

NORTHERN DISTRICTS MODEL ENGINEERING SOCIETY
Vasto Place Balcatta Western Australia **PO Box 681 Balcatta 6022**

STEAMLINES

May 2000

Your Committee

President	Doug Baker	9341 1630	Vice Pres	Ian Allison	9490 2381
Secretary	John Shugg	9246 9549	Treasurer	John Martin	9448 8843
Committee	Lindsay Adams	9447 4646	Committee	Jim Clark	58709446
Committee	Jim Crawford	9276 5464	Committee	Ron Date	
Committee	Gavin Gooch	9361 9662	Committee	Dick Langford	9342 8049
Committee	David Naeser		Committee	Ernie Redford	9446 4513

***STEAMLINES* Editor: Dick Langford**

Coming events

<i>Club run day including public running</i>	<i>Balcatta Track Site</i>	<i>10.00 am to 4.00 pm Sunday 28 May 2000</i>
Australian Model railway Association Exhibition	Claremont Showgrounds	3, 4 and 5 June 2000
General meeting	Laurie Strutt Park	8.00 pm Friday 9 June 2000
<i>Club run day including public running</i>	<i>Balcatta Track Site</i>	<i>10.00 am to 4.00 pm Sunday 25 June 2000</i>
General meeting	Laurie Strutt Park	8.00 pm Friday 14 July 2000

*** The AMRA Model Railway Exhibition - 3, 4 and 5 June 2000 ***

Your Society will be operating the straight portable track at the Australian Model Railway Association exhibition over the long weekend in June, as we have traditionally done many times in the past. This is always a very interesting exhibition with lots of "electric mice" running around in some very fine displays. I am always particularly impressed by the Western Australian prototype models running on tracks based on Western Australian stations. These are great. This event is a substantial source of funds for our Society and your assistance in helping to run our display will be greatly appreciated. It will also get you free entry to the exhibition. If you can give half a day (or more time if you wish) please let our hard working secretary, John Shugg, know. I would love to see you there.

Action at your Society's recent General Meetings

Recent General Meetings have been interesting.

Model engineering shown at our February meeting included:

- Lindsay Adams' new donkey pump, sized to fit on the side of his Simplex boiler. Lindsay said it had only three moving parts.
- A sample of 5 inch/7 ¼ inch gauge ground level track with concrete sleepers made by Ernie Redford and Dean Brennan. Pioneer Concrete are very kindly helping with the design and production of these sleepers. The 2 metre length of track, set in a tray frame and complete with ballast really looked fantastic. Steel fibres are used to reinforce the concrete and the track is bolted to the sleepers; short lengths of stainless steel threaded rod are cast into the sleepers. With a "Bushfly" chassis sitting on this track we had a great display.
- The "Bushfly" is one of four that Ron Date and Doug Baker are building. These locomotives are 0-4-2 wheel arrangement with 6 inch diameter copper boilers and slip eccentric valve gear controlling steam into "Simplex" cylinders. Side tanks are being fabricated from rectangular extruded aluminium section.
- Doug Baker showed that he had been very busy. He displayed a pair of new design 5 inch gauge riding car bogies, more valve gear components and the pattern for the crankshaft bearings for the launch engines he is building, superheater elements, in stainless steel for his 5 inch gauge locomotive "Deity" and parts for the "Blowfly" Boilers. These included the smokebox tube plate and firebox endplates, which he had pressed to shape rather than hammering them to shape over mandrels.
- Dennis Lord is building a very nice gauge 1 "Evening Star" and showed the chassis to us. Its wheels are lost wax castings – expensive but very classy!
- Jim Clarke showed his Yarrow style stationary boiler with its castable ceramic refractory lining.
- John Tuffin displayed his "Juliet" chassis; a project that he started many, many years ago.

Model Engineering at our March meeting was equally impressive:

- Ernie Redford brought along the sample length of ground level 5 inch/7 ¼ inch track.
- John Martin showed us the rose turning engine he has made to produce decoratively turned wood items.
- Bob Tanner talked about the copper two drum water tube boiler destined for his 16 foot steam boat.
- Dennis Lord showed some more of his gauge 1 work – a brake van and hopper waggon.
- Phil Gibbon, a visitor from the Castledare Miniature Railway showed his 2 ½ inch gauge "Purley Grange" locomotive to an LBSC design.
- Steve Reeves, also a visitor from the Castledare Miniature Railway told us about the injectors he has been making. These are built to the Laurie Lawrence design published in Model Engineer some years ago, but increased in size by 1 ½ and 3 times to provide 3 pints per minute or 5 pints per minute for 7 ¼ inch gauge locomotives.

Model engineering at our April meeting was a bit different:

- Lindsay Adams and Jack Watson showed two old lighting plant switchboards that they had restored.
- Lindsay also showed some castings for a pump and an old engine, and a milling machine power feed he had built using a stepper motor from an old photocopier.
- Doug Baker displayed the eccentrics and straps and other valve gear components for the launch engines he is building.

Our May meeting was a quiet one:

Club President Doug Baker was in South Australia amongst some steam launches and canoes on Lake Alexandrina. I'm sure he will tell us about this trip soon. Lindsay Adams chaired our meeting. It was a wet and miserable night, but about 14 keen members came along, bringing some model engineering:

- Lindsay Adams showed us his stepper motor powered milling machine table drive – all the parts came from computer printers and photocopiers. There are some delightful, well made model engineering sized bits in these things.
- David Naeser showed us his new quick change tool holder and boring bar.

What will our June meeting be like?

Its in your hands. Come along and join in to find out what your Society is really up to. Bring along your current project to show everyone.

Ground level track construction

Would you like to have your own section of the ground level track? The Society is planning to sell sections of track to members and other interested people. If you buy 10 metres or more, your section of track will be clearly named with your name or whatever you wish it to be called. 10 metres of track will cost \$250. Various options can be arranged.

You may wish to purchase a point or siding. Ernie Redford is currently designing the points for the track. These will not be conventional points but will have closing frogs. This design does not require check rails and thus the back to back distance between wheels is not critical to smooth running. This means that locomotives with fine scale wheels and thicker narrow gauge wheels can run without problems on the track. Points of this style are also smoother to run through as there are no gaps in the rails. There will be about six to eight points on the track when it is completed. We also need to consider the details of a signalling system for both the existing elevated track and the new ground level track. The train detection system that we adopt is a key component. It is important that the train detection system always ensures that a train has not separated, potentially leaving a riding car or two in an unprotected section of track.

Would you like to help build a point for the ground level track? Talk to Ernie if you are interested. These points will be sophisticated model engineering. Full size railways are just beginning to use these points. They will most likely be used on the extension of the Northern Suburbs railway to reduce impact noise at nearby houses.

Other interesting news

Some Society members are arranging to buy some char from Victoria. This is an excellent fuel for our locomotives and is used extensively by eastern states clubs. One tonne will cost \$400 ex the factory in Yallourn, Victoria and \$136 for freight to Perth. If you would like to contribute to the cost of this wonderful fuel, which is now in Perth, talk to Jim Crawford.

A new locomotive showed its paces on our track at the March running day. Ron Tottman steamed his "Simplex" for the first time. The locomotive looked great and purred round the track in magnificent style. Well done, Ron!!

The steaming bay building also needs some maintenance. Some of the steelwork is showing a bit of rust and needs to have a close encounter with some fishoil and paint. Like to help? However, this job must wait for a little while.

The track itself is also showing some rust and needs treatment with fishoil to preserve it. Ron Date has started on this. It is another project that would benefit from your help.

Your computer is part of the steam age – true or false? Its true; most of the power generated for the Western Australian south west electricity grid is generated by steam turbines at Muja and Collie power stations near Collie and at the Kwinana Power Station. A new, small steam powered station is being planned for Muchea – it will be fueled on sawdust removed from the many chicken growing sheds around Perth and will generate about 10 megawatts of power. Will it have injectors that really chirp? Nine gas turbines generate the rest of the power, about 28%, for the south west grid; these are located at Pinjar, north of Waneroo. Power in country Western Australia is generated by reciprocating diesel engines at about thirty small power stations in country towns, gas turbines and diesel engines at Carnarvon and gas turbines at Kalgoorlie and wind generators at Esperance and Denham. Broome and Esperance have the largest diesel engines – they are around 2400 kilowatts. Gascoyne Junction has a 80 kilowatt unit.

Have you got an old swivelling office chair with only four casters? These are ergonomically unacceptable now as they tip easily when you fall asleep in them. Take the base off the chair, fit a 1.2 metre length of 25 or 30 mm diameter steel pipe, make a fork to fit in the top of the pipe and attach a folding arm desk lamp. You can wheel it around the workshop to light under the bonnet of your car or light up your model engineering project .

The Editor's Questions

Did you try the dreaded questions in February 2000 *STEAMLINES*? I know a few members did!

Here are the answers. All the answers are based on information in an excellent book on Garratt locomotives - *Garratt Locomotives of the World* by A E Durant.

- *Which railway system purchased the world's first Garratt type steam locomotives from Beyer Peacock?*

The two Tasmanian Government Railways K Class engines, K1 and K2, were the first, ordered in 1909 for the beautiful North East Dundas Tramway.

- *Which railway system placed the next order with Beyer Peacock for a Garratt type steam locomotive?*

The Darjeeling Himalaya Railway ordered one 2 foot gauge 0-4-0 + 0-4-0 Garratt, which was delivered in 1911.

- *These engines were all of the same gauge and wheel arrangement. What was their gauge and wheel arrangement?*

They were 2 foot gauge and their wheel arrangement was 0-4-0 + 0-4-0.

- *These first two classes of Garratt type locomotives had some unique features that were not repeated on later engines. What were they?*

The Tasmanian K Class locomotives were compounds with the high pressure cylinders at the cab end. The engine units were arranged with the cylinders at the inner ends. The Darjeeling Himalaya railway engine had a well tank under the boiler.

- *Which Australian State Government railways operated Garratt type locomotives?*

New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia. Details of the various locomotives are in the following table.

State	Gauge	Class	Weight	Wheel arrangement
New South Wales	4'8 ½"	AD60 Class	260.0 tonnes	4-8-4 + 4-8-4
Queensland	3'6"	ASG	136.8 tonnes	4-8-2 + 2-8-4
	3'6"		119 tonnes	4-8-2 + 2-8-4
South Australia	5'3"	400	149.0 tonnes	4-8-2 + 2-8-4
	3'6"	ASG	119 tonnes	4-8-2 + 2-8-4
Tasmania	2'0"	K	33.5 tonnes	0-4-0 + 0-4-0
	3'6"	L	56.8 tonnes	2-6-2 + 2-6-2
	3'6"	M	48.0 tonnes	4-4-2 + 2-4-4
	3'6"	ASG	119 tonnes	4-8-2 + 2-8-4
Victoria	2'6"	G	69.0 tonnes	2-6-0 + 0-6-2
Western Australia	3'6"	M	66.5 tonnes	2-6-0 + 0-6-2
	3'6"	Ms	69.8 tonnes	2-6-0 + 0-6-2
	3'6"	Msa	74.0 tonnes	2-6-0 + 0-6-2
	3'6"	ASG	119 tonnes	4-8-2 + 2-8-4

I received two entries for this competition, but neither entry was fully correct.

Here are some more questions for you to try. They all relate to Australian steam railway history.

- *Two 3'6" gauge railways using rack and pinion traction operated in Australia in the 1890's. Where were they?*
- *Who built the thirteen special steam engines for these two railways?*

- *The boiler water level gauge glasses on all of these engines were in an unusual location? Where and why?*
- *How many cylinders did these engines have and what valve gear did they use?*
- *These engines had an unusual braking system. How did it work? -*

Give your written entries to *STEAMLINES* Editor, Dick Langford before your Society's June General Meeting. One correct entry, selected by ballot if necessary, will receive a small prize. Again, the answers are in a book or two in the Editor's library. Bribery is quite acceptable – all proceeds will go to your Society.

Are you a w-w-webber? No, not a barbecue, but an internet web surfer. Have you tried these sites?

- www.q-net.net.au/~gavin/Title.html is the Northern Districts Model Engineering Society's web site, developed for us by Gavin Gooch.
- www.ameng.com.au is Australian Model Engineering magazine's web site.
- www.globalpresence.com.au/3801.htm will get you to the 3801 Limited web site
- www.formlink.com.au/places/minirail.html will take you to a web site on miniature railways in Australia, but not ours at the moment.
- If you know of other interesting model engineering or railway or steamboat or traction engine web sites let your Editor know and they will be published in *STEAMLINES*.

Do you have your own e-mail address? If you do, please let your *STEAMLINES* editor know so that we can send your copy of *STEAMLINES* electronically. Electronic copies of *STEAMLINES* will often include colour photographs of Society activities.

Your Society's new Clubhouse

The City of Stirling will be considering our application on 13 June for our new clubhouse. Site preparation work has commenced. First activity was to move the coach to a new site close to the Vasto Place fence. This happened on Wednesday 17 May. Two cranes, one of 50 tonne capacity and the other of 30 tonnes capacity lifted it easily with help from Lindsay Adams, John Shugg, David Hunter, John Hudson, Peter Warner, and Jim Crawford.

Thanks guys – you have got our new Club House off to a great start!!! Well done!!!

Your chance to be in print

Do you have any news you wish to share with other members of your Society? Please let your Editor know so it can be included in future editions of *STEAMLINES*. Short articles on things you have done will also be welcomed for publication.