

# SYDNEY NEWSLETTER



ENGINEERS  
AUSTRALIA

**RTSA**

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

JUNE 2006

## NEXT RTSA SYDNEY CHAPTER MEETING

**Thursday 6<sup>th</sup> JULY**

THIS MEETING WILL BE THE FIRST AT OUR NEW HOME -  
**Inst of Engineers, 8 THOMAS St, CHATSWOOD**  
WEST SIDE OF CHATSWOOD STATION - (see map at end of this Newsletter)  
STARTING AT 17.30 (AS USUAL)

Presentation by Dick Day, General Manager, Timetable Strategy and  
Development for RailCorp

## CITY RAIL TIMETABLING

Dick will give us an overview of the RailCorp timetabling planning function - how it is structured, the tools that are employed, their philosophy of the black art of timetabling (which is more a humanity than a science), how customer expectations and needs are aligned to resource and service provision.

Recent timetabling developments have generated quite a bit of public 'heat' and it will be instructive to get the lowdown on these changes from an organisational point of view.

Dick will also discuss future developments such as how Epping - Chatswood services will be integrated into the network (and serve RTSA meetings!), and the impact on customers of various 'Clearway' developments as they come on line. This meeting is one that should not be missed by anyone who uses and/or has an interest in the most conspicuous of rail activities in Sydney.

*Complimentary nibbles (finger picking good!) and networking from 17.30 prior to the AGM and Presentation starting at 18.00. Meetings generally finish between 19.00 and 19.30, allowing attendees to get home at a sociable hour.*

Why not come along to an RTSA meeting (where you will be most welcome) and broaden your horizons in the industry that employs you and/or that you are keen to support. Even better consider joining RTSA (you do not have to be an engineer to be a member) and enjoy the full range of services provided by the association. Contact is at the mail address (above) or at [www.rtsa.com.au](http://www.rtsa.com.au) or by ringing Bill Laidlaw on 0409 602 833

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## THE OBSERVATION POST

ARG, the then operator of the former Westrail network as well country South Australia and various bibs and bobs in NSW, Victoria and the Northern Territory, reported recently that its traffic for May 2006 had gone up by 3536 wagon loads compared to the same period in 2005. Grain was well up despite having dropped the former grain delivery to Manildra Mills in NSW during the review period, while iron ore was down, in part due to higher capacity wagons being introduced on the Whyalla OneSteel operation. Overall ARG averaged 2749 wagon loads a day during May. While reporting activity by wagons loads is not a precise measure it does give a reasonable 'analogue' overview of company activity and its traffic trends.

The problem is that ARG traffic data is reported through their American owning company records as part of their FRA reporting requirements. So to find out what is going on in Australia, in part at least, it is necessary to rely on American data sources and American reporting requirements. Here in this country there is no requirement to report traffic activity at all – as far as most rail freight activity is concerned there is now a glaring black hole. Even back in the days of National Rail, before there were any major privatised freight operations, there was a cute approach to 'commercial in confidence' which essentially removed any meaningful reporting data from the public domain. It has only got worse since the majority of rail freight has passed from the public to the private sector.

Why should we even care if rail freight companies report their activity? Well, for a start there is the basic usefulness of industry wide data – how can we realistically present an industry as part of the economic engine-house of the nation if that industry's activity is cloaked in anonymity. "We are important to the nation, but we don't know why". John Anderson, now retired former Deputy Prime Minister and Minister for Transport and Regional Services, once observed "we need the rail industry to give us the data to help us to help you".

There is also the issue of planning, both of rail and transport as a whole. There are nine 'Departments of Transport' in this country presumably trying to make the best of their domain, yet they live in a data vacuum that can only make real planning extremely difficult. Even the rail industry must have difficulty in getting beyond individual company level in the absence of reliable overall data. We glibly talk of coordination and standardisation within the industry yet we continue to live, nay even encourage, the data vacuum that leaves

us engaging as much in fragmentary guesswork as real understanding.

America may be the centre of many undesirable attributes but a common sense approach to company reporting and regulation are not among these. Maybe, having been the driving force behind 'capitalism' since the year dot, they have a commercial maturity that we can only dream about. Maybe they are less tolerant of the mealy-mouthed 'commercial in confidence' excuses for avoiding reasonable reporting requirements. Maybe they are just more pragmatic about commercial life. Maybe their governments have a greater desire to do their bit with reasonable knowledge of the underlying facts.

Track owners in this country, bless their hearts, charge for rail access in various ways which generally includes a 'gross tonne kilometre' charging component, so by default we have some coarse measures. However even this data is not reported consistently – ARTC give route by route 'analogue' data in their annual reports, and periodically issue media releases about new 'gtkm' records when they occur but see if you can find anything useful from Victoria or West Australia.

Just in case you have missed the point consider:-

- How could the ACCC realistically hope to 'manage' the Toll / Patrick affair in the spirit of their brief when there is no useful data on which to base their assumptions in regard to competition / monopolies et al?
- How can the AusLink project move forward on a sensible basis when there are glaring gaps in the data that is supposed to be at it's heart?
- How can BTRE hope to develop (national) transport policy through detailed research when basic activity data is sadly lacking in quantity and quality?

Of course there is the old adage 'never let the facts get in the way of parish-pump policy'; an unfortunate ongoing problem most recently and quite unashamedly displayed by rejection of the ATC's rather tepid proposals for increased in heavy truck (as in road trains and B-doubles) registration charges. The fact that under the same generic proposals many times more trucks (at the light end of the scale) could have had a reduction in their charges seems to have escaped attention.

It seems to me the basic data we need is perhaps a little more advanced than the Americans 'by the wagon load'

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measure – after all computers have been invented and infused into every corner of life in the interim. The great plus for computers is that they can do a lot of hack work in short time (but don't let them make 'decisions', as some banks have found out to their cost) and therefore it is reasonable to look for a simple set of 21<sup>st</sup> century data that will not breach anyone's *real* commercial sensitivities. Such data should include higher level activity measures such as

- Net tonnes
- Gross tonnes
- Net tonne kms and
- Numbers of trains

as a starting point.

It is entirely within the capability of the rail industry to start at least debating this issue in their collaborative higher level forums. However given our existing reluctance to reveal anything useful maybe the various policy, regulatory and other governance authorities, all of whom must have a vested interest in valid and useful transport data, need to get a lot more vocal on this topic in order to get a 'top down' imposition for data. As long as we continue with our 'tell someone who cares' approach to the provision of useful higher level data there will continue to be judgemental decisions that do rail no favours at all.

## ANNUAL GENERAL MEETING

The AGM was held prior to the normal members meeting on June 1<sup>st</sup> and took up only a short period of time. The most notable issue was election of the Chapter committee for 2006/07. Les McNaughton has retired from the committee while John Aitken and David Jehan have stepped down due to pressure of work. Similarly Basil Hancock has stepped down from the Secretary role, although in his case he has continued to sit on the committee. Malcolm Cluett has bravely stepped up to become Secretary. Andrew Honan, Chairman of the RTSA Government relations sub-committee has joined the chapter committee, otherwise the existing committee members have nominated to continue on into the new executive year. Nominations for the various committee positions did not exceed the number of vacancies so the proceedings, in the capable hands of Returning Officer Alex Stoney, were relatively painless.

## 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.

## FUTURE MEETINGS AND EVENTS

A tentative meeting program has been determined for the remainder of 2006, although at this stage several of the proposed topics are subject to confirmation, and the dates may need to be swapped around in some cases. However the dates are firm.

**JULY 6<sup>th</sup>:** Timetable Planning – Dick Day of RailCorp, as advertised on the front page of this newsletter.

**JULY 13<sup>th</sup>:** Maglev Trains – 30 km in 8 minutes at up to 500 km/h. Brian Luber of Siemens will present to a joint meeting sponsored by IofE Electrical Branch at the Chatswood venue. This is an additional meeting to those advertised earlier.

**AUGUST 24<sup>th</sup> (note different date):** Joint meeting with PWI at Masonic Centre in Goulburn St. (cnr Castlereagh St) (PWI to advise topic)

**SEPTEMBER 7<sup>th</sup>:** "New Developments in Track Maintenance Machines" by Alan Logan of Plasser

**OCTOBER 5<sup>th</sup>:** to be decided.

**NOVEMBER 2<sup>nd</sup>:** Government and Opposition transport spokespersons debate their policies ahead of the 2007 election (subject to confirmation)

**2007** will start with a meeting on **Thur 1<sup>st</sup> February**, on the topic of "Advanced Steam" by Malcolm Cluett

AusRAIL 2006 (the annual rail industry conference) will be in Brisbane between 21<sup>st</sup> and 22<sup>nd</sup> and November.

Check out the STORE (study tour of grain lines) report at the RTSA website [www.rtsa.com.au](http://www.rtsa.com.au)

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## LAST MEETING - ROLLINGSTOCK PERFORMANCE IMPROVEMENT - LESSONS FROM THE UK AND AUSTRALIA

**Jason Groombridge MEng CEng MIMechE;  
Senior Consultant, Interfleet Technology**

Jason introduced the topic by setting out a few key pointers

- Railways are complex engineering systems.
- The primary function of a railway system is to transport people or goods.
- This is required to be achieved safely and reliably, with sufficient capacity and at an affordable cost.
- Train fleets are a key element of a railway system and have a significant interface with passengers / freight.
- Rollingstock performance is a key factor in overall railway system performance.

A key issue in rolling stock performance is the Whole of Life Cost = Capital costs + Maintenance Costs + Operating costs.

Reliability is a key issue in good business performance

- Reliability is a measure of failure.
- Unreliability is expensive both in terms of:
  - the cost of putting right the failure
  - the consequential cost from resulting delays and cancellations.
- Failure data is the primary information for a reliability improvement programme.
- Reliability has a cost.

Minimisation of failure = maximisation of performance

Availability is a concept related to reliability

- Trains need to be operational at designated times to meet planned timetable slots and service requirements.
- Availability is a measure of the number of trains available for service at a point in time from of a designated fleet.
- Availability is effected by:

- Maintenance requirements and maintenance delivery
- Failures and repairs
- Upgrades and modification work
- Special operational demands
- Availability has a cost.

Performance improvement is increasing the performance levels through:

- Design changes → change maximum performance capability
- Maintenance change → regain original performance capability
- Operational change → improved operational interface

The performance improvement process involves

- Establish a Performance Improvement Project!
- Define and Measure
  - Define performance
  - Establish measures and targets
  - Measure performance
  - Identify principal performance issues and identify root causes
- Improve
  - Determine improvement initiatives – what, how, why
  - Deploy improvement initiatives – who, where, when
- Monitor and Review
  - Assess performance levels and results
  - Revise plans, revise targets

A Key issue is accuracy and quality of data.

- Data validation
  - Correlating base information with driver/crew logs, incident reports, maintenance records, previous failures.
- Data analysis
  - Identify high frequency / high impact areas
  - Identify areas with adverse trends or statistically significant variations over time or between vehicles.

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- Various statistical tools can be employed.

## Identification of root causes

- Review data with maintenance staff and operation staff.
- Technical Teams worked to understand the root causes of the high priority / adverse trend areas.

## Improvement initiatives

- Review data with maintenance staff and operation staff.
- Technical Teams worked to understand the root causes of the high priority / adverse trend areas.
- Address technical root-cause issues through:
  - Modification programmes;
  - Maintenance system changes;
  - Parts quality improvement (working with the supplier);
  - Training updates.
- Address non-technical issues through:
  - Additional training or altered procedures to mitigate against the probability of an incident;
  - Operational changes to reduce the impact of a failure;
    - "cut and run"
  - Technical fixes to accommodate operational practices.

## Improvement through modification

- Establish the vehicle configuration – not always easy!
- Develop the modification to address the performance issue.
- Apply rigorous engineering change control:
  - Information to demonstrate the change is acceptable to implement.
  - Information to allow the change to be maintained going forward.
  - Risk assessments, drawings, installation instructions, maintenance documents, parts lists.
  - Controlled implementation.

## Improvement through maintenance

- Preventive maintenance is done to reduce the chance of things going wrong.
- Corrective maintenance is done when things do go wrong.
- Five principle types of maintenance task:
  - Condition Monitoring– to detect and record degradation;
  - Rework– to overhaul an item prior to any sign of degradation because evidence proves that further operation would significantly increase the risk of failure;
  - Discard– to throw away and replace an item with a new one;
  - Failure Finding– to check for a particular failure condition in a 'hidden' function;
  - Servicing or Lubrication.

## Lessons Learnt

- Common definition of Performance.
- Establish a performance improvement project properly at the outset.
- Collaboration and teamwork is key:
  - Operators
  - Engineers
  - Suppliers
- Understand the root causes of performance shortfalls before implementing solutions.
- Consider all ways of improving performance.

## Conclusions

- Rollingstock performance a business driven process.
- Good performance is not achieved by accident.
- The objectives of safety, reliability, availability and whole life cost can be aligned in an optimal way.
- Lessons can be learned from other railways.
- Engineering and engineers play a key role in all aspects of the performance improvement process.

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## **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 best rail technical networking groups in the country. The annual cost is low, 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. In particular RTSA 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)

## **Understanding Engineers - 7**

An engineer was crossing a road one-day when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess." He bent over, picked up the frog and put it in his pocket. The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will stay with you for one week." The engineer took the frog out of his pocket, smiled at it and returned it to the pocket. The frog then cried out, "If you kiss me and turn me back into a princess, I'll stay with you and do ANYTHING you want." Again the engineer took the frog out, smiled at it and put it back into his pocket. Finally, the frog asked, "What is the matter? I've told you I'm beautiful princess, and that I'll stay with you for a week and do anything you want. Why won't you kiss me?" The engineer said, "Look, I'm an engineer. I don't have time for a girl, but a talking frog, now that's cool."



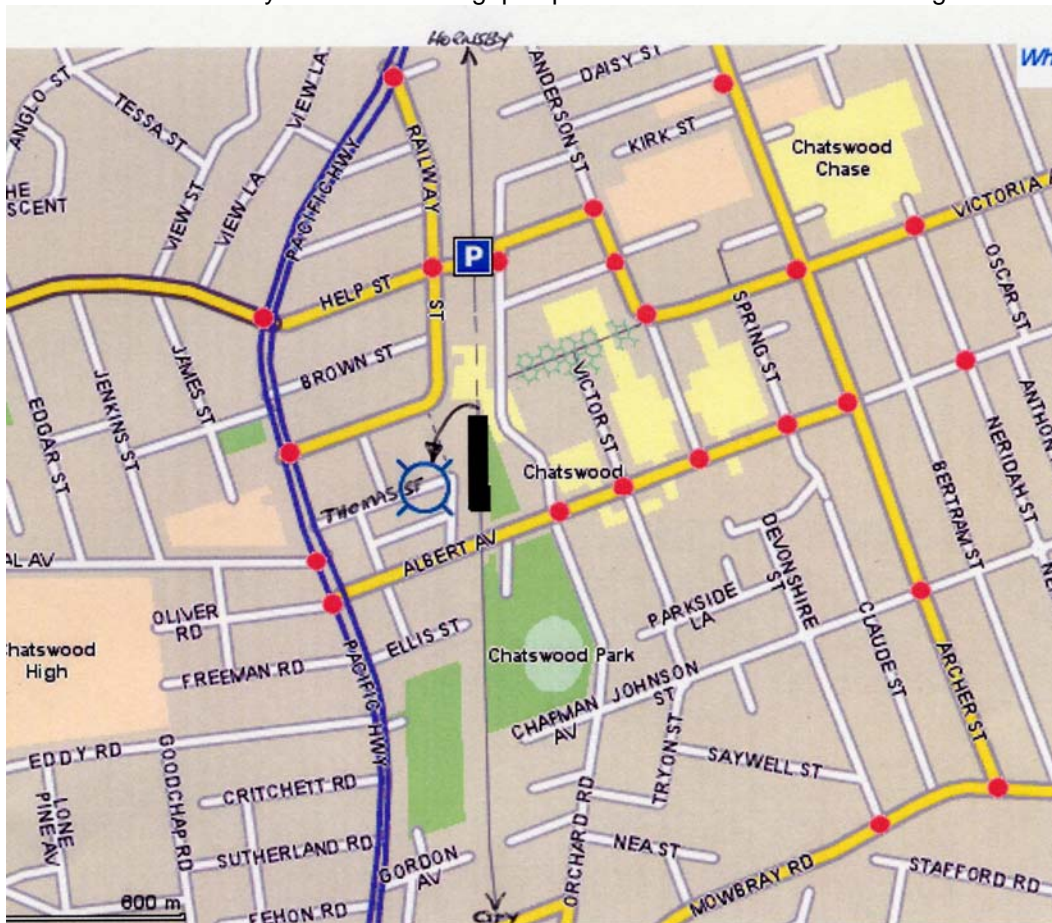
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## NOTICEBOARD

### NEW MEETING PLACE FROM JULY 2006 8 THOMAS ST, CHATSWOOD

Thomas St is a short street running between the station and Pacific highway at Chatswood. For the time being the area is a bomb site (also referred to as a construction site) but the following directions will get you there through all the chaos. Exit Chatswood station on west side (down side in railway parlance) to Victoria Ave West; proceed south (toward city) along curved footpath past telephone exchange and RSL for about 70-100 m, left turn into small connecting street to Thomas St; cross Thomas St, turn left (facing back to the railway) and the IofE building (8 Thomas St) will be on your right side. Ascend stairs into building, entry to venue is on ground floor to right of lifts.

Trains run at around 5 minute intervals through Chatswood in both directions in time for the meeting start. After the meeting, at around seven o'clock, trains to the city are still running at between 5 and 8 minute intervals while northbound toward Hornsby there are some gaps up to 14 minutes at that time of night.



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## KEY RTSA SYDNEY CHAPTER COMMITTEE CONTACTS

Bill Laidlaw	Chairman	0409 602 833	<a href="mailto:blaidlaw@bigpond.com">blaidlaw@bigpond.com</a>
Malcolm Cluett	Secretary	9589 0226 (H)	<a href="mailto:malcolm.cluett@bigpond.com">malcolm.cluett@bigpond.com</a>
Max Michell	Newsletter Editor	02 9241 2675	<a href="mailto:samrom@bigpond.com">samrom@bigpond.com</a>
Basil Hancock	Committee	Bob McCotter	Committee
Arnold Aranjo	Committee	Trevor Moore	Committee
D	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.

Send copy to the Editor, Max Michell, by e-mail to [samrom@bigpond.com](mailto:samrom@bigpond.com), phone 02 9241 2675 or post to 806/129 Harrington St., The Rocks, NSW, 2000. For all other matters relating to RTSA Sydney Chapter contact Basil Hancock (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

Members receiving this Newsletter by email should note that all Sydney Newsletters will be sent in a PDF format prepared using Adobe Acrobat Version 6.

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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