

NEW SOUTH WALES NEWSLETTER



ENGINEERS
AUSTRALIA

RTSA

Railway Technical Society of Australasia
NSW Chapter
Mail: PO Box 6238, Kingston, ACT, 2604

MAY 2008

NEXT RTSA NEW SOUTH WALES CHAPTER MEETING

Wednesday 4th JUNE

11.30 for 12.00 in our temporary venue at

***** Conference Room 1, Level 2, 477 Pitt St (north lift lobby)
– opposite the tram departure ramp at Central *****



Train to the left and train to the right!!

Photo: Bob Grant

THE FLINDERS FLYER – LEIGH CREEK COAL TRAIN

Ross Golotta, Senior Engineer, Interfleet Technology will give a presentation entitled “The Flinders Flyer”. This is the coal train from the Leigh Creek coal field which runs through arid country parallel to the magnificently coloured Flinders Ranges to the Port Augusta power station in South Australia.

The train is the longest and heaviest head end powered coal train in the Southern Hemisphere and is a critical component of the electricity supply chain for South Australia. The track is owned by the power company, making it unique in this country.

The talk gives an overview of the start up and operation by a new rail operator.

As is the custom sandwiches and light liquid refreshments will be available from 11.30, prior to the formal meeting, allowing both time for ‘refuelling’ and to meet some of your fellow railway people.

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LETTERS TO THE EDITOR

The RTSA National Council meeting has suggested that Chapter Newsletters (and presumably Rail Horizons) should make provision for letters to the editor. This of course is already the case, albeit informally, the only problem being that no one has ever actually written a letter to the editor, which is why none have ever been published. Articles sometimes, letters never!

The NSW Chapter has around 300 members, amongst whom there must be some who have a penchant for writing letters. So why not get your quill or keyboard out and write – offer opinions on the editors opinions, provide information or alerts on things of interest to our industry, set things that have been reported (in Newsletter or elsewhere) to rights or whatever. As long as your letter is in some way related to our industry, and is not likely to result in legal action, we will be more than happy to receive and publish. No more than half a page should allow for some interesting letters without overwhelming the Newsletter or its editor. E-mail and ordinary mail addresses are on the last page (as always), and just to be sure there will eventually be an additional 'RTSA Newsletter Editor' email address as well.

THE OBSERVATION POST

Last month I devoted a couple of pages to the relatively unsung ARTC progress in lifting rail coal capacity in the Hunter Valley. Growth of coal tonnages in the Valley are really quite amazing, particularly to those who can remember back more than a few decades to when coal was predominantly for domestic consumption, hauled in 16 tonne unbraked four wheel wagons which in many cases were entirely of wooden construction. We have come a long way since then. But stand back and look at the bigger picture and it is even more breathtaking.

Unless there is a major economic collapse it is entirely probable that within ten years railways in this country will be carrying more than one billion (1,000,000,000) tonnes of coal and iron ore per year – equivalent to something like 50 tonnes for every man, woman and child in this country; almost twice as many tonnes as there are rail passengers on all the rail systems in Australia. Breathtaking – you bet!

Apart from the Hunter Valley the focus of coal production is in Central Queensland, an active area that fits into a block of the state something like 700 km north-south and up to 300 km east-west. Within that area there are three main port complexes (Abbott Point near Bowen, Dalrymple Bay / Hay Point near Mackay and a trio of ports at Gladstone) served by four major rail networks – the Newlands system feeding Abbott Pt, the Goonyella system feeding into Dalrymple Bay / Hay Pt and the Blackwater and Moura systems feeding into Gladstone. There is a minor fifth coal network feeding Fisherman Islands (Brisbane) port but this is restricted by capacity constraints to remain a minor player, much as Port Kembla is in the NSW context.

One outstanding issue is that all the Queensland coal haulage is on narrow gauge (3ft 6 in), but over the years QR have pushed the envelope such that all but the Newlands system (for now) are worked with 26.5 tonne axle load wagons in trains that gross up to 13,000 tonnes (and this bar is expected to be raised to 15,000 in the near future) with distributed motive power. The Goonyella system is all electric loco operated using 25 kV ac power (as with all electrification in Queensland), while Blackwater is split between electric and diesel operation. Moura and Newlands are all diesel.

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Back in 1996/97 QR moved 90 million tonnes of coal. Eleven years later, in 2006/07, that figure had grown to 164 million tonnes, which in itself has been constrained by some well publicised choking in the supply chain in recent times.

Existing Queensland coal chain capacity enhancement anticipates rail capacity expanding to 224 million tonnes per annum (mtpa) by December 2009. Predictions for further capacity growth are to 362 mtpa by 2015 and at this stage 407 mtpa by 2020. Part of this expansion involves building the two missing links – the Northern Missing Link (NML) will connect the Goonyella and Newlands systems and the Southern Missing Link (or Surat Basin Railway - SBR) will connect the Moura network to untapped coal deposits in the Surat Basin 200 – 300 km south of Moura, at the same time linking to the Toowoomba regional rail network. The NML, listed for completion around mid 2010, will in effect integrate the Newlands system and Abbott Point port with the Goonyella system and ports near Mackay, with anticipated joint capacity for something like 260 mtpa by 2020. The Newlands system will be upgraded to 26.5 tonne axle load standard and it would appear it will be electrified to allow use of consistent train consists throughout the integrated network. Significant track duplication and limited grade easing is also part of the package.

The Goonyella and Blackwater systems have been connected at the Gregory mine site for quite some years and interchange of electrically hauled coal trains is a fact of life there. A second interconnection is constrained by the relatively low grade former branch line between Emerald and Blair Athol.

The Moura line was the first of the Queensland purpose built coal lines, dating back to the 1960's. Curiously some of the original narrow gauge coal wagons continue to see service in a quite different place, carrying crushed rock between Dunmore and Sydney on standard gauge. This network currently handles around 12 mtpa but in conjunction with completion of the SBR planned for late 2012 the coal business on this system will rapidly grow toward an expected 67 mtpa by 2020.

The standard Goonyella train is currently five electric locos hauling around 120 wagons (2140 metres) in a distributed power configuration. This is to be converted to a three loco configuration using new higher capacity electric locos. The Blackwater system currently runs four electric or three diesel locos on shorter train consists of around 1700 metres. It is apparently intended to move toward 2500 metre trains with five distributed power locomotives. These trains should carry 12,000 tonnes at a time, which would add quite a bit to capacity on both the Blackwater and adjacent Moura systems.

Major upgrading of 63 of the existing electric locos, along with 45 new locos of similar capability, will allow three locos to do the same task as five now on the Goonyella system. An additional 30 / 3000 hp high adhesion diesel locos are also being delivered to augment the Moura and Blackwater power pool. No less than 3490 new 106 tonne wagons are being acquired to expand the coal carrying fleet to match the additional motive power. All this rolling stock is to be delivered by 2011 – but expect more as long as export tonnages continue to expand past that date.

One, as yet unclear, development is the entry of Pacific National Queensland (PNQ) into the coal business. Their parent company announced imminent entry to the Queensland coal business at the same time they went public about abandoning much of their secondary grain and inter-modal business further south. At that time they indicated they were negotiating significant contracts, using both electric and diesel power (their existing PN class locos are almost identical to QR's heavy haul coal diesels) and by implication covering parts of both the Goonyella and Blackwater systems. Presumably their wagons will be of similar weight and capacity to current new QR wagons that are now standard for all the coal systems up north. Although coal contract details have not yet been announced it is more than likely, even with quite significant tonnages, that

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the QR tonnages will continue to grow, albeit at a slower rate. What a business to be in! Entry of a serious competitor with quite significant tonnages simply slows down the growth rate of the incumbent operator.

One interesting outcome will be that within a few years there will be continuous 25 kV electrification from NSW (at Coolangatta airport) to Abbott Point via the coal systems north of Rockhampton, a distance of perhaps 1500 – 1600 km to only around 200 km short of Townsville. To actually run a train end to end over this extended network will require some sort of publicity event or an enthusiast group with deep pockets. No normal train would ever need to run such a journey.

All this has grown out of a railway that until the 1960's had a maximum freight train load of 650 tonnes and an axle load of 12 tonnes on most main lines. Mind you the then QR carried as many total tonnes of freight as the coal systems now carry in less than three weeks. From another perspective QR freight business has grown by something like 1600% over the last 50 years and promises to double that within the next twelve.

Old timers peering down from their celestial abodes must surely be in some sort of disbelief. I know I find it all quite breathtaking and I am still in my earthly abode.

AN APPEAL

There are a multitude of activities and developments happening within our industry, again highlighted by both the editorial and last meeting report this month. Issues ranging from the high level (policy and the like) through major construction and acquisition to relatively minor matters that often go completely unrecognised and unreported are all part of our industry and in most cases are only known in detail by relatively few of us.

We are always on the lookout for interesting and varied topics for meetings later in the year and beyond. Basil has done a great job in getting an interesting and varied program up over the last 12 months, but he would welcome any, all or more bright ideas from members. So if you have a pet topic, or are overcome with curiosity about something of interest in the rail domain, then contact Basil at basil.hancock@railcorp.nsw.gov.au and let him know your thoughts.

Basil will be away for a period during June / July so during that time contact other office bearers as listed on the last page

WORDS FROM THE CHAIR

I recently had the opportunity, as the NSW delegate, to attend the RTSA National Executive meeting, held in Adelaide on Monday 12 May 2008. Some of the highlights are below.

- There is continuing strong support leading up to CORE 2008 in Perth from 7-9 September with high quality presentations and a full panellist and speaker list. With study tours prior to and after the event, including partner programs, this year's CORE is shaping up to be top class. I would urge those thinking of attending to book early so as not to miss out on cheap travel and accommodation deals.
- I was able to present to the Executive an update report of the NSW Metro symposium (to be held on 12 November), and am pleased to report of the unanimous strong support for this initiative. A review of the risk profile identified that *not* responding (to the NSW Government announcement) was the highest risk for the RTSA. The opportunity cost of doing nothing was seen as unacceptable.

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The symposium is a legitimate exercise looking at new technologies and the task this technology will perform. One of the key areas we will be looking at is the integration of this technology within the existing transport system, not only the existing heavy rail system but also other public and private transport. Integrating existing heavy rail, tram and bus systems with new technology metros offers the opportunity to improve overall network efficiency, route options and public transport resilience thereby lifting overall public transport performance.

- The National Executive also reaffirmed its support for the Young Engineers Australia (YEA). Rebecca Taylor and Daniel Martucci are the Young Engineers Australia representatives on the National Executive with Candice Ng on the NSW Chapter Committee. The age limit of YEA was increased from 30 to 35, to line up with Engineers Australia.
- The National Executive discussed strengthening the Incident and Investigation sub-committee of the RTSA. The RISSB talks being promoted by the RTSA and ARA, as well as possible Australia Transport Safety Bureau (ASTB) talks to Chapters were seen a part of this strengthening process.
- The Professional Development Assessment Program (PDAP) was discussed. It was agreed to explore a working relationship with Australasian Association for Engineering Education (A²E²) (<http://www.aeee.com.au/>). This is another technical society of Engineers Australia made up of deans and academics from a number of universities. An issue identified in the Sydney PDAP was attraction of engineers into the rail industry. This problem was both at the undergraduate level, (compounded with general skills shortages across all engineering disciplines) and also at the school level (enticing school leavers into a technical career). It was thought that work needed to occur in conjunction with Engineers Australia schools program as well as working possibly with A²E² at the undergraduate level.
- The National Executive also discussed the use of technical journals and Chapter and National newsletters. It was agreed that the RTSA will look at possible use of a transport technical journal through Engineers Australia, in which to publish learned papers. This is early days and the idea was to look at the demand and amount of content to support a regular journal issue.
- In regard to newsletters, the National Executive strongly commended local newsletters that kept in contact with local members. The Executive would like to see more opportunity for feedback, particularly on editorial and opinion pieces. A 'letters to the editor' section in the newsletter was seen a one way to provide this and suggested a general RTSA editor email account be set up. This will be done in the next few weeks.
- The redesigned RTSA web site is now up and running. Each chapter will be responsible to upload and maintain their information. For the NSW chapter this will mean a new position will be created on the NSW Committee next financial year. I would encourage anyone who has web skills and has time to update the web site to consider nominating for web updater next financial year.

[Andrew Honan, Chair, NSW RTSA]

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LAST MEETING

At the RTSA Monthly Meeting on 7th May, Steve Allday, Senior Project Manager – Systems, South Western Rail Link, TIDC gave a very interesting presentation on the new **South Western Rail Link**, which attracted an audience of over 90 persons.

The South West Rail Link will be 13km of new electrified double-track railway, integrated into the CityRail system. New stations (with bus interchanges) will be provided at Edmondson Park (3.25 km from Glenfield) and Leppington (9.4 km from Glenfield). The existing Glenfield station will be upgraded, with a fourth platform and a larger commuter carpark. Approvals by the Minister will be in different stages, with the works in the Glenfield area handled first. There will be the usual Environmental Assessment process with allowance for the 30 day public comment period.

The South Western Rail Link is tied in with major housing and town centre developments in the area, and the approvals process will take this into account. The speaker provided some time-line charts to demonstrate the planned programme for the staged approvals of the rail line, and how the various works will be contracted out. Generally the works at Glenfield will be separated from greenfield site work, but the Signalling and Train Control contract will cover both areas.

The Detailed Design will commence in mid 2008 and will be complete in early 2010. The signalling design will be complete in mid 2010.

The Land Acquisition process commenced late last year and should be complete by early 2009.

The new line will generally proceed in a westerly direction from Glenfield, with a major overbridge for the Hume Freeway. There are a number of other underbridges and overbridges, including a crossing of the Sydney Water Supply canal.

There will be new Flyovers built at each end of Glenfield Station. The North Flyover will be built so that an up service from Glenfield to East Hills will not conflict with down services from Liverpool. The South Flyover will permit services on Leppington line to avoid conflict with up services from Campbelltown or trains on the Southern Sydney Freight Line.

A stabling yard with associated facilities such as a washing plant will be provided at the end of the line just beyond Leppington station. Future line extension will be possible to Bringelly and Badgerys Creek.

Some development considerations are:

- Identification of flood prone areas
- Noise mitigation
- Landscaping
- Operational modelling
- Layout of stabling & station at Leppington
- Location of new train wash facilities
- Electrical power feeding on the route
- Effective utilisation of removed materials (ideally, the material in fills and cuts should balance out, reducing trucking movements off-site)
- Identification of future maintenance access requirements
- Liaison with other stakeholders, especially utilities

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- Operating speeds
- Train stopping patterns and routing over the network beyond Glenfield
- Placement of turnouts and crossovers
- Shunting movements
- Other requirements and constraints

The new stations will be partially sunk in a cutting, so that the concourse will be at grade level. The stations will incorporate the following:

Interchange between modes of transport;

- Buses
- Kiss & ride
- Park & ride (temporary & permanent)
- Taxis

Station operational requirements;

- Booking office requirements
- Staff facilities
- Crew facilities

Public Requirements;

- Information (Visual Displays, Public Address, Help Points, Ticketing facilities, etc)
- Safety (CCTV, Lighting, Evacuation, etc)

The speaker provided some preliminary drawings for the stabling facility, and 3D layouts of the proposed stations. Environmental features of the new stations were rainwater harvesting, energy saving initiatives for ventilation and the provision of photo-voltaic cells on the station canopies.

The speaker showed how the new track layout at Glenfield junction was developed from a number of options. The construction of the flyovers will be the most challenging part of the project, since it needs to interface with an active railway, and is on the critical path for completion in 2012. The provision of future maintenance access is another consideration. This site is adjacent to the Southern Suburbs Freight Railway (which will need to be relocated slightly away from the current running lines).

The planned opening to the public will be in late 2012, after a period of testing and trial running (as per the Epping-Chatswood rail link).

One problem that is facing railway operators worldwide is the current shortage of qualified railway signalling engineers. Construction resources generally are also in demand at present, due to the construction boom in the mining industry. It is hoped that these problems can be overcome to deliver the project on-time.

To sum up, it is unusual to hear about a new railway being constructed in New South Wales, and the interest in the South Western Railway Link can be judged by the large number of people attending the meeting.

The writer's only disappointment is that he will be unable to purchase an Edmondson (card) ticket at Edmondson Park station.

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MEETINGS

The list of coming meetings is in tabular form toward the back of this Newsletter. Meetings are normally on the 1st Wednesday of the month at 12.00 in the large meeting room off the main concourse of Sydney Central (Steam) Station. The venue can be found in the North West corner of the main concourse opposite platform 2, next to the Lost Property Office – **however** the usual meeting room will not be available for our **June and July meetings** (it has been impressed into World Youth Day service) so we will have those meetings in **Conference Room 1, Level 2, 477 Pitt St** – just a block or two away.

A special meeting will be held in early September (tentatively Mon 1st Sept) to hear the CORE eminent speaker, Andrew McCusker speaking about the Hong Kong MTR. Date and location will be advised closer to the time.

COMING EVENTS

CORE 2008 will be held in **Perth between 7th and 10th September 2008**. Themes will be around high volume bulk freight and the integration of rail as part of the export supply chain, and rail in an urban environment and the issues of integrated planning of land use and transport as the core of successful public transport. Registration is open and there are some very interesting technical tours that will be coupled to the main conference, those to the heavy haul railways of the Pilbara being quite limited in numbers. The web site with all up to date information, and web based registration, is at www.core2008.org.

METROS – FUTURE RAIL FOR SYDNEY is the title for a one day symposium being organised by the RTSA NSW Chapter for **Wednesday November 12th** at the **Old Customs House (Circular Quay)**.

The word **Metro** has had a lot of airplay in Sydney recently, but no one in the public domain has yet tried to define quite what a Metro is or does in term of what it will do for the city and its people. Is a Metro just another linear railway, is it a form of railway that provides enhanced and otherwise unachievable mobility for a majority of citizens, is it all about interchanges and inter-connections, is it some technological whiz-bang, or is it a railway at all? The RTSA Symposium in November will grapple with these and other matters to try and put some substance into the various Metro debates and proposals currently being floated, or just maybe to influence the future direction in city mobility in a way that has not even been floated in the public domain here yet!

The basic plan is for a full day symposium which would have a number of themed sessions –

What is a Metro (people mobility in compact city areas?)
Sydney now and tomorrow (as a city)
Case Studies – the experience of other cities with Metros
Panel Sessions, and a
What Would a Metro Network do for Sydney wrap up

The venue has limited capacity, but to ensure members are able to get priority booking, there will be a period between opening of bookings for members and availability to the wider interested public. Given recent events in this city we expect that we may well have a sell out. Bookings will open mid July for members.

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There are a number of other interesting ideas being investigated in connection with the symposium and these will be notified as they are confirmed

We are looking for **sponsorship** – both to enable overseas speakers to attend and to enhance the symposium as a whole, while keeping the attendance cost at an affordable level.

If you are in the corporate world, and have some interest in the prospect of a Metro network being built in Sydney, then you might consider becoming a sponsor of this event. Even if you are a bit doubtful at this stage it could be worthwhile to have a talk to Andrew Honan (ahonan@pacific.net.au) or on 0407 921 152

More details will be provided in coming months. Pencil **12th November** in your diaries now.

WHAT SHALL WE DO WITH THIS SPACE SECTION

A hard working correspondent found the following item just a little too much and took time off from his labours to sent it to us – the original was published in the May issue of "Railway Magazine". It is a classy example of rolling stock approvals bureaucracy gone mad from the UK.



One of the Gresley A4 Pacifics (60007 – “Sir Nigel Gresley”) was recently resubmitted for main line certification at a time when two others of the class were already certified and in operation. These locos have been running since 1935, one (Mallard) holds the world steam speed record. One or more of these locos has been main line certified in preservation nearly continuously since the 1970s.

The UK Acceptance Panel's Derogation Board refused to certify this loco until, amongst other things, calculations had been performed to demonstrate the loco's resistance to being blown over in a cross wind.

For your information the calculated wind speed was 420 mph (672 kph) – more than double the wind speed in a really savage cyclone.

One might wonder why the good Board showed no interest in the fate of the carriages trailing along behind 60007 at the time poor old Sir Nigel was blown off the track. One assumes they would probably have left Britain by then and be outside the Boards rather narrow concept of responsibility.

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COMING NSW MEETINGS: (black indicates confirmed, red indicates tentative)

DATE	SPEAKER	TOPIC	LOCATION	TIME
Wednesday 2 July 2008	John Fullerton FreightLink	Review of Experience with the Alice Springs to Darwin Railway	Conference Room 1 Level 2 477 Pitt Street, Sydney 2000	11.30 for 12.00
Wednesday 6 August 2008	Daniel Thomson RailCorp	AK Test Cars and Mechanised Track Patrol	Central Station Concourse Meeting Room	11.30 for 12.00
Monday 1 September 2008	Andrew McCusker MTR Corporation Ltd, Hong Kong	Hong Kong Mass Transit Railway	TBA	TBA
7-10 September 2008	Various	CORE - Conference on Railway Engineering 2008	PERTH	[CONFERENCE]
Wednesday 1 October 2008	Kevin Taylor Rail Industry Safety & Standards Board	Railway Standards Development	Central Station Concourse Meeting Room	11.30 for 12.00
Wednesday 5 November 2008	TBC	TBC	Central Station Concourse Meeting Room	11.30 for 12.00
Wednesday 12 November 2008	Various	Symposium – Metros - Future Rail for Sydney	Old Customs House, Circular Quay	ALL DAY
Wednesday 3 December 2008		Christmas Heritage Topic	Central Station Concourse Meeting Room	11.30 for 12.00

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KEY RTSA SYDNEY CHAPTER COMMITTEE CONTACTS

Andrew Honan	Chairman	0407 921 152	ahonan@pacific.net.au
Bill Laidlaw	Secretary	0409 602 833	billaid@bigpond.net.au
Max Michell	Newsletter Editor	02 9331 5662	samrom@bigpond.com
Basil Hancock	Meeting Topics		Basil.Hancock@railcorp.nsw.gov.au
Tomas Magyla	Committee	Chris Venn-Brown	Committee
Arnold Aranjo	Committee	Trevor Moore	Committee
Andrew Mackay	Committee	Malcolm Cluett	Committee
Bob McCotter	Committee	Eddie Hawes	Committee
John Watsford	Committee	Candice Ng	Invited Young Engineer

CONTRIBUTIONS TO THE SYDNEY NEWSLETTER

Part of the function of RTSA is to keep members in touch with what is going on in the industry and with each other and to that end we are only too happy to publish items of interest. Articles, letters or editorial comment for Newsletter are very welcome. We have several hundred members locally some of whom have stories, events or developments of interest that could make an interesting item for our NSW Newsletter.

Contact details are –

The Editor, Max Michell,

- e-mail to samrom@bigpond.com,
- phone 02 9331 5662 or
- post to P.O.Box 279, Potts Point, NSW, 1335.

For all other matters relating to RTSA Sydney Chapter contact Bill Laidlaw (Secretary) or Andrew Honan (Chair) as above.

CPD CREDITS

Engineers Aust members who attend RTSA meetings and events will qualify for CPD credits as per the Engineers Australia criteria. Members are responsible for recording their own CPD for audit.

NOTICE TO MEMBERS RECEIVING RTSA NEWSLETTER BY EMAIL

If you should receive this Newsletter by post but would prefer to get it by e-mail (quicker and more reliable) then please let the Canberra know (address in the page header). E-mail saves time for you and costs for RTSA, which in the end can only mean better service to our members

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