Rail Horizons

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ENGINEERS AUSTRALIA RTSA

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From the Executive Chairman

In this issue you will see a special report from Ravi Ravitharan on the trial Meet the Railway People Expo held in Melbourne in early September. With the lessons learnt from this inaugural event, we hope that this type of event will become a regular occurrence for all RTSA Chapters in the future.

The RTSA is also tackling the issue of encouraging more young people to become interested in a railway career on a number of other fronts. For those not lucky enough to be on the current STORE trip to Asia, you will probably not be aware of the assistance RTSA has given to 10 young people from the rail industry to make the trip. We were very pleased to help them enjoy the trip of a career.

Those in New South Wales will be aware of the Video Competition underway (see p13) aimed at younger people to encourage an active and safe observation of how the rail system works, and we will be featuring the winning video(s) on our website later on.

In New Zealand, the CORE2010 organising committee will be making arrangements for CORE participation by younger RTSA members, just as we did in Perth last year. I'm sure the complementary membership and other benefits were not lost on those qualifying and we are optimistic about those members re-subscribing.

I am particularly pleased about the number of younger members joining our Chapter Committees where they can have real impact on the type of events we run. Congratulations and thanks for making the effort to contribute.

I look forward to seeing more of you on the Executive Committee as well.

In regard to our cooperative working relationship with Australasian Railway Association (ARA) and Rail Industry Safety and Standards Board (RISSB) I was delighted to speak and attend the Technology Workshop hosted by RISSB in Melbourne last month.

These are annual events where an attempt is made to present and put some structure around the way the industry develops and implements technology.

It was a great success with overseas speakers from Canada, Switzerland and Japan as well as some of our own leading edge technologists from Defence and Telstra as well as CRC for Rail Innovation and TTG Rail Technology providing an insight to what is being done and what may be possible. The Australian Railway Industry Corporation (ARIC) and ARA played a leading role in bringing the parties together. You can grab my presentation of 'Accelerated Learning' RTSA's priority, on our website. RISSB will also be making the results of the workshop more widely known.

Finally our website is being updated daily with events, presentations and news so make sure you check it out and please give us some feedback so we can make it even better.

Martin Baggott
RTSA Executive Chairman

Meet the Railway People Expo

The RTSA held a successful *Meet the Railway People Expo* in Melbourne during September to as part of its ongoing long-term commitment to the rail industry. The RTSA seeks to play its part in helping to attract and retain the brightest undergraduates.

Aimed at undergraduate students (from years 1 to 4) from Victorian Universities the Expo sought to highlight some of the exciting career opportunities available to them within the rail industry.

A full illustrated report is included in this issue of Rail Horizons - see Page 8

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PO Box 6238
Kingston ACT 2604

www.rtsa.com.au

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Editorial Address:
PO Box 595
Prospect East SA 5082
e-mail: grms@bigpond.com

Point of View

Max Michell

Every so often it is a useful exercise to stand back and take a long look at the recent past, if only to gauge the value of what has been done and to provide some indication of what to do (or not to do) in the future.

Step back some 20 years or so – the mainstream railways were predominantly in State or Federal government hands, with traditional geographic and institutional boundaries, in many cases with very traditional attitudes and only a relatively embryonic understanding of 'market' and 'customer'.

But there were stirrings afoot and the first sign was the emergence of National Rail as an operator (although at the time it was intended it also take over appropriate track) which transcended borders - a truly national operator capable of sorting out the then loss making inter-state business.

Formation of National Rail was blessed by the Federal Government with a $0.5 billion 'One Nation' rail funding package, the first decent funding since back in the heady days of the mid 1970's.

Predictably the majority of this funding went to NSW where a long history of erratic and misplaced capital funding had left parts of that system in a significantly run-down state. It also was a precedent that has been assiduously followed by state governments and the private sector since, where assets have been allowed to (or deliberately) run down and then used to hold the Federal Government to ransom to bail out the mendicant organisation.

One Nation funding made two significant changes, other than just being catch-up money. It standardised the Melbourne to Adelaide line (thus completing the one gauge inter-capital network) and at that time it enabled trains east of Adelaide heading to Perth to be lengthened to 1500 metres.

At roughly the same time the mantra of 'competition policy' started to pervade political and commercial life. In the case of the rail network it began with disintegration of vertically integrated railway networks into above rail (operators) and below rail (infrastructure owners). This move brought two 'next step' events. The progressive transfer of pre-existing state freight rail to the private sector (yes, I know there are the exceptions), along with the rise of a number of small niche operators.

In some cases the below rail was retained as a separate entity (AN, NSW) while in others the track was passed to control of the privatised freight organisations by lease. So a form of re-integration followed on from privatisation, confounding the mantra to some degree, but in the longer

run being the principal source of profits for the private sector freight operators.

Progressive under-funding of infrastructure maintenance, along with an almost total lack of cooperation with other railway organisations and governments, brought the relatively complete and functional regional rail network almost to a standstill. In the mean time the value of the *accrued maintenance deficit* was trousered by the private sector, who then on-sold the property to the next predator. These then successfully plundered the above rail assets, leaving the regional networks in all but WA and Queensland in a parlous state.

At the same time three main stream operators rose out of the initial privatised primordial soup; Pacific National, created by an unholy combination of National Rail and the NSW FreightCorp; Queensland Rail; and significantly the logistics firm SCT.

Pacific National, despite being by far the biggest of the main line operators, managed to make very little progress in establishing itself in a growing market, preferring to blame others for their inadequacies and allowing itself to be diverted by some very childish antics at the expense of the rail industry and indeed the company shareholders. In its latter day guise, as a part of Asciano with just a main line rail operation, and stevedoring oligopoly, it might have been expected that a focus on these two businesses would have produced meaningful results. Apparently not so, at least with their rail business, with some significant losses of market share in their bulk activities occurring and probable continuing loss of market share in their inter-modal business.

Queensland Rail expanded beyond their traditional boundaries late in the piece, and with some relatively tired and unreliable motive power they managed to build a reputation for unreliability. It has taken a long time for QR to build a small traffic base, and even that is not yet at a level worthy of a daily inter-capital frequency. Unexpired long term contracts (with other operators) and lack of connectivity (between services) have made life hard for this operator.

Probably the most impressive main line operator is SCT Logistics. This business used to despatch vanloads of freight from Melbourne to Perth until NR, in a moment of sacrificial silliness, demanded that they containerise all their traffic. The company was a bit smarter than that and commenced one of the very early third party operations, running their own train with leased equipment and power across the country on a twice weekly schedule.

Over time they built tonnage and frequency, opened new warehouse terminals, added services from Parkes and most importantly progressively acquired their own rolling stock and locomotives based on the best available equipment. Their wagon designs, particularly the super-cube box cars that stand way above the normal rolling stock outline, are a case in point, using a concept that potentially wallops any comparable traffic in containers.

The fact that SCT consistently run the heaviest trains across the country, with more real payload than any other operator could currently achieve, speaks volumes for this company's understanding of the market and their understanding of what makes freighting (by rail or otherwise) a profitable business. SCT must surely be something of an inspiration to any general freight rail operator in this country.

While all this churning has been going on above rail, the below rail picture has finally settled to a relatively stable situation. Most of the nationally important railways are now leased or managed by ARTC, while a large proportion of the tracks once in the hands of the failed private companies are now back in the hands of state governments. There are obvious further changes to the 'below rail' scene that could (and in some cases should) happen, but in general the direction followed in this segment of the business looks to be on the right track. Although the jury is still out in WA with major question marks still hanging over some of the grain network there.

While all this was going on in the freight area the quite substantial urban passenger rail networks soldiered on under their respective state governments. The traditional 'heavy' networks in Sydney and Melbourne went on widely divergent paths in terms of management and performance. Brisbane, with its relatively newly electrified network and Adelaide, with its small diesel railcar operation, represented other aspects of urban rail.

The standout has been in Perth, which was virtually a basket case 20 years ago (with tired railcars and loco hauled trains struggling with a small traffic base), but with a lot of vision, backed by some similarly endowed political drive, it has become the show piece urban network in this country.

The extraordinary growth in passenger numbers in Melbourne, Brisbane and Perth (all at historical highs) have tended to attract the attention of the Federal government, which has at last seen fit to engage in public transport funding for the first time. However it is apparent that the Federal criteria for funding, relies much more on properly scoped and quantified projects than has been the case with some states in the past. That in itself must be a significant change in direction.

So where are we now after some 20 years of relative turmoil in the industry? Rail freight has been largely sorted out, albeit with a still heavily flawed model, while the infrastructure picture (given an imposed vertical separation of traditional type railways) is in reasonable shape but with some evolutionary way to go. New found interest at a national level in public transport is a welcome shift in the tectonics of the Federation. So where are the unresolved issues?

The regional rail networks, often severely degraded under their short term private lessees, have received scant attention from any government. Institutional and operational impositions, supported by those obsessive fiefdoms in each state generously labelled as 'The Regulator', have skewed the balance toward that side of the business focussed on *main line* and *high volume*.

There is little attention paid to the low volume, but potentially low cost, regional network with any supporting arrangements or sympathetic regulatory rules that deal with 'fit for purpose' rather than the nebulous concept of absolute safety in a simplistic *one size fits all* regime.

Allied to this is that the privatised freight model is still significantly flawed. It seems to this author at least that the State responsibility for rail transport lies at the root of these problems and until there is action (and not just weasel words) in relation to a single rail regulator, simplified operating rules, recognition of regional rail as a specialised situation in the overall package and other similar changes little real progress will be made.

Under the current regime it is only a matter of time before we see screaming headlines - "Rail Regulator causes Death!"

As things stand flawed legislation has focussed rail regulation on the bureaucratic pursuit of a singular objective of 'rail safety'. Much of their deliberation seem to be based on precedent, rather than sound commercial and/or scientific grounds, and is heavily skewed toward an odious requirement for volumes of paperwork that may be within the capability of a large organisation but is a major impost for a small one.

Delays in getting through the resulting bureaucratic mess have and do result in lost opportunities for freight on rail. As most aware observers will appreciate freight not on rail is almost always on road, and freight on road (predominantly in semis or B-doubles) is statistically associated with a significant proportion of death and injury on the roads.

Trucks do not necessarily cause crashes, but when a truck is involved the consequences are far more serious than if the same situation just involved domestic passenger vehicles. So in a roundabout way the existing application of 'rail safety', as enshrined in legislation that in part has been a knee jerk reaction to occasional rail crashes, is actually increasing the death and injury rate overall, although the rail related apart of that toll may well be marginally better.

The ARA is quite right to demand that the ATC get a lot more grunt into their deliberations on this topic. The sooner there is a single regulator the sooner we may be able to get a more sympathetic legislative regime to support rather than conflict with the rail industry and community objectives.

TRAVELLING AROUND MELBOURNE - A General Scheme Of Metro Rail Development for Melbourne

by C Louis Fouvy, CPEng,

Foreword

"Public transport is the life-blood of a City". So said Melbourne's major public transport operators, the Victorian Railways [VR] and the Melbourne & Metropolitan Tramways Board [MMTB], in the 1950s and 1960s. They were absolutely right. Public transport is an essential service, a utility as essential as our electricity, gas and water supplies. No major metropolis can operate cohesively, economically, effectively and efficiently unless it is compactly laid out so that its transport infrastructure, a necessary but unproductive industry, operates efficiently with transport journey distances minimized.

Cohesive and efficient operation of a city's business and transport within the metropolis requires an overall average gross population density of at least 50 to 100 persons per hectare. This was said for Melbourne as early as the *1929 Metropolitan Town Planning Commission Report*. Cities which possess a comprehensive public transport system and in which the major movement of its people is by public transport, contribute greatly to this cohesiveness, and work significantly more economically and efficiently than cities which are sprawled and where person travel is car-dominated.

Today, the metropolis of Melbourne operates inefficiently. It is a severely sprawled city, a victim of the 90-year old fundamental contradiction between what makes a city compact or sprawled. Its overall average gross population density of the 18 municipalities within 20 km of the city centre is only 20 persons per hectare. The state government's recent report on *Transport Congestion* stated that, because of its current transport congestion [mainly from road traffic], the overall cost to the metropolis, and its people, is of the order of $4 billion annually. This is money completely wasted. We in Melbourne can no longer afford to pay for the inefficiencies of the present high levels of private car use. Our limited available capital funds are much more effectively spent on public transport extensions, improvements and refurbishments.

A major contributor to Melbourne's transport congestion and inefficiency is its lack of a comprehensive and co-ordinated public transport system, and especially of the system of trunk routes as provided by the suburban railways. This system provides the fast travel, at schedule speeds of 40 km/h or more, for those making journeys longer than around 5 km. The necessary and complementary local-feeder tram and bus routes provide convenient transport at schedule speeds of 20 to 25 km/h for those making short journeys and those not close to a trunk route station. Together they provide a very viable alternative to private car travel. At present, Melbourne's trunk [suburban electric railway] system serves only 25 to 30% of its urban area.

The major area of influence of a suburban railway station extends out to 800 m, covering an area of 2 sq km around a station, so that trunk services are completely inadequate when the number of stations within a municipality is less than 0,5 stations per sq km. With a basic 2 km grid of radial and ring trunk routes with stations at 1 km intervals, the index has an average of 0,8. The municipal criterion of at least 0,8 stations per sq km is thus useful for determining the adequacy of the trunk services within their areas.

Current data for the 31 municipalities within the Melbourne Statistical Division show this index to vary from zero to 0,59. Three municipalities, Manningham, Melton and Mornington Peninsula, have indexes of zero because of no suburban electric rail service. The remainder, except for Yarra and Stonnington, have indexes between near zero and 0,30 [for the City of Melbourne]. The Cities of Yarra and Stonnington have indexes, respectively, of 0,46 and 0,59, but mainly only because they are inner suburban areas, and because their particular shapes contain relatively more railway lines and stations.

This situation now needs to be remedied, not just by more public transport plans, but by immediate action to implement them. This report proposes a ***General Scheme of Metro Rail Development for the Melbourne Region***, which is designed to guide this immediate action of refurbishing and extending Melbourne's trunk route system and increasing this city's transport efficiency.

The idea of a *General Scheme of Public Transport Development for the Metropolis of Melbourne* is not new. On its legislative establishment in 1918 by Act of the Victorian Parliament [# 2995], the MMTB was required not only to continue operating the tram services it had taken over, and bring them under its unified control, but also to prepare a *General Scheme of Tramway Development for the Metropolis of Melbourne* to guide Melbourne's future development. Tramway extensions proposed in that Scheme had greater government assurance of subsequent implementation. The Scheme was published in 1923 and continued in use into the 1960s.

Melbourne now urgently needs a General Scheme of Metro trunk route development to make up for the past 80 years' almost total neglect, and to guide its future development into becoming the compact, transport and energy-efficient, environmentally sustainable metropolis it needs to be. If the *Melbourne 2030* plan, which postulates and completely depends on an adequate trunk route system, is to come to fruition, it requires the immediate implementation of a *General Scheme of Metro Development* such as is described in this report.

The distinct advantage of having a General Scheme of Metro Development is that when the earlier sections are built, they can be designed to accommodate the later extensions. Such a Scheme therefore avoids the inefficiencies and costly demolitions needed when ad hoc extensions are made without thought for future developments.

This Scheme encompasses the complete refurbishment and extension of Melbourne's suburban railway system. Today's system carries of the order of 600 000 daily person trips. As an extended and refurbished system it will need to carry a minimum of 6 000 000 daily person trips. On this refurbishment, Melbourne will become greatly less energy-intensive and more environmentally sustainable, requiring the greater part of all electrical energy used to be generated from geothermal, hydro [where available], photo-voltaic, tidal and wind power. Here, as elsewhere, radical changes in lifestyle and Economy policies are needed ; "business-as-usual" and "more-of-the-same" are no longer valid.

The task of achieving this development, refurbishment and passenger growth requires

1. a ***Regional Public Transport Authority*** to gather into one united organization the present fragmentation of passenger traffic, accounting, and engineering planning, construction and maintenance businesses, with the unified primary service aim of "taking people where and when they want to go, economically, efficiently, reliably and safely" [not the benefit of shareholders !!],
2. a comprehensive extension of trunk routes to serve the whole, not merely 25 to 30% of Melbourne's urban area, and
3. a thorough refurbishment of Melbourne's railway tracks and stations in order to
    a) make stations and services much more passenger friendly than at present,
    b) ensure high performance services, tracks and trains, and
    c) grade-separate all present railway-roadway level crossings.

This proposal recommends the continued use on all radial routes of the current suburban electric railway technology, but in a significantly upgraded form. This technology is the least costly in its capital-plus-operating costs both of carrying large passenger numbers, and of building and operating underground track. Because much new track is required, this is an excellent opportunity for building all new railway track and converting existing track to standard gauge [1435 mm], and converting the train electric supply from 1500 VDC to 25 kVAC. The trial of new technologies such as monorail and the Bishop Austrans personal transit systems is best kept for the trunk 40 km/h ***ring*** routes [which are likely to be mostly elevated].

The suburban electric lines to be extended, as a matter of first priority, comprise

1) Footscray-Werribee via Kingsville, Laverton Nth, Tarneit & Werribee Village,
2) Flinders St-Sth Kingsville via Southbank, Fishermens Bend & Spotswood,
3) Southbank-Malvern via Domain, Prahran West, Windsor, Windsor East & Armadale South,
4) Prahran West-Elsternwick via St Kilda Centre & Elwood,
5) a 6-track N-S City Underground from Southbank-Victoria Market via Flinders St, CITY & Melbourne Central,
6) Victoria Market-Royal Park via North Melb Town Hall, Haines, Canning & Melrose,
7) Victoria Market & Royal Park-Rushall & Westgarth via Haymarket, Melb University, Nth Carlton & Nth Fitzroy,
8) Nth Melbourne-Rushall & Westgarth via S Cross, GPO, CITY, Parliament [an ultimately 4-track Bourke St underground], Fitzroy Sth, Fitzroy & Queens Pde,
9) a Ginifer-Keilor Plains loop via Brimbank Centre, Ravenhall Nth, Caroline Springs Centre & Taylors Hill,
10) electrification from Watergardens-Sunbury with stations at Sydenham, Calder Park, Diggers Rest, Jacksons Hill & Shields,
11) Northcote-S Morang & Whittlesea via Northcote Plaza, Sth Thornbury, East Preston, Northland, LaTrobe University, Bundoora, Mill Park Centre & Mill Pk Plaza, also Mill Pk Nth,
12) Epping-S Morang via East Epping & Mill Park North,
13) Melb University-Dandenong via Victoria Pk, Yarra Bend, Doncaster Shoppingtown, East Doncaster, Donvale, Ringwood, Heathmont, Wantirna, Knox City, Scoresby, Stud Park Centre & Dandenong Plaza,
14) Huntingdale-Stud Pk Centre & FTGully via Monash, Waverley Park, Lysterfield & Ferntree Gully South, and
15) Baxter-Mornington Centre via Moorooduc & Tanti Park.

To minimize disruption of rail passenger operations during the refurbishment process, it is important that these refurbishments of stations and track be begun as soon as possible alongside the proposed line extensions. Public transport is an essential service.

This report contains the data required for establishing the necessary Regional Public Transport Authority, for costing the proposed Metro developments, stations, tracks and vehicles, and for assessing their passenger carrying capacity by transportation study computer simulation procedures.

The process of developing, extending and refurbishing Melbourne's Metro trunk route system will be long and costly. A first estimate suggests that of the order of $3 billion will need to be spent annually for the next 20 years. Capital of this order is already available when we now know that remedying all the damage from Melbourne road traffic crashes is $2.85 billion annually [derived from an ATC 1996 report], and if the recently costed loss of $4 billion annually owing to transport congestion is accurate. Because amounts of this order are not yet accessible, the capital for starting these Metro developments, extensions and refurbishments needs to be made available through national and state government allocations and a combination of urban betterment, municipal, motor fuel, sales and other special taxes.

Investment in these proposed Metro developments, though long and costly, will bring benefits of much increased urban transport efficiency, a town plan in which many stations will each form a nucleus for attracting and sustaining major, suburban or local business districts around them, and many employment opportunities in their design, construction and operation. It will be a Metro system of which all Melburnians will be proud.

C Louis Fouvy graduated BEE (Melb, 1954), and followed a career as a full time professional engineer in the public transport industry from 1954 through 1988. Until 1983 he was employed by the M&MTB (Melbourne & Metropolitan Tramways Board) and from 1983 until 1988 by "The Met" and PTC (Public Transport Corporation).

He began as a young graduate engineer at Preston Testing Laboratories and finished there as Manager, Special (Engineering) Investigations. However, within this period he was seconded by the M&MTB from 1964 through 1969 as their technical engineering representative to the MMTS (Melbourne Metropolitan Transportation Study). This secondment then continued through to 1977 while working on further public transport planning work in what became the Vic Ministry of Transport Planning Division. In 1973 he spent a year's post-graduate study on Transportation Engineering at the University of California, Berkeley, USA from which he gained the degree of MS (Master of Science, in civil engineering).

Following retirement in 1988 to become a part-time consultant he also prepared and presented a number of strongly pro-public transport submissions to various enquiries during the 1990s. Having presented a paper on "Electric Vehicles" to the epoch-making 1998 Chartered Institute of Transport Symposium on the topic of "Beyond petroleum - vehicles and fuels for the future", it was becoming painfully obvious to Louis that the Victorian State Government was avoiding any serious future public transport planning, especially for the trunk route (suburban rail) system, which ultimately has led to the preparation of this paper.

Part Two will follow in the December issue of Rail Horizons.

Why Your World is to get a Whole Lot Smaller

Book review by Philip Laird

Hardly at all reported in Australia's capital city newspapers (except by the Courier Mail on 27 May *Economist Jeff Rubin says oil shortfall will end globalization*), this book warrants attention. So also does an accompanying prediction of the author in the Canadian media of oil prices reaching $US225 per barrel by 2012.

The author, a former chief economist at a large Canadian bank (CIBC) has a good track record earlier this decade in predicting oil prices. By way of example in 2000 he suggested that oil prices would hit $US50 a barrel within five years. He also takes the view that past oil price increases have triggered recessions in both the late Twentieth Century and the present severe recession.

The book covers how oil supply is being increasingly constrained (and hence more expensive to produce); also how demand for oil is increasing and particularly in the non-OECD countries. On recent growth rates, oil consumption outside the OECD will exceed the group's consumption by around 2012 (p 62) whilst car sales are booming in Brazil, Russia, India and China (the so called BRIC countries). Plus oil is sold very cheaply in some OPEC countries. Indeed, with reference to one country (Venezuela), in selling petrol at 25 cents per gallon (p 68) "the more you consume of your own oil, the higher the price you get for what's left."

In short "As for peak oil, it's not that the world is running out of oil in an absolute geological sense, but it is running out of the type of oil you and I can afford to fill your tank with." (Globe and Mail, 20 May, http://www.theglobeandmail.com/globe-investor/ask-jeff-rubin/article1141087/)

Along with North America, the book has frequent reference to Australia as a country dependent on cars and high energy inputs into its food production and economy.

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Meet the Railway People Expo

RTSA shows leadership in addressing skill shortages in the railway industry

The inaugural RTSA ***Meet the Railway People Expo*** was held successfully on Saturday 12 September 2009 at the Park Hyatt Hotel, Melbourne amidst the football fever sweeping the city at the time.

More than 90 industry participants including the CEO of Metro Trains Melbourne (MTM), the new franchisee appointed to operate and maintain the Melbourne train network, took part in the half day event. The attendance of Engineers Australia National President, Peter Godfrey; Madeleine McManus (State President - Victoria Division) and Glenda Graham (Executive Director - Victoria Division) at the Expo provided due recognition for this important RTSA initiative.

Rail industry representation was well covered with the participation of 30 organisations, though, it was noted that the rolling stock and signalling sectors of the industry were under represented. The 22 railway organisations which had display booths, created a buzz which accurately reflected the excitement and positive atmosphere that currently prevails within the industry.

There were 120 university representatives at the Expo from eight universities namely; Deakin, Melbourne, Monash, La Trobe, RMIT, QUT, Southern Cross and Swinburne. Even though most of the university participants were undergraduate students (from years 1 to 4), there were several postgraduate students. Additionally, academic and research staff attended the event to explore partnership opportunities which, in the long run, would benefit both the industry and the universities.

Students who attended the Expo were grateful to the RTSA for organising such an event and many of them indicated that rail was never on their radar as a potential career. They also have expressed the view that the Expo provided them with a positive impression of the industry.

Adam Gruszka, a fourth year Civil Engineering student has provided the following feedback

"...The Expo from a student's perspective was a success as it gave me insight into the Railway Engineering industry of which I had previously known little about. Very grateful to attend...."

The Secretary of the Victorian Department of Transport, Jim Betts, took part and made a brief presentation during the formal part of the Expo, outlining current railway projects and future railway activities planned in Victoria.

Following that, three young engineers; Will Street (GHD), Mina Hanna (Institute of Railway Technology) and Adam Morris (John Holland) shared their experiences within the railway industry during their relatively short careers.

These presentations and the style of delivery by the young presenters were very well received among the students who participated in the Expo. The positive start created by the presentations in the formal session flowed into the networking session which continued on even after the light lunch until the conclusion of the event at 2pm.

During the Expo, the message was emphasised that the rail industry has a bright future and there is a strong demand for large numbers of highly skilled engineering people to support future initiatives. The rail industry was portrayed also as being a close-knit community having great working relationships among the participants within its ranks. These positive messages must have made an impression on the students who flocked to the RTSA stand, several of whom showed a gratifying interest in becoming members.

It is perceived that the RTSA ***Meet the Railway People Expo*** definitely has made those who participated from the universities aware of the opportunities available. Unlike some of us who may have 'stumbled' into the railway industry, these students will be making much more conscious and reasoned decisions as to their possible future involvement in the industry.

The communication channels that have been created as a result of the Expo could prove to be of extraordinary value to the railway industry and there is a clear indication that the efforts of RTSA in organising the event were perceived to be well thought out and pointing in the right direction.

The Department of Transport Victoria, which sponsored the Expo, is thanked for its generous and very welcome support of this worthwhile and successful initiative.

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Hence the central question for such countries (as opposed to Europe whose rail infrastructure is in much better shape): will we decide to invest in "infrastructure that keeps us bound to oil consumption" (p23) so that "peak oil will soon lead to peak GDP". Or could we decouple our economy from oil and learn to live using less energy?

Much of the book is given, in a non-pessimistic way, to more local production of food and consumer goods. This should be assisted by carbon pricing, which the author suggests (p 166) is "good old-fashioned naked self interest"; also (p 169) "what we need to do is to impose a carbon cost on emitters at home, then impose the same standards on imports."

Expensive as this may be at home, it will be more expensive for ones competitors; thus bringing "a lot of long-lost jobs back home". Whether the Obama administration will introduce a carbon tariff remains to be seen; however some states in America have passed legislation to regulate their emissions and British Columbia in Canada has introduced a carbon tax.

Many questions are asked in this book. A good one for America, and Australia, is as follows (p 240) "will the billions earmarked for infrastructure be an investment in our past – in more highways and an obsolete auto industry – or in the future, in public transit and electric cars?"

Or (p 248), following comment about stimulus packages "will we spend our last dollars investing in new rail systems or refurbishing (or expanding) crumbling roads and bridges that are probably doomed to some form of abandonment anyway?"

The book, at 286 pages, includes detailed source notes, and an index. Although written from an economic perspective, it has some technical details on energy. For more on technical details, see *Transport Revolutions: Moving People and Freight without Oil* by Canadian authors Gilbert R and Perl A (2008, Earthscan - see Rail Express November 2008 p12 for a review) along with *Resilient Cities: Responding to peak oil and climate change* by Peter Newman, Timothy Beatley and Heather Boyer (2009, Island Press).

All three books are recommended reading. So also are sections of the February 2007 Report of the Senate Rural and Regional Affairs and Transport References Committee following its inquiry into Australia's future oil supply and alternative transport. The report notes, inter alia, "*that if there is a long term rise in the price of fuel, this will favour rail because fuel is a greater proportion of costs for road transport. This may suggest a need to increase the pace of catch up investment in rail infrastructure."*

Incidentally, some 30 months later, a government response to this report and its recommendations are still awaited. Meantime, Prime Minister Kevin Rudd's comment on 5 June 2008 that we have now reached the point in the world where *"more and more people are chasing less and less oil"* remains true.

In addition, the International Energy Agency who only in October 2004 in their World Energy Outlook concluded that *'oil prices reached in mid-2004 are unsustainable and market fundamentals will drive them down the next two years* (to $22 per barrel by 2006 - thus lulling nations like Australia into complacency) earlier this year were warning that there will be *"no spare oil capacity at the end of 2013."*

"**Why Your World is to get a Whole Lot Smaller"** by Jeff Rubin (2009), is published by Random House, New York.

Philip Laird is research fellow and associate professor at the Faculty of Informatics at the University of Wollongong.

This review was originally published in ***Australian Freight Logistics*** Issue 19 September/October 2009

CORE2010 Call for Abstracts

The CORE2010 Organising Committee has announced that Abstracts are now being invited for papers to be considered as part of the conference technical program which will build on the success of previous CORE events. With the theme ***Rail – Rejuvenation & Renaissance***, students, academics and industry professionals are invited to submit Abstracts of potential papers on a number of thematic strands listed on the CORE2010 web site with particular emphasis on rail rejuvenation.

Abstracts must no be longer than 350 words in length and should be formatted using the CORE 2010 Abstract Template which can also be found on the conference web site. All Abstracts are to be submitted online via the link provided.

Abstracts must be submitted by Friday 27 November 2009.

Authors will be notified of their Abstract status by e-mail in January 2010 and if successful, Full Papers will be required to be submitted no later than Friday 30 April 2010.

To ensure a high-quality conference, all submissions will be reviewed by the CORE 2010 Technical Committee for technical merit. Final acceptance of Full Papers will be based on peer review.

RAIL – REJUVENATION & RENAISSANCE
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South Australia

The South Australian Chapter continues to have a successful year, with well attended meetings. The Chapter committee welcomes Alice Weatherford as a co-opted member, replacing Tim Calver.

The meeting on **2 July** comprised a presentation by Philip Agnew of the Department for Transport, Energy and Infrastructure (DTEI) on the upgrading of the Belair Line, a major task which has just been completed. The upgrading of sleepers, ballast and formation has been a thorough and well engineered project.

On **6 August**, the South Australian Chapter again convened a joint meeting with the Mechanical Joint Technical Programme Committee and the Permanent Way Institution. The large audience was addressed by Carolyne Southern of Pacific National, on investigations into the very complex issues of managing noise emissions at the wheel/rail interface.

The September meeting on **3 September** featured the annual joint meeting hosted by IRSE. Guest speaker was Mike van de Worp, General Manager Communications & Control Systems, ARTC, who gave a most interesting address on ARTC's new communications system, with a glimpse of what might happen in the future with the proposed automatic train management system. Attendance was around 75.

Upcoming Events

Thursday 1 October 2009

Lucky Soegito from the Indonesian transport safety organisation will speak on railway accident investigation in Indonesia. Venue: Chapman Hall, Engineering House Bagot Street North Adelaide. Light refreshments from 5:30 pm, meeting commences 6:10 pm.

Thursday 5 November 2009

Joint meeting hosted by Permanent Way Institution. Ben Leske from ARTC will describe current "stimulus" works on the East West corridor. Lunchtime meeting, venue to be confirmed.

Tuesday 1 December 2009

Annual dinner and AGM. Keynote speaker will be Mark Carter on "Taking the Scenic Route" – a travelogue of well known and more obscure rail journeys from diverse locations around the world, covering scenery, people, and of course trains. This promises to be a most interesting evening, with something for everyone. Prior bookings are essential – details will be released soon.

Full details of Chapter activities (including venues, meeting times, programmes), and summaries of meeting presentations, are contained in the monthly Chapter newsletter, published on the RTSA website.

Duncan McLeod, SA Chapter Chair

Queensland

Chairman's Comments

One of the longest modern rail journeys came to an end at Roma Street station this month. The Q150 Steam Train journey covered over 9000km visiting 30 towns and regional centres across Queensland as part of Queensland's Q150 celebrations.

The first trip departed Roma Street Station on 14 April and five of the QR heritage fleet have been utilised on the journeys. It really is wonderful to see QR included as Queensland celebrates its 150th birthday. For 140 of these 150 years, QR has been instrumental in the social and commercial development of the state.

The Premier has been on a tour of the state too. Over the last few weeks Premier Bligh and Treasurer Fraser have been visiting many regional infrastructure projects across the state including the $500 million Jillalan Yard expansion .

It was very nice that the Premier and the Treasurer made the time to drop in on some of the local chapters of the "railway unions" (as reported on the news) in their travels. The unions took the time to politely express their reservations about the sale of QR.

Speaking of the sale, last month the Premier announced that the non-coal rail network is now off the market. That is the below rail assets.

The day before the Premier and Treasurer dropped in to check on Jilalan the All Star team took out the honours at the annual Silver Spike competition at the EKKA (the Brisbane Exhibition). It took the All Stars six minutes and four seconds to build the 13 metres of track, beating the North Queensland team. The track construction competitions were revived 12 years ago.

While we are discussing important rail related competitions; on the 22 July 'The Lost Boys' displayed great erudition as they triumphed at the 2009 RTSA Queensland Chapter AGM Trivia Extravaganza.

One hundred and thirty members and guests enjoyed the RTSA Queensland Chapter Annual General Meeting, Dinner and Trivia Extravaganza at the Queensland Irish Club. During the AGM last years committee was re-elected for another term. John Davey was re-elected as Secretary and Robert Wilkinson was elected as Treasurer. Alex Howie remains as Chapter Chair.

In the last quarter the Chapter also held two technical presentations, details of which are listed below.

The committee is keen to hear from members who have topics which they would like to hear about, or give a presentation on, or arrange a field trip. Remember it is your RTSA.

If you have a colleague who may be interested or benefit from membership please encourage them to join. The society is *for all who have an interest in railway technology and management*…

Recent Meetings

24 June 2009

Southern Rail Freight Corridor; The Southern Rail Freight Corridor is a proposed rail link from the west of Ipswich to the standard gauge interstate track at Bromelton.

Ken Bagget and Chris Cantwell of AECOM gave an interesting overview of the Southern Rail Freight Corridor Study. The presentation outlined the drivers for the study and the technical, social, and environmental issues that were encountered during the study.

22 July 2009

RTSA Queensland Chapter Annual General Meeting, Dinner and Trivia Extravaganza. Over 130 members and guests attended the Queensland Chapter AGM including the RTSA Executive Chair, Martin Baggott, EA Queensland President Andrew Chapman.

During the AGM the Queensland Chapter Committee was returned and Robert Wilkinson became the chapter Treasurer.

20 August 2009

We were fortunate to have Dr Felix Laube of SMA und Partner AG stop in Brisbane for a day on his way home to Switzerland. While working for SBB Felix developed a system of managing the rail system, giving flexibility to adjust for delayed trains, and pass on information to the drivers and passengers across the SBB rail network, a system that carries over 9000 train moments a day.

Upcoming Events

28 October 2009

Topic and speaker to be confirmed.

25 November 2009

ECP train braking by Keith Gollogly of Interfleet Technology.

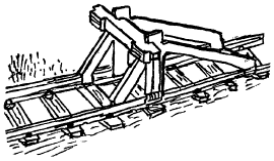
December 2009

December Technical meeting and Christmas Drinks. Date, topic and speaker to be confirmed.

Please see the RTSA website for more info and dates

The committee is keen to hear ideas from members of topics they would like to hear, or that they could give a presentation on, or see a particular field trip arranged. Remember it is your RTSA.

Alex Howie
Queensland
Chapter Chair



Victoria & Tasmania

The following is a summary of the Annual report provided to the Vic Chapter members at the Annual General Meeting conducted in August 2009.

Over the course of the last 12 months the Victoria Chapter committee has arranged no less than **10** Chapter events. A brief overview of the events is as follows.

5 Technical presentations (Track/Civil)

Andrew Cole
Warwick Kincher
Peter Munro (dual program)
Kevin Marchant
Darrien Welsby

2 Technical site visits (Rolling Stock)

EDI Rail - maintenance depot
Bombardier - maintenance and vehicle construction facility

4 Special interest presentations

Andrew McCusker - MTR Hong Kong
Tony Canavan - Department of Treasury and Finance
Jonathan Metcalfe - Chairman Connex Melbourne
Ravi Ravitharan - RTSA Professional Development Program (dual program)

A number of events stood out as being of particular interest as evidenced by the strong support of member and guest attendees and the level of discussion and questions generated after the presentations.

- Rail Operations in Hong Kong generated interest from all quarters, extending the event time beyond the planned 2 hours.
- Meeting public transport needs to meet changing demographics (Tony Canavan) was something quite new for the technically minded engineering group that attended the night, and
- Issues facing the Metropolitan Rail Operator in a time of unprecedented patronage growth from Jonathan Metcalfe was a topic that captured the whole audience at our popular Dinner meeting. In fact this event has proved so popular for not only networking but allowing our partners to come along and see 'what we do', that we will need to expand our choice of venue for future dinner meetings.

In July we conducted a joint event with the Victoria division of Young Engineers Australia. The RTSA award for the 'Young Rail Engineer 2009' was presented to Chris Gordon, and guest presenter for the evening was Kevin Marchant ,Thiess, on the innovative construction of rail bridges for the by pass route on the Ballarat corridor, for the Regional Fast Rail project. This event proved to be

hugely successful. The presentation by Kevin was of great interest and held the attention of all who attended. Future joint events will be explored with YEA.

The AGM was conducted in August, and whilst attendance numbers were disappointingly down for the evening, the technical presentation provided by Darrien Welsby from the Institute of Railway Technology-Monash, on the comparison of carbon rails, head hardened rails and hypereutectoid rail and their practical performance in regard to wear, rolling contact fatigue and maintenance in heavy conditions was of interest to everyone.

The following persons were elected to the Victorian Chapter committee for 2010.

Chair: Russell Trevaskis

Secretary: John Scott

Treasurer: Wayne Milful

Committee: David Anderson
Martin Baggott
Russell Bowey
Damien Brizzy
Gerry de Bont
Mathew Durham
Doug Hayhoe
Martin Hunt
Adam Morris
Peter Munro
Bernard Shepard
Norm Tichner

Special Interest Nominee: Nicholas Hurley

It is very pleasing and encouraging to see the committee numbers at a high level and even more encouraging seeing a group of younger faces with us.

Russell Trevaskis
Victoria &Tasmania Chapter Chair

New South Wales

The Annual General Meeting was held on 5 August. The meeting was well attended, and the new Chapter Committee was elected. The new committee for 2009/2010 is: Katharina Gerstmann (Chair), Andrew Honan (Past Chair), John Watsford (Secretary), Andrew Mackay (Treasurer), Max Michell, Basil Hancock, Candice Ng, Bill Laidlaw, Chris Venn-Brown, Tomas Magyla, Paul Harris and Malcolm Cluett.

Coen Stoltz has decided not to continue as a chapter committee member due to his current workload - Coen's contribution during the last year is much appreciated.

At the AGM Andrew Honan was also pleased to present the Railway Engineering Student Thesis Runner Up Award to Matthew Apolo for his Thesis on Laboratory Evaluation of Smear Zone within PVD Improved Soft Clay Subjected to Cyclic Loading.

RTSATube Video Competition

The RTSATube competition is in full swing and the working group is heavily promoting this via Engineers Australia's Web Site, Newsletter and Magazine, University Online Boards and the Department for Education NSW.

The selection processes and criteria are currently being finalised, and first entries are expected end of September.

We have provided a flyer which can be posted to promote this competition. You can download it from the RTSA website at

http://rtsa.com.au/awards/video-competition

There have been two technical meetings held since the previous Newsletter covering a range of topics. The Chapter's AGM and Dinner function were also held in August:

1 July 2009

Kevin Warrell, CEO, Metro Transport Sydney, Sydney, Light Rail & Monorail. Kevin gave an insight in to the day to day operations of the light rail and monorail, and elaborated on some of the more innovative and bespoke technical aspects of these two railways. He also discussed possible extensions to the light rail, and gave his view of the technical and political barriers to such extensions.

5 August 2009

The formal AGM was followed by an excellent and informative presentation by Seamus Walsh, Hardface Technologies Ltd on "Reclaiming rails using HEDKOTE Welding" and the major benefits to rail operators, in terms of reducing major possessions, and economies of purchasing new track.

6 August 2009 – Annual Dinner

Our dinner meeting at the Royal Automobile Club of Australia was extremely well supported with a good number of happy souls, made up of RTSA members and their partners attending. The dinner was excellent, and our guest speaker Dale Budd, gave a talk on 'The Digital Railway' which was of technical interest to the engineers present, and was also entertaining for the partners.

The occasion provided an opportunity for our membership to socialize and spend a pleasant few hours in the company of others in the industry, while, at the same time gaining new knowledge on railway technology.

My special thanks go to Chris Venn-Brown for his efforts in making all of the necessary arrangements.

This was an enjoyable and entertaining function and we look forward to similar events being held in future years.

Upcoming Events

7 October 2009

Peter Moore, Executive Director, UITP Australia – Presentation on UITP & urban transport.

4 November 2009

Ivan Waterfield, Executive Manager, Cardiff Operations, Downer EDI Rail - RailCorp PPP A-Trains.

2 December 2009

Alan Gardener, Manager Infrastructure & Engineering, RISSB - Restoration of NSWGR Beyer-Garratt Steam Locomotive 6029.

The program for 2010 is currently being organised and will commence in January. We look forward to a busy year and good attendance of our meetings which are held at the Concourse Meeting Room at Sydney's Central Station, meeting at 11.30 am for a noon start.

Katharina Gerstmann, NSW Chapter Chair

Western Australia

The Science and Engineering Challenge

One of the RTSA's clear objectives is to encourage young people into the rail industry. To assist with this the RTSA endeavours to encourage young people to undertake engineering studies. The Science and Engineering Challenge fits neatly into the RTSA objective and the WA Chapter is intending to support the WA Challenge.

The Science & Engineering Challenge is held in November each year and is a competition for Year 9 high school students, which 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.

Envisaged support includes sponsorship and volunteers to assist at the Challenge. **Anybody interested in being a volunteer can contact the Chapter Chair or Secretary.**

The WA Chapter activities are continuing to prove very popular this year. Four lunchtime presentations have been held since the last edition of Rail Horizons. One presentation was a jointly sponsored presentation with the Transport Panel.

June 2009

Nick Nolan, Operations Manager, Speno Rail Maintenance Australia Pty Ltd spoke to the topic **The Current Status of Rail Grinding and Ultrasonic Testing**. Nick's presentation was very interesting and covered the background of Speno, and the current and future developments and trends in rail grinding and ultrasonic rail flaw detection.

30 July 2009

Richard Morwood, Alliances & Sustainability Infrastructure Director, AECOM was the speaker. His topic Project Alliances in the Rail Industry – Lessons Learnt, Benefits and Difficulties was based around the book he recently co-authored titled 'Alliancing – a participant's guide'. Richard gave a very enlightening presentation and his interactive style was well received by the audience.

18 August 2009

A joint Transport Panel/RTSA presentation was held and the topic was The Grain Freight Rail Network - Is it worth saving? There was to be two presenters however one presenter was unable to attend due to sickness. Paul Larsen, General Manager, WestNet Rail provided an excellent background covering the issues and challenges facing decision makers and made the case for retaining a large proportion of the existing grain network.

27 August 2009

The presentation focused on the new railway operator in the Pilbara region of WA. Andrew Williton, Rollingstock Engineer, FMG covered the topic FMG – Construction of a Heavy Haul Railway. Now well into operations, the presentation provided a fascinating insight into the Pilbara's third major iron ore railway and covered the infrastructure construction and operational issues associated with this major project.

Upcoming Events

8 October 2009

The Deltic Locomotive - Dr John Wager

26 November 2009 – Annual General Meeting

Presentation: Reece Waldock, CEO, Public Transport Authority WA

The Chapter will shortly be seeking nominations for committee positions for next year.

The WA Chapter looks forward to the continuing strong support from members.

John Goodall
WA Chapter Chair

New Zealand

The next meeting of the NZ Chapter will be held at 5:00PM, Monday 21 September at The Wellesley Hotel. Entitled "Signals of Intention" and it will be a joint meeting with the Institution of Railway Signal Engineers. The two papers "21st Century Signalling and Train Control Technology for the Electrified Auckland Rail Network" and "Automatic Train Protection and the application of ETCS in Auckland " should be of widespread interest and I encourage everyone to come and hear about some major steps in NZ railway practice. The evening's refreshments will be kindly sponsored by Westinghouse Rail Systems Australia.

No doubt plans for Auckland will be of interest to delegates to CORE2010 in Wellington from 12-15 September 2010, now only a year away. Planning for the conference is in full swing and the Call for Abstracts has gone out (see p10). With major upgrades underway in the Auckland and Wellington metro areas there will be plenty to make attending CORE worthwhile as well as the usual strong program of technical papers. See the website to register your interest, submit an abstract, or find more details. We look forward to hosting you in Wellington in September next year!

www.core2010.org.nz

Andrew Hunt
NZ Chapter Chair

2009 RTSA ANNUAL AWARDS

Two further awards presentations have occurred since the last edition of ***Rail Horizons***.

On Wednesday 15 July, at a joint meeting of the RTSA Victoria Chapter and the Victoria Division of Young Engineers Australia, Mr Chris Gordon of Coffey Rail received his Young Railway Engineer award from Mr Russell Trevaskis, the Victoria Chapter Chair.

As previously reported, Mr Gordon is a Senior Signals Engineer with Coffey Rail Pty. Ltd. Melbourne. In this role, he is responsible for a variety of train operation and signaling projects, which notably have included the Regional Fast Train, the Diamond Creek Resignalling Scheme and the Vic Track Level Crossing Up-grade Project. In addition, he has compiled VicSig, the largest single database of Victoria rail related information in Australia. He graduated from the University of Melbourne with a double degree in Engineering (Civil) and Science (Computer Science) and, since then, he has completed a Post Graduate Diploma in Railway Signaling offered by the Central Queensland University.

Mr Gordon is a Member of Engineers Australia, a Member of the Institution of Railway Signal Engineers and a Member of the RTSA.

Chris Gordon of Coffey Rail receives his Young Railway Engineer award from Russell Trevaskis, Victorian Chapter Chair

On Wednesday 5 August, Mr Matthew Apolo of the University of Wollongong received his Railway Engineering Student Thesis runner up award from Mr Andrew Honan, the New South Wales Chapter Chair, at a lunchtime general meeting of the Chapter.

Mr Apolo received his award for his thesis *Laboratory Evaluation of Smear Zone within PVD Improved Soft Clay Subjected to Cyclic Loading*.

The only outstanding award yet to be made in 2009 is the Individual Award, the recipient of which will be announced, and the presentation made, at the AusRAIL Plus gala dinner in Adelaide in November.

2010 RTSA ANNUAL AWARDS

In 2010 the RTSA is offering awards in five different categories, being; Individual, Industry, Young Railway Engineer, Railway Engineering Student Thesis and Contact Mechanics.

The cash component of both the Railway Engineering Student Thesis Award and the Contact Mechanics Award has been increased to $4,000 and that for the Young Railway Engineer Award has been increased to $1,000

The nominations for the 2010 Engineering Student Thesis Award and the Contact Mechanics Award will close on **27 November 2009** and for all the other categories of award nominations will close on **28 February 2010.**

So, with the time for the Student Thesis Award and the Contact Mechanics Award rapidly approaching, you are urged to identify potential nominees as a matter of priority please.

More details of all of the RTSA awards, including the appropriate nomination forms, can be found in its web site www.rtsa.com.au

RAIL – REJUVENATION & RENAISSANCE

CORE2010

CONFERENCE ON RAILWAY ENGINEERING

12–15 SEPTEMBER WELLINGTON NZ. WWW.CORE2010.ORG.NZ

The Conference on Railway Engineering (CORE) is the biennial conference organised by the Railway Technical Society of Australasia (RTSA). CORE has become an important technical event in the international railway industry calendar and in 2010 the RTSA takes CORE to Wellington, New Zealand.

CORE2010 will provide CORE delegates from across the railway industry with a programme of high quality railway technical papers and ample opportunity to network.

Rail – Rejuvenation & Renaissance, the CORE2010 theme, highlights the re-emergence of rail as a major solution to the need for sustainable, high capacity infrastructure to support economic development on both sides of the Tasman and around the world.

The New Zealand Rail system provides a good case study for the various political, economic and technical challenges in rail system development and operation. The country's unique geography continues to present a major challenge to rail and the need to upgrade ageing infrastructure has led to the development of some innovative technical solutions.

CORE 2010 will feature national and international speakers who will analyse the increasingly important role of rail in modern infrastructure systems. As well as a challenging technical programme, technical tours will be offered that will focus on enabling delegates to experience our unique New Zealand rail system.

Wellington, New Zealand's capital and scenic harbour city puts CORE2010 in the political, economic and railway technical centre of New Zealand. The event will showcase the current redevelopment of the capital's urban rail transport system - a case study in rail renaissance.

Wellington Convention Centre is the perfect venue - within walking distance of hotels, cafés, restaurants, entertainment and the city's arts and cultural venues.

Abstract Submissions are now open!

We need your participation to contribute to an interesting and diverse programme and invite papers aligned with any of the 11 thematic strands with particular emphasis on Rail – Rejuvenation & Renaissance.

For more information visit **www.CORE2010.org.nz**