

From the Executive Chair

The end of another year is fast approaching, and whilst for many of us, the Christmas and New Year period provides us with the chance to recharge our batteries, I recognise that for many railway people this time is an extremely busy one with many major construction projects and equipment overhauls scheduled to take place during the 'quiet' time after Christmas. If you are one of the many who will be working during this period, I hope that everything goes to plan and that you are able to enjoy a well earned break later in the summer.

2010 has been another successful year for the RTSA with highlights including:

- The first 'overseas' CORE held in Wellington in September, attended by over 600 delegates, sponsors and exhibitors, with 81 technical papers presented, the highest number yet at CORE.. Particularly pleasing was the award of 50 youth scholarships to enable university students and recent graduates from both New Zealand and Australia to attend.
- *Meet the Railway People Expos* held in Sydney in July and Brisbane in October, attended by over 250 students and graduates in total, which I was pleased to be able to attend.
- In excess of 60 meetings and other events organised by our 6 chapters across Australia and New Zealand, including lectures by our Eminent Speakers for 2010, Professor Andrew McNaughton from the UK and Michael Roney from Canada.
- The inclusion of information about career opportunities in the rail industry and about the RTSA in the First 10 careers guidance publication for Australian high school students
- Contributed seed funding to assist the Rail Cooperative Research Centre in establishing the Rail Knowledge Bank, which was launched at CORE 2010.
- Our online survey of 2000 RTSA members and others working in the rail industry in May, to which we received almost 400 responses, a very healthy response rate for such surveys.

Our membership numbers have continued to grow strongly with total membership now at around 1350, up from 1139 in 2009 - an increase of 18.5%. While this trend is good to see, our membership still only represents a small portion of the total number of technical, operational and management personnel working in the Australasian rail industry. I would ask everyone in the RTSA to spread the word to colleagues who are not members and encourage them to come along to some of our events and find out more about our organisation and its activities.

Looking forward to 2011, your Executive Committee is working hard to address the key messages that you gave us in the survey earlier in the year. You felt that our identity needed to be updated and made more prominent, so we are working on designs for a new RTSA logo and on a revamped website that aims to be more relevant to your needs. We plan to launch both our new logo and website early next year so I will be keen to find out what you think of them - good or bad!

Another strong message we took from the survey was the desire you felt for the RTSA to show more leadership in the industry. High Speed Rail is once again back on the radar in Australia and it's great to see the strong level of interest that has been shown in the STORE High Speed Rail Study tour to Taiwan, Korea and Japan in May next year. Andrew Honan and the STORE organising committee have been working hard on the arrangements for this study tour, so I'm pleased to be able to announce that the RTSA will be providing financial assistance to enable young engineers to take part in the tour. We are also working on ideas for how the RTSA can facilitate the debate on High Speed Rail within Australia, so keep an eye out for more information in the New Year.

In conclusion, I'm looking forward to the RTSA continuing to grow and develop in 2011. Please contact me or your Chapter Chairs if you have any suggestions or comments on what the RTSA is or should be doing.

Best wishes for Christmas and 2011.

Simon Wood
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Rail Horizons

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AUSTRALIA

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Point of View

Max Michell

When the economists are not busy wrongly second guessing the Reserve Bank's monthly decisions, they are busy babbling about the 'two speed economy'. It may have passed notice but we in the rail industry have had a two speed rail market share for years - around 80% of the land transport East West (and around 60% of the total general freight task), but only a very minor share plunging towards irrelevance North South between Melbourne, Sydney and Brisbane. Less than 20% on the long-haul Melbourne to Brisbane route and a trifling single digit share between the adjacent capitals is hardly in the same league as the East West share.

ARTC has been investing heavily in the North South corridor, in many cases simply catching up on the maintenance and upgrading that should have been done much earlier by the former infrastructure owners.

There is a degree of improvement - higher axle loads at higher track speeds, the Southern Sydney Freight Line (SSFL), and improved crossing facilities on single track. A somewhat fortuitous agreement between Victoria and ARTC has effectively duplicated 200 kms of the Melbourne to Sydney route, although it, along with SSFL, has yet to become operational despite the passage of a lengthy period of time.

The outcome of the current works on the east coast is intended to be a significant reduction in transit times, gain in reliability, increased capacity and potential for cost reductions (above and below rail) all of which should significantly improve rail's market share.

Under the flawed privatisation/ separation model there is no obligation to report traffic data so it impossible to find reliable indicators of actual rail activity. Anecdotal evidence, based on the train frequency, length of train and frequency of empty container slots suggests that North South rail freight is probably going backwards in absolute terms. On a rising freight task this is a recipe for extinction.

Why should rail on this corridor be so incapable of attracting a reasonable rail freight market share? The reasons are many: Sydney with its curfews and overbearing attention to bureaucratic impositions; relatively slow transit times; poorly managed terminals; unreliable trains and infrastructure; the residual disconnect created by the ghost of State railways past; poor marketing and product definition; and a host of other issues which would be apparent to the keen observer. Some of these issues are common to the North South and East West, so the answer is not just a case of this simple listing of shortcomings.

Perhaps it would be wise to go back to basics. Three principal concerns or impediments in terms of the quality

of the existing freight network have been identified in recent studies. They are:

- Poor reliability of the existing rail network
- Lack of consistency in regulation across the network
- Congestion in metropolitan areas.

The second issue is being vigorously pursued by ARA while the third is one where rail is part of the answer. The first however is an issue that has long been recognised (it goes back to the 1970s as an identified issue), but has received scant attention in terms of any real action. Reliability involves far more than simply arriving 'on time'. As far as the customers are concerned it is the predictable and repeatable arrival at their door at a given time or in line with a given need. Rail is only part of the equation and arrival 'on time' at the rail terminal is just part of the chain of events that combine to provide the service quality from the customers' point of view.

One of the major issues is the 'detach' of rail from the real customers. From the despatch door to the receipt door there are at least three individual transport transactions, under control of three different entities, which combine to provide the service - a pickup and delivery to a rail terminal (PUD), the rail line haul, and delivery (PUD) at the far end. All of these can have an impact on the end reliability, even though two of the participants will never actually have anything to do with the end customer.

Because of the interfacing (twice) at rail terminals there is a further issue - the time required to provide reliable inter-connections at these terminals will improve reliability of delivery at the expense of extended door to door transit time.

From a rail perspective a direct siding to siding traffic is much easier to manage reliably than the complex web of transactions that are involved in intermodal traffic. Equally where rail is in direct contact with the real customer, rather than an intermediary, the definition of the customers' needs and translation into an achievable service plan is much easier than when dealing with freight brokers.

However intermodal is here to stay so the issue for rail is to develop a system that optimises reliability with the least impact on transit times. Making the trains run on time is a starting point, and in fact needs to be the centrepiece of any planned reliable service. Getting the pickup and delivery to the outbound rail terminal at a time to allow loading without delaying the train departure is the second issue and should be reasonably easy to manage (although tightening up the time waste at this juncture is rather more complex).

The real issue for reliability is the arrival at the rail terminal and delivery to the end customer. In theory a 1500 metre train arrival will have 100 or more delivery trucks waiting to collect its 200 TEU of loading. Even under ideal

conditions there will be a delay for the last of the pickup trucks of 3-4 hours and by the same token at least that amount of variability in the delivery time to the customer. Immediately we have an example of the fragility of the system.

Of course it could be worse. The last pickup to depart the terminal may well not get to the customer before close of business that day, thus adding another element of variability into the equation. This variability is a direct consequence of the railway interfacing with the customer (via a freight broker or carrier) at the terminal rather than at the customers' door.

One hundred or more independent trucks all wanting priority will result in a poor outcome for most, no matter how it is managed. The solution to this problem is to schedule the train - truck interface, but that is far easier said than done. Truck scheduling, in the absence of a reliable interface with trains, would simply be another source of aggravation, so it is also necessary to develop a new terminal process that de-couples the train arrival and truck pickup to some degree (currently the process is primarily direct transfer train to truck).

Having 100 (nominally) independent trucks each doing one specific pickup is not the most efficient use of truck resources. Unless they all turn up in strict scheduled order there will be time wasted and / or out of sequence deliveries which will contribute to a residual unreliability problem.

It seems, to this writer at least, that a coordinated truck response is needed, either a series of contracted trucks running at the call of the terminal operator or a terminal owned truck fleet. This would be counter to the current 'freight broker' system, but clearly that system has not served the east coast rail at all well.

It is well understood that the pickup and delivery part of the inter-modal business is charged out at a disproportionate rate, largely negating the natural cost advantage of rail line haul. Anything that will improve the productivity of the PUD part of intermodal will have a carry through impact on the cost of rail compared to line haul trucking. If a reliable interface between the trains and end customers can be delivered at the same time then there is a win-win for rail which might provide a foundation for a reversal of rail's long term market failure.

There are a host of related issues that contribute to unreliable rail delivery; 'above rail' owned terminals; Sydney curfews; rolling stock and infrastructure faults and failures; a propensity to delay departing trains for late containers; terminal equipment failures and so on. Sorting out the delivery side of things will improve one aspect of intermodal rail, but on its own will not resolve the problem. This will involve a rather more systematic and comprehensive change to the system, which the currently

rather fragmented rail industry shows little sign of understanding let alone taking any appropriate action.

If North South rail is to succeed in growing its market share it will have to do far more than simply planting concrete sleepers and extending crossing loops. It will involve a package of reforms that will deal with the root problems of trying to get a reliable rail based intermodal system in the rather fragmented multi-player process. There is no doubt that reliability is the cause for much of the existing disaffection with rail, at least on the east coast where every passing day leaves rail in a more difficult situation from which it will have to recover if it is to survive.

The Infrastructure Report Card and Rail

by Philip Laird

On 24 November at the National Press Club in Canberra, Chief Executive, Peter Taylor of Engineers Australia released the 2010 Australian Infrastructure Report Card.

Overall, the report card found that little or no real overall progress has been made in the past 5 years, despite some attempts to make up for past under-spending. Five years ago, Australia's overall result was a C plus and it remains a C plus in 2010, meaning that major national infrastructure improvements are still required.

The result for rail was a set back from a C- in 2005 to a D+ rating in 2010.

Roads overall maintained their C rating. The reason given for the low rating for rail (Section 4.2, page 21) is that "...urban rail networks cannot cope with demand."

Sydney comes in for particular mention, including its population predicted to increase by 550,000 people by 2021 and that transit times will need reducing to the neighbouring centres of Wollongong, the Blue Mountains and Newcastle are. In several cases, these times are currently slower than in the past. Examples are cited, including from a 2009 paper *On the Right Track: Why NSW Needs Business Class Rail*, by Buckingham and Hartwich from the Centre for Independent Studies.

The 2010 EA Infrastructure Report considers that it is "essential to increase rail freight to accommodate the greater freight task..." To this end, it is necessary to improve the interstate and regional freight lines, plus develop multi-user intermodal terminals. Coal lines in NSW and Queensland will also need attention. Improved separation of freight and passenger trains is "particularly needed in Sydney and Brisbane".

The relative low pricing of road freight is noted and ensuring 'user pays' is an issue (p19) "that will need to be addressed sooner rather than later."

The new high speed rail feasibility study is welcomed. Support is given for land corridor protection, including to Canberra.

Finally, failure to address integrated land-use and transport planning and the existing deficiencies of rail (p24) "will impose huge costs on future generations."

Maldon Dombarton link update

by Philip Laird

In November, the Federal Government released a Maldon-Dombarton Feasibility Study Issues Paper. It can be found at www.infrastructure.gov.au and a link to the study is on the home page. Submissions have been invited in response to this paper by December 17.

The project has received strong support from Wollondilly Shire Council and business groups from the Macarthur region as well as Wollongong. Along with transport, economic and other benefits, it is likely to reduce the large numbers of trucks travelling along Picton Rd.

The conclusions of a 2010 Australasian Transport Research Forum paper *An Illawarra Macarthur rail link* by this writer (full paper available on request to plaird@uow.edu.au) and presented in September at Canberra follow.

Conclusions With the constraints on the existing road and rail networks, the ongoing expansion of Port Kembla, and increased demand for passenger train services on the existing South Coast railway, the case for completion of the 35 km Maldon to Dombarton rail link is stronger than it was in 1988 when worked on it was suspended.

Given the positive findings of a 2009 pre-feasibility study, either the Federal or the NSW Government should move to acquire the complete corridor (most is already held) and commence additional environmental impact assessment to meet any new requirements introduced since the 1983 EIS was completed. The results of the full feasibility study will be awaited with interest.

The Maldon to Dombarton link could also be tied in with a 36 km Menangle to Aylmerton rail deviation to improve freight and passenger train operations on the NSW Main South railway. Corridor protection for this and other Main South rail deviations could well be expedited.

In 2010, two further factors have emerged to support completion of the link whose P50 cost was estimated in 2009 at \$550 million.

The Port Kembla Port Corporation is currently seeking approval from the NSW Department of Planning to expand its Outer Harbour and in Autumn 2010 released an Environmental Assessment giving various mode shares for rail. This notes limitations of rail capacity on the existing main line to Sydney, and suggests rerouting freight trains with new cargo going into and out of Port Kembla via the

Moss Vale Unanderra line. However, the Moss Vale Unanderra line has severe speed-weight restrictions.

In response to an Environmental Assessment Report, a June 2010 Submissions Report includes comment by the NSW Roads and Traffic Authority that for even Stage 1 Port Kembla outer harbour traffic volumes (bulk, general and limited containers), if the predicted rail mode share could not be achieved, there would be likely "... *unacceptable impacts to road safety and traffic efficiency as well as environmental issues such as amenity, noise and air quality.*"

The second factor is that Port Botany is the main container port for New South Wales and during 2009/10 saw a total movement of containers amounting to 1.928 million Twenty Foot Equivalent Units (TEUs); also, the present planning consent places a maximum movement of 3.2 million TEUs per annum. At a 6 per cent per annum growth rate, this cap would be reached in 2019 (i.e. this decade rather next). The NSW Government will need to decide whether to lift this cap, which may require extensive investment in expanding the M5 highway noted (conservatively) in 2009 as \$4.5 billion. It may well be better to complete the Maldon Dombarton link and accommodate this growth in container numbers (many of which are destined for Western Sydney) at Port Kembla.

High Speed Rail - spearheading a rail revival?

By Andrew Honan

Soon there will be a ramping up of the debate on high speed rail (HSR), as the Australian Government's feasibility study on HSR between Brisbane-Sydney-Melbourne (with a first stage consideration of Newcastle to Sydney) gets underway.

Infrastructure Partnership Australia (IPA) and the Australasian Railway Association (ARA) both strongly endorse HSR, as does the CRC for Rail Innovation and a number of other stakeholders. All these organisations, along with the political parties, are to be commended for putting rail (in particular HSR) on the agenda. The emerging technologies of HSR are delivering higher speeds (up to 380km/hr) and increased adoption worldwide. HSR is capturing the imagination of the public in Europe, Japan, China and South America.

No doubt it will also capture the imagination of the Australian general public and the media, but how will it go down in the federal and state government bureaucracies? To quote Dr Andrew McNaughton (chief engineer of HS2 in the UK), "HSR involves eye-watering amounts of money", (and) "... you have to convince treasury officials to allocate large sums of money, and prioritise HSR over other spending needs".

The problem is that mega projects create mega risks, and unless benefits accrue as expenditure occurs, they have a high probability of failure. This is manifested in people's attitudes; where initially their imagination is captured and support is vocal, but in time attitudes change; to scepticism and support becomes very soft. Particularly when expenditures blow out, timelines increase and bad publicity fuels negative sentiment.

This can even generate a negative image of the rail industry and rail engineers as a whole, which may be unfairly tarnished with trying to build such a 'big-bang' project.

It was therefore very pleasing to read the IPA report that advocated a staged implementation of HSR, both in terms of corridor preservation and the shared use of corridors (with rail freight, roads, water, NBN), over an extended period of time.

The HSR debate in Australia has important issues. First and foremost the argument must be won that Australia does indeed, eventually need a high speed line between Brisbane, Sydney and Melbourne. This is not an argument to be won solely by detail econometric modelling of passenger numbers between city-pairs, but on a combination of strategic issues of population growth, regional development, environmental issues, liveability pressures of cities, relief for a second Sydney airport as well as general high levels of city-pair air travel (and forecast growth).

This strategic question has to be won and *maintained* within the wider community.

How we 'get there' with HSR must be held as a distinctly separate issue.

Shared corridors

'How we get there' or the implementation or staging of HSR is equally important. The IPA report advocates the use of shared corridors as a way to integrate different infrastructure uses within a shared corridor. The joint costs of the development of this infrastructure, in one corridor, are less than the sum of the standalone parts.

The use of shared corridors is not a new concept; indeed the RTSA was a lone voice in 2007 in its submission to the NSW RTA on the proposed Eungai to Kempsey road upgrade on the North Coast of NSW. In its submission the RTSA advocated that a combined road-rail section should be studied as part of the environmental planning.

This was one of the worst rail alignments on the North Coast line and the RTSA was keen to see the opportunistic value presented to rail with the use of a shared road-rail corridor, that would minimize land and environmental planning costs for rail as well as providing benefits such as an integrated road and rail interface design (no level crossings), emergency access to the corridor and minimization of flora and fauna habitat fragmentation.

Unfortunately this has not occurred (despite Commonwealth and State laws on ecologically sustainable development), and highlights the challenges of a state based road agency, a Commonwealth rail track corporation, (both with different mandates) and the Commonwealth/ State funding arrangements. This inability to integrate such developments should constitute a study by both governments; so as to provide lessons on the barriers to future integration and how to extract opportunistic value.

Although shared corridors are not new, the IPA report is to be commended in putting it high on the public agenda. Shared corridors will be particularly beneficial for freight rail.

The IPA and also the Victorian Government (in its Metropolitan Freight Terminal Network document) make the point that Australian land transport has some similarities but also some distinguishing differences to other countries. Population densities, distances, geography, patterns of agricultural production and distribution, patterns of container freight distribution and historical development all mean that adoption and implementation of land transport systems for Australia are unique to the Australia environment.

For example, at a technical level, many European countries have totally separate corridors for both HSR and rail freight. They argue that vertical and horizontal grades are significantly different for these systems (freight cannot sustain 3% vertical grades whereas HSR can), and invariably HSR lines have been developed only recently, whereas rail freight networks have been around since the beginning of rail development. In Europe, open land is scarce and existing rail freight markets are strong. Contrastingly, in Australia intermodal rail freight (Melbourne - Sydney - Brisbane) is weak, and there may

be situations where new shared freight / passenger rail corridors may be feasible.

One approach would be to widen the terms of reference of the Department of Infrastructure and Transport's HSR feasibility study to specifically identify and plan for use of shared passenger and freight rail corridors between Newcastle and Sydney and Sydney and Canberra. Further, to develop high level strategic approaches to freight and passenger rail beyond Newcastle and Canberra.

Staged implementation and benefits

The terms of reference for the HSR study could also look at how early benefits can occur on a Sydney - Newcastle passenger line, as well as outlining the policy framework for implementing high speed rail and freight rail revival.

One approach for delivering early *passenger* benefits could be:

- Stage 1 Newcastle - Sydney passenger rail service starting with express rail (up to 250 km/hr) rather than high speed (350km/h)
- Stage 2 Sydney - Canberra passenger rail service starting with express rail (up to 250 km/hr)
- Stage 3A Extending express rail from Newcastle to Coffs Harbour (up to 250 km/hr)
- Stage 3B Extending express rail from Canberra to Wagga Wagga (up to 250 km/hr)
- Stage 4 Completing the rail infrastructure from Wagga Wagga to Melbourne and operating trains from Sydney - Canberra- Melbourne at high speed (350km/h plus)



In the south east of England, mid-range high speed (225km/h) commuter and regional services share tracks with international HSR Eurostar services on the high speed corridor between St Pancras and Ashford.

Image: Mark Carter

Stage 5 Completing the rail infrastructure from Coffs Harbour to Brisbane and operating trains from Sydney all the way to Brisbane at high speed (350km/h plus)

Stages 1-3 would deliver benefits (travel time between Sydney and regional areas below 3 hours). This would allow the rail markets to develop, regional 'hubbing' to take hold and encourage population decentralisation along this corridor. It would generate very significant rail traffic in the following markets; Newcastle to Sydney, Sydney to Canberra, Wagga Wagga and regional areas to Canberra, Sydney to Coffs Harbour and the mid north coast of NSW. Early benefits would accrue whilst the infrastructure extends to Melbourne and Brisbane when full 350 -380 km/h and higher frequency services are implemented under Stage 4.

It is important to note that the express rail services would be converted to high speed rail services (350-380 km/h) in time, therefore the infrastructure standards must be capable of delivering on this speeds.

Instead of implementing a Very Fast Train (TGV - Train à Grande Vitesse) the project could start off as a Fairly Fast Train (TPV - Train à Passable Vitesse) scaling up to a very fast train in the future.

The standards or technical issues to be addressed include:

- Dedicated passenger line to replace outer suburban RailCorp system
- 25kv AC power supply (power demand scaled up as service frequency and speeds increase)
- ERTMS Level 2 train control
- Gentle vertical and horizontal alignments (for shared freight corridor)
- Wide track centre clearances
- Minimizing tunnels or large tunnel diameters to cater for high speeds
- Possible slab track construction for track stability

Parramatta station may be the terminal for the high speed line. In many cases around the world, high speed rail terminals are used as a catalyst to uplift business and



commercial development of secondary CBD's. Parramatta with good connections to suburban rail systems may be well suited to providing high speed rail access to greater metropolitan Sydney as well as access to employment areas through the expanded suburban rail system including Sydney CBD, Sydney Airport and the 'Golden Arc'.

Stage 1 and 2 could also see the development of the freight services north of Sydney (to Newcastle) and South (to Yass-Cootamundra district).

Conclusion

For any HSR network to be successful it must involve the States, the ACT and the Commonwealth. It has to offer benefits for the regions, States / ACT as well as the nation as a whole. These benefits necessarily involve a strategy and commitment in the regions and cities to more passenger rail connectivity (and to a lesser degree road) to HSR terminals. Furthermore there has some activism to passenger transport links and markets around HSR hubs. All this needs to be achieved without undermining the end-to-end passenger markets.

The design of the HSR must integrate state-based policies on regional transport and regional planning for corridor preservation. Some jurisdictions are well on the way.

Victoria for example, continues to develop a regional fast rail system and is using the success of regional rail as the foundation for further expansion in rail. Both political parties in Victoria now promote more investments in passenger rail.

This was not the case just a few short years ago at the beginning of RFR; something to be mindful of in the HSR debate. Similar 'doubters' existed with the initial Perth rail system and the recent Perth - Mandurah line. Both of these are now outstanding pieces of infrastructure, supporting regional and city economies and communities. They are classic success stories. Queensland also has a strong south-east infrastructure planning strategy.

The provision of early and multiple levels of benefits, both regional and national, that leverage off existing patterns of settlement and emerging strategies, along with multi-jurisdictional funding, offers a higher probability of success than a stand-alone HSR proposal.

The challenge is that much like in the 1970's when the national highway plans were developed, the States, ACT and the Commonwealth all have to jointly commit to rail as a vision and also to a rail plan. Some jurisdictions are further ahead than others, but nonetheless the time will come when rail benefits will be fully exploited.

Future Australian generations may look back at this point in time, as one where Australia seized the opportunity of a unique set of circumstances, with stronger government policies, practices and a strategic approach, to deliver a distinctly Australian land transport solution.

NEWS

NTC lost on transport safety & sustainability

The Australasian Railway Association (ARA) has questioned the merits of the National Transport Commission's (NTC) recently released paper, *Understanding public perceptions of road freight*.

The paper claims that high productivity vehicles (HPVs) will improve the efficiency of road freight movements and improve road freight's fuel economy and safety performance. It recommends practical changes to regulations and access arrangements to facilitate the greater use of such vehicles.

"The ARA supports all improvements in freight transport that will improve safety, climate change and congestion outcomes. However, the jury is still out as to whether HPVs, such as B-doubles and B-triples will achieve this," said ARA CEO, Bryan Nye.

"It is disappointing when transport policy makers short change their fellow Australians by continually reaching for the second or third best solution to deal with the transport challenges."

While HPVs may modestly improve road freight's energy efficiency, their contribution to road safety and urban congestion is highly contentious.

"1500 people die on our roads every year and many thousands more are seriously injured. This costs the Australian economy up to \$35 billion every year. I find it inconceivable that placing more freight on roads and introducing larger trucks will improve road safety outcomes," said Mr Nye.

The stopping and acceleration times in HPVs are greater than other heavy vehicles, making them prone to accidents in changed traffic conditions. The weight of a HPV is more likely to derail trains in level crossings accidents, potentially leading to catastrophic incidents of multiple fatalities.

"There is a role for HPVs in the transport mix. All modes of transport will need to be fully utilised to meet the projected tripling of the freight task by 2050. However, the reliance on road transportation to meet this growth in freight will lead to suboptimal environmental and safety outcomes.

"Why don't we try the best solution for a change? Containerised rail freight is up to 5 times more fuel efficient and up to 9 times safer than road freight. One freight train can remove up to 150 trucks off the road. Rail

only moves 20% of containerised freight on our eastern sea board, yet it has ample capacity to handle more.

"I challenge anyone to show that higher productivity vehicles can come close in matching rail's potential to reduce greenhouse gases, reduce fatal road accidents and improve urban congestion," concluded Mr Nye.

The ARA is calling for changes to rail's regulatory and access arrangements to ensure adequate capacity for the growth in the freight task.

KiwiRail picks up engineering award

At the recent NZ Engineering Excellence Awards, KiwiRail Network in conjunction, with contractor XWORKS, won the Information, Communication Electronic and Electrical Technology category for the development of the ORC 400 Radio over Internet Protocol (RoIP) appliance which is used as part of the KiwiRail Network radio network.

KiwiRail and XWORKS entered the award with the ORC400, a custom-designed solution that allows KiwiRail to integrate its mobile radio systems with modern digital Internet Protocol networks and computer systems.

The ORC400 supports a range of mobile radio and IP protocols and has extensive diagnostic capability. The companies claim it is a flexible, fully integrated, low-bandwidth, vendor-neutral RoIP solution for bridging mobile radio networks and IP networks.



The ORC400 has allowed KiwiRail to replace dedicated leased lines with cheaper IP connections that are often already in place.

Analogue radio equipment with inbuilt IP is not readily available and carries a high cost premium therefore a strategy was developed to use commonly available analogue radio equipment along with RoIP interface devices.

The search for RoIP equipment was further complicated by the special needs of the National Train Control Centre (NTCC). When an open international search could not find a suitable product, KiwiRail and XWORKS set about designing one from scratch. For KiwiRail this meant getting a product that completely met their needs; for XWORKS it meant the opportunity to develop a product with a proven market niche.

Designed and built by XWORKS in conjunction with KiwiRail, the ORC400 is a highly versatile appliance for bridging conventional analogue VHF/UHF radio systems and IP networks.

On the radio side it provides all common signalling and control protocols (such as CTCSS and Selcall) and the ability to control the functions a range of professional radio equipment. On the IP side it supports a wide range of common functions (including SNMP, DHCP, QoS and an integrated web server).

As a site controller it includes a range of SCADA I/O and logging/reporting functions.

Presenting the Award, Institution of Professional Engineers chief executive Andrew Cleland said, "The ORC400 is well-engineered, well-built and well-documented, with features that support potentially wider applications to other areas of communication such as emergency services and there is also interest from potential purchasers in other countries."



ORC logo artwork for the ORC400 courtesy Richard Taylor of Weta Workshops

CRC for Rail Innovation - A Year in Review

➔ Australia's first rail Knowledge Bank

Officially launched at the RTSA's CORE2010 conference in September this year, the Australian rail industry now has on-line access to domestic and international rail-related research papers, reports, theses and presentations through the CRC's Knowledge Bank.

Accessible through the CRC for Rail Innovation and ARRB Group websites, the resource already has approximately 1,400 items of information available, with new items continually added.

The Knowledge Bank will help improve the operational effectiveness of the Australian rail industry through knowledge sharing, reducing duplication of research efforts, and by providing links to international rail research portals.

➔ Towards High Speed Rail in Australia

In early 2010, the CRC for Rail Innovation published its pre-feasibility study into High Speed Rail (HSR) in the Australian context.

This CRC for Rail Innovation project has been extremely successful in generating renewed public interest and debate on HSR.

A measure of the success of this research is the expressed multi-partisan support and commitment from the major political parties to undertake a full feasibility study into HSR in Australia.

➔ Branding for success - boosting rail's image

The CRC for Rail Innovation is pursuing strategies to improve the rail industry's image and attractiveness.

The first research project of its kind is being conducted to recommend and inform future strategies to build rail career awareness and re-brand rail as a progressive, innovative, and exciting employer of choice.

This exciting research project is about to deliver a comprehensive portfolio of attraction and branding strategies to the rail industry in the form of an easy-to-use CD-ROM.

The CD-ROM provides a comprehensive analysis of national and international attraction and image strategies that have had a positive impact on successfully positioning rail careers, and on proven strategies used by other industries. The focus is on providing practical tools that can be adopted by industry.

→ Skilled worker shortfall - addressing the big issue

Skill shortages in key areas greatly affect the rail industry's ability to perform. CRC for Rail Innovation research is addressing this issue by building a multi-stakeholder hub of innovation focused on removing barriers to skilled migration and highlighting avenues to secure long term labour supplies of skilled engineers for the rail industry.

The research has been shaped in part by a Skilled Migration Forum held in November 2009, involving 50 participants from industry, government, suppliers and other stakeholders.

The research project is soon to deliver a Skilled Migration Information Toolkit, in the form of a DVD and web resource. It is anticipated that the toolkit will be instrumental in providing the industry with practical strategies and tools to attract, employ and retain critical skilled migrants.

→ Reducing rail noise - a significant step

Rail noise is the dominant cause of community concern and pollution complaint for existing rail networks. Industry estimates the costs of rail noise at around \$13.5 million per annum.

CRC for Rail Innovation research is addressing the two key issues, rolling noise and curve noise to improve the management and mitigation of rail noise by delivering guidelines and procedures in the form of 'how-to' manuals.

These will include comprehensive guidance on the selection and implementation of cost-effective noise mitigation methods, the means of justification, and will feed directly into current programs and procedures in most rail organisations.

Stage One of this project has recently been completed, and Stage Two is anticipated to deliver final results toward the end of 2013.

→ Technology for safety - protecting Australia's level crossings

Railway level crossing incidents are one of the most serious safety issues faced by the rail industry in Australia. There were 578 road vehicle collisions at railway level crossings (RLX) from the 1st January 2001 until the 30th June 2008 (ATSB, 2008).

Most analyses have demonstrated that errors or violations by road users are the largest contributor to RLX incidents, indicating the need for innovative road-based interventions to complement railway interventions.

The CRC for Rail Innovation and the CRC for Advanced Automotive Technology (AutoCRC) have signed a Memorandum of Understanding in relation to Australian Road – Rail Research Collaboration.

The CRC for Rail Innovation is undertaking cutting-edge research designed to trial new Intelligent Transport Systems (ITS) interventions in the CARRS-Q driving simulator to deliver a comprehensive analysis of the benefits of ITS for level crossing safety and driver behaviour, contributing to an understanding of how best to protect road and rail users at level crossings.

www.railcrc.net.au

Radio Spectrum for the rail industry

Effective telecommunications are paramount to the future efficient operation of rail, by providing the required user and operational information and control systems to support safety, innovation and the optimal use of current infrastructure.

Radio spectrum is critical for the provision of these rail telecommunication systems. At the present, the rail industry's access to the required radio spectrum is at risk and the Australasian Railway Association (ARA) has been working with industry representatives to secure this most critical of resources.

To support this process, the Australian Rail Industry has developed a document "*One Industry, One Goal – National approach to Rail Industry Spectrum*", which sets out the industry's spectrum requirements.

This document can be downloaded by accessing the following link

<http://www.ara.net.au/UserFiles/file/Publications/NationalApproachtoRailIndustrySpectrum10-11-03.pdf>

A summary of the issues follows on page 11. If you require further information, please contact Vicki Brown, ARA Director Transport Policy on (02) 6270 4508 or vbrown@ara.net.au.

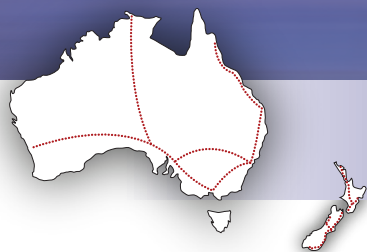


Radio Spectrum

Securing Rail's Telecommunication Networks



AUSTRALASIAN
RAILWAY
ASSOCIATION



November 2010

The Challenge

The Rail Industry's telecommunications networks rely on radio spectrum within the 400 MHz and 1800 MHz spectrum bands. The Australian Communications and Media Authority (ACMA) has reserved only 32 channels in the 400 MHz band for the Rail Industry, raising concerns for existing and future voice and data telecommunications. The ACMA has also advised that the re-issue of Rail's current 1800 MHz licences is not guaranteed. Together, these developments present significant operational, economic and planning issues for the Australian Rail Industry.

If adequate channels in the 400 MHz band are not made available and/or the 1800 MHz licences are not re-issued after expiry for another 15 years, the productivity, efficiency, safety, capacity and viability of Australia's urban, regional and interstate passenger and freight (including heavy haul) rail operations will be severely affected.

Failure to renew the current 1800 MHz Spectrum licences and supply adequate channels of 400 MHz spectrum at a cost which recognises the public good rail provides will result in the Rail Industry having to compete with commercial entities to retain current allocations. National mobile carriers view available spectrum allocations as a means to increase revenues. The Rail Industry cannot compete financially with these companies to secure its required spectrum.

The Solution

The Rail Industry requires adequate channels or 'frequency bands' of 400 MHz and the re-issue of its 1800 MHz spectrum licences.

Rail is a significant contributor to Australia's rural and regional economies, producing economic benefits worth around \$7.7 billion each year. Every year Rail provides more than 724 million trips for passengers and transports more than 720 million tonnes of goods around Australia. Clearly, rail provides an essential service for the Australian population and performs a key role in the continued growth of the Australian economy.

The Industry's required spectrum allocation should be provided at minimal cost to reflect the public benefits Rail provides for Australia.

Mobile Carriers purchase spectrum licences as a resource to provide revenue-generating services. Rail's spectrum is an essential part of the industry's infrastructure to ensure safe operations and improve productivity.

Why Does Rail Need Spectrum?

Rail needs spectrum for its operational communication activities. The Rail Industry's required spectrum ensures:

- **Safety:** train controllers communicate reliably with train drivers, maintenance workers and station staff to ensure the safe daily movement of train passengers and freight.
- **Innovation:** increased use of wireless data transmission to support new train control systems and provide improved management of customer information allowing greater utilisation of current infrastructure.
- **Efficiency:** improvements in train control and communication using the existing spectrum allocation will allow operators to run trains closer together without sacrificing safety. This will increase capacity and efficiency by allowing rail to move a greater number of passengers and freight on the existing networks. This will also reduce demand for hard infrastructure such as additional tracks, which will lower infrastructure investment costs for Government and Industry.



ara.net.au

Rail ↘

Providing solutions for the future

Society and Chapter News

RTSA Railway Engineering Awards

Advanced Notice - Call for Nominations 2011 Individual and Young Railway Engineer Awards

Advanced Notice is given that the Nominations for the 2011 RTSA Individual Award and the Young Railway Engineer Award will be called on Monday 3 January 2011, with a closing date of **Friday 25 February 2011**.

The Individual Award is presented annually to a person who has made an outstanding contribution to the rail industry. Also awarded annually, the Young Railway Engineer Award recognises young professional engineers, technologists or associates, aged 35 or under, practicing in Australia or New Zealand.

Both of these are prestigious awards and the Call for Nominations together with the appropriate nomination forms and judging criteria will be published on the RTSA website www.rtsa.com.au

All RTSA members and rail industry participants are strongly requested to please to support the Society in the identification and encouragement of suitable nominations for these prestigious awards.

Any queries regarding the RTSA Railway Engineering Awards should be directed to the Chair of the Awards Sub-committee, John Dring, at dring@bigpond.net.au

RTSA High Speed Rail Study Tour

Following promotion of this Study Tour on Railway Engineering (STORE) in September and October, the Society received approximately 60 expressions of interest, including 16 from young RTSA members, for a total of 20 places available for the tour in May 2011.

During December the tour organisers we will be contacting all those who expressed interest with further details of the itinerary and budget.

The tour will focus on the Japanese Shinkansen (JR Central, JR East, JR West), Korea Train eXpress (KTX) and the Taiwan High Speed Rail Corporation (THSC) high speed rail systems. The tour will look at how these systems operate in their environment and discuss how these technologies might be developed for a Brisbane-Sydney-Canberra-Melbourne high-speed rail corridor.

The tour will be topical and contemporary following the recent confirmation by the Australian Government of its pre-election promise to commission a further feasibility study into the potential for high-speed rail on Australia's eastern seaboard.

The tour will contribute to the professional standing of attendees and the RTSA.

Joint symposium on High Speed Rail - March 2011

The RTSA is planning to hold a one-day symposium in partnership with the Engineers Australia National Committee on Transport Engineering (NCTE) in early March of 2011 on the subject of high-speed rail. This will be an opportunity to bring together the rail related technical issues with some of the broader engineering issues and optimal transport integration.

The symposium is planned to be held in Melbourne. Depending on the success, it may also be held in Sydney and other locations.

An announcement will be made via email, once detailed plans have been finalised.

Chapter Reports

Queensland

Chairman's Comments

Those of you in Brisbane may remember the weekend of the 9 October 2010 as being a little wet, so much so that the site inspection of the new QR National rail welding facility planned for Monday 11 October had to be postponed. Once an alternative date has been organised an updated flyer will be circulated.

You may not remember 6 November 2010 as being a remarkable day, but maybe you should. On this day a new railway related world record was set in Queensland. In just under three hours a toy Thomas the Tank Engine ran the length of the world's longest toy railway.

The record was set at the Workshops Rail Museum in Ipswich and on a 2.014km track, breaking the four year old record set in Mediage/Aqua City, Odaiba, Japan. It took 20 people 214 hours to prepare for the record attempt using 10,197 pieces of Thomas the Tank Engine™ Fisher-Price® TrackMaster™ track..

Monday 11 November may stick in the memories of a few of you. It is the day the QR National became a public company. At 11am a ceremonial mouse click was made and the shares became available for trading. There was much rejoicing, and there were rumours of cake in Callemondah.

Despite the mainly negative press about the float, at the time of writing the shares have been trading three weeks and have followed a modest upward trend - \$2.70 per share at the time of going to press.

If you didn't buy shares in QR National and now feel you are missing out on the huge wealth generated, never fear as you can always come to an RTSA technical presentation - they are free!

Meet the Railway People Expo

On 9 October the Queensland Chapter hosted a *Meet the Railway People Expo*, a symposium to for undergraduates to learn about the rail industry. The symposium was not intended to be a career fair, but a means of making undergraduates aware of the career opportunities in the rail industry and, hopefully, steer them to the rail industry when they are ready to leave Uni.

The symposium was very well received by those that attended with many students stating that they did not realise that the rail industry offers so many career options. We look forward to a repeat event next year.

On behalf of the Committee and members I would like to thank the companies that were represented, flying the flag for the rail industry and the staff of those companies who made the time to attend. I would particularly like to thank

the those that organised the symposium, Sekar (Manicka Dhanasekar) who enthusiastically took on the responsibility for organising the event and pulled everything together, almost single handed.

Recent Meetings

In the last quarter the Queensland Chapter hosted two Eminent Speakers, the *Meet the Railway People Expo*, a technical meeting and postponed a site visit.

16 September 2010

Rail - Creating the 21st Century Transport System of Choice. Andrew McNaughton, Chief Engineer, High Speed 2, and Visiting Professor Engineering, Imperial College. Andrew was a Keynote Speaker at CORE2010.

23 September 2010

Mike Roney, General Manager - Technical Standards and Chief Engineer with Canadian Pacific. Michael was also a Keynote Speaker at CORE2010.

9 October 2010

Meet the Railway People Expo, QUT Gardens Point.

24 November 2010

Lessons Learnt from Waterfall.

10 December 2010

Christmas Drinks and Technical Meeting - Robin Walpole talked about his experiences working on two railways in Africa.

Upcoming Events

The committee is working on the 2011 programme. As events and speakers are confirmed flyers will be circulated. The technical meetings will be held on the fourth Wednesday of the month.

On behalf of the Queensland Committee I would like to wish all our members and their families a happy Christmas and New Year and we look forward to seeing you at the technical meetings in 2011.

Alex Howie
Queensland Chapter Chair

South Australia

The RTSA SA Chapter has concluded another busy and successful year, with many highlights punctuated by CORE. This year saw us move our meetings to new premises within the city and involved a full calendar of ten technical seminars/ field trips, with healthy attendances throughout.

We have also continued our close working relationships with sister organisations, holding joint meetings with Permanent Way Institution, Institution of Railway Signal

Engineers, and the Mechanical Joint Technical Programme.

Our annual dinner meeting on **Tuesday 30 November** was held in conjunction with the AGM. Good sponsorship was received, enabling prices to be held at a modest level. We continued last year's initiative of providing an entertaining speaker and a non-railway-related topic of broad interest - this time being keynote speaker John Ryan from the Adelaide Zoo, who presented an insight into this iconic Adelaide attraction and its world conservation and breeding programmes.

Summarising our 2010 programme, it comprised:

4 February 2010

Continuing with the tradition of starting the year with a topic to broaden viewpoints, Stephen Townsend and Max Shuard gave an enlightening presentation on their observations from the September 2009 RTSA Study Tour on Asian metro systems.

4 March 2010

In our first meeting at the new city premises, Roy Nancarrow took us through developing a rail focussed non-destructive testing course for ARTC inspectors.

8 April 2010

We joined the PWI on a chartered trip on the then recently-opened tramline extension to the Entertainment Centre on a new Alstom Citadis tram - together with inspections of these vehicles in the pit of the Glengowrie tram depot, new tramway trackwork in this depot, and the then recently-completed South Road tram overpass.

6 May 2010

A technical presentation by Paul Gelston, the DTEI Project Director that managed the South Road tramline overpass.

3 June 2010

Joining the PWI on their afternoon excursion to the construction of the Dry Creek Railcar Depot, designed for housing the future 25kV EMU fleet, accommodating later standardisation, and allowing the current depot's North Terrace site to be used for redevelopment.

1 July 2010

An excellent presentation of the Cairns Tilt Train Accident by Larry Matters of the ATSB.

5 August 2010

We hosted the PWI and Mechanic Society in a joint meeting to hear of recent progress by Pacific National on wheel-profile analysis, presented by Carolyn Southern and Nick Petticrew. A highlight of this meeting was a presentation to Dr Ron Fitch in honour of his dedication and long service to the Australian rail industry and to mark the occasion of his recent 100th birthday. This gift was

capably organised by John Adams, who also gave a superb presentational address to one of our biggest audiences yet.

2 September 2010

A joint meeting hosted by the IRSE at Adelaide Oval on Signalling Outcomes for TransAdelaide as part of the new Dry Creek Depot, Seaford Extension and Immunisation for Electrification, presented by Koos Rohlandt.

27 September 2010

CORE speaker Andrew McNaughton reprised his thorough and challenging keynote address after spending the weekend in Adelaide as part of the national CORE Eminent Speaker Tour. The co-ordination of this visit by Andrew and his wife was masterminded by John Dring, with many members of the committee participating and assisting in its many stages.

4 November 2010

A technical presentation on the recent reconstruction of the Port Adelaide Viaduct by DTEI's Guillermina Perelmuter.

Chairman's Comments

This being my first year as Chair I owe a particular thankyou to the Chapter Committee for their assistance, consistency and behind-the-scenes work pulling all this together. New processes and procedures were involved in the venue-change, which they all took in their stride.

Early in the year we welcomed Carolyn Southern on the Committee after she was co-opted to represent professional development matters; after the AGM we also gave a fond farewell to those who are leaving the Committee.

I would sincerely like to thank these individuals, many of whom are long-standing - namely Immediate Past Chair Duncan McLeod and Committee Members Bill Edmonds, Steve Torok and Micheal Forbes; Treasurer Rob Schweiger is stepping down but will continue to sit on the Committee, whereas we loose Newsletter Editor Lucie Mitchell, who is returning to Sydney.

I also welcome a number of new faces to the Committee, namely Doug Gillot, Mike Hurd, Russell Fuller, Simon Mitchell and Peter Haskard. Peter will be taking over the Secretaryship from Alice Weatherford, who steps up to a new role as Treasurer. I look forward to delivering what already looks like a very full program for 2011 with our new Committee.

Daniel Martucci, SA Chapter Chair

Victoria & Tasmania

The Chapter events this quarter have covered a wide geographical area and topics that have been just as diverse.

September

We were very fortunate to be able to feature the key note speaker from CORE, Eminent Professor Andrew McNaughton. Andrew's focus was a high level discussion on long distance and regional market demands, urban passenger and commuter needs and demand trends as well as High Speed Rail emergence in the UK and potentially Australia as an option for the near future.

The evening was a bonus for many who could not make it to CORE and the Chapter event attracted over 95 attendees.

This night was sponsored by Parsons Brinkerhoff and we greatly appreciate their support for our Chapter activities.

October

An IRSE and RTSA joint effort, conducted in the afternoon rather than the evening as is typical of RTSA events.

The first presentation was from the recipients of the RTSA 2009 Student Thesis award, Vic Lorena and Clara Mulholland on a "proposed orbital Public Transport system for Melbourne". It is opportunities like this, for our younger talent to present their work that will make our rail future stronger.

A second presentation from Andrew Gaucci (SKM) had a Regional focus and concentrated on rail freight movements in the Geelong area. This provided attendees at the event with an insight on how things were happening outside the metropolitan area.

November

A late change in presentation was required due to circumstances beyond our control.

However this was an excellent opportunity to restore some balance between heavy rail and light rail. Light rail (Trams) is quite often over shadowed by the heavy rail projects currently happening or being planned.

Susan Patrick from Yarra Trams gave an excellent presentation not only on Yarra Trams, but included a detailed presentation on the upgrade of the infrastructure on Route 86 in regard to community consultation, design and testing of options for the rollout of the program.

Questions were thick and fast and indicated a strong level of interest from those present.

We have already made arrangements for Susan to give us a further update on the project as it progresses over the next 12-8 months.

The November Chapter event was the final for the 2010 calendar year and the Committee is well advanced in planning the program for 2011.

Russell Trevaskis
Victoria & Tasmania Chapter Chair

New South Wales

The NSW Chapter has enjoyed another successful year with a total of 11 technical meetings being held. These proved to be quality presentations with the emphasis on current engineering developments and topics in the railway industry. The presentations have delivered the commitment for engineers to continue with their professional development.

There have been three technical meetings and two events held since the previous Newsletter covering a range of topics. The Chapter's AGM was also held on 4 August 2010:

Over the past period, presentations have included:

October

Busways - A Threat to Railways and Light Rail?, Basil Hancock, RailCorp

November

Automatic Train Protection, Craig Stanfield, Project Director ATP RailCorp

December

Christmas Heritage Topic - Rebirth of a Legend: 3801 in the 21st Century, Craig Mackey (NSWRM) and Chris Hoskin (Halcrow)

There will be no January Chapter activity, but the Chapter committee is preparing a plan for chapter activities for 2011.

Members will be advised by e-mail of the next technical meeting, scheduled for the first Wednesday of February. Details will also be placed on our website.

Katharina Gerstmann, NSW Chapter Chair

Western Australia

The WA Chapter has completed its activities for the year. The highlights of the year have been the continuing strong level of attendance at lunchtime presentations, our sponsorship and support for the Science and Engineering Challenge, and our first Annual Dinner.

Lunchtime Presentations

The 2010 program included nine lunch time presentations, one site visit and the 2010 Annual Dinner. A wide range of topics were included in the program, and it included the two keynote speakers from CORE 2010. Mike Roney from Canada and Professor Andrew McNaughton from England provided an international perspective to the presentation program. Local tours and smaller presentation/discussion sessions were also arranged for our international guests.

Four functions have been held since our last report to complete the programme for 2010.

20 September 2010

Michael Roney, General Manager, Standards and Chief Engineer Canadian Pacific, and Keynote Speaker at CORE 2010, presented his topic titled **Railways – a Canadian Experience**. This presentation was well received and drew many questions.

28 September 2010

Andrew Mc Naughton, Chief Engineer of High Speed Two Ltd (UK) and Visiting Professor of Engineering, Imperial College, London, and Keynote Speaker at CORE 2010, on the topic was **Rail – Creating the 21st Century Transport System of Choice**.

Andrew provided a very interesting and entertaining view of the way forward for the rail industry.

14 October 2010

On October 14, Les Smith presented his paper titled **20 Years with the Eye of the Tiger** which provided a fascinating first hand insight into the developing relationship with the Chinese rail industry. Les was able to take members from the very earliest contacts to the present day relationships.

November 2010

The final presentation for the year was Reece Waldoock's **The Future Direction of Transport in WA**. The massive expected growth in passenger and freight transport in WA requires bold responses from government. After completing his first 150 days in the recently created role of Director General of Transport, Reece Waldoock outlined his vision for future policy and planning initiatives to address this challenge.

Annual Dinner

The first WA Chapter Annual Dinner was held in April and it attracted 190 members and guests. This was a very successful evening of networking, and our guest speaker Lisa Scaffidi, Lord Mayor, City of Perth provided an excellent presentation on the developments planned for the City. Based on this year's level of support, it is intended to make the Dinner an annual event.

The Science and Engineering Challenge

The Chapter was again a sponsor and supporter of The Science and Engineering Challenge. The WA Chapter is pleased to support the event which was held in November with events in Perth and a number of regional locations. It is a competition for year 9 high school students that aims to present engineering in an inspirational manner, excite the imagination of prospective students and provoke their interest through a variety of well designed tasks. Activities range from problem solving scenarios to designing and building projects.

Chapter Committee

At the AGM held on December 2, the new chapter committee was elected. The new committee is as follows:

Chairman John Goodall
Secretary John Syers
Deputy Chair Graham Holden

Committee Members (continuing from 2010)

Bruce Greening
Barry Moore
Hugh Smith
Rebecca Taylor
Qian Zheng (Chen)
Maneesh Gupta
Bruce Keay
John Wager
An Tang

Committee Members (new)

Peter Martinovich
Aaron Butters

The 2010 committee has been very active this year and the new committee is planning to further increase the number and range of member activities throughout 2011.

The WA Chapter committee extends good wishes to members for the Christmas and festive season and looks forward to the continued strong support in 2011.

John Goodall
WA Chapter Chair

New Zealand

The NZ Chapter briefly drew breath after CORE before dealing with the post conference follow-through tasks. The soft copy of conference proceedings has been reissued as a single pdf as part of an expanded content DVD. I hope delegates find additional value in the coverage of the keynote addresses now included.

Thanks from NZ to all who came to Wellington and helped make the conference what it was. And thanks to all who contributed to the organisation and technical content - the work of the technical team was particularly impressive with the expanded program and it is great to see the reach of the RTSA web of peer reviewers.

Plans for 2011 are taking place. The committee elected in November has an expanded Auckland membership and we plan to build a stronger presence there. The year's program will build on the successful evening meeting program in both Wellington and Auckland but we plan to build in some extras. Watch out for meeting notices in the New Year and get in touch if you have a program suggestion to offer.

Andrew Hunt
NZ Chapter Chair