finished off. We hired four acrow props for the job which certainly was a help. The many hands available certainly made it easier and many thanks to all involved.

Features

Decision Points

Warwick Allison

Next month we will have our NSW State election. Now a state election is not something that would normally rate a mention in the SLSLS newsletter, but these are interesting times. Last year we saw the end of the lease of 3801 to 3801 Ltd. We saw the release of the Redfern Waterloo Authority (RWA) plans which showed a permissible 12 storey development on the site of the Large Erecting Shop. We saw the Government respond with a statement listing the Large as a Heritage area in the RWA "Fact Sheet Five". Despite this the planning map's 12 storey potential has simply been qualified as being subject to a "detailed heritage assessment"!

We saw the promise of $14M for rail heritage (mainly Thirlmere), promises of 'saving' 3801, and the establishment of the ARHS in a new and deserved home for their bookshop on the Sydney Station concourse. We also saw a report on the future of 3801 and 3801 Ltd and the Rail Transport Museum.

It would be true to say the fate of 3801 itself was never at risk. However, the Government has been silent on the true fate of the "Large" and have refused to acknowledge it as a continuing operational steam depot. Additionally their inaction has resulted in the loss of a viable volunteer group expert and proven in steam maintenance and operation. Whether or not the RTM can deliver the same as 3801 Ltd is irrelevant. What is needed is a viable movement of preservation, restoration and most importantly, steam operation, in NSW. This cannot be achieved by a single large body. Specialisations and diverse opinions and strategies are essential in nurturing the variety of skills needed. Volunteers are not paid labour. They do rely on turning up for work each day for their living. They are uninterested in politics, and red tape. They are extremely sensitive to wasted time, lost opportunities and clashing personalities. They need a practical vision and hard regular evidence of progress, in a pleasant agreeable team to grow and produce.

NSW has seen the benefit of volunteers in the Olympics. But the steam preservation movement needs skilled volunteers. The active destruction of any volunteer group (especially a successful team) is a despicable act by any who has a finger in it.

It is in the lack of response on the future of the Large as an operating steam depot, and the destruction of a valued and productive operating group that has been the great disappointments of the year. Just as disappointing is the lack of action by our established historical and museum groups. The end of the Large is the last chance of steam operation in Sydney. If this is lost, there is no where else. It will be gone for good. Neither the RTM nor the ARHS has verbally come out in favour of preservation of the Large. By their silence it appears a fait-au-complait to them. Why is it so? Only the National Trust (to its great credit) has come out strongly in its defence.

George Robertson supervises the activities of Jim and John with the erection of the new steel beam on the old clubhouse.

It is clear that there has been significant private correspondence to government ministers, oppositions and others on the matter. Both the Liberal Opposition and Mayor of Sydney have come out vocally in favour of its retention. However the Government has gone quiet, and one suspects influences at play that are not in the front line. The National Trust has continued to point out the undemocratic powers of these development Authorities. Powers that override the Heritage Act and other planning instruments, and place it directly into the hands of developers.

Twenty years ago, to have this done by a Labor government would have been unthinkable. Now it appears arrogant and unreceptive. Their gifts to Rail Heritage to date pale into monetary insignificance with the overall profits

Diary

24-25 February	LMLSLS Birthday Run Edgeworth
5 March	Directors Meeting
17 March	Public Running Day
3 April	Members Meeting
6-9 April	AALS Convention Penfield South Australia.
21 April	Public Running Day
1 May	Directors Meeting
19 May	Public Running Day and Next Newsletter
5 June	Members Meeting
9-11 June	Hot Pot Illawarra Live Steamers
16 June	Public Running Day

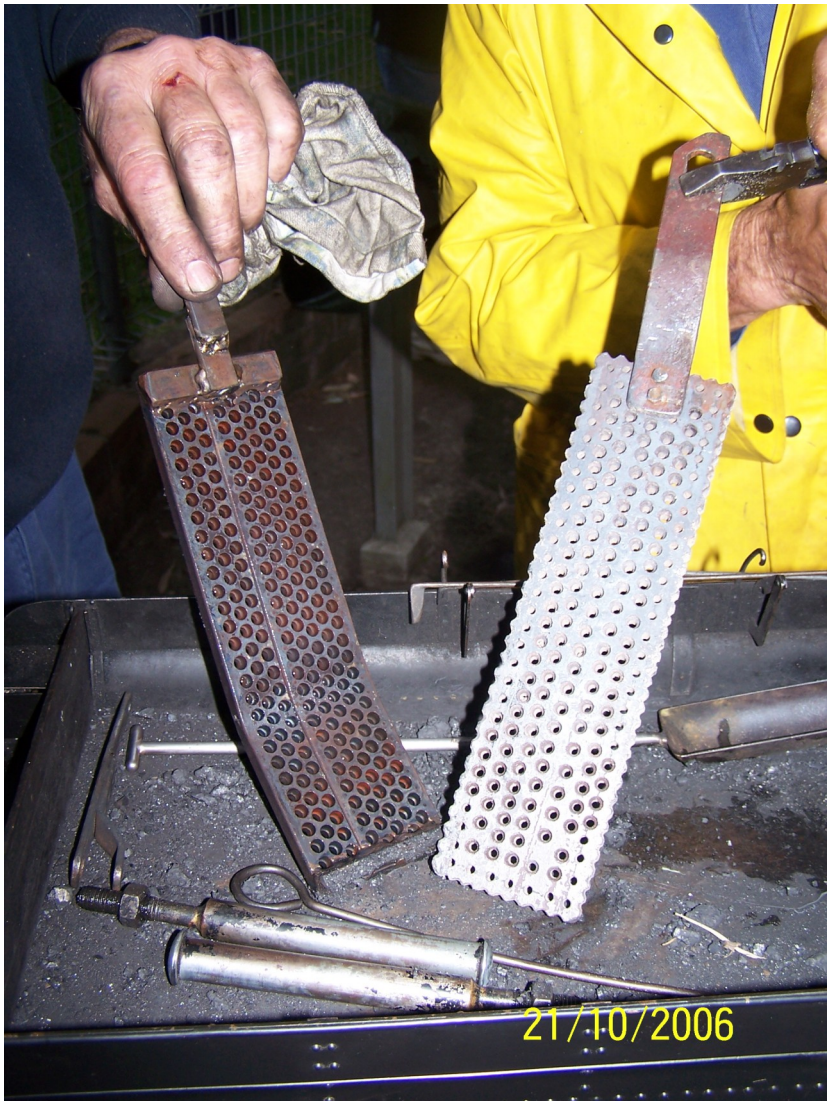
to be made in the total development. They are tokens and long overdue at that. However they come with strings attached. The Government and RailCorp should stay out of the area of managing heritage. They should just fund it and leave it to the experts. After all, its our money.

What does it take to get our established rail historical bodies to take an opinion on public matters?
As this is written, the issues seem clear. The Government is questionable against the retention of the Large Erecting Shop as a working rail facility, the Opposition is for.
The choice is yours.

Char Grates

At the post convention run at our grounds, April 2006, I happened to see one of our visitors fitting the grate to his locomotive and noticed it was just a piece of plate with a lot of holes drilled in it. I thought at the time, not a bad idea, suppose it works all right.
Graeme Kirkby has undertaken some detailed study of fire grates and here is his story.

Barry Tulloch's grate on the left compared with Graeme Kirkby's on the right.



Experimenting with Fire Grates. Graeme Kirkby.

My D5035 entered service in May 2002 and from the onset was fitted with a stainless steel longitudinal bar fire grate fabricated of ¼"square section with ¼" gaps giving 50% air openings. The firebox being mounted between the frames as pre prototype 50 class means the firebox is long and narrow, 2 7/8" wide and 9 7/8" long. The fire grate being 2½" X 9½" fits easily into the box and is perfectly flat throughout its length. The grate is supported towards its front end by a cylindrical carrier bar and at its rear end, a 3¾" long handle attached to the grate is pinned securely under the cab floor. The ash pan has adequate air openings, one at the front having a 3¾ sq. in. inlet and the rear one 4¾ sq. in. being in total approximately 31% of effective grate area.
Due to the rear axle crossing under the fire box it means the ash pan has to rise up and over the axle which unfortunately only gives a ¼" clearance at this high spot to the underside of the fire grate. This undesirable feature means that any ash clinging in the ash pan could cause the grate to burn out.

The fuels I use in 5035 are mostly our well known char chopped to a size a little more than a thumb nail. Black coals of similar size from either the Gunnedah area (13000 BTU, 40% volatiles, tarry, 7% ash) or Lithgow (11900 BTU, 30% volatiles, 15% ash) are often used straight or as a mixture with the char. During the Easter 2004 Convention in Bunbury, WA, a considerable amount of Collie coal (approx. 9000 BTU) was also burnt successfully. In all cases steaming is never a problem, the boiler being a very free steamer and responds well about 40 seconds after a firing. Only when using black coal towards the end of a long day in steam (say 10 hours) does steaming fall off a bit as the 7/16" i.d. tubes soot up, but with a bit more blower she rallies fairly readily.
After some 22 steamings (128 hours in steam) this stainless steel grate was starting to give out. This was not so much from being burnt out but from warping of the long bars forming unequal gaps which allowed excessive fire and ash to fall through. I decided a new grate was in order and thought a cast iron grate with long bars might be the way to go. I made a rough wooden pattern and submitted it to the friendly chaps at Jackson's Foundry near Granville and some weeks later picked up two grates for $20 each. They were of identical size but were now ¾" high 91/2" higher than the original grate) and weighed 950 grams. One of these grates I left as original, approximately 43% air openings, the other I dressed up with the angle grinder, cleaning off all the little fins and opening the air spaces to about 50%. This grate has served me well for some 15 steamings (85 hours) and despite the fire bed sit-

ting ½" higher than previously, no adverse steaming has been noticed due to the slight loss of heating surface and the foundation ring area being subjected to cold air. But I have since noticed some burning of the bars on the top and inside surfaces due to fire lodging between the bars.
Around May 2006 I saw a fire grate that John Tulloch had fitted into his J class. It seemed to me to be most unusual in that it had only very small holes drilled in it and I wondered seriously how it could possibly allow the boiler to steam. John had used it a few times and reckoned it was good. Me, being fascinated by such experiments, decided I would have one for my T class to try out. At first opportunity I was off to Emco and purchased some steel plate ½" thick and 2 ½" wide and long enough for two 9 ½" lengths, at $11.60 per kg. After cutting to length, I drilled some 191 holes through the plate in seven long rows, slightly more than ¼" apart. These holes were 9/64" dia. From the underside of the plate I opened the holes out to 15/64" but only drilled about half way through. This was to give a "velocity" effect to ensure a fierce blast of air up into the fire bed. I estimate the air openings the small holes gave as only 12%. Additionally, I made small serrations all around the ½" edge of the grate to allow air up the sides and walls of the firebox to encourage a good hot fire where the water is. After fitting a handle to the grate, I put it on the scales and it weighed 1 kg., a useful amount towards the rear of the locomotive.
The first test for this "holey" grate was recently on the "Windy Ridge" railway over a three day period where the engine was in steam for 31 hours. For the majority of the time char or a "shandy" 70/30 mix was fired. No discernible difference could be detected in the engine's ability to steam, it seemed the same as with a conventional grate but I did soon notice I was using less fuel, perhaps three shovels full per five minute lap hauling around 500 kg. weight behind the bum-truck. It seemed the fuel was being burnt more economically right through to nothing. Next to no ash was falling into the pan and only very fine stuff at that. Yet the fire never built up thick and heavy, in fact, if anything, there seemed to be a thinner fire bed. Burning straight Lithgow coal had similar tendencies as to burning on a bar grate, the fire did thicken considerably due to the excessive ash produced by this coal but it was manageable. A little more blower was needed and perhaps a run through with the pricker. With this coal the firing principle of "light and often" applied. As a point of interest another poor fuel I used was some old coal I had picked out of the Wolgan River at Newnes years ago. It had been rolling down the sandy bed of the river for X amount of years and after collecting quite a number of lumps, I stored it at home in an open container for some years before using it. It burned in a fashion to the Lithgow coal. Only towards the end of the first day after being in steam for over 10 hours did steaming fall off a bit but this was due to sooting up the tubes, especially the lower half dozen.
Train operations at Windy Ridge are usually quite different to our intense "peak hour" like services at SLSLS. A far more relaxed and slower running of trains with frequent and sometimes lengthy stops is usually the order of the day. It was the lengthy stops that bought home to me a different "modus operandi" was required when leaving the fire unattended. With the previous bar grates, a fire could be left for perhaps 20 minutes while one enjoyed a relaxed cuppa or cooked a snag on the shovel. However with the "holey" plate grate I was caught out. On returning to the engine, I found steam was back to 40 lbs. and the fire virtually out. "No worries" I thought, just a few fresh lumps on and crank up the blower and she'll be right! But she wasn't. With the grate having only very small holes, the fire had died right down and when I put the blower on hard there was not enough draught created through the small holes to save the fire and I had to resort to artificial means to relight the fire. I got caught twice! Unfortunately, to leave the fire unattended for any length of time now means I have to have the blower going harder which of course uses water.
At the October running day of SLSLS I was able to run double headed with Barry Tulloch on his D5037 in the latter part of the afternoon. Barry was also using a new "holey" plate grate and we were able to compare performance during the hour and a half run. I believe the grate in continuous running service was every bit equal to, if not better than a conventional bar grate with the advantage of using around 20% less fuel, very little in the way of ash and no coals falling through into the ash pan. The fire also appeared much more intense, a bright lemon colour when steaming up grade. So far, it looks as though it will be a long lasting grate as the fire burns totally on the top surface of the plate and not between the bars like a more conventional grate. Great! Must try one in the wide firebox of "2401".
Although night tests to evaluate spark emissions have not being carried out, it is thought sparks may be considerably reduced using this fire grate.

Rosebud Fire Grates Tulloch Works

Nearly everyone, who has used straight bar fire grates made from either steel or cast iron, has experienced burning of bars, thinning, and eventual collapse. Particularly those who have a driving axle below the firebox, and limited ashpan capacity. Full size grates in narrow firebox boilers are a series of transverse slabs of iron the width of the firebox, cast with tapered holes in them in a regular pattern. These bars about 15" wide pivot about their centre at either end and can be rocked back and forth to dump the fire or if necessary clear excessive ash build up. In the photo of the full size grate, the bottom grate section is actually No. 2 and has oval holes to admit more air. This bar is below the end of the fire arch. No. 1 bar is fixed so that it is impossible to lose all of the fire when dumping.

The ratio of air space to grate area is not all that large, in fact only about 12%. Our friends south of the border decided to try a holey grate in miniature some years ago and we spotted them at the 2005 HOT POT RUN.

The advantage is that apart from simple construction the fire doesn't get below the top surface and thus no burning

The fire grate sections of 3112.

takes place between bars, a situation that accelerates on a straight bar grate once it has started. John and I had reservations about getting enough air through the holes remembering that a bar grate admits at least 50% air or more depending on the spaces, and we felt that we drove our engines harder than the VICTORIANS.

However we made a grate from 10mm black steel bar drilled with 11/64" dia holes counter-bored ¼" deep with a 15/64" dia drill spaced longitudinally at 5/16" and laterally at ¼" interposed and the results have been amazing. There has been no warping of the plates. No burning on the surface, virtually no ash in the ashpan and a saving in char. This grate has not been tested on straight black coal but a mixture of black and char has proved OK. The air to grate ratio in this case is 22%.

Graeme Kirkby has made a holey grate for 5035 with even smaller holes reducing the air percentage to only 12%, with complete success. But he claims a little blower is necessary if the engine has to stand for extended periods. Brian Kilgour has fitted one to his Nigel Gresley, again with only 12% air to grate area, also with success as regards steaming and he claims, along with Graeme, a saving of at least 20% on char fuel.

The result of these experiments is by no means conclusive and we would recommend others to try a grate with reduced air spaces to see what suits our small locos best.

Produced by Tulloch Works

Lithgow and the Zig Zag Railway.

A report by John Lyons.

I was fortunate in 2006 to have had three trips to this part of the world. The first occasion was early in March with a church social group bus trip. While the day was dull and overcast I still enjoyed my first ride in the diesel railmotor, ex Queensland Railways, that are used weekdays (steam on Wednesday) or to supplement the steam service on a weekend. The railmotor comes to a halt at the Sydney end of No. 1 viaduct to let passengers alight and observe the scenery and engineering works from the station and observation position they have put in place. Under way again the next stop is to change direction at Top Points station and allow more time to admire the location. Back on the train we run down middle road over viaducts No.'s 2 and 3, through the tunnel to alight at Zig Zag station. Time here is allowed for showing those interested through the workshop area. In the workshop the steam fleet are serviced on one side and carriage restoration is under way on the other. An interesting project at that time was the conversion of one of the cars from side opening door style to centre aisle with only two doors at each end, each side. Probably a matter of passenger safety. After the workshop inspection it was back on board for a much quicker run back to Clarence station.

The second venture to this locality was with Brian Rawlinson in the October school holidays for the specific purpose of visiting the State Mine Museum at Lithgow. This Museum is usually opened only at weekends or on special occasions (such as the school holidays). As some of you may recall it was also the site of the disastrous fire some time back that destroyed some NSWGR end platform cars and singed the newly restored Z2606 2-6-2 saddle tank locomotive. The site is easily located to the north of the railway yards a few kilometres from the remains of the original Iron Works that put Lithgow on the industrial map many years ago. The remaining museum buildings are in good condition and there are many pieces of mining equipment about the area. The poppet head over the vertical shaft is not the original, but is very impressive any way. You can see the remains, footings, of the two power stations that have operated here. The second of these provided electricity for the mine, the town of Lithgow and as far east as Kurrajong. It was closed when the then State Electricity Commission completed their power station at Wallerawang. In the main office building the rooms are set out with displays and memorabilia of the mining industry showing how it has evolved from earliest times to the present day long wall system. Our guide had spent his working life in the industry and was very informative. We were shown maps of the mine workings, it was hard to realise that the un-

derground workings stretched for about 9 kilometres to the north from where we were situated in the building. One of the items on display was a block of anthracite taken from the Balmain colliery many years ago. It was bigger than a two-foot cube, I have wondered how long that would keep the Z19 in steam. Out side we were taken over to the poppet head where our guide found a reasonable size stone and dropped it through an opening into the shaft, quite a few seconds elapsed before we heard it hit the bottom. On our way to the wash house and blacksmith's shop we passed a very undressed saturated D5112 posing as an 0-8-0. The turret tender is just behind it but not coupled. Legend has it that D5112 was the late Prime Minister Ben Chifley's "locomotive". Since it was set aside and taken off the books in 1974 it was displayed at Bathurst Station and then transferred to Orange for restoration. Work got under way, then stopped and now it is at Lithgow. I hope that all the parts have come with it and perhaps it will become a steaming companion for the 26 class.

5112 at the State Mine Museum.

The wash house contains a display of photographs of many collieries from the local area as well as the Hunter and Illawarra coalfields. There are other pieces of mining equipment including locomotives and carriages used underground. An interesting piece is a glass mercury rectifier, a relic from one of the power stations and an exquisite example of skilled glass blowing.

The resident blacksmith was out for the morning but there were many pieces of his work to be seen. The items that caught the eye were a set of gates and fencing that he had been contracted to produce, they were quite impressive. The northern end of this building is a sort of carpenter's shop and in here was a fettler's trike under restoration.

Before leaving we were shown into the new carriage shed housing some passenger cars and the saddle tank Z2606. We could not see it close up and had to be satisfied with a view from a raised mezzanine floor at the southern end of the building. The locomotive did not seem to show any effects of the superficial damage inflicted by the fire.

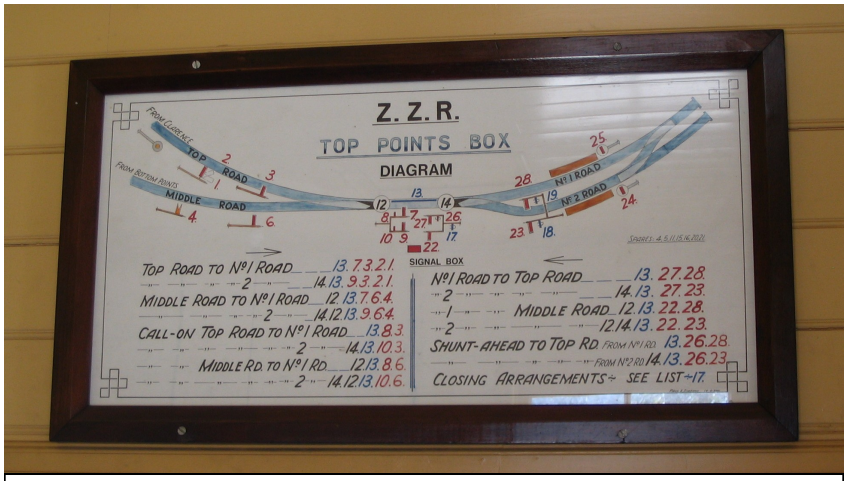
Leaving the museum site we made our way to the Lithgow Workers Club for an enjoyable lunch and then proceeded to Clarence station and the Zig Zag Railway. We did not have time to ride on the train so we had a look over a locomotive and rolling stock that is stored in a yard just to the west of the station. We then explored the beginning of the Zig Zag walking track. A sign warned that the track could be slippery and dangerous in windy conditions and would take about 45 minutes. The start of the track is at the western end of the platform north of the railway line. The first part of the walk is a relatively easy grade running parallel to the railway line above the tunnel. Just before the western tunnel portal the walking track descends with a fairly steep grade where you have to be very careful with your footing. At the foot of this grade a slight detour takes you to a viewing area where you can observe the train coming up the grade from Mt.Sinai and entering the tunnel. This was as far as we went with our exploration returning to Clarence station for refreshments and to watch the 1.00pm. train return to set up for the 3.00pm. service. We had enjoyed a good day.

In the week before daylight saving began for this summer I decided that I would have a day out by train and cover the whole of the walking track. On checking the timetables I was in for an early start.

0640am. from Seven Hills to connect with an intercity four car set at Penrith 0730am. for a limited stop train to Zig Zag. With a clear day, plenty of seats to choose from and the big picture windows what could be better. It was a chance to see the things you miss when having to concentrate on your driving.

Trains stop at Zig Zag platform (about 10 metres long) on request, tell the Guard and alight from the rear car. At

2606 at the State Mine Museum with other rolling stock.



Top Points Signal Box diagram.

at the end of the platform. Once I had inquired as to the departure time of the train I knew how long I had for a bit of a look around. I inquired from one of their guides if I could have a look in the Signal Box (bottom Points), he said yes, come with me. I had a couple of photos of my 19 with me. When I showed them to him it was like having a ticket to an inner circle. At top points I was invited into the signal box to watch the track and signals set for our run up the top road. Back in the rail car I was introduced to the driver and given a seat up front, what a way to travel. We made a stop at Edgecombe Siding to let one of the track workers off and the driver discussed some work movements that were to take place that morning. On the move again we were soon running beside the main road and into the depths of the tunnel to emerge into the daylight and come to a stop at Clarence Station. The train was to depart on its first service at 1100am. in about 40 minutes time. I purchased my ticket for the trip just completed and settled down for morning tea before attacking the walking track.

As I started off on the walk, the track workers ran a train consisting of a low profile mine locomotive and a flat car with a section of track on board. They made the run to the work shop yard area well ahead of the rail cars. The walking track, once past the western tunnel portal, takes a turn to the north to follow the ridge across the valley from the railway line, in effect it takes you well above No. 10 tunnel. The walk heads steadily up hill through lightly timbered terrain, it was very dry but there were plenty of wild flowers out. Eventually the walk emerges from the forest and on

Katoomba I moved to the rear car and informed the Guard of my wishes. Running over the Darling Causeway between Mt. Victoria and Bell I was able to see the remains of the exchange sidings for some long closed colliery. Further on there was a loaded coal train with quad 82 class locos waiting to depart the balloon loop of the current Clarence colliery. As we swung into the big horse shoe curve that marks the start of the 1910 deviation that made the Zig Zag redundant I remembered reading somewhere to look out for the views into the Hartley Valley as the train runs between the Rat Hole Tunnels, No.s 4, 5 & 6, I think. With the clear day the view was special even though ninety years of vegetation growth has had a limiting effect.

Right on time at 0915am. I set foot on Zig Zag platform and almost immediately an up container train growled through on its way to No. 10 tunnel with a pair of former AN CL class diesels at the head.

The rail car that was to run the days service was waiting

Garratt loco in the depot area. Note the inscription on the adjacent wagon!

Old railway dam wall.

to the open exposed "heath" type region. This is where it would not be the place to be in strong winds or electrical storm conditions, it is across the valley from Edgecombe siding. There are some very interesting rocky outcrops to observe that are very typical of the region. The walk is well indicated and very soon starts to zig zag down and towards the edge of the ridge. About half way down I came across a large rock platform just off the track, it was not difficult to get on to and provided an incredible panorama of the whole bottom section of the Zig Zag Railway. Straight down the station and signal box could be observed and to the right you were able to see right into the workshop area. I sat there for refreshments and to await the arrival of the rail cars that had departed Clarence station at 1100am. It almost appeared as though I was looking down on a large model railway. The main western line could be seen as well, a better view could be had by moving to the very end of the rock platform. Once the rail cars arrived I returned back to the track and completed the walk to the bottom. I had spent just over 45 minutes walking time but if walking back you would have to allow a bit more time as the initial climb would be rather tiring.

Elevated views from the walking track. Above: the depot and main western lines. Below: The railmotor arriving at Bottom Points.

I was able to join in with the passengers to go to the workshop area, my signal box guide from earlier in the day showed me through and took me outside to look at the 1953 vintage South Australian 400 class garratt. After the workshop visit I returned to the station to watch the departure of the rail cars and have lunch. I had some time to fill in before the departure time, 0154pm., of my train back home so I headed off to locate the dam that has provided a water supply probably since the system was first in operation. Walking off the Sydney end of the platform, past the shunting neck and around the electricity sub station I found it without too much trouble. The level was down a bit but with its location I imagine it would fill rather well with just a few days of rain.

Another fellow I had spoken with earlier in the day had given me directions to another track that would take you up to a location opposite the viaducts. Being conscious of time I did some more exploration but the track sort of disappeared so I headed back to the platform to for the train. Trains stop at Zig Zag "on request", the directions say to hold out the Green Disk for the driver to see. Green for stop???

There were four other visitors who were very amused as to how we were to stop the train. The big surprise was the CityRail message just as the train was due. Right on time it came round the corner, I held out the green disk, had a toot of acknowledgment from the driver and was soon settled in the rear carriage for an all stations trip to Penrith.

It was a very enjoyable day and a different way to see the Zig Zag. The walk would be recommended, a reasonable level of fitness is needed but watch your footing. Now on a day when they have two steam trains in operation my rock platform would be a good place to spend a couple of hours to watch and listen to the activities of the Zig Zag.

Post script. Since the above story was first written the comment re. electrical storms proved correct. On a Monday in late November a series of storms rolled across the state. The lightning with these relatively dry storms started a number of bush fires. These fires were at Mudgee, the Zig Zag and the western end of the Grose Valley. As far as I know there was no damage to any of the Zig Zag infrastructure but it was very worrying. The Bells line of Road and the Darling Causeway were closed for many days and extensive back burning was necessary in the Grose Valley to contain the fire. J.L.

Above: Matt Lee & 3803 traverse the newly upgraded outer main past 46 Signal.
Left: David Thomas driving Mountaineer and Steve Border as Guard with a good load on the inner main.
Below: Jim Leishman and the 10 wheeler in festive mood!

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