

Assisting Professional Development within the Railway Industry

The Railway Technical Society (RTSA), in line with its Charter, provides opportunities to its members for professional development. It provides a forum for mutual technical development, networking, acquiring and sharing knowledge for professionals within the railway industry. The RTSA's recent biennial Conference on Railway Engineering (CORE2006) provided more than 650 delegates from around the world the opportunity to listen to 60 high quality technical papers presented over two days. The panel discussion on the second day of the conference received unprecedented support from the delegates. Many also participated in informative technical tours on the final day to get first hand experience of the railway infrastructure investments in Victoria. Apart from assisting the delegates to expand their knowledge, their attendance at the conference also enabled them to collect 20 CPD (Continuing Professional Development) points towards professional development.

In an industry which has undergone significant restructuring and reforms in the 1990's with the privatisation push, currently more than fifty percent of its professionals are 50 years of age or older. A broad spectrum of railway related activities including presentations, technical field visits and study tours organised by the RTSA through its Chapters and specialist sub-committees are intended to assist young professionals entering this mature transport industry.

The recent RTSA study tour of NSW branch lines (22-25 March 2006) provided an opportunity for the participants to identify with local communities and grain growers on issues associated with transport and, in particular, rail. Some of the tour members already had a good knowledge of the rail infrastructure in the area and had a special interest in short-line operations. Their insights enhanced the knowledge of many of the younger participants as, for many, this was their first experience of regional rail. The RTSA

has completed its report of the tour and has used this opportunity to make a submission to the Federal Government's inquiry into 'Integration of Regional Rail and Roads and their Interface to Ports' (the Neville Inquiry). Copies of the submission and the study tour report can be down loaded from the RTSA's web site pages www.rtsa.com.au/publications/submissions and www.rtsa.com.au/events/study-tours respectively.

The RTSA takes a keen interest in industry initiatives in professional development activities. The sharing of successful professional development strategies among other industry players would be beneficial to the entire railway industry. The RTSA has provided its full support to the recently announced ARTC Mentoring Program and would welcome other such initiatives from organisations within the railway industry.



Ravi Ravitharan

National Chairman
Railway Technical Society of Australasia (RTSA)

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ENGINEERS
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Point of View

Max Michell

Many moons ago, when the various rail systems were all state or federally owned, there were regular quarterly meetings of the rail systems under the auspices of Railways of Australia (antecedent of ARA). These meetings were disciplinary – Operations, Passenger, Technical – with an overarching Management Committee, all of which was overseen by the Commissioners Meetings.

I was involved in the Operations meetings, which alternated between Melbourne (RoA's home) and various inter-state locations. The idea of the latter was particularly to allow representatives to get exposure to other ways of doing things – then as now the states were highly insular and had a strong belief that they had unique problems which only they could resolve.

At the time the most advanced rail systems were WestRail and Australian National, both with strong leadership supported by clearly focussed and even visionary technical and operating people. So when the Operations meeting was scheduled for Adelaide it was assumed that the various state representatives would come along enthusiastic to search out those things that made AN notable, at least as far as operational practices were concerned. Wrong!

The representative from an unnamed 'Premier State' had never been to Adelaide (or South Australia) in his life before, but even so he managed to doze his way through the day in the back of the bus that took us on a 'technical tour' on the second day. What did he learn? Very little if anything, but after all, his home rail system had problems and issues that only he and his railway could resolve. They all did at one stage.

Since that rather unedifying episode (and others like it) there have been massive structural changes which have helped to break down the insularity so evident then. The government owned railways have ceased to exist, apart from QR (which now is very much a government owned company, rather than a department), so that old colonial allegiances are considerably muted compared to the past. State prejudices have been over-ridden in many cases by a commercial imperative, while wheeling and dealing in above rail assets has substantially confused the concept of parochial identity.

But all is not well. Each state has its own accreditation and safety authority, each imposing quite demanding, costly and time consuming caveats on rail operators. While this over bureaucratization is slowly working its way toward something substantially more efficient and responsive to real (passenger and freight) needs, the registration and licencing of competing road buses and trucks and their



drivers is a matter of a single ‘once only’ routine at any place in the country.

We also still retain state based rail systems in the suburban rail systems in the five major capital cities. Two of these, in Perth and Adelaide, are largely separated from freight and long distance passenger activity and are almost stand alone systems. The remainder, in Melbourne, Sydney and Brisbane, have mixed traffic operations over a number of their routes where the residual parochial attitudes and practices continue to flourish, often justified by an all embracing devotion to the word ‘safety’.

By virtue of the interaction of non suburban trains, that operate over a far wider territory than just the suburban areas, these parochial attitudes extend far beyond the relatively small domain of the initiating railway. In effect the local railways in Melbourne and particularly Sydney are imposing their own peculiar form of ‘interference’ on rail operations across the continent.

The multiplicity of such jurisdictions inevitably results in considerable over-employment in order to re-invent everything five times over, which must inevitably add a considerable cost impost to the total rail industry. The surfeit of people, all essentially trying to retain a role while dealing with the same issues as their counterparts in other railways, has another negative side to it – the unnecessary complication of matters that should and could be quite simple.

There was a recent article that observed that if a piece of broomstick with two station names inscribed on it is an appropriate technology for a low traffic branch then use that technology – there is no need to go to a higher level technology than that required to meet the needs of the day and immediate future unless there are demonstrable commercial gains to be had. Maybe ‘broomstick’ technology has to be backed by a reliable radio based communications system to be fully effective, and maybe there are some operating rules that need to be defined to deal with running line turnouts, level crossings and the like, but none of these change concept of ‘simplicity is good’.

The trouble with our colonial re-inventors is that they tend to create unique solutions, partly through insularity (such as noted in the opening paragraph) and partly as a kind of ‘make work’ that will ensure their continued survival. Five different solutions inevitably lead to higher costs, both from unnecessary complication and from low volume ‘production’ of the associated technology. Is this really the way we want to go as an industry? I think not.

In Sydney there is something of a political fracas going on following a number of high profile school pedestrian crossing accidents. The (typical) knee-jerk reaction has been to double the penalties and propose substantial upgrading of (some) these crossings at a very high cost. Despite this I suspect that no one has bothered to travel

across the intellectual and geographic borders to look at what other states have done in similar situation (for ALL states do have schools and they are ALL on roads!).

There are two things that make Sydney unique of course – a ‘guards and convicts’ culture and a local urban myth that it is the centre of the Australian universe. A form of intellectual arrogance born of ignorance. Travel brother, travel! By expanding your experiential boundaries beyond your employment domain you may be able to contribute to a simpler, more effective and above all more affordable rail industry that will be better able to survive the ravages of competition

This situation in NSW is of course not restricted to that state, but it should be a timely reminder that we, the rail industry, should be eternally vigilant lest we should return to the ‘what is best for me’ syndrome rather than ‘what is best for rail customers’. I would suggest that there are still too many vestiges of the parochial prescriptive formulations of introspective governance to be confident that the rail industry is truly detached from its past colonial shackles.

Government Relations Committee

The supplementary report to the Neville Inquiry (on regional rail lines) was completed in April and submitted to the House of Representative Standing Committee on Transport and Regional Services. This builds on the substantial work previously submitted by Philip Laird in April 2005.

The supplementary submission involved contributions from John Goodall in Western Australia, Scott Clennett in Tasmania, Martin Baggott in Victoria and members of the NSW Branch Lines Study Tour in NSW. I want to personally thank all those that gave up their time to contribute, particularly when there are so many competing pressures on people’s time with CORE and other personal commitments. Having contributions from other states gave added weight to our report.

The RTSA has been invited to appear before the Neville Committee (along with other leading stakeholders) in Sydney in early August. This will be a good opportunity to discuss aspects of our report, further discussed in the article on Page 4.

The study tour report on the NSW branch lines (STORE) is also out, and can be downloaded from the RTSA web site. This tour gave many new entrants (to the rail industry) their first experience of regional rail, whilst others became reacquainted with aspects of the infrastructure.

Study tours are a great shared learning experience – in this particular case for new entrants and seasoned practitioners to transfer knowledge, but as well, to discover new dimensions to the challenges facing regional rail.

The study tour looked at wider aspects (not just infrastructure) and talked to farmers, grain handlers, wine producers, as well as those associated with local government. (Copies of both reports have been sent to groups we visited).

I commend members to read both reports on the RTSA web site (although the Neville Report is quite lengthy).

One of the interesting findings of the NSW tour was the apparent need to rebuild capability. Although regional communities want rail, there is little rail operational and development experience. Whilst governments may direct grants to local government for integrated transport, solutions will invariably be road-based and may be sub-optimal.

Obviously, with regional lines in many states facing huge challenges, new arrangements for rail viability and integrated transport is a keen issue for many communities. The Government Relations Sub-Committee hopes to continue to discuss with government agencies and statutory bodies these issues and to aid development of regional rail (within the logistics chain) for the benefit of communities.

Finding Solutions for Viable Regional Rail Services

In April, the RTSA made a submission to the ‘Neville’ Inquiry on regional rail services after conducting some ‘desktop’ research, a study tour of the south-west NSW, and taking input from New South Wales, Victorian, Tasmanian and Western Australian members.

This submission is currently ‘copyright’ until published on the Australian Parliament House web site, after which we will be explaining its content in detail to members and interested stakeholders.

The report identified the varying nature of the regional freight task (between grain dependent areas and other producer/ consumer regional economies) as well as the geographical and topographical constraints of routes from production centres to ports.

Although there is much focus on the bottlenecks to exports (and wealth creation), there was a view that regional economies may also benefit from inter-regional rail freight. A view expressed in the report was the rail is not living up to the potential that it can offer producers, consumers and regional communities.

Whilst the federal government has announced a Strategic Regional Transport Projects grant (\$126.8M on 2 March 2006) in which Local Government Council sponsor transport projects, because of a lack of rail understanding

and experience, submissions are likely to be biased towards road-only projects rather integrated logistics solutions.

A less than optimum outcome is likely to occur.

This lack of regional capability appears to be a severe market failure and a barrier for regional areas to have a ‘say’ and a ‘go’ at running regional rail services. As State Governments have retreated from regional rail, the transfer of that capability (and the development of rail) has varied across the different jurisdictions.

Although in some cases there is evidence that grain logistic companies should operate vertically integrated systems, there appears also to be opportunities in some regional economies for short-line models.

These problems are not new. Saskatchewan has developed a successful approach for their environment.

Contact has been made with the Saskatchewan Highways and Transportation agency – Rail Services division. This office facilitates Short-line railway operators and stakeholders to understand the strengths of regional rail within specific localities, and to develop business cases for viable rail services (that enables access to government funds).

http://www.highways.gov.sk.ca/docs/rail_air/shortlines/shortline_advisory.asp

This evidence-based policy has been highly successful in promoting short-line railways in Canada and this is one approach that we have highlighted to the Neville Inquiry for closer examination.

It should be emphasized however that there are many differences in rail (and transport) operations across Australia, which will require examination of many different ‘solutions’.

While in simple terms the freight task in Australia is clear- ‘Twice the Task by 2020’, the implications are more subtle. With a road maintenance burden that is a geometric progression of the number of axles (road maintenance is a function of the number of axles to the power of 4) compared with a rail maintenance burden that is fixed (\$7,000- \$12,000/km pa for up to 2M Tonne pa), the maintenance advantages are clear.

The challenge is to build on the strengths of road (in delivering ‘quality of service’) as well as rail (in delivering ‘scale of service’) in a complementary manner within an integrated system.

The RTSA hopes to continue to articulate scenarios for regional rail and assist in the development of human capital for viable rail solutions.

Andrew Honan
Chairman, Government Relations Committee



The Railway Technical Society of Australasia's biennial Conference on Railway Engineering (CORE2006) was held at the magnificent Grand Hyatt Hotel in Melbourne between 30 April and 3 May 2006 with the futuristic theme *Rail Achieving Growth*. The Conference offered more than 600 delegates 60 high quality technical papers presented in three parallel streams over two days.



(left to right) Ravi Ravitharan CORE2006 Conference Chairman, The Hon Minister for Transport Mr Peter Batchelor, Mr David Marchant, CEO ARTC, at the Opening Plenary Session



Some of the 650 delegates at the CORE2006 opening plenary session



Extensive trade exhibition of more than 40 corporate displays

To bring CORE2006 to a close, a panel session of eminent rail industry persona was convened including Australasian Railway Association CEO Bryan Nye, well know urban planning academic Paul Mees and the RTSA's own Martin Baggott and Max Michell. The forum was moderated by well-known local ABC radio identity, Jon Faine, who had researched his subject very well to the extent of trying to catch the first train of the day, unsuccessfully, into Melbourne for his early morning radio shift. The forum was thought provoking and stimulated much debate and again highlights the ability of CORE conferences to go that one step further



James Morrison performing at the CORE2006 Gala Dinner

Three interesting and informative technical tours on the final day of the conference provided the delegates an excellent opportunity to get first hand experience of the railway infrastructure investments in Victoria, particularly the Regional Fast Rail (RFR) and Spencer Street Station projects as well as the historic Castlemaine to Maldon railway system and various railway facilities and workshops in the Melbourne and surrounding areas. A broad spectrum of the Australian rail industry was well represented at the extensive exhibition of more than 40 corporate displays and ample opportunity for networking was presented at two cocktail functions on 30 April and 1 May 2006.



CORE2006 Gala Dinner

As is customary, CORE delegates and exhibitors were provided with questionnaires to gauge their feedback on the conference and assist future CORE organising committees in making their events even better. Overall there was a general consensus that this was one of the most successful railway technical conferences held to date. Those delegates that responded to the questionnaire overwhelmingly voiced their preference for CORE to continue in its current format as an independently organised event held over two days for technical papers with a third day set aside for technical tours. The exhibitors were evenly divided between a straight two day technical event and the current format. Delegates also clearly wish to see the money raised from CORE utilised for benefit of railway industry and the RTSA membership.

RTSA Award Presentations

The recipients of the prestigious RTSA Engineering Awards for 2006 were announced and their awards were presented at the CORE2006 Gala Dinner at the Grand Hyatt Hotel on the evening of Tuesday 2 May 2006. The RTSA Engineering Awards in the following four categories; Individual, Industry, Young Railway Engineer and Railway Engineering Student Thesis once again were highly sought after as was evident from the number of entries and nominations received.

The Individual Award was presented to David Ferris for his outstanding service to the railway industry over the past 40 years and for his numerous ex-officio activities including those associated with the RTSA.



David Ferris receiving his RTSA Individual Award 2006 from RTSA Immediate Past Chairman Mr George Erdos

The 2006 RTSA Young Railway Engineer's Award was presented to both Tom Hampton a Project Manager with John Holland Rail and Rebecca Bignell a Signal Engineer with the PTA of Western Australia. In addition, the 2005 winner Wilson Wong, a design engineer with Maunsell Australia, and runner up, Brenden Vosper, an engineer with John Holland Pty. Ltd., were recognized for their achievement in the previous year.



RTSA Young Railway Engineer's Award 2006 recipients Tom Hampton (John Holland Rail) and Rebecca Bignell (PTA of Western Australia)

The 2006 biennial Industry Award jointly went to the PTA of Western Australia and Union Switch and Signal for the project involving the design, installation and commissioning of the new single train control system for the Perth metropolitan rail network.



Lido Costa (Union Switch and Signal) and Hugh Smith (PTA of Western Australia 2006) receiving the RTSA biennial Industry Award 2006 from Tim Ryan (ARTC).

The winner of the 2006 Engineering Thesis Award was Jonathan Dennis of Queensland University. Evan Barrett of the Griffith University in Queensland received the runner up award.

Ian Macfarlane one of RTSA members was also honoured with the Life Membership status of the Railway Technical Society of Australasia for his outstanding contribution to the railway industry over a long period of time. This made him only the fourth person in the history of the RTSA ever to receive this coveted honour.



Ian Macfarlane receiving his Life Membership status of RTSA from RTSA National Chairman Ravi Ravitharan.

CORE2006 - Max's View

CORE2006 in Melbourne was a great success as is now the customary expectation. It followed the reasonably traditional format of an opening plenary session, a day and a half of parallel streams and a closing plenary session. The consequence of this is that individual attendance at sessions is limited to probably no more than around 35% of presentations, although all papers are provided to delegates so the other 65% can be at least read.

One of the issues that concerns me is demonstration of a holistic attitude to rail, placing whatever the presenter has as their topic into the broader context of a bigger / brighter / better rail service or system – the reliability / capacity / transit time / yield continuum. The theme of the conference “Rail Achieving Growth” sort of pointed in this direction but without being prescriptive about what is meant by “Growth”.

An interesting paper was presented by Ray Bartlett (a ‘graduate’ of that most excellent practical rail learning institution - Victorian Railways) on a high level study of a rail route to Tullamarine airport. His end conclusion was that the existing Sky Bus service is time and capacity competitive and will not change until numbers of passengers through the airport are significantly higher. As Ray rather cleverly put it this is a case of “Growth Achieving Rail”. A good example of holistic thinking.

A number of presentations were on various aspects of safety. While safety issues can have a direct bearing on costs they also have a number of less financially accountable aspects, not the least of which could be categorized as political (remember Waterfall?) and social. Safety in these contexts was categorized by Alan Ross as “You are only as good as your last accident”.

The conference proper wound up on the second day with a panel session. Since I was part of the panel I feel it would be inappropriate for me to comment on that other than I felt it was very well moderated by Jon Faine (a local ABC radio identity), challenging and great fun.

If there is one change I would like to see for the 2008 CORE in Perth it would be an indication of a higher level appreciation of the value of the presenter's topic to railways as a whole – how does it fit into the reliability / capacity / transit time / yield continuum?

Max Michell

ODE to CORE2006

*It all began in Melbourne more than two years ago,
There was a special event that we wanted to throw,
We invited ASN Events to organise it for us,
To achieve a modest profit without any fuss,
And to make it possible for rail to continue and grow.*

*The planning took place over those two years in time,
When we had good times, and hard, and sometimes a whine,
But gradually the Conference on Railway Engineering 2006,
Began to take shape with design of the logo, and juggling the mix
Of papers and speakers, and of food menus and fine wine.*

*It was decided the venue would be the hotel Grand Hyatt,
After consideration and discussion it was decided to go and hire it,
As it turned out it was the best and quite grand,
A perfect setting for the gala dinner and invited brass band,
And for having a conference where everyone would fit.*

*The venue and entertainers were well chosen, no doubt,
While ASN and the committee continued to tout
For sponsorships, delegates, and exhibition stand space,
And when the day arrived we needed all hands in the race,
To pack the satchels before the welcome cocktails came out.*

*To get the presenters that we did was really a coup,
But when CORE is on, you as a delegate are most welcome too,
The papers were world class and the exhibitors were great,
The gala dinner and entertainment were also first rate,
And when the CORE talks are finally over, we relax on the choo choo.*

*One technical tour went to Newport and other great places,
The luncheon was partaken amid the posh yachts and happy faces,
It was enjoyed by many delegates all of whom were glad,
To have finished their CORE without having gone mad,
Because they had been clever, and reserved their conference spaces.*

*Now we can look forward to the next conference in 2008,
When booking we recommend you do it early, not leave it til late,
The next conference will be in Perth and the planning has commenced,
Although the theme is yet to be determined, all of us have sensed,
That everyone will be keen, to come on that CORE date.*

by The CORE2006 Organising Committee

ARTC Mentoring Programme

The Australian Rail Track Corporation (ARTC) is establishing an innovative formal mentoring programme for employees across its national network based on developing leadership skills and staff careers. The broad objectives of the programme are to contribute towards positive cultural change within ARTC, emphasizing 'can do' and commercial attributes to improve staff retention rates through the leadership and career development of emerging talent within the Corporation. The programme aims to preserve the skills and expertise of more experienced staff through the transfer of knowledge from mentors and mentorees, to expose mentors and mentorees to diverse experiences and encouraging innovative ways of thinking through participation in the mentor network and to develop skills and experience to achieve optimum outcomes in the tasks that are undertaken.

The Corporation now is seeking applications from potential volunteer mentors from the broader commercial business community to fill these important roles across the whole breadth of positions within ARTC.

It is anticipated that, on average, mentors and mentorees will commit one hour per week to the programme. Partnerships will be drawn from a broad range of disciplines including finance, engineering, operations and customer service, human resources and safety with the objective of the mentor sharing his or her particular knowledge and experience with the mentoree over an initial period of twelve months. ARTC participants are employees and managers at all levels of seniority.

If you are interested in contributing to this worthwhile initiative, contact Ms Prue Hodgson, ARTC HR Programme Coordinator on telephone (02) 6939 5404 or fax (02) 6939 5446 or email PHodgson@artc.com.au for more information about mentor selection criteria and application procedures.



INDUSTRY FOCUSED RAIL COURSES

Two distance learning courses

Two professional development rail courses are being offered on the new railway environment. These have been jointly developed by Queensland University of Technology (QUT) and Australian Railway Research Institute (ARRI). The creation and offering of these courses to rail professionals is an initiative to fill a training vacuum and lack of industry induction towards a broader vision of the rail industry. These two courses are aimed at the majority of rail personnel and designed to give a "broad brush" approach to rail operation, management and infrastructure as a whole.

The first course is "Railway Business and Engineering" and it comprises five modules as follows: railway business, railway access, project management, infrastructure and rolling stock.

The second course, "Railway Management, Operation, and Safety", comprises four modules: railway management, railway operation, railway safety management, and signalling & communications systems.

Both courses are full-fee paying and available in a self-paced, independent study mode with high quality resources supplied to participants; they are self-contained units with individual assessment. Both courses have been able to be credited towards various postgraduate programs (eg Graduate Certificate or Masters).

More often than not, employers sponsor members of their staff to undertake one or both courses. The increased breadth of knowledge their staff achieve concerning the business of rail, has been invaluable for their businesses.

The closing date for registrations for 2nd semester offerings is the third week of July 2006.

Further detailed information on the two courses can be obtained from the following:

Dr Martin Murray m.murray@qut.edu.au

Dr Wardina Oghanna arri@aanet.com.au

Rethinking Sydney's Transport Equation

By Philip Laird

The population of Sydney continues to grow, but, with the exception of half a railway between Epping and Chatswood now under construction and the airport line opened in time for the Sydney 2000 Olympics, the most recent new line was the East Hills to Glenfield line opened in 1988.

Since then, numerous freeways and tollways have been built with more to follow. In addition, car use has been encouraged with the removal of tolls at Berowa in 1988 and Waterfall in 1996, combined with the ongoing operation of a costly toll rebate scheme.

The main encouragement for Sydney people to now think twice before using their cars is the increasing road congestion and recent increases in petrol prices. Although the NSW Government's 2003 Parry report on sustainable transport recommended improved road pricing, this is a hard call for governments at both the NSW and Federal level.

Until recently, the NSW government has been reluctant to increase spending on rail beyond historic levels and the present Federal government continues to deny support to urban public transport. It is little wonder that car numbers have increased faster than the population. In fact according to the current NSW Road Minister (the third in twelve months) an extra one million cars have been put onto Sydney's roads over the last ten years.

The 2002 RTSA/RTAA brochure 'Getting Sydney back on track' urged more investment in rail, including the NSW Government's promised Action for Transport 2010 program of rail extensions and upgrades.

External costs of road transport in Sydney (\$ million per annum)			
	RTSA 2003 estimate	CIE 2005	CIE 2020 (projected)
Congestion	6000	12072	16569
Motor vehicle accidents	3000	3864	4977
Greenhouse Gas emissions	330	145	187
Ambient airborne pollution	> 1000	1223	1228
RTA subsidies	N/A	741	946
TOTAL	> 10000	18045	23904

Reference: RTSA and CIE. Note RTSA used \$40 per tonne for greenhouse gas emissions whilst CIE used \$10 per tonne.

The brochure counted the high external costs of excessive car dependence. More recently, the *Sydney Morning Herald* commissioned the Centre for Independent Economics to undertake a study "Sydney's transport infrastructure The real economics" which also looked at the external costs 'such as congestion, pollution, greenhouse gas emissions, and a rising incidence and cost of road accidents'. The respective external costs are shown in the table opposite.

The CIE report notes that the average external costs are 42.5 cents vehicle kilometre travelled (cf recent quotes of total car use costs of 88 cents per km). To recover 42.5 cents per kilometre for the average car using 11 litres per 100 km would require a charge of \$3.86 per litre. Other external costs include generous tax rebates for car purchase and operation, health impacts, noise pollution and property depreciation near major roads.

The need to improve Sydney's transport was addressed by Engineers Australia in its 2003 NSW Infrastructure Report Card (rail was rated D) and a one day seminar held at Milson's Point in June 2005. The need for improvement has also been advocated by the Warren School of Engineering and an associated group 'The 10,000 friends of Greater Sydney' together with Sydney City Council. The basic message from surveys is that people are prepared to pay for improved public transport.

As petrol prices continue their long term trend upwards, residents of Western Sydney and other outlying areas will be faced with increasing transport costs in contrast to residents of Perth's Southern suburbs whose new railway to Mandurah will be delivered debt free following a State Budget gift of \$1.3 billion from the 2005/06 surplus.

WA Premier Alan Carpenter said "It was crucial to reinvest heavily in the State's infrastructure to ensure key services such as health, education, law and order, and public transport continued to be world-class. This will save up to \$75 million a year in interest payments, which can instead be directed to health, education and community safety. Even in the best managed economies, boom times do not last forever so now is the time to start building for the future."

Pacific Highway Upgrades

In May 2006, a Standing Committee of the NSW Legislative Council released its final report on Pacific Highway Upgrades. RTSA together with the University of Wollongong using Rail CRC inputs participated in the inquiry. The central finding of the Final Report is that New South Wales lacks a comprehensive freight strategy and that such a strategy is needed to guide the Pacific Highway Upgrade Program. This need will become more pressing with the predicted doubling of the freight task by 2020.

The Inquiry demonstrated that coastal residents are extremely concerned about the dangers of mixing local and heavy vehicles on the Highway. Many North Coast

residents claimed that heavy vehicles are having a negative impact on their communities and this has worsened dramatically when B Doubles were allowed onto the Highway in 2002. There Inquiry found widespread community support for greater use of rail freight to reduce the environmental and safety impact of heavy vehicles and the Committee supports the greater use of rail freight.

A number of recommendations were made including

- The NSW Government act on its responsibility for strategic transport planning for freight by developing an integrated NSW Freight Strategy, and work through CoAG to develop a national freight strategy to encourage integrated strategic planning for all modes of transport.

The NSW Freight Strategy should also

- outline measures to encourage a shift from road to rail freight, including through integrated strategic planning for both road and rail upgrades
- investigate the adequacy of less extensive upgrades to the Pacific Highway on the Mid and Far North Coasts, taking into consideration the outcomes of investigations concerning the North Coast Highway Strategy investigate including the feasibility of incorporating the Summerland Way and measures to shift freight from road to rail.
- The Committee considered there was a need for improved data on freight movements between Sydney and Brisbane, and called upon the RTA to expedite this.

The Committee supported the view that a major upgrade (the Yelgun-Chinderah deviation) and approval of B-Doubles, both in August 2002, had led to 'induced heavy traffic'. The report noted an increase of 340 heavy vehicles per day from 2001 to 1230 in late 2002. There was only a fall of about 50 heavy trucks per day on the New England Highway. Since about 2002, there was an increase in B-Doubles from about 120 per day to 300 per day, with a fall of about 105 semitrailers per day.

Many NSW North Coast residents are concerned about the way some heavy trucks are driven including very



dangerous tailgating, excessive speeds of up to 130 km/h and deliberate cutting off of smaller vehicles at the end of overtaking lanes). Noise is a further concern and had been addressed by an early Noise Taskforce Report.

No fewer than nine pages of the report addressed support for rail freight and increasing rail's share of the land freight task (p102) *"There was considerable support among Inquiry participants for greater use of rail freight as a means of decreasing the number of heavy vehicles on the road, thus improving road safety and lessening the environmental impact of road freight. However the Committee also heard that support for rail freight must be balanced against the advantages of road transport, which tends to be more cost and time efficient."*

Oddly enough, some of the support for road freight came from the NRMA and the Tourism and Transport Task Force as well unsurprisingly from the NSW Road Transport Association. There was strong support from many residents for more use of rail (including a Mr Armstrong from Coffs Harbour who noted 5.79) *"To make rail freight attractive and hopefully remove much freight from the Pacific Highway, it goes without saying that the rail line from Sydney to Brisbane along and through the coastal population centres must be straightened and duplicated."*

As noted by Andrew Honan for the RTSA at a public hearing held 21 March, implementing shared road and rail corridors would 'be putting into practice the Government's policies on the environment and land transport.' Discussions between the ARTC and the RTA were noted in the report (p109). However, to date, shared corridors for Pacific Highway upgrades and rail upgrades remain restricted to the Tugun Bypass at the initiative of Queensland Transport and Queensland Rail.



With a number of serious derailments in the news over the last couple months QR's historical advisor, Greg Hallam provides us with an earlier example that shows that all human activity has some unavoidable degree of risk attached.

The Macalister Derailment of 1909

A bridge at 173 ½ miles (277 kms) from Brisbane, and 8 km west of Macalister (between Macalister and Broadmead) marks the location of the worst railway accident to take place in the first 45 years of operation of the Queensland Railways. The accident occurred on 24 July 1909, involving a passenger train travelling from Roma to Brisbane. The train (13 down, Roma-Toowoomba passenger train) had left Roma at 6.30 am in the morning. The train consisted of a B15 class engine 485, "H" wagon 693 loaded with theatrical scenery, TPO (Travelling Post Office Van) 363, 1st class carriage 373, composite lavatory car 339, 2nd class car 378, composite lavatory car 399, "AG" wagon 5830 and 1st class brake van 414.

The Guard (Samuel Davies) totalled the loading to 114 tons (the driver around 125 tons). The train according to the Guard was running to time, and travelling at around 25-30 miles an hour (40-50 km/h). The train departed Warra at 12.28 pm. As the train was crossing a low level trestle bridge, the leading wagon on the train (the "H" goods wagon) derailed. This wagon was carrying the theatrical scenery for the Travelling Theatre Company. Guard Davies timed the accident as happening at 12. 41 pm. The only warning of the accident that had taken place was when the emergency application of the train brake threw him into some luggage in the Brake Van. The van had stopped just clear of the bridge. When Davies left the van he found "the train on its side".

There was no screaming or any noise of any kind amongst the passengers... My van stopped just clear of the bridge. The people at once commenced to climb out of the carriage windows. The men helped the women and I climbed up and helped too. There were no lengthsmen or anyone present except the Driver, Fireman, myself and passengers.1[1]

The driver of the train David O'Connor stated that the first indication he had of the derailment was when there was a slight sag in the movement of the train. This was just before the engine entered on the bridge.

I immediately looked back and saw that the "H" wagon next the engine was off the road. I shut off steam and applied the automatic brake. When on the bridge I looked back and saw a space between the wagon and the coaches. It may have been six feet or more and the space was

1 [1] Evidence taken at 175 ½ miles, Western Line, on Sunday, 25th July 1909, by the Commissioner for Railways. Evidence of Guard Samuel Davies, p.1-2. QSA, (Macalister Accident 24 July,1909), HB96, A/8982.

increasing. When I was about the Macalister end of the bridge, I saw the leading carriage capsize and afterwards the other coaches capsized... The "H" wagon was still attached to the engine and had three pairs of its wheels off the road.2[2]

The Brisbane Courier reported on the accident, as one of its correspondents made their way to the scene of the derailment on a special train, run for the Commissioner of Railways.

On Saturday afternoon telegraphic information was received in Brisbane to the effect that a railway disaster had taken place on the western line, and immediately the whole city was thrown into a state of anxiety and alarm... The shock was the greater from the fact that in the half century of her railway history Queensland has been singularly free from accidents of a serious nature. 3[3]

The derailment on the (250 feet) 80 metre long bridge pulled an additional five passenger wagons from the line.

The train and bridge alike were an absolute wreck... The carriages were mostly flat on their sides, and the passengers had to climb out of the doors or windows on top and that they quickly did. They helped each other readily and willingly and very soon the majority were freed from the wreckage... 4[4]

Although the bridge was only 1.5 metres (5 feet) high, two passengers were killed and thirty-six others were injured in the disaster. The bridge marked the first place in Queensland where people had died as a result of an accident happening to a passenger train. Until this time Queensland Railways had one of the safest records of train operation in the world.5[5] The Travelling Theatre Company erected a tent at the crash site, for the treatment of the injured. The locomotive from the wrecked train was despatched into Dalby. The Matron of Dalby Hospital as well as a local Doctor, and the Dalby Ambulance Brigade returned to the crash site, along with five carriages to take the stranded passengers onwards.

The engine and passengers went off to Dalby at 4.13 pm, leaving the two victims behind at the scene, in the charge of the police who had arrived from Warra. The shock amongst the railway administration, employees and travelling public alike was pronounced. The Commissioner for Railways Mr Thallon had remarked on viewing the wreckage, "that we had broken our record. It was the first time a man had been killed in an accident of this kind in Queensland. Men had been killed between

.....Continued on Page 16

2 [2] Evidence of David J. O'Connor, Engine Driver, p. 3-4, Ibid.

3 [3] Brisbane Courier, 26 July 1909, p. 3.

4 [4] Ibid

5 [5] John Kerr, Queensland Rail Heritage Report: Part 2 Section 4. 9, July 1993, p. 4-97.

RTSA Chapter Reports

Victoria and Tasmania

The Victorian Chapter's workload over the last 3 months has been entirely focused on CORE2006, a conference that we have been very proud to have organized. A lot was learnt as to what is really involved in the running of a major conference and we will be looking forward to passing on that experience to Western Australia over the next year and a half. I hope all members will benefit from CORE2006, even those who did not attend because the technical papers will have a long lasting effect and the networking will improve our collective knowledge and cooperation. These are some of the real benefits from staging the conference.

Our program for the remainder of the year begins in June with an infrastructure topic providing an insight into the use of geotextiles, repeated from a recent Perth meeting.

In July we will have an important meeting with Louis Fovey providing further insight into planning for the tram network in Melbourne. August will be our Annual General Meeting with a presentation on Urban Transport Information Systems. A half day seminar is planned for September where technical solutions will be presented to address providing better rail services for Melbourne. Other meetings occur monthly.

The Victorian Chapter is growing and has been considerably strengthened by our activities this year and I thank those in the Chapter who have contributed so much

Martin Baggott, Chapter Chair

New South Wales

From the Chairman

The Sydney Chapter has held five member meetings, one Study Tour (STORE), attended a number of seminars / workshops and has introduced a monthly newsletter with good attendance and support from the membership.

Some members of the Executive committee have however been a little pre-occupied with the tendering process for the proposed 500 new air-conditioned Suburban railcars for the Sydney Suburban network and the current contracts for Outer Suburban and Hunter cars. As a result, that the chapter program for the current year has been less organized than usual.

Secretary, Basil Hancock, was one of these individuals involved, hence the role of Secretary was divided into several components to relieve the load on any one individual taking on the role and is working well to date with a minute secretary, newsletter editor, meeting

coordinator and a Members Dispatch Officer, to keep the mailing list current, positions created.

John Watsford and Bill Laidlaw have been appointed to the Steering Committee for the AusRail 2006 Conference to be held in Brisbane in November. This will be a two day event commencing on Tuesday the 21 November.

After many years' faithful service to the RTSA, Les McNaughton elected not to continue on the executive past 2005. Les chaired the Sydney Chapter for two years then chaired the very successful CORE2002 in Wollongong. We wish Les good health and know that we will still see him at meetings from time to time.

The following members were elected at the AGM to serve on the NSW Committee for the forthcoming year.

Chapter Chair Bill Laidlaw
Secretary Malcolm Cluett
Treasurer Andrew Mackay

Committee Members: Arnold Arango; Basil Hancock; Andrew Honan; Bob McCotter; Max Michell; Trevor Moore; Chris Venn-Brown and John Watsford

Recent Meetings

Chapter members were invited to attend an information seminar on **15 March** hosted by Geofabrics Australia Pty Ltd at the Harricks Auditorium. The seminar titled "Mechanical Stabilised Rail Track Support Techniques" outlined the latest research in reduction of formation thickness and showed case studies from Europe, America and Australia, in particular the problems of Black Soil sub-grades in Queensland. Presenters Cliff Hall and Mike Dobie of Tensar were very informative in their presentations.

Sydney Chapter Members and some members from Victoria attended an open day at the Illawarra Light Railway's open day on **19 March** at Albion Park. All operational rolling stock was running with non-operational stock on display. The workshops were open for inspection which attracted many members in attendance.

Chapter members were invited to an RTAA/ RailCorp Field Day which was held at RailCorp's Clyde Up Yard on **29 & 30 March**. The venue provided operators of track equipment the opportunity to demonstrate in-situ and naturally this was a hard hat and safety boots occasion.

April This was a joint meeting with the IRSE with Gareth Topham, Safety Change Manager, RailCorp presenting on the topic "Changes in Railway Safety Management". Gareth began by defining safety then went through a number of standards applicable. For a full write up see the April Chapter Newsletter.

Grain Line Study Tour

Following discussions at AusRail Plus 2005 and a meeting with RailCorp CEO, Vince Graham, a STORE was held in

March visiting the Grain lines of the west and Riverina areas of NSW. Farmers, grain handlers, Shire Councillors, a wine producer and shipping companies were visited to gain information for a submission to the Neville Inquiry through the Government Relations Committee, of significance was the involvement of the Charles Sturt University, Wagga Wagga Campus in there allowing a member of staff to accompany the tour and the addresses given by two members during dinner whilst at Wagga Wagga. Over the four days the 17 attendees gained an insight into branch line rail operations, country hospitality and visited a few heritage / tourist railway operations along the way. Thanks to the National Council for supporting this venture and to other chapters for information given to compile the report which can be found on the RTSA website.

May- Report to Members on the information gained on the Grain lines STORE. This was the last meeting at the current venue as Engineers Australia vacated their Milsons Point premises at the end of May, taking up residence at Chatswood, some six stations further up the North Shore line.

June - AGM. This meeting was held in the city due to the venue change over blackout period during EA's transition to Chatswood. In addition, Sydney Chapter have moved the AGM from February to June to assist in the logistics of creating programs for the forthcoming year and to assist EA in their publications of the coming year's events.

After the election of office bearers for the forthcoming year, Jason Groombridge, Senior Consultant with Interfleet Technology Pty. Ltd addressed the meeting (48 in attendance). Jason's topic was "Rolling stock Performance Improvement drawing on Jason's considerable experience both in UK Australia. Jason covered:-

- Why rolling stock performance is an important aspect of a modern railway
- How engineering tools and techniques underpin the measurement and management of performance
- How rolling stock performance is measured in a railway environment,
- Detail some initiatives to deliver improved performance,

Question time held the attention of all for a further half hour!



Future Meetings will be held at 8 Thomas Street Chatswood. The following is the program subject to final approvals and availability of speakers:

Thursday 6 July 2006	Timetable Planning – Dick Day of RailCorp
Thursday 3 August 2006	Joint meeting with PWI & IRSE at Masonic Centre in Goulburn St. (cnr Castlereagh St) (PWI to advise topic)
Thursday 7 September	New Developments in Track Maintenance Machines” by Plasser and Theurer
Thursday 5 October 2006	TBA
Thursday 2 November	Government and Opposition transport spokespersons debate their policies ahead of the 2007 election.
2007: Thursday 1 February	Traction Upgrading”

Western Australia

The Perth Chapter has started on preparations for CORE2008, under the Chairmanship of John Goodall. Details of the Call for Papers and a website address will be advised shortly and will be available on the RTSA website.

The site visit to the William street station was well over-subscribed and a repeat visit should be organised soon. Perth is a hive of railway activity and the trackwork is in place from Rockingham to Thompson's Lake, with works trains running along the freeway median.

A site visit to the railway construction works in progress in Perth took place on Monday 24 April 24.

Our new South West Metropolitan railway approaches Perth over the Narrows Bridge then runs through a curving cut and cover to reach Esplanade station below ground at the foot of William St. Twin bored tunnels then carry the tracks northwards under the city to the William St station cavern. From here the tunnels continue on, curving west on a tight radius to emerge in the Northbridge rail yard, where the new southern line will finally connect directly with the existing northern line to Clarkson.

The first 470m tunnel has already been bored upwards from the Esplanade to William St station, at which point it is 20m below street level. The 300 tonne custom built boring machine (TBM) has a cutting head diameter of 6.9m, yet it deviated only 5mm from the designed entry

point as it broke through into the William St station box. The tunnel is initially lined with a rapid setting cement and spoil mixture as the boring head advances. Curved precast concrete segments are installed behind it to complete the finished lining. Excess spoil is fed to the rear of the TBM and collected in bins on rail wagons, which are then hauled back out of the tunnel by a mining locomotive.

Extraordinarily detailed observation of building movement is being carried out whilst tunnelling is in progress. The equipment used is so sensitive that it has detected faint ground swell from a minor earthquake far out in the Indian Ocean. With more than 4000 instruments measuring the impact of tunnelling activity to sub-millimetre accuracy, the construction team recorded less than 1mm of movement in the buildings above the TBM as it passed beneath. A temporary excavation in central William St contains a sophisticated grouting injection system which can be activated to correct any subsidence..



William St station has pedestrian access links to Murray St and Perth central station. The design includes for possible future access tunnels out to Forrest Place and Raine Square, and the underground station structure is capable of bearing eight storey developments above it.

The heritage listed Wellington building was retained in situ with great care and intricate structural support while the station cavern was excavated under it. Another heritage building which fronted William St was found to be too fragile to be supported, so its facade was delicately cut into nine segments and removed off site for restoration later.

This was an outstanding and informative site visit. Our thanks to PTA Engineer Richard Mann for giving us his valuable time on this occasion.

Bill Singleton, WA Chapter Secretary

South Australia

The SA Chapter continues to hold Technical meetings which are both interesting and informative. The meetings generally attract 1 CPD point per meeting and are essential for those Chartered Engineers requiring evidence of Continuing Professional Development.

The SA Chapter has successfully implemented a program of joint meetings with the PWI and the IRSE. The railway industry is made up of many disciplines and it is incumbent of us all to understand the other disciplines point of view and their challenges and constraints. Being aware of these interdependent issues will help us make our own careers successful.

The meeting schedule for the rest of 2006 is as follows:

Thursday 13 July 2006	Report on the Tilt Train Derailment (ATSB) (Or possible Eminent Speaker - awaiting conformation of details)
Thursday 3 August 2006	History of Ultrasonic Rail Flaw detection/ Current Practices Speaker - R Nancarrow
Thursday 7 September	In Cab Activated Point Switching Speaker - ARTC Joint meeting with IRSE
Thursday 5 October 2006	Wayside Detection and Wheel Profile Measurement Speaker – ARTC Joint meeting with PWI
Thursday 2 November	TBA
Tuesday 28 November	AGM Dinner at the Hyde Park Tavern.

Railway Study Tour to Victoria

A study tour to Victoria, in conjunction with the PWI, is proposed for October 2006. There are a number of major rail related projects nearing completion in Victoria such as the Fast Rail Project and the redevelopment of Spencer Street Station as well as a number of other activities of interest to observe and learn about such as rail research and the private operation of its suburban railways and tramways. Please contact us if you have an interest to attend and we will keep you informed as more information becomes available.

Rob Schweiger, SA Chapter Chairman

Queensland

Chairman's Comments

Well, 1 June seems to have been some sort of watershed day for QR, having announced on that day the success of its acquisition of the above rail portion of West Australian based company ARG, and also the commencement on the same day, of true "multi-user" operation of Acacia Ridge standard gauge freight terminal, under the management of QR's venture partner, P&O Ports.

At the same time, the Qld Government continues to talk up its proposed big dollar budget on a whole raft of infrastructure projects, including rail projects.

You certainly can't say that the rail industry in Qld is sitting stagnant at the moment!

Recent Meetings

Three meetings to report on since last report:-

22 Mar 2006

Site Visit to Bradken Foundry at Runcorn - 17 members enjoyed the hospitality of Bradken Factory Manager Mike Warren, as they heard about and saw firsthand the wide range of products and services offered by this company. Many thanks again to Bradken for their hospitality.

26 April 2006

Steerable Bogie Technologies review, by Scott Simson, CQU's Centre for Railway Engineering. *Attendees 22*

Scott presented the outcomes to date of his research into possibilities for improved traction steerable bogies to offer improved performance. Many thanks to Scott for filling in at such short notice, in lieu of Clay Hack's presentation.

24 May 2006

Robert Johnson and Lino Santarossa from CSR Sugar provided the audience with an insightful look at the issues facing the Sugar industry as it relies on cost-effective yet reliable rolling stock to form an integral part of the logistic chain from farm to crushing mill. *Attendees ~35*

Upcoming Events

The Queensland Chapter organising committee trusts that you will enjoy the 2006 event calendar that they have prepared for the members. Whilst every attempt has been made to bring members a widely varied range of topics, we would welcome any other suggestions from members for interesting topics or ways to present it.

Chairman's Final Note

After two years as the Queensland chapter chairman, I have decided to stand down from the position, with a view to allowing fresh, new views and directions to be introduced from our incoming chair (to be announced at the AGM). At this time, I would like to express my

deepest thanks to the members of the current chapter committee for their on-going support and commitment. Without their willingness to get in and get it done, the Queensland chapter would not have improved as much as it has. I look forward to continuing my involvement on the committee and providing support to the new chair.

Just For Fun

This Japanese rail employee is mighty strong!!!



Wednesday 28 June 2006	Rail CRC Masters theses presentations (x2). Continuations of work presented in 2004. Michael Alt and Jeff Leong will be the presenters. Combined with presentation of the winner and runner-up awards from the RTSA national awards student thesis competition.
Wednesday 26 July 2006	AGM and dinner, including a trivia night. Irish Club, Elizabeth St, Brisbane City
Wednesday 23 August 2006 (lunchtime)	Rob Wilkinson, Interfleet. Topic will be related to Rob's UK experiences working in a ROSCO
Wednesday 27 Sept 2006	Possible guest lecture associated with the International Contact Mechanics and Wear of Rail/Wheel systems Conference
October 2006	Possible meeting in Rockhampton in association with QR Infrastructure Conference
Wednesday 22 Nov 2006	Possible presentation from Pacific National Queensland about their operations to date. TBC.

Cameron Smart
Queensland Chapter Chair

.....Continued from Page 11

carriages, but never in an accident before.”^{1[6]} The Queensland Railways had prided itself on the safety record of its operation for nearly half a century.

From the evidence that was gathered, the speed that the train was travelling at the time was ruled out as a probable cause for the accident. Although some crews had complained of the road being rough in places the evidence appeared to suggest that the nature of the load in the “H” flat wagon behind the locomotive was to blame. Guard Davies had recalled that the vehicle was invoiced as ten tons, although he felt the scenery and props were far lighter than invoiced. The scenery and props were a light load for the type of wagon, and had contributed to the derailment. The same type of incident involving the derailment of a wagon was to lead to a similar tragedy at Traveston (a C class wagon, however), on the North Coast Line near Gympie in 1925.



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7th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM2006)

Brisbane, Australia, September 2006

The International Conference on Contact Mechanics and Wear of Rail/Wheel Systems covers contact conditions between the wheel and rail and the material damage mechanisms (wear, rolling contact fatigue, corrugations) that occur at this interface. The first conference was held in Canada in 1982, with subsequent conferences in the USA, Canada, the UK, Japan and Sweden.

Recent conferences in this series have attracted strong support from the international railway community, through the focus on wheel/rail contact and the issues that arise from managing this interface in passenger, freight and heavy haul railway systems.

CM2006 is to be held in Brisbane, during the period September 24-27, 2006. This is the first time this conference series has been held in Australia representing a unique opportunity for the Australian railway industry to hear and participate in presentations and discussions specifically focused on the rail/wheel interface.

The theme of CM2006 is “Combining scientific and practical knowledge for the safe and economic operation of railway systems”. A total of 90 papers from leading representatives of rail administrations, operators, industries, consultancies, institutes and universities have been accepted for presentation.

Keynote presentations on the challenges associated with managing the rail/wheel interface will be given by Dr Stephen Marich (Australia) and Mr Harry Tournay (USA). Stephen Marich is widely known throughout the Australian and international railway industry for his long-standing involvement in the heavy haul sector. Harry Tournay is a member of the CM International Committee, and is currently employed by the Transportation Technology Centre, Inc in the USA.

The CM conference series is administered by an International Committee comprised of leading researchers and practitioners from some 13 countries. The Railway Technical Society of Australia (RTSA) is supporting CM2006, through representation of the Queensland Chapter on the Organising Committee.

Materials Australia has been appointed the conference managers for CM2006.

Additional information on CM2006 is available at the conference web site, which is:

www.materialsaustralia.com.au/cm2006/

Peter Mutton and Bill Thomas
Co-Chairmen, CM2006

¹ [6] *Brisbane Courier*, 26 July 1909.