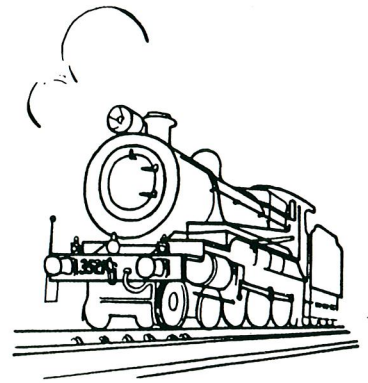


Allison

*Sydney Live Steam Locomotive Society*  
Anthony Road, West Ryde, N.S.W.



# 'Newsletter'

Vol.27. No. 4.  
November 1999.

## Running Days.

**August.** The main entrance was used for this running day even though the grass was still wet under foot in some places. We had a good crowd with a number of birthday groups, the weather was good in the morning but there was a threat of rain for the afternoon, we did have a few spots but thankfully it held off.

There was a good locomotive roster for the elevated track. Jim Leishman Ps4, Brian Carter "Perseverance", Paul Taffa "Hunslet", Stuart Larkin C35, the Mulholland's "Pansy" and Jack Grierson with "3 1/2" C38 class. With all the locomotives in operation the lever frame had plenty of use with the cross over as well as the points being utilised.

**Ground level.** On the outer track Bernie Courtenay's SMR 10 class ran one train while the other was hauled by Peter Shiel's C3901. Trevor Arney seemed to be enjoying his spell driving C3901 at one time setting up the best smoke screen we have witnessed at West Ryde for some time. The inner running was covered by Ray Lee with his C3803 and Graeme Kirkby double heading with Max Gay's "Bittza", Graeme's Pacific ran as an 0-6-2 for most of the afternoon.

Andrew Allison and Scott Murray were very busy with track up grading on the ballast siding. With the track base clearing, the weed control mat and the re - ballasting this siding must just about be at main line condition. We had in excess of 2500 rides for the day.

**September.** The day was fine but cloudy with a cold breeze. The crowd was reasonable with again a number of birthday groups. There were 2334 rides for the day. The inner ground level had double headed standard goods, Barry Tulloch D5037 and Mike Tyson D5112, on one of the trains while Henry Spencer "R" Class doubled with Ken Baker and his "Simplex". Later in the afternoon Barry and D5037 ran a three car train. The outer trains were hauled by C3803 Ray Lee and John Hurst with his 4-8-2.

On the elevated track there were two three car trains. Brian Carter "Perseverance" took one while Jim Leishman and his Ps4, 4-6-2, ran the second.

**October.** This running day was almost 50 years to the day that the Society first ran at West Ryde.

There were some interesting motive power combinations rostered for the afternoon. On the ground level outer track Max Gay "Bitza" and Henry Spencer "R" class ran one carriage set with C3901 Peter Shiels hauling the second set. Later in the afternoon C3901 was replaced by C3142 Jeff Sorensen, Matt Lee C3506 and D5037 with Barry Tulloch. This combination was very impressive. The inner service was run by Ray Lee with his "S" class and John Hurst 4-8-2. Mike Tyson D5112, ran his works train for a while and then was involved in some passenger hauling. John Tulloch's "H" class was on shed.

The elevated track was full of activity after a lean time in September. Jack Grierson's C38 ran most of the afternoon, Mark Gibbons was at the regulator. Jim Leishman had the Ps4 on three cars, Brian Carter, 0-4-0 "Perseverance" also three cars, Jim Mulholland and "Pansy" one car, Stuart Larkin C35 two cars and Ken Baker "Simplex" three cars.

It was a very good afternoon and you will find a further report from Warwick later in this Newsletter.

## Confessions of a Travelling Aussie Trainspotter.

Peter Lyons. 25th. October '99.

Hello all from Fort William, Scotland, on an overcast late autumn evening. As the mist rolls onto Loch Linnhe, I thought I would recount some of the Rail experiences that Sharlene and myself have had in the past six weeks. We have been lucky to see so much of Europe and the United Kingdom and along the way a small dose of railways has kept up my interest. Here is a summary of the things we have experienced.

**A Jetlagged Arrival.** After a 22 hour flight from Australia it was time to catch the Tube from Heathrow to London. Just after the morning peak, on went Sharlene and myself and all our luggage! A change of train

and we were at Euston and out on the street heading for our Hotel. To say the least our arms grew longer after that first introduction.

**National Rail and Privatisation.** How curious I was to hear the Station Announcers at Waterloo and Victoria Stations call everybody CUSTOMERS, nobody is a Passenger anymore!!! "Customers are to proceed to platform 9.....". "Customers are advised.....". "Customers alighting for.....". Very profit orientated indeed !

**High Speed Trains.** Thalys Train ( Amsterdam to Paris ) This train covered approximately 500kms. in four hours. Slower speed through Belgium but very quick on French rails. I used to time our trains between kilometer posts back in Oz. I thought that 25 seconds ( about 144 km/h ) was good for a 600/700 Series Railmotor between Muswellbrook and Singleton. Well, do you think I could see the kilometre posts once this train got moving, very quick, and such a smooth ride.

**TGV. Paris to Lourdes and return.** Comfortable and very quick, covered about 800 kms. in 5 1/2 hours. The pressure changes in the carriage as the train enters tunnels at high speed at times caused slight discomfort. At Bordeaux, about 600 kms. from Paris the old steam roundhouse was in the process of demolition, as all the Electric Locomotives looked on.

**Paris Metro.** Very good to get around. It must be dangerous for some as when I approached an English speaking French lady to ask a question, she nearly had a heart attack - screamed with fright. After she realised I was no threat ( I could only shoot her with my camera ) she was most helpful. Moral : Do not speak to anyone on the Metro.

Managed again with luggage for the trip from Gare Montparnasse to Gare du Nord to TGV to Eurostar. Pretty good , Metro has Escalators and stairs. Also we had to watch out for Buskers in the carriages with their Piano Accordions playing the Can and other French classics, if you look as though you are enjoying it they come and ask for a tip when they are finished, then they move on to the next carriage.

**Funiculars.** A fancy name for a cable car / inclined railway carriage. Usually one goes up as one comes down, hauled by electric winding motor. There was one in Paris to lift you about 50 metres. A good one on the Isle of Capri , Italy, took you up about 200 metres high. Interesting single line with a crossing loop in the middle. As one car goes up it passes the "down" car half way.

**Swiss Rail Experience.** Whilst on our coach tour of Europe we stopped for two nights on Lake Luzern, Switzerland in the small town of Fluelen. Much to the disgust of the 44 / 45 passengers on the bus, the hotel was right beside the main line , which must have been a major rail trunk route through Europe. It was great. Trains in both directions at 3 minute intervals virtually 24 hours a day. The variety was there too, passenger and goods. Not bad I thought, what a way to run a railway.

**Eurostar.** ( finally someone speaking English ) Very quick in France . Twenty minutes in the Channel Tunnel. Slow on British rails which was not unexpected, but a good rail journey to say the least.

Back in the U.K. Now the fun begins. Two days of trains in amongst the regular sightseeing.

**National Railway Museum.** A real must for anyone . This place was great. All that reading of those "Steam Railway" magazines has paid off. And John Tulloch, you would be in your element , 99.9% British trains here. There was one Chinese locomotive in the main hall, but that was British built, OK 100% then. The first things I saw as I walked towards the entry of the main hall - no - not a "King", "Castle" or a "Duchess" but a 3 1/2 " "Titch" and a 3 1/2" "Rob Roy" Not bad I thought.

Into the Great Hall and there was the G.W.R. "Star" class 4-6-0. "Evening Star" 92220 2-10-0 overshadowed by that Vulcan built Chinese 4-8-4. The last British Rail steam locomotive built and the largest British built rigid wheel base steam locomotive ! Amongst other things , the Stirling Single, the original Rocket and two replicas, L.M.S. Compound and the sectioned Merchant Navy 4-6-2 in motion. ( this was great ) A4 Mallard, City of Turo 4-4-0 and Battle of Britain "Winston Churchill" 4-6-2.

The newly opened warehouse section contained an extensive collection of models, name plates, station signs, engine number plates and builders plates. Lots of signalling equipment ( even a miniature frame from British Rail like our West Ryde one. ) There was this extensive collection of "O" gauge scale models of the 4 wheeled "S truck type " private owner wagons. A great display, there were a few hundred, all with different markings. The collection was left to the Museum as a bequest from the Modeller.

The NRM workshop has a viewing gallery. The replica Rocket was being lifted into the shop for its end of season overhaul. The small tender being easily handled by the 7 tonne overhead crane. This is about as close to miniature train handling as they could do here at the NRM I thought. A boilerless Super D 0-8-0

chassis directly beneath the viewing platform, 2 diesels ( no interest what so ever ) and the "Duchess of Hamilton" 4-6-2 No. 46229 across in the far corner minus boiler cladding, the tender out in the main hall.

To mention the rest of the Museum would take far too long. It is definitely worth spending a day ( or two ).  
**North Yorkshire Moors Railway.** An over cast and wet 21st. October. Time to get off the roads and travel by train again. And the railway did not disappoint. The 10.20am. service from Pickering , first carriage behind L.N.E.R. K1 2-6-0 in its British Rail black livery and B.R. No. 62005.. Plenty of steam and soot. Finally able to put my head out of a train window again. The sound of the exhaust for most of the trip, the very high pitched British train whistles. Great!... The scenery on this line is nice, through the Yorkshire Moors, " Heartbeat " country. Crossed the first Grosmont to Pickering service at Levisham hauled by 4-6-2 British Rail 4MT tank No. 80135. This locomotive has covered 100,000 miles on the NYM railway and has just returned to service this season after a five year overhaul including the construction of a new firebox.

Talking to the Conductor, found out I missed A4 "Nigel Gresley" in steam by just a few days. A Wartime Theme week end was being readied for . The U.S.A. Transportation Corps Class 2-8-0 and the War Department 2-10-0 No. 3672 "Dame Vera Lynn" were being prepared. The return journey was just as good, the K1 performed well. In the last carriage this time, great views of the locomotive.

Back to Pickering and the rain had set in. It would be a fun drive to Whitby !

I hope and England have some interesting and varied rail operations. The Paddington rail disaster in London has got the nation talking Rail Safety.... the Privatised Rail Track have washed their hands of responsibility for safety..... their job is to run trains. They say!!!.

I have been very fortunate to have seen so much, I hope you have enjoyed my short notes.

#### Vale Ron Larkin.

On Sunday 12th. September Ron lost his short battle with cancer. The Society lost a very valued member, and many of us a friend. Not least Laurelle, Karen and Stuart lost a person who was very special to them. Ron had been a member of the Society for thirty years, and served as a Director for more than half of that time. Ron was involved in many of the activities of the Society and went about getting things done in his own quiet efficient manner. We was very willing to help other Society Members, there are many of us that have smoke boxes that Ron was able to roll for us, and others who gained access to the TAFE furnaces to make the shaping of boiler plates that little bit easier, his advice on welding techniques much appreciated .

Ron enjoyed driving his locomotives and he also liked to see others sharing that enjoyment, a lot of us have had the first experience of driving a "Big" locomotive on Ron's Atlantic or the C35 class.

For some of the members and their families their friendship with Ron goes back much further than his involvement with the Society to the time when, as a teenager, Ron's family moved to Strathfield.

The respect that Ron held in the S.L.S.L.S. was amply demonstrated by the number of members who were able to be present at his funeral service. We will all miss his friendship and his sense of humour.

On the September running day the flag flew at half mast. R.I.P.

#### From the Larkin Family.

We would like to express our sincere thanks to all of you for your support, care, concern and phone calls, visits to our home and to the hospital, where Ron spent 3 1/2 months all up, out of the 7 1/2 months of his illness. Thank you for the friendship shown during visits to West Ryde when health permitted, after Ron's diagnosis.

Thank you to the large number who came to Ron's funeral service to pay tribute, to show respect, to give thanks for his life and to say goodbye with dignity, he so richly deserved.

Thank you for the lovely flowers and the many cards we received and for the donations, in Ron's memory, to Ward C5C, Westmead Hospital to purchase equipment to care for others.

Ron was passionate about his teaching and steam engines and looked forward to his retirement time to finish building his engine and to firing up and running them but this was not to be but in our great sadness and loss we are comforted by your care and concern.

Ron took a photo of his steam engine with him.

Ron will never be forgotten, just as your kindness will not be forgotten.

Laurelle, Karen and Stuart Larkin.

### **50th Anniversary of the Opening of the Grounds**

This event was celebrated at short notice by an evening BBQ after the October running day. While the weather on the day was marginal (it kept the rides down to just under 2000), the members turned up in droves with lots of locos and good humour and it proved to be ideal conditions. A particular highlight was the display of 2½ inch gauge locomotives in the elevated roundhouse. On shed were 2 Princesses, (John Hurst's & Ted Esdaile's (now in the possession of Bernie Courtenay), Allan Mackellar's P class and Len Rowlings 36 Class now in the possession of Barry Tulloch, and the Cec Mackellar built Atlantic, on loan for the occasion. There was also a 35 class chassis. Running continued into the night on both the ground and elevated tracks, and the ladies gratefully assisted with the organisation of the food, including the supply of desert, which was, of course, not considered by the organising committee but which was consumed with gusto by all present. A great time of steam, food and friends which everyone appreciated.

### **Anniversary Book**

There are still copies available. Cost is \$7.50. See Warwick or the ticket seller on running days.

### **Wedding Bells.**

Congratulations to provisional member Rolf Collett and his wife Rachael who were married in late September. Best wishes for the future from all of us.

### **Christmas Party**

This event will occur on the first Saturday in December, 4th. As in previous years it will be a BYO everything BBQ tea. Family and friends are most welcome. Bring those locos and steam into the night amongst impeccable company! Starting time is when you arrive!

### **New Years Eve**

Can't afford the Harbour cruise? or the night at the Hilton? How about making our own fireworks! What better than steam on New Years Eve! This would start as early as you like going through a BYO BBQ tea and then on into the final throws of the century, and the millennium (if you consider it happens this time-otherwise its another excuse to do it again next year!). Whether people would be in a fit state to then drive home might influence a later New Years Day morning finish? For those interested, New Years Eve is a Friday. The best time in Sydney!

### **Narooma & Kent Rd School Run**

This, now annual, event was held in October. A number of members attended for the run which was greatly enjoyed by kids, teachers, & members alike. Peter Shiels, C3901, and Henry, R Class, powered the two trains of the day, Bill Richards ran the signal box, Alan Mackellar and George Robertson assisted. Peter reported that the kids were the nicest lot you could wish to meet.

### **Works Reports**

#### **That Council Drainage Work**

Is this the end? Council decided they did not like the height of the refilled site and required removal of 200mm off the top. This work was reasonably promptly carried out after we gave the go ahead, although it means that some turf that had just got going OK was dug up again. The work was carried out without any damage or effect on our facilities and was completed a week before the October running day. Hopefully, this is the end!

#### **Luxurious Carpet**

Many thanks to Jim Leishman for obtaining the carpet and arranging the laying of it in our clubhouse. It makes the place a lot more pleasant for conversation with less reverberation. If you are not aware of what it cost to lay, then ask Jim! (Hint-its not money!)

#### **Concrete Path**

A concrete path is to be laid from the entry bridge to meet up with the exposed drain top. This will provide an all weather entry and will make wheel chair and stroller access much easier. The ground seems to be susceptible to being boggy after the drainage works, and this will make entry into the grounds safe and easy when conditions are a bit marginal. Work should start on this soon.

#### **Track Work**

The ballast siding has been rejuvenated with the provision of a pine log retaining wall, weed mat under the track, new sleepers and a general tidy up and realignment. The sand pit has received a new wall to prevent the

sand spilling out onto the ballast siding track. The work was commenced enthusiastically by Scott Murray and Andrew Allison and soon had others lending a hand. Some seem to think it is now main line status!

### Visit to the Blowfly Rally

This happened on 30 & 31 October at Orange. Unfortunately, the weekend was wet with a only handful on the track, although there were more locos keeping dry in cars and trailers! Over 50 signed in on the Saturday and there was plenty of gossip amongst the tea drinking. Barry Potter, Blowfly creator extraordinaire, was presented with a framed certificate in recognition of his contribution to the hobby. Early Sunday the water in the nearby creek (drain?) had risen to cover the track and platform, but fell quickly after council workers opened some drain gates. Most had decided to give it away by this stage. Thanks go to the Orange club, for hosting the event and the effort they put into it!

### Email Addresses

It was suggested that a list of email addresses of connected members would be a good idea to facilitate communication. If you have an address and its not listed here please let us know (by email!)

"Warwick Allison" <wallison@pnc.com.au>,  
 "Mick Murray" <mjm@pnc.com.au>,  
 "Brian Rawlinson" <brianer@netspace.net.au>,  
 "Brian Kilgour" <nigel-gr@zip.com.au>,  
 "Barry Millner" <rysup@presto.net.au>,  
 "B Carter" <brian@ameng.com.au>,(Brian has a few other ones as well!)  
 "Ken Baker" <kibaker@raaf.defence.gov.au

### Use of Power Tools

The Society has invested in a portable safety switch for use with extension leads and portable electric power tools. It will be kept in the old clubhouse. Please be aware of it and use it for our safety!

### Stolen Locomotives

Hornsby Model Engineers have advised of 2 "Anne" 0-6-0 tank locomotives painted dark blue with red wheels, that have been stolen. Boiler numbers are NK-48-78 & NK-48-79. Anyone with information is invited to telephone (02) 9411 8196 or 9588 2688.

### Those "Olympics"

The opening ceremony of the Olympics is on the day before our running day in September. As we are the closest live steam club to the Olympics venue, some of us have been thinking of having a special weekend or display where hopefully we will be able to attract any overseas model engineers who may be in town. No firm decision or arrangements have been made. As they say in the ad "Please Consider!"

### Braking Policy

The AALS has amended the Operating Code on brakes following an all club postal vote. The old 1 in 3 cars requirements has been deleted and replaced with a requirement for clubs to formulate their own policy on brakes. Accordingly at the November Director's meeting the following policy was adopted: "The SLSLS braking policy on public running days is that a minimum of 33% of elevated cars per train be braked and a minimum of 66% of cars on ground level trains be braked."

Of course we usually do much better than this and it is in our interest to ensure that our brakes are as good as possible. On this basis loco owners who do not have a vacuum ejector fitted are encouraged to do so, and as time goes by, the very few remaining unbraked cars will be upgraded so that we have all passenger cars fully braked.

### Hear Ye Hear Ye - New Loco!!

Brian Rawlinson's new Blowfly passed its steam test on Thursday 28 October 1999! There are a few small matters to attend to, then hopefully it will be a regular attender at the grounds. The completion of any loco is a major achievement, and this is the clubs first new one for some time. Well done Brian!

### For Sale.

5" Pacific loco. and passenger truck. \$6000. Boiler Cert. not current, but should be no problem.  
 Two 3 1/2" Hielan Lassie chassis , rolling, no rods. One complete boiler. Assorted castings. Rolling tender chassis, brass tender plates. Contact Barry Tulloch. 9746 8117.

**Diary**

|                  |   |
|------------------|---|
| 20 November      | Public Running Day (for the Malcolm Sargeant Cancer Fund) |
| 4 December 1999  | SLSLS Christmas Party                                     |
| 7 December 1999  | Members Meeting   |
| 18 December 1999 | Public Running Day  |
| 31 December 1999 | New Years Eve Run   |
| 4 January 2000   | Directors Meeting   |
| 15 January 2000  | Public Running Day  |
| 1 February 2000  | Members Meeting   |
| 19 February 2000 | Public Running Day & next Newsletter.                     |
| 26 February 2000 | Lake Macquarie 47th. Birthday Run.                        |
| 7 March 2000     | Directors Meeting   |
| 18 March 2000    | Public Running Day .                                      |
| 21/24 April 2000 | Annual Convention-Warner Queensland.                      |

**Garden Roster.**

|           |  |
|-----------|--|
| Dec. '99. | B.Richards, W.Fletcher, F.Collins, M.Gay, S.Larkin, D.Lee, J.Noller, G.Robertson, H.Spencer.               |
| Jan. '00. | W.Allison, R.Barlow, B.Kilgour, B.Millner, D.Mulholland, J.Mulholland, M.Murray, V.Scicluna, P.Shiels.     |
| Feb. '00. | B.Courtenay, K.Baker, B.Carter, V.Condon, J.Grierson, M.Haynes, L.Pascoe, J.Sorensen, N.Sorensen, P.Taffa. |
| Mar. '00. | J.L.Hurst, J.B.Hurst, A.Cottrell, A.Coucill, J.Leishman, J.Lyons, P.Lyons, B.Peake, M.Tyson, M.Yule.       |

**Gate Roster.**

|           |            |          |          |           |              |
|-----------|------------|----------|----------|-----------|--------------|
| December. | J.Lyons.   | January. | P.Lyons. | February. | A.Mackellar. |
| March.    | K.McMahon. |          |          |           |              |

**Boiler Inspection Dates. 1999 / 2000**

| Name.        | Exp. Date.   | Loco. / T.E. | Details.                 |        |
|--------------|--------------|--------------|--------------------------|--------|
| W.Fletcher.  | 13. 1. 99.   | 2 1/2"       | 4-6-0 Pearly Grange.     | O.O.D. |
| V.Scicluna   | 16. 3. 99.   | 3"           | Scale Cliff and Bunting. | O.O.D. |
| J.Sorensen.  | 3. 5. 2000.  | 5"           | 4-6-0. C3142             |        |
| S.Larkin     | 3. 5. 2000.  | 5"           | 4-4-2 Atlantic.          |        |
| G.Kirkby.    | 3. 5. 2000.  | 5"           | 4-6-2. 2401.             |        |
| P.Taffa.     | 3. 5. 2000.  | 5"           | 0-4-0. Hunslet.          |        |
| R.Lee.       | 14. 6.2000.  | 5"           | 4-6-0 C35.               |        |
| R.W.Allison. | 12. 7. 2000. | 3 1/2.       | 0-4-0. Titch.            |        |
| B.Carter.    | 25. 7. 2000  | 5"           | 0-4-0. Decauville.       |        |
| J.L.Hurst.   | 9. 8. 2000.  | 5"           | 4-8-2. Baby.             |        |
| H.Spencer    | 30. 8. 2000. | 5"           | 4-6-2. T.G.R. R Class.   |        |
| P.Shiels.    | 30. 8. 2000. | 5"           | 4-8-2. C3901             |        |
| V.Scicluna.  | 30. 8. 2000. | 2"           | Scale Allchin.           |        |

**Editorial.**

I would like to take this opportunity to wish all members of the Society, their families and friends all the joys of the Christmas season and good luck for the New Year and the start of the 2 thousands.

John Lyons.

**The Development of the Steam Locomotive on the N.S.W. Railways.**

by Mr. C.A.Cardew. Continued.

**Bogies.**

As has been more or less indicated the evolution of the leading four wheel bogie and two wheel pony truck progressed in each case through the Bissell radial arm type, until with the four wheel bogie there was introduced the Adams design, which provides both a lateral and a partially rotating movement per medium of a sliding ( or swinging ) and swivelling bolster which supports the weight carried. Also the means whereby the desired side controlling force is exerted, both to steady on the straight and assist in guiding around the curves

the front of the locomotive, passing through the stages of the employment for this purpose of mating sliding surfaces on both the engine and the bogie frames, set to an inclined plane, the lateral component of the weight carried on which provided the side controlling force, to initially compressed springs exerting the desired side pressure in the same way. Then, later, there was provided in the Adams type bogie above mentioned a bolster free to move sideways in guides in the bogie, or truck, frames in which it was located, either controlled by side springs, or else suspended by inclined links with single pin bearings top and bottom, the inclination of which links supplied the side force, and subsequently came swinging links positioned vertical on straight track, and having a single pin bearing at one end but double pins in slots at the other, which operated similarly, though holding the bolster in the central position, as on straight track, with greater stability than did the previously used single top and bottom pin links with, finally, a device the same in principle but operating in effect as though the links were placed in compression instead of, as in the preceding, in tension.

With two wheel trailing trucks there was only one variant from similar designs, but applicable in this position, to those outlined in the foregoing, and this was the use on the suburban type tank engines that had two trailing wheels of the Webb radial axle box. This ingenious device, the invention of F.W. Webb, of the London and North Western Railway is the equivalent of the Biessell radial arm truck, but substitutes for the radial arm an axle box assembly, constrained longitudinally in curved guides which are struck to a radius, and allow side movement in exactly the same way as would be the case if the assembly were controlled by the radial arm which it does away with. In respect of the number of locomotives which were built here with this arrangement one can only speculate whether, or no, royalties were paid to Mr. Webb for the use of this device of his in this then far away colony. Mr. Webb was renowned for his insistence on obtaining adequate financial recognition for his many inventions, from which very largely he amassed a considerable fortune. But let it at once be added, however, that the proceeds of this latter he left for the benefit of the railway employees and inhabitants of the railway town of Crew, where even today these benefactions continue.

#### Valve Gears.

It will be sufficient merely to record the gears that did appear from time to time on the various classes of locomotives on the New South Wales Railways. Thus there were - the Stephenson, Joy's valve gear, the Allan straight link, the Southern, and the Walschaerts gear, the last mentioned, though invented much about the same time as the Stephenson, and actually well before the other three mentioned, being the last to be applied to locomotives designed for these railways, as it was also the one to be employed on all the latest classes of locomotive. Actually there was some consideration given at a late stage to the introduction of the Baker valve gear, and the Caprotti system with poppet valves, but the decision was not to depart from those gears already in use, a decision which it is thought was a wise one, especially in the case of the Walschaerts gear, than which the opinion is expressed that none other had such superior merits as would justify superseding this gear. Finally, it may be remarked in regard to the several valve gears mentioned that it is believed that Joy's valve gear was used nowhere else in Australia beside New South Wales, but, was very much favoured on the London and North Western Railway. So far as it is known the New South Wales Railways were alone outside of the U.S.A. in employing the Southern valve gear.

#### Boiler, Fireboxes and Smokeboxes.

The boiler and its appurtenances possibly constitute the most important part of a steam locomotive, and in the pursuit of greater power output, and with the dimensional growth of the locomotives of the New South Wales Railways and the design and proportions of the boilers for the same, of course, were developed accordingly. There were, however, no radical departures from the orthodox type of boiler attempted, and the fact that there never were any such successfully made on any railway is a tribute to the suitability of the locomotive type boiler itself for locomotive work.

There were, however, some features which underwent change, modification, and development, as the case might be, which ought to be recorded. Of course, in this regard there was the adaptation of the boiler to accommodate superheating apparatus, to which some reference has already been made. The original series of Standard Goods boiler was modified to allow for the necessary large diameter upper flues for housing the elements of the fire tube superheater.

The Belpaire design of firebox, when introduced, did not necessarily become universal. There were at one stage conversions from round top to Belpaire, and then, reversion again for new locomotive designs to the round top box, and later again to the Belpaire type, so that neither could ever be said to be standard New South Wales practice. In favour of the Belpaire design there is, of course, the advantage of direct staying, with the stays more or less normal to the plate surfaces involved, and a large steam space, but in large

locomotives it can be unduly bulky, and occupy a great deal of space obstructing the view ahead from the footplate.

A subsequent development in boiler design was the introduction of various forms of tapered boiler barrel, the more modern principle of which was worked out on the Great Western Railway in England, though previously there had been American locomotives employing a variation of the idea. Experiments made on the English Railway mentioned showed that the most violent movement and circulation of the water occurred in a locomotive boiler just ahead of the firebox tube plate, and thus it was desirable to have the largest cross sectional dimension possible of the boiler here. Hence the design of barrel sloping upwards, and outwards, on top and at the sides, from either end of the boiler to reach a maximum two or three feet in front of the firebox tube plate, by which feature there is both allowed wide water passages at the sides to communicate with the water legs of the firebox, and provided an ample steam space on top at a place where it is most desirable because of the local ebullience of the fiercely heated water. The corresponding downward inclination of the top of the inner firebox towards the back, is also valuable as providing a greater depth of water at the rear, helping to keep the crown sheet covered when the water runs forward following any heavy application of the brakes. While referring to this ebullience of water in the boiler while forming steam, it might be mentioned that although at one stage there was a trend, exemplified in one or two early boiler designs, to follow a practice having some vogue in England of doing away with the steam dome, water conditions in New South Wales were not sufficiently favourable for it to be accepted, and reversion to the use of the dome quickly followed, with thereafter its permanent retention in boiler practice.

The largest boiler ever employed on a New South Wales Railways Locomotive was that designed for the D57, and D58, Classes, it incorporated both the taper barrel feature with a wide and round top firebox. This boiler was stoker fired.

Incidentally, it might be appropriate to refer to the fact that there has, to my knowledge, been only one case in all the history of the New South Wales Railways of a serious boiler explosion, which is a tribute to their design, construction, maintenance and operation, which could be the envy of more important lines.

The introduction of such facilities as rocking grates and self emptying hopper shaped ash pans were possibly long delayed, this would be true, but equally true of most railways outside the U.S.A. When applied they proved most successful.

Finally, A few words should be said about the development of that very vital part of a steam locomotive and its boiler, the smokebox. In the early stages there was neither anything very remarkable about smokebox design, or for many years attempts made to develop improvements in same, except perhaps some rather crude arrangements of spark prevention equipment applied. In later years however, following locomotive practice in the U.S.A., there was developed for both existing and new classes of locomotive, what is known as the American Master Mechanics Smokebox. This design of smokebox is intended to avoid the need for emptying the smokebox from time to time of the heavy cinder accumulations which lodge there. It does this by discharging the cinders with great velocity, under the action of the rapidly flowing smokebox gasses which the equipment suitably directs for the purpose, and the force of the exhaust steam issuing from the blast nozzle, up the chimney, and to the atmosphere. And further, by means of baffle plates provided, and the final interposition before exit of a flat wire mesh screen, there is provided what is probably the best form of spark arrester that has ever been used on steam locomotives, and one that is effective in almost entirely preventing the emission of any live sparks of such size or condition, as under normal conditions will be a risk of causing lineside fires.

This completes the series, thank you to Alan Austin for providing the original text.

*'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 shopping centre. Telephone (02) 9874 8696

Postal Address: The Secretary, PO Box 124 West Ryde NSW 2114

Web Page Address: <http://www.pnc.com.au/~wallison/sls.html>

Public Running Day is the THIRD Saturday in each month from 1.30pm. Entry is \$2 adults, \$1 children. Rides are 50c each