

Rail Horizons

September 2004



From the Chair

This is my first opportunity to communicate with members of the RTSA as your new National Chairperson.

Over the last two years, the RTSA under the guidance of John Watsford, as National Chair, has moved from strength to strength with the climax of his term seeing the very successful delivery of CORE2004 in Darwin. In this regard, I would like to pass my personal thanks to John and on behalf of all RTSA members, for his dedication in ensuring the continued growth of our Society. I look forward to John's ongoing participation as the Immediate Past National Chairperson.

For those of you who attended CORE2004, I'm sure you will agree it was an enjoyable event that was clearly topped off by an excellent program of stimulating papers that CORE conferences have become renowned for and I'm sure will have application for the industry.

My thanks to everyone who participated in CORE2004, the organising committee from South Australia, the presenters, participants and most importantly the sponsors. Without the support from the sponsors, RTSA could not bring an event such as this to the industry at the low registration cost achieved. As most members would know, the RTSA is a non-profit organisation established for promoting the co-operation of academic, industrial, commercial and governmental organisations in relation to the practice and advancement of Railway Engineering in Australasia and all membership subscriptions and monies earned through CORE conferences is injected back into the industry for the promotion of the industry.

On a lighter note, CORE2004 also saw our Annual General Meeting, my thanks to members who attended, you will be pleased to know that your committee for 2004/05 comprises:

| | |
|-------------------------|-------------------------|
| George Erdos | (National Chair) |
| Sivapragasam Ravitharan | (Deputy National Chair) |

| | |
|------------------|--|
| Chris Venn-Brown | (National Secretary) |
| Robert Schweiger | (National Treasurer & SA/NT Chapter Chair) |
| John Watsford | (Immediate Past National Chair) |
| Philip Laird | (Chair Government Relations Committee) |
| Cameron Smart | (Qld Chapter Chair) |
| William Laidlaw | (NSW Chapter Chair) |
| David Ferris | (Vic/Tas Chapter Chair) |
| John Syers | (WA Chapter Chair) |

I look forward to working with the new team and anticipate that with their assistance we will build on the fine work that has been done over the last few years.

For those of us who work with in the industry, we know that rail can be an exciting profession. The exhilaration of a string of 4,000hp, locomotive hauling their 1.8km long pay load through mountainous terrain or flying across our great country at ever-higher speed is nothing short of an adrenalin rush. Moving millions of passengers every year is equally challenging. To the disbelief of many, rail has often been at the fore front of engineering and is now once again embracing technologies that will enhance the efficiency of the industry as communities world wide call on rail to overcome congestion and environmental problems as road and air transport struggle to meet ever growing demand.

Today, the industry in Australia is facing a critical shortage of skilled professionals. This situation will become exacerbated over the next decade or so as our aging work force moves into retirement. In this regard the rail industry is no orphan, compounded with the fact that the youth of today sees the rail industry as a dinosaur of the past in an era of exciting nanotechnology now begs the question of

how we will source and educate future generations of rail professional.

This dilemma has well been recognised by the RTSA and the Australasian Railway Association (ARA). Both of our organisations have written papers and know that a real challenge for the future will be attracting youth to become part of the industry. A second and almost equally important challenge will be the education of that youth. In the past, rail in Australia was substantially composed of large bureaucratic Government organisations. Although in today's climate, they were considered to be financially inefficient they did recognise the need for effective succession planning. As a result most had well-developed apprentice, cadet engineer and internal railway training schemes.

Today, in our world of economic rationalism this has substantially changed and many of the training schemes have now all but disappeared. Fortunately there has been some recognition of this problem and there is now some movement afoot to develop and implement external training programs to bridge this gap. Several such programs include the post Graduate Course in Railway Signal Engineering offered by CQU (Central Queensland University).

However, it is the former issue in attracting the youth of Australia to become part of the rail industry that will be the critical challenge if our industry is to survive and grow. Today, more than ever there is a real need to attract interest in our industry, so your active participation as a member of the RTSA to drive this need is essential.

Similarly, membership is and always remains a critically important issue for the on going well being and growth of the RTSA, so if you believe a friend or colleague could benefit from membership; word of mouth is one of the strongest mechanisms by which we can attract involvement.

In closing, if you feel you can contribute to any of the activities undertaken by the RTSA, please speak to one of your local Chapter Committee Members. We are always looking for help and new blood.

George Erdos
RTSA National Chair

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POINT OF VIEW

Max Michell

The new agenda; service, what the customer wants, the customer comes first. With competition comes the mantra. But how well does it happen in practice?

Rail is in some respects a wholesaler – a transporter best suited to bulked freight or passengers rather than retailing to individuals. Trucks are better at that for freight while cars and to some extent buses are better at retail passengers. In some cases such as export coal or cereals rail effectively deals with 'the customer' by the train load and responds what that customers wants – minimum costs with reliable delivery to suit shipping programs.

In others, such as inter-modal, rail actually is dealing with a large number of individual customers at the one time. There is very little likelihood that an inter-modal train will completely satisfy all customers at the one time – they will accept what is provided on the basis of cost, convenience or whatever, but would in most cases prefer some enhancement to the rail service they are using.

Enter the freight forwarder – organisations that act as brokers between retail freight requirements and the wholesale transporter. In theory at least the freight

forwarder (or in 21st century speak the logistics chain technologist) will try and optimise the type of wholesale service to best satisfy the mixed requirements of the retail freight able to be combined onto the particular service. But what exactly are the optimum requirements to enable the larger share of retail freight to want to go by rail?

There is a whole raft of attributes but in the end price, reliability, transit time and damage minimisation are most often mentioned. Generally price is a positive attribute of rail, reliability is a bit mixed, transit time (door to door) is a not a strong point while damage minimisation is generally acceptable. Transit time is probably the weakest aspect of rail, and is very much up front in the emerging program to substantially upgrade the east coast main line rail network. Transit time, capacity, reliability and yield improvement (above and below rail) are the key attributes being looked for in the capital plans for the Melbourne – Sydney – Brisbane corridors.

Existing transit times terminal to terminal for the inter-modal freight trains are around 14 hours between Melbourne and Sydney and 20 hours between Sydney and Brisbane, both over distances around 950 km. Pick up and delivery at each end will add substantially to these times as far as the retail customer is concerned. But closer examination reveals a rather bleaker picture.

The main Sydney – Brisbane Superfreighter leaves Chullora at around 12.30 on weekdays and arrives Brisbane at around 09.00 next day. It can run up to 1500 metres in length, which means it typically can have over 200 TEU (20 ft boxes) on board, or any combination of different length boxes equivalent to that number. Which means the first box loaded will need to be placed on the train some three hours prior to departure and the last box off at the other end will be three hours after arrival – so now the times *at the terminal* can be more like 09.30 to 12.00 next day.

Even worse if delivery to the Sydney terminal is at 13.00 the retail freight will wait nearly 24 hours before it moves toward its real destination. In which case arrival at the terminal could be 13.00 on day 1, actual despatch at 12.30 on day 2, arrival in Brisbane at 09.00 day three and delivery out the yard gate at 12.00 day three. In the mean time the road competitor will be well on the way to completing a second round trip.

The rail operator is running big (1500 metre) trains since that is the lowest cost way to run a train – it minimises crew, track access and some other unit costs. But is it really the way to improve the rail market share of retail freight, and is it really the most cost effective way to run trains?

Plans for the Sydney – Brisbane route envisage transit time being reduced to around 15 hours with a commensurate

increase in capacity and reliability on the line (in fact doubling the existing number of long paths). So under good conditions the unfortunate rail user who is now getting up to a 47 hour terminal to terminal service will in future get a 42 hour service. Is this likely to engender a rush of new traffic on rail? I think not. Reduced transit times are an important goal and they should not be diminished in any way. The problem is more to do with large and infrequent trains compared to smaller (and more accessible) trains at more frequent intervals.

Recently in Paris I was very impressed with both the frequency and connectivity of the Paris Metro system. Weekday frequencies are 1 or 2 minutes and every other station has an interchange with anything up to five other lines. In the context of inter-capital freight the frequency issue is reasonably clear cut – departures at more times around the clock would have a dramatic impact on the perceived transit time on rail?

Connectivity is a bit harder, but in this context it refers to the interface between rail line haul and the pick up /delivery activity; the more frequent the trains the more efficient the latter can become, requiring a smaller number of vehicles working considerably harder to carry out the task. At the same time the load and unload times of trains will be reduced allowing the terminal times for freight to be more acceptable and predictable.

More frequent trains will also lead to better turnaround of locos and wagons such that the fleet required for any given task will be reduced. With some imagination it is possible to further reduce the time at each terminal so that rolling stock utilisation is further improved.

But, say the bean counters, that will all put the costs up and hence the prices. Maybe so, but what about the value of more frequent service in terms of transit time? Isn't service supposed to have a value? Isn't that what just in time (JIT) is all about. So if the improved service has a value then it must be able to be realised in financial terms in the market place. And if that is so then the concept of long and infrequent trains may have a fatal flaw – fatal that is for the sort of market share recovery that is the foundation for the current round of main line funding.

The direction of the funding, to transit time, capacity, reliability and yield is perfectly correct. It will be the above rail operators who will need to contribute, and quite substantially, if the goals of the quite substantial funding are to be achieved. And if they are not achieved then there may well be yet another funding drought. Over to you!



Safety at Railway Level Crossings – An Examination of Countermeasures for Motorist Behaviour

Angela Wallace, QUT

Level crossing crashes in Australia are a major cause of concern for rail authorities. Despite the fact that the number of railway crash fatalities in Australia has fallen in recent years, level crossing crashes constitute a significant proportion of the national rail toll.

The cost of level crossing crashes in Australia in 1999 was estimated to be \$32 million, with approximately \$10 million due to crashes involving motor vehicles. With many level crossing deaths and injuries resulting in coronial inquests, litigation and negative media publicity, the actions of rail and road infrastructure providers and the behaviour of motorists, come under close scrutiny.

Historically, research into level crossing safety has been plagued by the rail/road interface and the separation of responsibilities between rail and road authorities reflecting the social and political context in which they are contained. However, with the recent rail reform in Australia, safety at level crossings has become a key priority area. This priority area is currently under investigation by researchers at the Queensland University of Technology (QUT).

Sponsored by the Co-operative Research Centre for Railway Engineering and Technologies (Rail CRC), the Centre for Accident Research and Road Safety – Queensland (CARRS-Q) based at QUT is undertaking a project to better understand the scope and nature of motorist's behaviour at level crossings in order to develop and implement more effective road safety countermeasures. This research is unique to Australia.

While engineering approaches have traditionally dominated risk management strategies in rail safety, research suggests that such technologies are reaching their point of diminishing returns. Due to the lack of financial viability of continuing to approach risk management from an engineering perspective, the merits of human factor research need to be examined for suitability.

In Australia, there has been considerable recognition regarding the importance of human factor approaches to level crossing safety, particularly the ability to see a train and judge a safe crossing distance. The emphasis has been on train visibility and conspicuity for motorists by modifying train lights. However, such research has

revealed little about motorist behaviour at level crossings and implementation of the research findings has been limited.

A recent investigation by the Australian Transport Safety Bureau (ATSB) indicated that motorist error is a major contributing factor to crashes at level crossings. It is known that motorists engage in numerous behaviours at level crossings that may increase the risk of being involved in a crash. An understanding of the tasks that drivers perform as they encounter various kinds of signs and controls is essential in human factors research.

This 3-year project aims to examine the effectiveness of specific road safety educational countermeasures designed for different road user groups. Currently, the research team is conducting a survey of rail and road safety experts from each jurisdiction in Australia to determine which road user groups are at risk of a crash at level crossings. Additionally, train drivers in Queensland are assisting with this research by participating in discussions of their experiences of motorist behaviour at crossings. These findings will assist in designing countermeasures for each of the road user groups identified. Subsequent to this evaluation, the researchers will develop a model of best practice for educational countermeasures for motorist behaviour at level crossings.

For further information contact: Nadja Ibrahim (Project Officer) on 07 3864 4926



RAIL CRC

Government Relations Committee

With a Federal election pending, all is relatively quiet with Parliamentary Committees. Our most recent involvement has been with the House of Reps Standing Committee on Environment and Heritage inquiry into Sustainable Cities 2025. Here, National Chairman John Watsford and I appeared for the RTSA at a Public Hearing on 8 June held in Sydney. A summary of the RTSA submission follows below.

With the assistance of the Victorian Chapter, a brief submission has gone to the Victorian Government's inquiry into their rail track. Our main concern is with the condition of the regional track infrastructure and the problems in replacing older wooden sleepers. Here, it is of note that the AusLink White Paper provides up to \$45m towards standardisation of the Geelong to Mildura line and the broad gauge track from Melbourne to Albury.

On behalf of the RTSA, I attended the launch on 21 July in Sydney of the ARA's new Rail Industry Report 2003 by Deputy PM John Anderson, and the ARA's new infrastructure policy by Stephen O'Donnell.

Mr Anderson's positive speech outlined ARA achievements, rail freight reform, AusLink and the NSW/ARTC agreement. He also said that the Commonwealth will invest in a better data base that will include information on transport corridors. This was welcome as RTSA submissions have consistently supported the need for better rail data. Mr Anderson also noted that *"the Bureau of Transport and Regional Economics can better help me to help you if they get better data from you."*

As noted by Mr O'Donnell, ARA's new infrastructure policy has five principles, including proper road and rail track pricing. This is an issue RTSA has taken up in its submissions to Government over the years. The need for more 'user pays' in road pricing to get AusLink to work effectively was also taken up in an editorial *"Rail plan needs political will"* in the Aust Financial Review for 18 August.

RTSA has written to Mr Anderson conveying our thanks to him for his efforts in getting AusLink into place. We also asked if he could look at including the Brisbane - Townsville rail corridor as part of the AusLink funding package. This would complement the \$429 million funding for the Bruce Highway over the next five years. The inclusion of funding for the nearby rail corridor would recognize the importance of this line as part of the extended interstate network (it does assist in moving fruit and vegetables from Northern Queensland to the Sydney and Melbourne markets). It would assist with the long

overdue upgrading of the Caboolture - Landsborough track.

This section of single track was recognised as congested in a 1994 report of the National Transport Planning Taskforce. In March 2004, RTSA wrote to the new Queensland Transport Minister, the Hon Paul Lucas MP with concerns about the delays in approving a suitable variation to "Option 2" of the proposed Caboolture - Landsborough upgrade that was on public exhibition to December 2003. A reply in May from Mr Lucas's Senior Advisor mentions the processes involved. However, as the months go by, the need for the duplication with deviations grow. To quote from our earlier letter "... *Caboolture - Nambour is probably the nation's most congested single rail track, and, that the Brisbane - Townsville line may be regarded as a vital extension of the Defined Interstate Rail Network. As such, the upgrading of Caboolture - Landsborough to Option 2 standard will assist in efficient interstate rail operations between Central and North Queensland and other Australian states.*"

The RTSA has supported retention of the Broadmeadow to Newcastle short line and has suggested to NSW Transport Minister Costa that no decision on the short line should be made until a proper benefit cost assessment has been made within the context of a comprehensive regional transport plan. This should also take account of population growth (where the Hunter Region is seen as a major area to alleviate Sydney's growth problems) and rail access to a regional centre being maintained by sustainable transport means. RTSA has been favoured with a reply from Director-General John Lee outlining the process involved. Our concerns are shared by Engineers Australia and the Chartered Institute of Logistics and Transport. Further comment is given in a Newcastle Herald Opinion Piece (Look on the bright side of transport, Geoff Dawson, 4 June 2004).

The Committee wishes the Australian Rail Track Corporation well in its take up from 5 September 2004 in its 60 year lease of the NSW mainline interstate track. We are pleased that the Federal Budget for 2004 mentioned *'straightening the track'* and that the AusLink White Paper cites *'building deviations'*. The track upgrades to support faster and heavier freight trains should also prove useful for high speed passenger trains.

My thanks are due to Committee Members, Jon Bailey, George Erdos, Max Michell, Ross Mitchell, and Chris Venn-Brown, along with Andrew Honan who retired earlier this year due to new work commitments. All have helped with many submissions.

Philip Laird
plaird@uow.edu.au

Summary of RTSA submission to the Inquiry into Sustainable Cities 2025

Cities can only be deemed sustainable when their transport is environmentally sustainable. This is not currently the case in Australia's major cities. For example, between 1991 and 2002 Sydney's population grew about ten per cent, the numbers of households increased by about 15 per cent, car numbers about 20 per cent, whilst road use in terms of vehicle kilometres travelled rose by about 25 per cent. A further such increase in vehicle use would cause major problems. Instead, people need to be encouraged to walk, cycle or use public transport to a much greater extent than they currently do.

Although Sydney's passenger train use increased during the 1990s, its share of passenger kilometres stands at only 5 per cent. As well, in 2002, the Sydney City Rail System was given a C- rating. The Sydney Greater Metropolitan Region as a whole needs extensive "catch up" works over the next decade.



Better rail infrastructure and improved road pricing are two measures that would encourage more use of public transport in our major cities. The congestion costs of road usage in Australian capital cities now exceeds \$12 billion per year. As well, the cost of adverse health impacts due to air pollution from motor vehicle use in Australian capital cities now has been estimated at \$3.3 billion a year.

Although the Federal Government's AusLink initiative is a positive development, it fails to adequately address funding for urban public transport. Government also needs to address congestion pricing for cars in our major cities and mass distance pricing for heavy trucks. Discussion on addressing excessive "automobile dependence" in Australia's major cities was also limited in the White Paper. Recent Federal Budgets could have done much more to encourage sustainable transport, but instead the New Tax System led to cheaper cars, cheaper petrol, cheaper diesel and more expensive public transport.

Mainline track upgrading for faster and heavier freight trains, and the issue of fast passenger trains, warrant the attention of Government at all levels.

The Federal Government is yet to give full attention to warnings of permanent world decline in cheap oil production within the next decade. Signing the Kyoto agreements would help reduce both oil dependence and greenhouse gas emissions.

As per the Australian Transport Council's 2002 National Strategy for Lowering Emissions from Urban Traffic and the New South Wales 2003 Inquiry into Sustainable Transport, more attention is needed by Government to road pricing. The submission includes a ten point proposal on land transport pricing.

"Rail plan needs political will"

Australian Financial Review, 18 August.

"If Mr Anderson wants to make progress towards his vision, he needs to help rail overcome these disadvantages. The \$1 billion provided under Auslink to the commonwealth-owned Australian Rail Track Corporation, which plans to borrow another \$870 million from the market, will go a long way towards speeding up the journey. ...[with this and other] innovations such as road-rail interchangeable flat cars; the industry believes these can reduce the viable-trip threshold for rail from 1000 kilometres to 500-600 kilometres."

"The strategy has accordingly earned two cheers from the investment community, which believes the Auslink rail money will underpin the shift from road to rail but do little actively to bring it about. The third cheer would be for full cost recovery from trucks, of which there is no sign. This would probably require the commonwealth and state governments to brave a deafening blockade of their respective parliament houses. In the past politicians have always backed off."



Oils ain't Oils.....

Speaking at the 'International Perspectives on Oil Vulnerability Seminar' sponsored by the Bureau of Transport and Regional Economics in Canberra on 11 August 2004, Dr. A. Bakhtiari, from Iran made the following points.

In 1995, the initial world oil reserves were estimated at about 1900 billion barrels; we have now about one half of this and the world is now using roughly 80 m barrels per day (mbpd), and the maximum supply is no longer 90 mbpd with one prediction of a peak production of about 81 mbpd occurring in 2005-06. The suggestion that Middle East can deliver much more is no longer valid, and three only new super oil fields have been discovered in the last 20 years. Of these, two are small and one is yet to produce.

The world used 28 billion barrels of oil in 2003, yet only 4 billion were found in 2003. USA uses 20 +/- mbpd, Australia about 0.8 mbpd. We are looking at emerging demand from China, and within later years, a maximum production of 70 mbpd. American sprawling suburbia (home to 100 million people) and Walmart based shopping using cheap trucking could be hit hard. There are also implications for global food production and hence populations. So learn now, rather than later, to live with less oil (an example cited was Perth's new rail development).

Dr. V. Tulpule, Deputy Director ABARE was not as pessimistic as Dr. Bakhtiari, but not as optimistic as some international agencies. Two different views were presented:

The first view is Business as Usual. Despite a cut in production of 12 mbpd having the effect of pushing up oil prices \$5 per barrel, China's recent oil demand increasing at 11% pa will slow down, current prices are too high and will revert to say \$19 per barrel.

The second view is that a "phase shift" occurred around 1999 due to OPEC discipline, Asian economic recovery and low interest rates. With this we can now expect higher prices - say an average of \$27 per barrel.

In Australia, we use about 0.8 mbpd, have gone through an oil production peak of 0.6 mbpd, and are fortunate with our reserves of gas and coal.

What others are saying.....

'Era of cheap oil is over, says Anderson

Sydney Morning Herald August 14 2004

The chief executive of the Service Stations Association, Ron Bowden, said: "Australian motorists have enjoyed a period of very cheap petrol. But, for the time being, those days are over. We are going to have to get used to paying more for our petrol."

The oil price spike this year would add \$4 billion to the annual petrol bill of Australian consumers, AMP's chief economist, Dr Shane Oliver, estimated.

The Deputy Prime Minister, John Anderson, said: "It may very well be that the era of cheap oil production has ended."

CORE2004

Impressions of CORE 2004 and RTSA Chapter Meetings in Australia - June 2004

CORE 2004 was a fascinating opportunity to meet an exciting Australian community of rail experts. Under the umbrella "New Horizons for Rail" the conference reached the audience with encouraged visions as well as an impressive variety of technical subjects and rail business aspects. Darwin provided an ideal setting for the conference programme and inspiring discussions at social events.

It was an honour that the RTSA programme committee selected Hans Bier's paper "Introducing GSM-R in a live railway system" for the conference, reflecting interest in the German experience made with the new European radio communications standard in commercial use.

But it was an overwhelming honour for both of us to be invited as eminent speakers to the RTSA chapter tour to Perth, Brisbane, Melbourne, Adelaide, and Sydney to present the German Railways experience with the migration of aging incompatible analogue systems to one common digital train radio platform based on GSM-R, a standard tailored to the operational safety needs of railways. In all meetings we found an amazing interest in the benefits and drivers of GSM-R and in discussing its potential for Australian solutions.

In the end, Australians will answer the challenging question of the tour "Railway communications: is one common national system possible?" on their own. However, based on the many talks besides and during the

chapter meetings we would like to summarize some of our impressions as followed:

- Amongst representatives from governments, railways, railway authorities and railway groups there is one common understanding: Australia needs railways as an important part of an economic transportation system.
- Given the size of the continent and the existing structure of the main populated regions, Australian railways face some different challenges than railways in “narrow” Europe. However, there is one main commonality:

While Europe has to find a way from a variety of different national signalling and communication systems to Europe-wide cross border railway services, linking metropolitan and business regions, Australia has to overcome a diversity of technical systems in the different states and territories and the lack of common safety standards for seamless rail transportation.

- In that context, the European approach European Railway Transport Management System (ERTMS) - which combines one unified radio based signalling and European Train Control System (ETCS) with the unified radio communications platform GSM-R - is a candidate to look at. Even though it is unrealistic to expect a migration over night, ERTMS provides a workable solution to step by step overcome the current diversity.
- In that context, the European Integrated Railway Radio Enhanced Network (EIRENE) which incorporates a unified radio communications platform GSM-R which becomes the basis to support other applications such as European Train Control System (ETCS), other levels of Train Management Systems (TMS), diagnostic applications and others. GSM-R becomes the communications platform which allows evolution of your railway built on the radio network.
- Growing awareness for need of better interoperability matches the actual interest of the Australian Railway Association which is working with the rail industry to work out a national solution. From discussions with railway representatives we understand GSM-R will be included in the analysis.
- Obviously, the German solution cannot be mapped one-to-one to Australia. However, GSM-R might be an appropriate solution matching the high safety requirements of the densely populated urban regions in Australia. On long distance lines through rural regions with reduced safety needs alternative radio communication techniques (such as CDMA) could be applied on lower cost level providing interoperability

with GSM-R covered regions through dual-mode equipment on trains and appropriate connections at control or dispatch.

We express our thanks to RTSA and the RTSA chapters for their excellent organisation of the events, the friendly welcome and hospitality. We are looking forward to joint meetings in the future.

Hans Bier, German Rail - DB Netz AG
Dr. Manfred Sedello, Quattron Management Consulting

RTSA RAILWAY ENGINEERING AWARDS AT CORE2004

Under the stars and looking out over the lawns of the Darwin MGM Grand Casino, where some 450 CORE2004 delegates, sponsors, exhibitors and other guests were gathered, was a fitting setting in which to hold the annual RTSA Railway Engineering Awards ceremony on Tuesday evening 22nd June. John Dring, the Chairman of the Awards Committee, facilitated the event at which the awardees in four different categories were announced and the particular presentations made.

The categories in question were the Railway Engineering Student Theses Award, the Young Railway Engineers Award, the Annual Individual Award and the Biennial Industry Award.



The Award Presenters (from left to right; Professor Philip Laird, Robert Schweiger, David Marchant, John Dring and Bruce McGowan)

Railway Engineering Student Theses Award

The announcements with respect to the runner up and the joint winners of the “Student Theses Award” were made by Awards Committee member, Professor Philip Laird. The joint winners were:

Nick Stephens of the University of Queensland with his Thesis entitled “A Relationship Analysis of the effects of

Saturation and Compaction on the Top Misalignment of Rail Track”; and

Savithri Shimada from the University of Sydney with her Thesis entitled “A Study of High-Frequency Vibration Response of Resilient Rail Baseplates”.

A runner up prize was also awarded to:

Liam Walls of the University of Queensland with his Thesis entitled “Test Rig Design for Simulation and Identification of Rail Corrugation”.

As none of these recipients were in attendance at the Conference, arrangements have been made to make the actual presentations of the awards at local RTSA Chapter Meetings.

Young Railway Engineers Award

Robert Schweiger, Chairman of the CORE 2004 Organising Committee and a member of the Awards Committee, made the presentation to the winner of the inaugural “Young Railway Engineer’s Award” to **Jacob Latter**, an Area Engineer with the John Holland Railway Division at Rutherford in New South Wales.



The RTSA Young Railway Engineers Award presented to **Jacob Latter** (on right)

Individual Award

The Annual “Individual Award” was received by **Peter Mutton**, Associate Director of the Monash University Institute of Railway Technology, from David Marchant, the CEO of ARTC and a major sponsor of the Conference.

Industry Award

Bruce McGowan, the CEO of FreightLink, another of the major sponsors of the Conference, presented the “Industry Award” to **David Swifte** of **Fluor Australia Pty Ltd.** the Design & Construction of a New Railroad Project for BHP Billiton in the Pilbara, Western Australia. In addition an Honorable Mention in this category was awarded to **NRG Flinders** for their tie renewal project on the Leigh Creek to Port Augusta Rail Line. The award was accepted on behalf of NRG Flinders by **David Tasker**, GM of the John

Holland Railway Division, who were the major contractor for the project.



The RTSA Individual Award presented to **Peter Mutton** (on right)



The RTSA Industry Award presented to **David Swifte** (on right) of **Fluor Australia Pty Ltd.**



The RTSA Industry Award Honourable Mention awarded to **NRG Flinders** and accepted by **David Tasker** (on left)

John Dring, RTSA Awards Committee Chairman

RTSA 2004 Individual Award Winner

Peter Mutton



Peter Mutton from the Institute of Railway Technology with his Award

Peter Mutton from Monash's Institute of Railway Technology (IRT) was awarded the RTSA's prestigious Railway Industry 2004 Individual Award. Peter was presented with his award by ARTC Managing Director David Marchant at the CORE2004 Gala Dinner in Darwin, in recognition by his peers of his outstanding contribution to the rail industry over 25 years.

Peter's contribution to the advancement of railway industry has been on several fronts and he has been extensively involved in many areas of research during a railway career spanning over 25 years. These include:

- Behaviour of materials in wheel-rail contact
- Lubrication of the wheel-rail interface
- Behaviour of railway wheels under mechanical and thermal loads
- Development and performance of rail and wheel materials
- Rail welding procedures (development & performance, specifications & standards).

Peter is regarded as an expert in the specialised field of wheel and rail materials and weld materials by numerous railway systems worldwide. He has an

Associate Diploma in Metallurgy (SAIT, 1972) and a Masters of Applied Science (University of Melbourne, 1986). Peter is a member of the Railway Technical Society of Australasia (RTSA), Institute of Materials Engineering, Australia (IMEA) and Engineers Australia (formerly Institution of Engineers, Australia). He has made a significant contribution to railway industry through his professional affiliations with the following railway and related societies/associations:

- Member, Standards Australia CE/2 Committee (Railway Track Materials) Working Group, Rail Welding.
- Member, International Scientific Committee, International Conference on Contact Mechanics and Wear of Rail/Wheel Systems.
- Conference Chairman 7th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (to be held in Brisbane in 2006)
- Member, Conference Scientific Committee, 4th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems, Vancouver, Canada (1994).
- Member, Victorian Branch Council, Institute of Metals and Materials Australasia (IMMA) (1995-97)
- Member, Organising Committee, AusTrib '98: International Tribology Conference, Brisbane (1998)
- Member, Selection Panel, Inaugural Professor of Tribology, Queensland University of Technology (1992)
- Member, Standards Australia Working Group, Aluminothermic Welding Consumables (1992-94)
- Chairman, Organising Committee, ROA/STLE/Monash University Seminar Lubrication of the Rail/Wheel Interface, Melbourne (1991)
- Member, Organising Committee, IMMA Conf. Failure Analysis in Materials Engineering, Institute of Metals and Materials Australasia (IMMA) Melbourne (1994).
- Member, Editorial panel and contributing author, STLE Publication Tribology: A Means to Increase Profitability, STLE Australian Section (1987).
- Member, Executive Committee, Australian Section of the Society of Tribologists and Lubrication Engineers (STLE).

In 1996, Peter was awarded the prestigious Florence Taylor Award by the Institute of Metals and Materials Australasia (IMMA), for meritorious service and

substantial contribution to metallurgy/materials in Victoria and Australia.

Peter was one of the founding members of the world-renowned railway research facility BHP - Melbourne Research Laboratories and, for approximately 30 years, played a key role in providing technical leadership. Since January 2000 he has relocated to the Institute of Railway Technology at Monash University and has undertaken an important management role as the Associate Director. In 2002, the Institute of Railway Technology recently was awarded the RTSA's Industry Award for "Excellence in Railway Research". Peter has played a significant part in elevating the Institute's position as a recognized world leader in railway technology.

The IRT has been based at Monash for almost five years and is closely aligned with industry. It was established in 1972 as part of the BHP-Melbourne Research Laboratories.

Staff at the Institute work on a wide variety of industry-sponsored projects for the Australian railway industry, as well as for rail systems in Hong Kong, Malaysia and Singapore.

Peter has published and presented over 50 papers in international railway conferences and journals and authored more than 120 research reports.

Peter said that he was both overwhelmed and honoured to have received the award.

"I wouldn't have been able to do it without the help and support of my colleagues at IRT and the ongoing support of the railway industry for the institute's activities," he said.

NEWS

► ARTC commences NSW operations

On Sunday 5 September, ARTC took up the operations of the New South Wales interstate and Hunter Valley rail networks as part of a 60 year lease of the NSW network. In addition to the lease, ARTC will manage the remainder of the non-metropolitan on behalf of the NSW Government.

For the first time train operators will be provided with a seamless service across most state boundaries. In the past fragmented control of the interstate network has greatly hindered rail growth. With better network integration, ARTC will be able to build on the current record highs on the East-West corridor and see similar gains on the North-South national rail corridor.

The commencement of the NSW lease will be accompanied by an infrastructure investment programme

of \$870m to improve the capacity and reliability of the North-South rail corridor.

Revenues generated by the combined business are expected to be in excess of \$300 million per year.

ARTC has again posted record highs for monthly traffic volumes carried over the interstate rail network.

During July 2004, a record total of 2.943 billion gross tonne kilometres (GTK) was moved by train operators over the ARTC network, a phenomenal increase of 15.05% on the July 2003 figure. The strong growth has continued into August with 2.920 billion gross tonne kilometres being moved, an increase of 12.3% over August 2003.

ARTC Managing Director David Marchant said, "These results graphically highlight the recognition by freight forwarders of the strong benefits of moving freight by rail."

► CFCLA Purchases West Coast Loco Fleet

CFCL Australia has agreed to purchase the locomotive fleet of pioneer private rail operator West Coast Railway, which was due to cease operations at the end of August.

The deal, which also includes a substantial spare parts inventory, will add another nine locomotives to CFCLA's expanding lease fleet, now totalling over 65 locomotives.

West Coast Railway had built up a small but useful locomotive fleet for use on its Warrnambool passenger services and for hire to other rail operators.

CFCLA Director Ian Gibbs said, "We are pleased to be in a position to purchase these locomotives and see them retained for useful work within Victoria."

"Before returning these locomotives to service they will be fully overhauled at the Bendigo railway workshops, with most of the work likely to be contracted out to Victorian engineering service providers."

Ian Gibbs said, "We are fully aware of the problems that saw these locomotives recently withdrawn from traffic. However, we believe they have plenty of working life left in them and have undertaken a full engineering assessment of their condition with the necessary repairs budgeted for."

The former WCR locomotives are expected to remain on broad gauge and it is anticipated they will see use on infrastructure works trains across the Melbourne metropolitan network, on works associated with the Regional Fast Rail project and on other planned rail upgrades.

Chapter Reports

Victoria & Tasmania

The Victoria and Tasmania Chapter has been active and the continuing good support is now placing pressure on the size of the venue we have been using. The Committee is currently investigating alternatives. Our programme over recent and coming months is summarised below:

On **Tuesday June 29th, 2004** after the highly successful CORE 2004 in Darwin, the Eminent Speakers Hans Bier and Dr. Manfred Sedello spoke to a well attended meeting about the German GSM-R project. The lecture was enjoyed by all.

Our 6th Chapter Annual General Meeting was held on **Wednesday, 18th August, 2004**. The following Committee Members and Office Bearers were elected: Martin Baggott, Russell Bowey, Gerry de Bont (Chapter Treasurer), Philip Dunn, David Ferris (Chapter Chair), David Griffiths, Doug Hayhoe, Wayne Milfull, SSS (Ravi) Ravitharan, John Scott (Chapter Secretary), and Graham Vallance. The Committee has been very willing and energetic in the past, and is keen to keep up the good work.

After the formalities of the AGM, Phil Dunn gave an excellent and detailed presentation following key features of the history of Railways in Victoria, focusing on locomotive development and the influence of the ever present potential of conversion to standard gauge. Victoria celebrates 150 years of railways on September 12th 2004.

The program for the rest of 2004 is as follows:

| | |
|---------------------------------------|---|
| Wednesday 15th September, 2004 | Presentation by Doug Aikins of Silverton Rail (at the usual North Melbourne (Mainco Training Room) venue. (Details already circulated). |
| Wednesday 13th October, 2004 | Site visit to Bombardier Dandenong Works to view Victoria's new "Velocity" DMU Rail Cars. (Details already circulated) |
| Wednesday 17th November, 2004 | Not yet arranged. (Details to be circulated if required). |
| Wednesday 8th December, 2004 | Annual Christmas gathering and Corporate Presentation (21 Bedford Street). (Details to be circulated) |

Details of all of the above events will be circulated in advance, and will be available on the RSTA website.

We note with pleasure that former Committee Member Russell Trevaskis has returned from NSW, and we welcome him home.

Arrangements for CORE 2006 (to be held in Melbourne) continue to make good progress. We have held frequent meetings and have selected the Venue. Watch for more details.

David Ferris, Chapter Chair

Western Australia

Activities of the WA chapter have continued with three technical meetings held over the period since the previous report. In addition members had the opportunity to attend CORE 2004 in Darwin.

10th June, 2004 – Queensland Tilt Train

As the manufacturer of the new electric urban passenger railcars, EDI Rail has had representatives in Perth commissioning the units. The WA group was fortunate to have EDI engineer, Mr Jerry Jirasek explained the background of the Queensland tilt train development and the operational details. His presentation covered the electric units that operate between Brisbane and Rockhampton, and the diesel units that are travelling the 1600 kms between Brisbane and Cairns.

He explained the journey time between Brisbane and Rockhampton has been reduced by up to 3 hours (from 9 hours 25 minutes to less than 7 hours) brought about by track improvements and the new service speed of 160 km/hr with passenger comfort levels being maintained due to the tilt technology.

24th June, 2004 – Analogue to Digital Radio Technology.

Following on from the CORE 2004 in Darwin the visit by the Eminent Speaker Mr Hans Bier, (DB Netz AG) was the first of his national tour to all RTSA groups.

It was unfortunate that a number of members were still returning from Darwin and the attendance at the meeting was relatively low, but those who attended reported the presentation was well delivered and had a strong technical theme involving modern communications for railway systems.

22nd July, 2004 – Darwin to Alice Springs Railway.

In the wake of the Darwin conference it was appropriate for the WA members to have some exposure to the new railway from Alice Springs north.

Mr David Tasker, General Manager Rail Division, John Holland provided a presentation covering the background of the project, the joint venture structure and the

construction details resulting in a highly successful project completed five months ahead of schedule.



David Tasker

This presentation represented a milestone in RTSA activities being the first to be video streamed for wider distribution through the internet network. The presentation can be accessed through the WA Engineers Australia website (www.wa.engineersaustralia.org.au)

Future Program

The program for the remainder of the year is as follows;

- | | |
|---|---|
| Thursday 9th September | Area C Mine to Yandi Railway (CORE 2004 project winner) – Mr David Swifte, Project Manager MPD JV |
| Thursday 14th October | Perth Urban Railcars – Mr Alwyn Gearon, New MetroRail |
| Thursday 25th November (to be confirmed) | Site Visit, Beckenham to Thornley Railway construction |

General

There is already interest being shown in the proposed CORE2008 scheduled for Perth. Some members have offered their assistance in organizing the event.

Any members willing to participate in the organisation of CORE2008 should register interest with Chairman John Syers (08) 9387 1946 (Email rail@ca.com.au).

John Syers, WA Chapter Chair

Queensland

Chairman's Comments

As I sit here and contemplate writing my first contribution to Rail Horizons, on behalf of the Queensland Chapter, there are a number of things that I feel are important to say from the outset. Firstly, I wish to publicly express thanks to George Nikandros for his 5 years of devoted service to the RTSA as the past Queensland Chapter Chair. Secondly, I would like to express thanks to Ian Macfarlane, as he steps down from the committee after a very long involvement, for his untiring commitment to the furtherment of the RTSA and railway engineering in general. Ken Kwong from Central Queensland University / Rail CRC also chose to step down from committee membership this year as well. They will be missed for their unique contributions.

I look forward to the RTSA becoming a stronger force within the railway scene in Queensland, both in the South East Queensland corner as well as the vast regional areas of our state. I am sure this will be achieved with the commitment and assistance of this year's committee:

- Cameron Smart (Chair)
- George Nikandros (Past Chair)
- John Davey (Secretary)
- Barrie Griffiths
- Melissa Bona
- Dave Schonfeld
- Mark Wishart
- Paul Jenkins
- Colin Cole (appointed at July AGM)

I look forward to working with them to meet the challenges ahead, and I thank them for their continued involvement.

July Annual General Meeting

At our Annual General Meeting on 28 July, apart from the appointment of the incoming committee, it was a pleasure to be able to present an award that was announced during the CORE 2004 conference. It was my pleasure to present to Liam Walls of University of Queensland, a certificate and cheque for \$1000, for his honourable mention in the RTSA Railway Engineering Student Thesis Award. Liam's undergraduate thesis was entitled "Test rig design for simulation and identification of rail corrugations".

RTSA in the Public Eye

Since agreeing to take on the role of Chair of the Queensland Chapter, I must admit that I have been surprised by the opportunities that have presented themselves, for me to represent the RTSA to the wider



community. Two opportunities have arisen in the last quarter – one rather traditional, and one definitely out of left field. On 21 July, I was invited to attend the EA Queensland Division's Energex Forum, which this year was entitled

“Infrastructure – Secure Australia's Economic Foundation.”

There were 4 speakers covering a range of topics. Athol Yates of Engineers Australia spoke about securing Australia's Critical infrastructure from terrorism attack; Keith Orchison spoke about his vision of the national energy market; and Hon. Campbell Newman, Brisbane Lord Mayor spoke of his vision for Brisbane's future. However, most pleasingly, Vince O'Rourke, Chairman Rail CRC, gave a stirring presentation on his vision of the National Transport and Logistics Picture from the railway's point of view.

On 27 June, I was asked to stand in for a QR Manager, to judge the best overall model locomotive and the best Queensland model locomotive at the 9th anniversary celebrations of the Bracken Ridge Lions Club 5" Gauge Live Steamers group. No matter what you might think of them, there can be no doubting their enthusiasm!!!



Recent Meetings

Queensland Chapter held three events in the last quarter.

28 June

CORE2004 Eminent Speakers Hans Bier and Manfred Sedello with their masterfully choreographed presentation entitled “Migration of German Rail from Analogue to Digital Train Radio with GSM-R”. Attendance – 18.

28 July

It was by some coincidence that this particular night had a definite focus on students and railway research. Apart from the CORE 2004 Student Thesis Award Honourable Mention presentation to Liam Walls, we heard from two very capable QR civil engineers, who are currently undertaking masters research projects through the Rail CRC. Melissa Bona spoke about “The effects of Dipped Welds on Track Degradation”. For those in attendance who weren't from a civil or track background, it was fascinating to begin to understand some of the issues related to critical maintenance and management of track welds. David Steffans spoke to us about the “Identification and Development of a Model of Railway Track Behaviour”. Whereas there are in existence a number of trusted computer models which are capable of showing the dynamic response of a rail vehicle as it traverses the track, David's research has paved the way for the further development of a computer model which looks at dynamic response from a different perspective, i.e. from the track's point of view. Attendance - 20

25 August

Scott Lowden of QR's Rollingstock Engineering Division gave a presentation entitled “Controlling Long Coal Trains Using the Latest Distributed Power Technology.” Scott's talk was a useful reminder of some of the fundamental principles that underpin the use of distributed power control systems, and this was shown to be particularly relevant as QR embarks on a replacement of its older Locotrol equipment. Attendance – 22

Upcoming Events

22 September

Our annual half-day seminar, this year themed around the topic of “**Human Factors – the Human and the Railway System**” to be held at Berkleys on Ann, Rendezvous Hotel, Ann St (opp Central Station) from 1215 to 1630. Cost per person \$44.00 RTSA and EA members; \$49.50 non-members. Cost includes lunch and afternoon tea.

For further information -

<http://qld.ieaust.org.au/jetspeed/static/events/3099/RTSA22.09.04seminar.pdf>

27 October

UIC-MIT Project related to the possible application of emergent non-rail specific technology to the rail industry. Speaker (TBC) - Professor Dudley Roach, CEO Rail CRC

24 November

Research into Establishing Fire Safety Standards for Passenger Rolling stock. Speaker – Nathan White, CSIRO.

23 February 2005

Planned Bus Tour of Transport Logistics and Freight Handling Facilities at the Port of Brisbane. Cost TBA will include bus charter and a light meal at the Port Of Brisbane Visitor Centre. Planned for around 1730 to 1900.

What's Going on in Queensland

If I were to take a stab at what is the most topical issue within the rail industry in Queensland at the moment, it would have to be in relation to the imminent departure of the first Pacific National Queensland train operating on the North Coast Line. Whilst statements from PNQ have been few and far between, QR's CEO has certainly been vocal in his warnings of the implications of this on QR's existing business and its supporting workforce, balanced by his vision of where he believes can position itself for the future. February 2005 will be an interesting month I'm sure!

Final Words

As mentioned elsewhere within this edition of Rail Horizons, I would like to take the opportunity to put the challenge to the rolling stock fraternity within the Queensland Chapter to become involved in the content development of the Rail CRC's proposed continuing professional development program for rolling stock engineers. Feel free to contact me for any further information on how you could become involved.

I also encourage Queensland Chapter members to continue to look out for details of upcoming events, particularly as they firm up closer to the time. Some events can be subject to change for reasons beyond our control. For those who receive it by e-mail, look out for the fortnightly "Queensland Focus" put out by the EA Qld Division. The RTSA website www.rtsa.com.au also holds details and contact numbers. The bi-monthly "Engineering Queensland" insert in the monthly Engineers Australia magazine also contains relevant details of upcoming RTSA Queensland Chapter events.

*Cameron Smart,
Queensland Chapter Chair*

New South Wales

"Rail for a better future" has been the theme of a series of meetings and public forums in which the Sydney Chapter combined with the Centre for Engineering Leadership, the Transport Panel and the Civil Panel to identify the users perceptions of what the NSW Rail System can do to improve the rail services of the Sydney suburban and interurban rail services under the current issues of congestion, driver shortages, slow delivery of new train sets and the use of older non-air conditioned rolling stock until new contracts are let for their replacement.

The meetings held to date have been:

8 June 2004 – Vince Graham, Chief Executive Officer, Rail Corporation New South Wales.

Mr. Graham's talk centred on the issue of Rail Clearways – Untangling our rail network for more frequent, reliable CityRail services. Due for completion by 2010, the Rail Clearways plan comprises 15 key projects that will separate the networks 14 metropolitan rail routes into 5 different clearways. These projects will remove the bottlenecks and junctions, reduce congestions and delays, and allow for simpler timetables for more reliable and frequent services. Delivery of the Rail Clearways will mean an incident on one part of the rail network will no longer affect services on other clearways. (Attendance 70)

20 July 2004 – Rail Forum with Dr. Dick Day and Mr. Andrew Addinall from RailCorp who both presented on RailCorp's vision in light of the new Rail Clearways and 500 new passenger cars to replace older non-air conditioned rolling stock

Responses were made on behalf of the RTSA and other groups with a long question time following. (Attendance 160)

31 August 2004 – Rail Infrastructure Forum.

This Forum, "Rail for a better future" was held at Art Gallery of New South Wales during Engineers Week with an attendance of around 160 persons mainly public. Professor Vernon Ireland, President of Sydney Division of Engineers Australia, commented "There is a need for the State Government to re-establish public confidence in rail, which has deteriorated rapidly." This event comes after Engineers Australia released its 2003 NSW Infrastructure Report Card that gave rail a 'D' rating.

Speakers included Robert Whitehead, the Editor of the Sydney Morning Herald; Ken Dobinson, The Warren Centre; Dinesh Wadiwel, NSW Council of Social Services, all representing the community addressing the meeting with a lively question time following. Messrs

Day and Addinall from RailCorp were also in attendance to answer questions and to clarify issues.

Steve Findlay, past Sydney President, chaired the forum with the evening concluding with attendees completing a questionnaire, the results being encouraging for the future of this series of forums.

The next meeting will be on the **16th of November** titled **“What can Engineers do?”** followed by the final forum in March 2005.

Meanwhile the Sydney Chapter continues with the usual mix of meetings and site visits:

1 July 2004 – Hans Bier and Dr. Manfred Sedello presented to members and guests on “Migration of German Rail from Analogue to Digital Train Radio” followed by dinner.

13 July 2004 – Tim Kajons, Manager of Structural Engineering, EDI Rail.

Tim repeated the presentation given to CORE2004 on the EDI rolling stock for the Alice Springs to Darwin rail link

31 July 2004 – Site visit to the Austrans test track at Chullora.

Austrans is a people mover developed by Bishop Austrans Limited for specific transport needs. A presentation was made by Piers Brogan, Commercialisation Manager, who outlined the concept and development of the people mover, a nine seated a little larger than the conventional road mini-bus but with greater room and safety features. Several possibilities for potential uses were given before members inspected and rode the Austrans around the test track.

26 August 2004 - Joint meeting with IRSE & PWI

The first presentation was by Seamus Walsh from Hard Face Technologies on rail repairs in situ and the second presentation was by Barbara Klampfer, ITSRR, on the “Human Factors for Railways”

The program for the coming months includes:

14 September 2004

Sergei Kasian & Arnold Arango - A repeat of the paper presented to CORE2004 – Driving Cost Efficiencies in Rollingstock Maintenance.

12 October 2004

United Goninan, Hunter Diesel Railcars

9 November 2004

Silverton Rail

Bill Laidlaw, Chapter Chair

Basil Hancock, Secretary

South Australia

Prior to the end of June much of the Chapter Committee’s time was taken up by final organisation of CORE2004. The Committee felt that the effort was well worth it with a highly successful CORE in Darwin, with 320 delegates, 30 exhibitors’ stands (with 60 staff) and 70 partners. The two CORE dinners were both attended by over 440 people and the contrasting entertainment at both will be long remembered - there is more CORE news on page 6.

Recent Meetings

30 June 2004 – Hans Bier and Dr. Manfred Sedello

As part of their RTSA Eminent Speaker Tour, Hans and Manfred expanded on their CORE presentation regarding the introduction of GSM-R communications in Germany, including the successes and the pitfalls. A more detailed summary of their presentation will appear in the next Newsletter.

5 August 2004 – Malcolm Owens – CORE2004 Wrap

ARTC GM Infrastructure, Malcolm Owens provided a wrap up of his impressions of CORE2004 and paraphrased seven of the CORE papers he found particularly interesting.

2 September 2004 – Keith Charlton and Daniel Martucci, TransAdelaide

Keith and Daniel presented a paper on TransAdelaide’s re-sleeping programme – past, present and future. Daniel explained the logistical challenges of concrete re-sleeping in an urban environment and the management of contaminated ballast.

TransAdelaide has achieved something that the Victorian Government have completely missed and that is having the foresight to upgrade their broad gauge tracks with gauge convertible concrete sleepers where replacement has occurred in recent years.

Upcoming Meetings

7 October

TransAdelaide, Outsourcing railcar maintenance

4 November

Progress on the Port River Rail Bridge

30 November

AGM Dinner

Rob Schweiger, Chapter Chair

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The Railway Technical Society of Australasia



CRC Theme 63

The steering committee for CRC Theme 63, which is responsible for overseeing the development of a post graduate course in the engineering of railway rolling stock, is seeking contributors to the course content. The individuals involved will be experienced railway engineers who would be in a position to author teaching modules (for which they will be compensated) to be used in distance education mode under the umbrella of a university (yet to be determined).

The RTSA is involved in the development of the course, a number of the steering committee members being also RTSA members. The steering committee is currently finalising the course content specifications under the following module titles:

Introduction to the Railway and Rolling stock Environment

Locomotives

Passenger Rolling stock

Freight Wagons

Rolling stock Interfaces

Rolling stock Dynamics

Train Brakes

Rolling stock Bogies

Philosophies of Railway Safety

Rolling stock Construction

Rolling stock Maintenance

It is the view of the steering committee that many existing experienced rolling stock engineers will be retiring in the not too distant future, and if no action is taken, there will be a severe shortage of rolling stock engineering expertise. The development of this course is seen as a means of passing some of that expertise on to the next generation.

The steering committee is also interested in determining the number of people who may be interested in undertaking this course, which it is hoped will be presented for the first time in 2006. Successful completion of the course will result in a post graduate degree.

Initial registrations of interest in either assisting with preparation of the course or potential participants should be e-mailed to: chrisvb@midcoast.com.au

Chris Venn-Brown, Chair of RTSA Railway Engineering Education Sub-Committee.

CE2 - Railway Track Materials

MTG-061: Wednesday 5th and Thursday 6th May 2004

Meeting Venue: Standards Australia
19 Raglan St
South Melbourne 3205

Meeting Date: Wednesday 5th and Thursday 6th May 2004

Meeting Time: 9.30am

Duration: 2 days

Chair: Richard Brown

Secretary: Richard Weller

1 Objective of the Meeting:

To review latest work and recent publications.

2 Summary of the Meeting:

Opening

Those present were welcomed and congratulated for such a high level of attendance.

The meeting had been scheduled to be held in Adelaide, or possibly at Whyalla. This had not eventuated so the meeting had been moved to Melbourne.

AS 1085.20: Welding of steel rail

The latest draft had been circulated just before the meeting in order to progress to Public Comment. Some minor changes were made and the draft was to be released with wide circulation to interested people.

AS 1085.14: Prestressed concrete sleepers

The latest draft was tabled. The loads were not yet agreed on and changes were made. Also, the use of the concrete flexural tensile strength as the critical compliance criteria required more discussion. Therefore, the draft was returned to the working group.

Site Visit

The committee visited the ultrasound equipment company, Rail Technology International (RTI), an Australian company based in Harkaway.

1085.21: Points and crossing structures

A draft was tabled pending a meeting being arranged of a working group. Manes were listed to be invited onto the working group for a meeting before the next CE2 meeting.

Rail profiles

A proposal for new rail head profiles was tabled. The rail head was defined by a series of points rather than curves. It was agreed that these could be put to public comment as an amendment to AS 1085.1 as soon as they were prepared.

All agreed that the change to the rail head profile in the 2000 edition of AS 1085.1 that had been repeated in the 2003 edition had been an error that was never intended. The correct head profile should show the centre of the corner 15mm radius lying on the line 16mm from the top of the head (for the 50kg rail). This provides for unambiguous definition of the head profile.

For the time being, reference should be made for this detail to the figures in the 1995 edition of the Standard.

Dog screw

It was agreed that a separate Standard was needed for the dog screw currently included in AS 1085.18.

3 Next Meeting:

The next meeting to be held in Adelaide in November 2004.

4 Current Standards:

Details of the current projects that the committee is responsible for can be found on the Committee website under Projects. (See also Page 20).



CORE2006

The Railway Technical Society of Australasia (RTSA) is pleased to announce that its Victorian Chapter will be hosting the next International Conference on Railway Engineering, CORE2006, from **Sunday 30 April 2006 to Wednesday 03 May 2006** at the Grand Hyatt Melbourne.

The next CORE conference will build on previous successful CORE conferences, with the futuristic theme of "**Rail Achieving Growth**". CORE2006 will provide an ideal setting for establishing and consolidating fellowship amongst professionals associated with the rail industry.

The technical program, informative technical tours and expansive trade show planned as part of the CORE2006 conference will also provide delegates with valuable networking opportunities on which to build effective business relationships.

All potential delegates, exhibitors and sponsors are invited to submit their expressions of interest now through the conference website www.core2006.org For further details contact Ms Annette McClellan at ASN Events on am@asnevents.net.au or telephone **03 5983 2400**.

Ravi Ravitharan, Chair CORE2006 Organising Committee



The Institution of Railway Signal Engineers

Signalling & Communications -Mitigating the Risk

29 & 30 October 2004

Radisson Playford Hotel, North Terrace, Adelaide

Friday 29 - Full day Technical and Panel Sessions

Friday 30 - Technical Tour

For full details e-mail
Malcolm Menadue mmenadue@ozemail.com.au

| CE-002—RAILWAY TRACK MATERIAL | | | |
|---|--|-------------|--|
| Standard No. | Title | Type | Committee Action |
| AS 1085.1—2002 | Steel rails | P | -- |
| AS 1085.1 Sup 1 | Supplement to Part 1: Steel rails—History | G | In preparation |
| AS 1085.2—2002 | Fishplates | Pres. | Revision pending when resources allow |
| AS 1085.3—2002 | Sleeper plates | P | -- |
| AS 1085.4—2002 | Fishbolts and nuts | P | -- |
| AS 1085.7—2003 | Spring washers | P | -- |
| AS 1085.8—2002 | Dogspikes | Pres. | Revision pending when resources allow |
| AS 1085.10—2002 | Rail anchors | Pres. | Revision pending when resources allow |
| AS 1085.12—2002 | Insulated joint assemblies | P | -- |
| AS 1085.13—2002 | Spring fastening spikes for sleeper plates | P | -- |
| AS 1085.14—2003 | Prestressed concrete sleepers | P | Revision well under way |
| AS 1085.15—1995 | Aluminothermic rail welding | P | See new welding standard-Part 20 |
| AS 1085.17—2003 | Steel sleepers | P | -- |
| AS 1085.18—2003 | Screw spikes and threaded inserts | P | -- |
| AS 1085.19—2003 | Resilient fastening assemblies | P | -- |
| AS 1085.20 | Welding of steel rails | Proc. | Going to public comment |
| AS 1085.21 | Points and Crossings | P | In preparation |
| Related Standards | | | |
| AS 2758.7—1996 | Aggregates and rock for engineering purposes, Part 7: Railway ballast | P | Prepared by CE-012 |
| AS 3818.2—1998 | Timber—Heavy structural products—Visually graded, Part 2: Railway track timbers | Pres. | Prepared by TM-003. Revision to be published soon to include a grade for river redgum timber sleepers. |
| AS 4799—2000 | Installation of underground utility services and pipelines within railway boundaries | Pres. | Prepared by CE-23 |
| G = guide P = performance based product Standard Pres. = prescriptive product Standard Proc. = procedural Standard | | | |

2005 RTSA RAILWAY ENGINEERING AWARDS

In 2005, the RTSA will offer three awards. They are; the Railway Engineering Student Thesis Award, the Young Railway Engineer's Award and the Annual Individual Award.

The **Railway Engineering Student Thesis Award** will be made to the author of an outstanding final year project on a railway engineering subject that has been completed by a student in his or her final year of an undergraduate engineering course at an Australian or New Zealand University.

The **Young Railway Engineer's Award** is for young professional engineers, technologists or associates in Australia & New Zealand.

The **Annual Individual Award** recognizes the outstanding achievement of an individual within the railway industry.

Nomination Forms can be found at www.rtsa.com.au and applications will close on Friday 25 February 2005.