

# SYDNEY NEWSLETTER



ENGINEERS  
AUSTRALIA

**RTSA**

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

NOVEMBER 2006

## THE END IS NIGH

## IMPORTANT COMING DATES

It is that time of year again when normal routines go a bit haywire, the credit cards go off the scale and before we know it another year has been consigned to the memory bank.

It is also that time of year when we can slow down (well, just a little) and enjoy the good things of life like families, little kids on Xmas Day, holidays, a surfeit of eating and drinking or whatever takes your fancy.

Although not everything went the way the rail community might have liked in 2006, there is no doubt that there has been something of a resurgence of financial and political interest in rail during the year with the first fruits of that resurgence now being visible on the ground. As indicated in a major article in this Newsletter there is a lot more coming, not only just in NSW, over the next few years.

It has also been a good year for RTSA with the continuation of the fellowship of railway people combined with informative presentations and active lobbying for the rail industry from our Government Relations sub-committee.

**It just remains for the Chairman, Bill Laidlaw, and his merry band of committeemen to wish each and every member and reader, their families and friends a very happy and safe Xmas – New Year period and a truly satisfying and prosperous 2007. May you all go well**

### Monday 29<sup>th</sup> January 2007

Ed Zsombor, 'eminent speaker' from Canada, out here for the Wagga Regional Rail Forum, will give a presentation to NSW (and particularly Sydney) members on the subject of regional rail experiences in his home country. This meeting will be at a city location and should be at the normal time of around 17.30.

Full details will be sent out mid January

### Thursday 1<sup>st</sup> February 2007

The **Wagga Regional Rail Forum** – an all day event in Wagga co-sponsored by Sturt University. Details are later in this Newsletter, while the full program, registration and updates are available on the RTSA web site [www.rtsa.com.au](http://www.rtsa.com.au)

In the evening a **joint RTSA NSW and Victorian dinner with speaker** will be held so that those who attend the forum can have some social time to network and enjoy themselves after a stimulating day.

Details will be provided on the web site as they are confirmed.

A reminder Newsletter will be sent out in January but now is the time to mark these events in your diaries.

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## THE OBSERVATION POST

In the beginning, when sail ruled the sea, land based connections determined how useful port would be. Rail initially developed to a large degree to fill this need and in fact extend the port tentacles well into the interior of the country. In fact these rail connections were the means to open up the country which began, and remains, a land of mainly coastal fringe dwellers. Over time changes have overtaken the 19<sup>th</sup> century concept of a port, none more so that the advent of widespread international containerisation in the 1970's. Coupled with this has been the growth of large distribution centres linked by small volume on demand deliveries to end users – the much overplayed 'just in time' concept. The end result is that away from bulk freight rail now carries a minor part of the import – export freight these days. The other result is that a disproportionate number of import containers (in particular) are destined for users (including distribution centres) within a short distance of the port.

Sydney was rather slow off the mark with containers. The original port facilities were at Pyrmont in a constrained area backed by a vocal residential population with rather congested road and rail links to the rest of the land-side. Melbourne on the other hand made good use of its position as the small manufacturing centre of Australia and created a completely new port, although still with constrained land-side transport links. In time Sydney bit the bullet and moved its activity to a new site in Botany Bay in an area already heavily industrialised. Rail facilities to the new port were installed almost as an afterthought (more as a result of port and stevedore policy than from disinterest by the railway) and were underutilised right from the start. In time the less than adequate road system became something of a political issue while shortage of suitable container handling land near the port was giving rise to the concept of 'satellite terminals'. Hence the political dictum that 40% of the container traffic to and from the port should be on rail.

Botany currently handles around 1.4 million TEU (twenty foot equivalent) each year with an underlying growth of around 7.5%. At this rate the port will reach its current installed capacity of around 1.9 mill TEU in 2010. A third 'port', with capacity of around 1.6 mill TEU p.a. is planned (although not without some controversy) which will bring the port up to around 3.5 mill TEU at some time prior to 2020. A rail link to the new port, independent of existing port sidings, is incorporated in the plan, along with enhancement of the current rail

facility at Patricks, which will give 650 metre loading sidings for all stevedores in the port.

Rail currently handles perhaps 10% of this task or around 140,000 TEU p.a., through satellite terminals at places such as Leightonfield, Yennora, Camellia and Minto in the Sydney area and at various locations in the country such as Narrabri, Wee Waa, Blayney, Dubbo, Warren, Griffith, Leeton, Bomen and Wodonga. The country locations mainly load for export, with empty containers being railed from Sydney for that purpose. Most of the existing trains serving the Sydney satellite locations are less than the future train length of 650 metres.

What if rail was carrying the postulated 40% of containers to and from Botany? Rather than 140,000 TEU it would be handling 560,000 TEU, a task that would require four times the number of existing size trains or (hopefully) by using full length trains would require only 20 trains per day everyday of the year. Only!! A 650 metre train arriving or departing just about hourly every day, every week, every year. By 2010, when the port is predicting a throughput of around 1.9 million TEU p.a., the notional rail task would be 760,000 TEU p.a. while at its longer term capacity of 3.5 mill TEU the rail task would be equal to the current port throughput of 1.4 mill TEU.

However admirable the concept of '40% on rail' may be there are a number of quite significant issues that need to be resolved for this to happen. The first is where would such large numbers of containers go to? The Port of Sydney is planning a 300,000 TEU p.a. facility at Enfield, which at this stage looks as if it may eventually get through all the planning pitfalls and become a reality. Beyond that there is potential for expansion at Minto from 40,000 to 200,000 TEU p.a. (also increasingly looking like a 'probably') and a new facility at Moorebank that would service 500,000 TEU p.a. Combined these would provide capacity through into the 2020's (on current port predictions). Beyond these proposals there have been suggestions for other large scale facilities at Ingleburn (Patrick – but since the Toll takeover status of this proposal is not known), Menangle, St Marys and Eastern Creek. Presumably the smaller existing facilities could keep operating although their contribution cannot amount to much of the total activity. Notably among these proposals there are no satellite terminals north of Sydney apart from Newcastle, which has its own container port expectations.

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The second issue is one of track capacity. From Botany to Enfield the goods line provides the basics, although enhancement of the single track Botany – Cooks River section would be needed. Equally between Enfield, Moorebank and Minto (and further south) the planned Southern Sydney Freight Line will provide a suitable freight track but possibly requiring some capacity enhancement as local container business grows. Access to locations on the Western line would have to be fitted into a continuing curfew situation since a dedicated freight line in that direction is unlikely. Access to Newcastle, or any proposal for an intermediate northern 'on line' satellite terminal, will presumably be enhanced by developments that are being planned by RailCorp and ARTC to alleviate curfew constraints for north –south freight.

The third issue is one of above rail resources. Even if terminal operations were to be streamlined there would be a need for a significant number of additional locomotives and wagons. Contrary to the wisdom applicable to longer hauls, the port – satellite terminal trains could be made up using relatively old and inefficient (but totally reliable) equipment that suited the business. These trains will spend much of their time in terminals and only a small proportion out 'on the road', so things like distance based maintenance costs and fuel will not loom large in the scheme of things. Despite this there is little doubt that somewhere in the system there will need to be investment in locos and wagons, even if it is for long haul to allow the older gear to be cascaded down to the port business. As noted in a previous Newsletter, this is not something that is on the 'above rail' operator's radar right at the moment.

The fourth issue is one of terminal management and handling. Traditionally container trains arrive and stand while lifting equipment and usually trucks or tractor trains move along the standing wagons lifting containers on and off the train. In the port business there is a much better opportunity to lift direct from stack to train, and vice versa, than at the domestic inter-modal terminals but even in this case there may be more efficient ways of dealing with frequent standard consist trains. Ships these days are up to 6000 TEU so there is little benefit in even attempting direct tranship to any form of land-side transport. The practice is to stack the arrival containers for subsequent clearance by truck or train, while in the other direction deliveries over several days will be used to 'build the load' for a ship. Something similar, but on a much smaller scale happens at the satellite terminals with train loads being grounded for later individual delivery by road. In all this there may be some process changes that would reduce

amount of terminal handling and the attached costs that is one of the millstones for inter-modal rail. In this area in particular there is an opportunity for some lateral thinking, which would be helped by some good process engineering. So for instance rather than take the container to the train is there a case to be made to take the train to the container? Rather than have remote dead end sidings at the back of the wharf is there a case for a balloon loop type concept? Is there scope for a facility that allows an incoming train to be left and the locos immediately drop onto a standing loaded rake, thus enhancing both loco and rolling stock utilisation?

None of these concepts are new; rather they are used on other parts of the rail network for other traffics. The port business not only presents an interesting short haul opportunity (despite all those parrots who keep babbling the 'long haul' mantra?) but because of its particular nature would allow for some innovative thinking in the way of train operations and terminal interfacing, some of which might also have a wider application to the seriously long haul domestic container business.

The port-rail business has relevance to all capital cities where there are regular ports of call by large overseas container ships. Sydney is probably the choice of a prototype port since its geography and relatively poor urban road network lend themselves to distributed container terminals where rail is an option, but sooner or later other cities are likely to find something similar is required. Melbourne talks of a plan for 30% to be on rail by 2010 for instance despite the difficulties of a two gauge problem. Fremantle already has a regular rail link to Kewdale, although still handling a small share of the total containers, while Brisbane is possibly unique in that it has quite substantial land available to conduct not only port container business but to provide capacity for domestic containers as well. There are other port related short haul opportunities among which the import motor car business from Port Kembla to Sydney (and NSW?) is probably one of the more interesting. The same issues will apply to this sort of business as for the container business.

The short haul port traffic will not just devolve to rail as a result of a political dictate. Rail needs to be proactive in the running of trains, interfacing at terminals and provision of adequate but cost effective resources if this opportunity is to be realised. For many years rail has competed with the burgeoning road industry on a terminal to terminal basis rather than on a door to door basis. The consequence has been that the 'doors' of industry are now mainly located well away from direct rail access. This has been a long drawn out but costly

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mistake on the part of the rail industry. The short haul port business does not have sufficient margin to afford such a *laissez faire* approach, even if the stars are lined up in rail's favour in other respects.

## COMING EVENTS

**RTSA WAGGA REGIONAL RAIL FORUM: *Future Frameworks for Regional Rail, 1<sup>st</sup> Feb 2007***: a joint initiative between RTSA and Charles Sturt University, will be held at Charles Sturt University Wagga.

RTSA will be sponsoring Ed Zsombor from Saskatchewan to talk at the symposium on 'Transforming Canada's Rural Railways' - about Short Lines and how they have been a growth industry, sustaining rail service to rural Canada. Ed heads up the Rail Unit within the Saskatchewan Highway Agency in which both regional road and rail are considered within the one provincial agency. Saskatchewan has some important similarities to Australian States, in terms of grain production and logistics (in particular transport).

Ed will also visit the various state RTSA Chapters before and after the symposium to talk to members. We would hope that government, grain industry and other regional stakeholders will have an opportunity to meet Ed. The symposium has been designed to bring a range of speakers covering a number of key issues targeted specifically at the regional community level.

The program at the time of compilation of this newsletter is:

Welcoming Address Professor Lyn Gorman Acting Deputy Vice-Chancellor (Administration)

- 1) Transforming Canada's Rural Railways  
Ed Zsombor, Director, Rail Projects  
Saskatchewan Highway and Transport Agency
- 2) Regional Governance: Lessons from the Australian Experience with Catchment Management  
Allan Curtis, Professor of Integrated Environmental Management. Director of the Institute for Land, Water and Society
- 3) Evidence from Western Australia of an Integrated Grains Industry. John Goodall, Principal Beyond Rail Solutions
- 4) Regionalism, Railways and Local Government.

Ian Gray, Associate Professor School of Humanities and Social Sciences Charles Sturt University

- 5) Views from an Emerging Australian Short-line Rail Operator. Mick Maartensz Victorian Operations Manager - Southern Shorthaul Railroad (to be confirmed)
- 6) Victoria's Regional Rail PPP – Past, Present and Potential. John Hearsch, Principal, John Hearsch Consulting Pty Ltd.
- 7) Cooperative Approaches to Rail in the Hunter Valley Coal Export Industry. Kenn Clacher, Principal Kenn Clacher & Associates Pty. Ltd.
- 8) Report on 'Integration of Regional Rail and Roads and their Interface to Ports'  
Mr Paul Neville MP, Chair Standing Committee on Transport and Regional Services (subject to parliamentary commitments)

Panel discussions will follow morning, lunchtime and afternoon sessions.

Full program, flyer and registration form is available on the RTSA web site. Registration is by a downloadable form from the RTSA web site (if you have no internet then contact the address in the header to this newsletter). The cost is very reasonable - \$80 for RTSA members and \$120 for non members. Progressive updates are at [www.rtsa.com.au](http://www.rtsa.com.au).

See the **FUTURE MEETINGS** section in this newsletter for initial advice of a joint RTSA NSW and Victorian dinner and presentation following the Forum.

**AusRAIL Plus 2007** will be back at the usual Darling Harbour location in Sydney from 4<sup>th</sup> to 6<sup>th</sup> December 2007.

**CORE 2008** will be held in Perth between 7<sup>th</sup> and 10<sup>th</sup> 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 (Eastern States take particular note)

Potential delegates, exhibitors and sponsors can register their interest by going to [www.CORE2008.org](http://www.CORE2008.org)

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## LAST MEETING (November)

(since the editor was elsewhere on the night of this meeting Malcolm Cluett has kindly taken some notes for the information of those members who were also unable to attend)

Mr Mike Sowden, Senior Mechanical Engineer from ARTC spoke on the range of wayside detection gear that is now operating on the national network.

Mike made the statement that lawyers can make a lot of money out of derailments. He showed a number of photos of severe derailments in Australia and overseas, caused by faulty wheel sets. Wheel impact detectors can not only increase rail and wheel life, - reducing impacts will lengthen the life of the bearings.

Mike described after-market items to improve the performance of the standard 3-piece freight bogies. Some bogie designs are better than others at avoiding wheel squeal on curves. (Showed images of a number of different bogie types in Australia and overseas.)

Some examples of the monitoring equipment

- Wheel Impact Detector
- Angle of Attack Detector
- Hunting Detector (three position)
- Wheel Profile Detector
- Rail Bearing Acoustic Monitoring (Microphone arrays, using military sonic array technology)

For all of these sites, ARTC has outlaid \$13M, and the operators have outlaid \$8M.

Hot Box Detectors are of limited use, as they are only activated when the bearing's failure is imminent. However the Bearing Acoustic Monitors can determine race and roller condition of each bearing well before imminent failure, and allow it to be monitored. One concern is that the outer race of wagon bearings is allowed to rotate slowly, presenting a different section to the load-bearing rollers. For this reason, an imminent failure could remain undetected, by chance positioning of the outer race when it passes over the monitoring point.

The Wheel Profile Detector is basically a Rail Profile Detector turned upside down, with additional equipment allowing it to be triggered when a wheelset passes over.

Two types of freight car bearings;

- Taper Roller Bearings back-to-back
- European-style self-aligning spherical roller bearings.

The latter have a heavier housing, which can be more difficult for thermal or acoustic scanning.

When a monitoring station is first installed, a lot of faults in the wagon fleet are revealed initially. (Not so much on locomotives, because their wheels tend to be turned more often on a wheel lathe.)

Fault Data for a particular train or wagon can be accessed and interrogated on-line (for that particular operator only).

Some of the monitoring equipment has been supplied by vendors in a no-payment-if-unsatisfactory basis. (will be removed at their expense)

A bit of variation is beneficial in the wheel profiles. (The example was given of Sheffel Bogies in South Africa, - which once aligned properly can lead to a uniform and narrow contact band which can lead to hollow tread wear. This can lead to high-frequency instability. The rail profiles in RSA are deliberately left less-than-optimal to widen the contact band.) Steering bogies like these can be sensitive to mis-alignment (like suspension on a motor car) but benefits can be had by adopting this technology. China is installing their own design of steering freight bogies.

There is a strong link between wheel/bogie faults and increased fuel consumption. When faults arising from monitoring are fixed, there are sustained improvements in fuel efficiency.

"Track-friendly bogies" have been developed, which allow scope for increased axle loads without damage to the track.

Top-of-Rail Friction Modifiers (which may be more effective than flange lubrication, the lubrication from which can often end up on the railhead)

Tag Readers for rolling Stock – mounted on both sides of track. There are incentives for operators to eliminate non-reads (which will improve the integrity of the data). Sometimes the tag readers will read another train in the background (maybe passing in the opposite direction) leading to spoiled data acquisition and questions of stray wagons in a consist!

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Most intermodal trains are not turned. Most Coal Trains in the Hunter Valley are turned on balloon loops at each end.

At monitoring stations, hollow sleepers are used to run cables from one side of the trackbed to the other. "Ski Jump" protectors are fitted in the six-foot to protect items such as Tag Readers, often with tight clearances.

The speaker concluded with spectacular images of a double stack container train that had been blown over in the US (on a high bridge). In Australia, they are not loaded with "empty on empty" containers. (ie laden containers are always on the bottom deck to lower the C of G) with empties loaded on top, or on single-deck wagons.

## FUTURE MEETINGS

The meeting program has been determined for 2007, with presenters and topics being progressively confirmed through the year. Despite this there are odd occasions where late changes to topic, location or date may occur. We will always despatch a newsletter, or in extreme situations a flyer to advise of any changes to the advertised program. In most cases the next couple of months are firm. Meeting dates through to the end of 2007 are shown below. Topics will be advised in the newsletter as details are confirmed.

**The 2007 program will start with a bit of a rush then follow the normal format through to the end of the year.**

**Monday 29<sup>th</sup> JAN:** Eminent speaker Ed Zsombor from Canada will talk (at a city location) on the topic of short lines and regional rail. Ed is being brought to Australia as keynote speaker at the Wagga Regional Rail Forum and will be doing the rounds of the various RTSA Chapters, starting with Sydney.

**Thursday 1<sup>st</sup> FEB:** on the evening of the Wagga Regional Rail Forum (following that event - details of which are under the COMING EVENTS heading) it is planned that a joint meeting of the NSW and Victorian Chapters of RTSA will be rolled into a dinner, with a speaker discussing one (or more) of the several main line upgrading projects that ARTC are undertaking on the Sydney-Melbourne route.

There is a perfectly good train service to Wagga (but running to a slow 'summer' timetable) that should suit participants attending the Forum and/or joint meeting.

**Thur 1<sup>st</sup> MARCH at Chatswood:** "Advanced Steam" with Malcolm Cluett.

**Thur 12<sup>th</sup> APRIL (a week later than normal to avoid Easter) in the city:** a joint meeting with IRSE, with a speaker arranged by IRSE.

**Thur 3<sup>rd</sup> MAY at Chatswood:** tba

**Thur 7<sup>th</sup> JUNE at Chatswood:** tba

**Thur 5<sup>th</sup> JULY at Chatswood:** AGM and tba

**Thur 23<sup>rd</sup> AUGUST at city location:** joint RTSA / PWI / IRSE meeting, with a speaker arranged by PWI.

**Thur 6<sup>th</sup> SEPTEMBER at Chatswood:** tba

**Thur 4<sup>th</sup> OCTOBER at Chatswood:** tba

**Thur 1<sup>st</sup> NOVEMBER at Chatswood:** tba

## CHATSWOOD – A MOVING FEAST

For the next year or so there will be periodic changes at Chatswood Station and surrounding areas as redevelopment takes place in conjunction with the new underground railway to Epping. A major change occurred in mid October when the new 'down' side island platform was brought in to operation with improved passenger access facilities, replacing the temporary access arrangements and 'up' side island platform that was previously in use. Access to our venue at 8 Thomas Street is now somewhat easier – both getting in and out of the station, and in a small reduction in distance.

## CONSULTANTS (1)

There was an engineer who had an exceptional gift for fixing all things mechanical. After serving his company loyally for over 30 years, he happily retired.

Several years later the company contacted him regarding a seemingly impossible problem they were having with one of their multimillion dollar machines. They had tried everything and everyone else to get the machine to work but to no avail. In desperation, they called on the retired engineer who had solved so many of their problems in the past.

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The engineer reluctantly took the challenge. He spent a day studying the huge machine. At the end of the day, he marked a small "x" in chalk on a particular component of the machine and stated, "This is where your problem is".

The part was replaced and the machine worked perfectly again. The company received a bill for \$50,000 from the engineer for his service. They demanded an itemised accounting of his charges.

The engineer responded briefly: One chalk mark \$1. Knowing where to put it \$49,999.

## **PWI ANNUAL CONVENTION**

The NSW Permanent Way Institution (PWI) has held an annual convention for many years – in fact this year was the 33<sup>rd</sup> such event. This year it was on Friday 27<sup>th</sup> October at Technology Park (Redfern) and the first three papers presented, as part of the first session, contained a very interesting overview of urban and freight rail developments that are currently on the drawing boards or underway. The following is a brief summary of those three papers.

The Convention was started with a Keynote presentation, which was appropriately given by Vince Graham, CEO of RailCorp. Vince opened with reference to J. J. C. Bradfield and his visionary plan some 90 or so years ago for Sydney transport – which although still unfinished included the harbour bridge and city circle railway. Vince in fact made a self depreciatory comment that he was 'not a visionary, more a tradesman' in relation to current and coming expansion of the Sydney suburban rail network. One of the key drivers of the current suite of developments on the rail network is the growth in peak travel (up 100,000 trips per week so far this year) and provision to increase modal share of peak travel into the future – which translates into increasing the capacity and reliability of the CityRail network.

This led into a summary overview of the Clearway projects, planned major extensions to new north-west and south-west population growth areas and a number of quite significant but relatively unremarked improvements such as easy access upgrades to stations (2/3rds of stations are now compliant), passenger information systems, adoption of a GSM-R radio and trials of an ATP system, completion of concrete sleepers of the network, augmentation of the

traction power supply system (needed for modern trains as well as higher frequency train services) and the about to be awarded order for 72 new eight car trains to replace all non air-conditioned trains as well as add capacity to the network (since announced as going to the EDI consortium). Whilst not glossing over the shortcomings of the existing network Vince was able to project confidence that the direction being taken by Railcorp, with support of the government, would achieve the desired outcomes of reliability, capacity and quality of service.

Vince was followed by Glenn Bentley, Director Clearways, TIDC who went through the Clearways Program in some detail, providing an oversight of the objectives intended to be achieved and the current status of the various projects. The Clearway projects are designed to deliver improved reliability (beyond that already achieved with the recent timetable change), improved (peak) service frequency, reduced crowding, increased track capacity for future expansion and outsourcing as a means of growing capability of the rail industry in this state.

The projects include

- additional platforms and/or turnbacks at Bondi Junction, Macdonaldtown, Berowra, Hornsby, Lidcombe, Homebush, Revesby, Liverpool and Macarthur
- track duplication on the Cronulla line, extension of duplication on the Richmond line, quadruplication between Kingsgrove and Revesby on the East Hills line and a feasibility study of six tracking Erskineville to Sydenham.
- Stabling facilities at Macdonaldtown and Hornsby
- A passing loop on the Carlingford line

Three of these projects have already been completed (Bondi Jn, Berowra and Macdonaldtown turnback) while work is in hand on site at Macdonaldtown stabling, Hornsby, Lidcombe, Homebush and Revesby. At the same time as these projects are going on the Chatswood - Epping underground railway is nearing completion and there are yet to be confirmed plans for freight capacity improvements in the northern main line, all of which adds up to a fairly aggressive expansion and improvement period over the next few years.

Based on the existing plan the following completion dates can be expected

**Already Complete:**  
Bondi Jn turnback (4/06)

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Berowra additional platform (8/06)  
Macdonaldtown turnback (5/05)

#### To be completed:

Macdonaldtown stabling (4/07)  
Revesby turnback (1/08)  
Hornsby 5<sup>th</sup> platform (4/08)  
Homebush 6<sup>th</sup> platform (4/08)  
Lidcombe platform 5 (6/08)  
Cronulla duplication (10/08)  
Chatswood – Epping railway (xx/08)  
Macarthur 4<sup>th</sup> platform (3/09)  
Liverpool 4<sup>th</sup> platform (3/10)  
Carlingford line passing loop (6/10)  
Quakers Hill Schofields duplication (9/10)  
Kingsgrove – Revesby quadruplication (12/10)

The second paper was given by Rod Staples, Acting GM, Network Development, RailCorp and covered the planned very significant extension of the network to the north-west and south-west as well as providing additional capacity through the CBD. At present it is theoretically possible to get 110 – 120 trains / hour through the CBD in the am peak hour but in practice around 95 is all that can be currently achieved. By 2031 Sydney is expected to have another 1.2 million people, half of whom will live in the north-west and south-west areas, which provides the incentive for this high cost but somewhat visionary set of projects.

The proposals, in brief, involve:

- A line 12 km long from Glenfield to Leppington, opening in 2012. The line will involve a grade separated junction south of Glenfield (and another at the existing East Hills junction) with double track through 1 intermediate station. Stabling for up to 20 trains beyond Leppington will be provided and services will start with a frequency of 4 peak trains per hour. Possible extension west or south by 2020.
- A line 20 km long, 16 of which will be in tunnel, between Cheltenham and Rouse Hill opening in 2017 (although subsequent announcements suggest this will be brought forward to 2015). In addition four tracks will be provided between Epping and Beecroft. Six stations will be provided, with stabling beyond the terminus for up to 8 trains. Initial service frequency is expected to be 5 – 10 minutes in the peak and 15 minutes off peak. Extension toward Box Hill and Vineyard by 2020 is possible.
- A new line from St Leonards to beyond Central going under the harbour and either following along the west side of the city along Sussex /

Kent streets or up the centre of the city following Pitt / Castlereagh Streets to Central then either hooking into the Airport line or the surface Illawarra main at Redfern. The existing Chatswood – St Leonards section will be quadruplicated at the same time. This line is the most difficult of the three, involving a significant long grade from St Leonards to pass under the harbour and the difficulties of building under the city with all its buildings, services and existing tunnels of various kinds. Completion is planned for 2017.

The planning people have identified a 'global economic corridor' that more or less runs from Chatswood to the Airport where most employment and services are expected to be located. These new lines together create a new route of nearly 100 km between Rouse Hill and Leppington which passes through this corridor, enhancing both the corridor and the new line. Action is being taken to protect the corridor and acquire the land for these rail lines.

The third paper was given by Tim Ryan, GM Asset Management, ARTC who spoke on Clearways for Freight – the north – south corridor program that is currently under way. ARTC have their four simple objectives that are part of all their improvement planning – Transit time, Reliability, Capacity, Yield - which have been rolled up into the acronym 'TRACY'.

Contracts have already been let for 2.6 million concrete sleepers (sufficient to do the whole of the ARTC route between Melbourne and the Queensland border), a minimum of 150 turnouts and point motors of an improved design, and are actively exploring opportunities for large quantities of new rail.

The corridor wide improvements include train control consolidation (Junee and Broadmeadow, from 6/06), replacement of all signal boxes with centralised control (there will be no signal boxes by 6/07), elimination of the residual sections of manual block and electric staff, restructuring to the ARTC corridor management model in control centres, increasing curve speeds (CRC project 96) and concrete sleepers of all main line track (contracts for sleeper supply let).

Various projects specific to the Melbourne – Sydney corridor include

- Tottenham – Dynon improvement (Auslink)
- Brooklyn – Sunshine direct link
- Wodonga by-pass (Auslink)

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**RTSA**

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

NOVEMBER 2006

- 16 x 6.8 km passing lanes between Melbourne and Junee (able to be extended to 13.4 km – the lengths fit the Advanced Train Management System (ATMS) requirements.
- Replacement of Wagga bridge (completion between Xmas and New Year 2006)
- As funds permit create passing lanes on double track north of Junee (Harden is under way)
- Eliminate manual block south of Harden and south of Moss Vale
- Southern Sydney Freight Line between Macarthur and Sefton Park Jn. (start mid 2007)
- An immediate refurbishment, involving 250,000 timber sleepers, is being done on the Southern line to improve short term reliability pending completion of the concrete sleeper program

Projects specific to the Sydney – Brisbane corridor are

- To the extent that funds permit complete quad track between Strathfield and West Ryde and a dive for up freight trains at North Strathfield (Auslink)
- Sandgate flyover – cut in a week after the conference and included transfer of control of Maitland and Thornton interlockings to Broadmeadow.
- 15 existing long loops will be set up for higher entry/exit speeds
- 14 loops to be extended to 1500m and two new loops of that length built
- CTC replacing electric staff between Casino and Acacia Ridge

ARTC modelling has indicated that the market share will grow significantly as a result of this investment plan – medium range predictions indicate a 170% volume growth over the next ten years. This volume growth will result in revenue growth (from track access fees) that justifies the investment.

The second session had another three papers that covered noise and vibration in rail tunnels, train maintenance practices and equipment to achieve more with less disruption to the operations and an overview of the working of the ARTC / RIC alliance for the country network that is not part of the ARTC lease. These papers will be summarised in the next Newsletter.

## **CONSULTANTS (2)**

A shepherd was herding his flock in a remote pasture when suddenly a brand-new BMW X5

advanced out of a dust cloud towards him. The driver, a young man in a Broni suit, Gucci shoes, Ray Ban sunglasses and YSL tie, leans out the window and asks the shepherd, "If I tell you exactly how many sheep you have in your flock, will you give me one?"

The shepherd looks at the man, obviously a yuppie, then looks at his peacefully grazing flock and calmly answers: "Sure, why not?"

The yuppie parks his car, whips out his Dell notebook computer. He connects it to his AT cell phone, surfs to a NASA page on the Internet, where he calls up a GPS satellite navigation system to get an exact fix on his location. He feeds it to another NASA satellite that scans the area in an ultra-high-resolution photo. Then the young man opens the digital photo in Photoshop and exports it to an image processing facility in Hamburg. Within seconds, he receives an email on his Palm Pilot that the image has been processed and the data stored. He then accesses a MS-SQL database through an ODBC connected Excel spreadsheet with hundreds of complex formulas. He uploads all of this data via an email on his Blackberry and, after a few minutes, receives a response.

Finally, he prints out a full-colour, 150-page report on his hi-tech, miniaturized HP LaserJet printer and turns to the shepherd and says, "You have exactly 1586 sheep."

"That's right. Well, I guess you can take one of my sheep," says the shepherd. He watches the young man select one of the animals and looks on amused as the young man begins to stuff it into the trunk of his car.

Then the shepherd says to the young man: "Hey, if I can tell you exactly what your business is, will you give me back my sheep?" The young man thinks for a second and then says, "Okay, why not?"

"You're a consultant," says the shepherd.

"Wow! That's correct," says the yuppie, "but how did you guess that?"

"No guessing required," answered the shepherd. "You showed up here even though nobody called you; you want to get paid for an answer I already knew; to a question I never asked; and you know nothing about my business. Now give me back my dog

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## **NEWSLETTER FORMAT**

You will notice that the front page of the newsletter has the 'Next Meeting' notice done in poster style. Where the opportunity arises consider printing off this front cover and placing on your work or other suitable notice board – more attendees at meetings means better informed people engaged in the industry.

## **MEMBERSHIP – JOIN UP A NEW MEMBER**

While this newsletter is primarily intended for members it is distributed more widely than that. Readers who are not members of RTSA should seriously consider joining the organisation. Details of membership and how to join will be found in the RTSA website at [www.rtsa.com.au](http://www.rtsa.com.au)

Although RTSA is a technical group under the auspices of Engineers Australia it is open to everyone who has a real interest in railways. It is the only technical group which covers all disciplines (civil, mechanical, electrical, signalling, communications etc.) and as such is one of the most rewarding rail technical networking groups in the country. The annual cost is very reasonable, and the rewards are considerable.

RTSA offers a number of regular activities for its members, including meetings, visits and technical tours. The every other year Conference on Railway Engineering (CORE) is a highlight. A number of awards are made annually to encourage recognition of meritorious activity in support of the rail industry. A particular RTSA attribute is that it engages in considerable well reasoned and structured lobbying in support of the rail industry with regular submissions and presentations to policy study groups and enquiries. Membership, in support of this activity alone, is very worthwhile. Consider joining RTSA now if you are not yet a member, or if you are a member see if you can introduce a friend as a new member. Remember [www.rtsa.com.au](http://www.rtsa.com.au)

## **WHATS MORE – A TAIL PIECE**

### ***FOR LEXOPHILES (LOVERS OF WORDS)***

1. A bicycle can't stand alone; it is two tired.
2. A will is a dead giveaway.

3. Time flies like an arrow; fruit flies like an apple.
4. A backward poet writes inverse.
5. In a democracy it's your vote that counts; in feudalism it's your Count that votes.
6. A chicken crossing the road: poultry in motion.
7. If you don't pay your exorcist you can get repossessed.
8. With her marriage she got a new name and a dress.
9. Show me a piano falling down a mine shaft and I'll show you A-flat miner.
10. When a clock is hungry it goes back four seconds.
11. The guy who fell onto an upholstery machine was fully recovered.
12. A grenade fell onto a kitchen floor in France, resulting in Linoleum Blownapart.
13. You are stuck with your debt if you can't budge it.
14. Local Area Network in Australia: The LAN down under.
15. He would often have to break into song because he couldn't find the key.
16. A calendar's days are numbered.
17. A lot of money is tainted: 'Taint yours, and 'taint mine.
18. A boiled egg is hard to beat.
19. He had a photographic memory which was never developed.

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## NOTICEBOARD

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Andrew McKay	Committee	Chris Venn-Brown	Committee
Andrew Honan	Committee	John Watsford	Committee

### 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 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 Sydney Newsletter.

Contact details are –

The Editor, Max Michell, e-mail to [samrom@bigpond.com](mailto: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 Malcolm Cluett (Secretary) or Bill Laidlaw (Chairman) 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

### DISCLAIMER

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