

# NEW SOUTH WALES NEWSLETTER

**JUNE 2009**



ENGINEERS  
AUSTRALIA

**RTSA**

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

## RTSA NSW CHAPTER MEETING

**Wednesday 1st JULY**

11.30 for 12.00 in the

**CENTRAL STATION - CONCOURSE MEETING ROOM**

(next to Lost Property, opposite platform 2)

## **LIGHT RAIL AND THE MONORAIL**



Kevin Warrell, Chief Executive of Metro Transport Sydney, the company which owns the Sydney light rail and monorail systems will talk about those systems and their part in the life of Sydney.

In his presentation Kevin will describe the day to day operations of the light rail and monorail, and elaborate on some of the more innovative and bespoke technical aspects of these two railways. In addition he will discuss possible extensions to the light rail, and give his view of the technical and political barriers to such extensions.

Born in the UK, he is an engineer by training, and has worked in the Royal Navy and the oil exploration industry before moving into transport management 20 years ago. His experience includes heavy rail, large ferry, bus and light rail operations.

*The usual light lunch and refreshments will be available prior to the meeting proper.*

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## NSW CHAIRMAN'S CHATTER

There has been some debate about education and skills development within the rail industry recently. In one way there has always been an underlining unease about the capability and capacity of the rail industry in relation to labour productivity. The recent Victorian Government inquiry into skills is another example of this issue coming to the fore. (see [http://www.parliament.vic.gov.au/etc/fs\\_rail.html](http://www.parliament.vic.gov.au/etc/fs_rail.html)). Engineers Australia made a submission to this inquiry, which can be viewed at ([http://www.engineersaustralia.org.au/shadomx/apps/fms/fmsdownload.cfm?file\\_uuid=A4D0A8E5-FE92-6C2D-AEA7-C5FB77767691&siteName=ieaust](http://www.engineersaustralia.org.au/shadomx/apps/fms/fmsdownload.cfm?file_uuid=A4D0A8E5-FE92-6C2D-AEA7-C5FB77767691&siteName=ieaust))

Many labour market issues within the rail industry revolve around the efficiency of work practices (in once government rail agencies). The concerns however, within these agencies, is that the risks and safety of operations (particularly signalling, electrical and train control) are not understood outside the agency and indeed the technologies, the work methods, the authorities and the rules wrap up safety, endogenously within the rail organisation.

Other labour market issues revolve around attracting young men and women to the rail industry and retaining them. This focus on an ageing workforce, in which a large cohort of middle aged men will soon leave the workforce creating a hollowing-out of middle management, is a concern for the sustainability of rail transport in Australia.

Some of these matters, particularly the university sector, were recently discussed at the NSW Committee meeting and I would like to share some of these here.

I had thought that one way to promote professional engineers into the rail industry was to offer rail specific options at the engineering schools of universities, in the final 2 years of undergraduate study.

The argument is that there is a lack of knowledge, transitioning from a undergraduate tertiary institution into the rail industry, even if there was ever a good careers promotion of rail at universities.

The new Commonwealth funding arrangements for universities (in which funds go to students rather than institutions) could play an important role in trying to 'co-badge' courses between universities. A group of universities (around Australia) could co-operate and allow electives to be taken from each university as part of a co-badge degree. Such groups of universities already exists, for example the 'Australian Technology Network of Universities' (UTS, RMIT, QUT, UNI SA, CURTIN), but as yet there are no co-badge of degrees. So maybe each university within this group could offer a particular rail elective in which any of the engineering graduates within the group could undertake (using distance or innovative course delivery).

Engineering graduates would come out with their disciplines, say Bachelors of Engineering (Mech) or (Civil) or (Elect) or whatever but have a better understanding of the different rail technologies, whether they be perway design, 1500VDC or 25V AC traction power, signalling, train crash worthiness, wagon vehicle dynamics etc. These specialised options would articulate graduates from a discipline based course into a career option within the rail industry. It would also provide a common Australian-wide curriculum for the different Australian rail technologies and practices.

At issue is relative lack demand for rail engineering skills around Australia whilst at the same time a student pool that is scattered across Australia. Never mind the fact that a subject (say perway) could address the different approaches between States and facilitate commonality in technology and transferability of skills.

I accept that from an engineering discipline there has to be knowledge and rigour of engineering principles, whether it is civil engineering, electrical engineering or mechanical engineering. Without these there is no engineering basis for permanent way design, electrical traction supply or vehicle dynamics in locomotives or wagons. However, many of you who did engineering will I am sure, relate to times when you sat through subjects that had no interest and no relevance to your degree?

I had expressed the above concept as an engineer graduating with a discipline but majoring in 'rail transport'.

Others in the committee expressed a different view.

Some felt very strongly that it is of great importance to the general engineering profession that students properly learn and absorb the basics of engineering at undergraduate level. This is not to say that specific industry technologies cannot be used to provide illustrations and examples.

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A danger not to be overlooked of having a Bachelor of Engineering (Majoring in Rail), is that a student with this qualification will be pigeon-holed into the railway industry, whether they like it, or not - not good for them or the rail industry. A Bachelor of Engineering should enable a person to join any industry within his/her discipline (mech., elec., civil, chem., aero, etc.) and then specialise later on, if s/he chooses.

Furthermore, the idea of introducing railway engineering at undergraduate level has two objects. Firstly, to produce better railway engineers, and secondly, to introduce the railway industry to more engineers, so that more become available.

In regard to the first object, the quality of railway engineering in Australia will not be improved by teaching railway engineering in any detail at undergraduate level. To this end, a far better plan is to learn the fundamentals of engineering (in your particular discipline) at undergraduate level, and then go on to specialise in railway engineering at post grad level.

Others on the committee expressed the need to at least introduce the railway industry to the budding engineer, and to this end, some rail oriented activities at undergraduate level can be justified - for example, a brief overview course (say one lecture a week for a term). This course could be based on the NRE001 course being offered by QUT/ARRI at post grad level, but would need to be simplified, and the emphasis would need to be different for civil, mech or elec. students. To achieve its ends, it should be given to all students in mech, elec and civil, and should not be an 'elective'. (If the purpose of the course is really to 'market' the railway industry to students who know nothing about this industry, how will they know to select this course?)

Other alternatives include providing the universities with suitable railway topics for undergraduate theses. Another very good option would be to arrange 'industry' visits for the students to railway sites.

Others on the committee suggested that the major barrier is one of perception – most undergraduate level students have had little contact with rail (unless they have family in that industry, or as is not uncommon they already have an interest in rail) and most contact will be less than enticing. We really should get graduate engineers who WANT to come into the rail industry, so we need to somehow give them the background to allow them to develop that 'want'. Most students would have little or no idea of freight, heavy haul, track issues yet these are the areas where most 'joy' is to be found for someone with a bit of enterprise.

Maybe the industry should look to setting up 'holiday experience jobs' (say in the Xmas - New Year break) that would be designed to give participants a wide exposure to the various aspects of the rail industry that might attract interest for later in life (in fact might create a latent opening for when they graduate as well). If a student gets some exposure (which is the issue that matters, not getting short term cheap labour) they at least have something of substance that can guide them as they progress through their course.

It needs to be kept in mind that many engineers have risen to managerial height in rail and in some cases have crossed discipline boundaries such as a civil person running a loco workshop or managing a passenger business, so that is another aspect that needs to be imparted at the same time - you are not necessarily stuck in a discipline or narrow rut in rail.

Unfortunately, we did not get time to discuss the resurgence of cadetships, traineeships and apprenticeships by rail organisations, and their impact on rail capability.

All up, it was a very important and useful discussion and obviously one that will continue for some time.

On a more immediate note and briefly, the RTSA is busily trying to coordinate a number of activities over the next few months. As we go to press you will see the NSW Chapter annual dinner is being announced for the 6<sup>th</sup> August. This formal event will be an opportunity for all ages (and partners) to mix with friends and colleagues in a non-commercial event. This is the first time the NSW Chapter has had a formal chapter dinner and we hope it will be an annual event.

Another event we hope to finalise is a video competition for schools and universities. Katharina Gerstmann is working hard with university friends and colleagues to put together this really exciting competition. I am hopeful that we can resolve details of this shortly and Katharina will be in a position to formally announce it soon.

Of course the study tour of Asian metros is fully subscribed. We have 27 delegates leaving in September this year. We have wonderful support from organisations in all the countries we are visiting. We are staying

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in China the longest and the program in China is particularly strong. Many thanks go to Candice Ng and Gerard Moroney for their hard work. Also many thanks to the STORE sub-committee for their commitment to making this tour a success.

## **POINT OF VIEW: Max Michell**

Back in early 2008 RTSA held a seminar at Wagga on the topic of regional rail. It was very successful, not the least because of the presence of Ed Zsombor from Saskatchewan in Canada who was able to give an erudite overview of the Canadian short line model and its practical application in that province. At the time many of us who were there pondered on what would be required to get a short line model appropriate to this country. The difference here in Transportation responsibilities between National and State Governments, the plethora of regulatory bodies and a 'one size fits all' culture that pervades the industry are factors which would make a direct transplant of the Canadian experience to this country a risky strategy. But somewhere there must be a satisfactory solution, because if there is not then most of the regional network will continue to wither and die, leaving little but a relatively thin set of trunk routes with little support outside the major population centres.

Since the Wagga conference Tasmania has descended from a working railway with thin but supportable traffic flows to an almost farcical situation where the incumbent operator (also until recently track maintainer) has progressively walked away leaving the railway virtually moribund. Their claims that the track has not been properly maintained is somewhat specious given that it was predominantly their own lack of attention that brought about that situation in the first place. Whatever else might be said about the incumbent their lack of attention at the due diligence stage (or simply a desire to behave in a predatory way) has done the State and their own shareholders no favours at all. TasRail is effectively a regional railway, yet it wilted under what could only be described as a failed regional management model. TasRail has lessons for regional rail only in that it adds to the knowledge pool of what not to do.

In the same period the Victorian regional network, which is primarily the broad gauge freight network in that state, has been run down to a parlous state – firstly by a deliberate reduction in track maintenance to well below a sustainable level (using the residual value of the track as it deteriorated) and secondly by the latest owner of the business which has combined a palpable disinterest in the regional business with a wholesale diversion of locomotives and rolling stock to what they see as more useful (main line) activity elsewhere – a form of asset stripping. It is no surprise that the same incumbent as in Tasmania is involved, and a similar set of negative lessons arise from this unfortunate circumstance.

The lesson from both Tasmania and Victoria is that simple main line operators are not the sort of organisation that should be allowed anywhere near a regional railway. Quite simply their culture of big trains and relative indifference to their customer base is not one that has any place in a regional set up. Their obsession with serving the shareholders (although recent events suggest that serving the Directors is well ahead of the shareholders) and ignoring the customers, employees and community in which they work is not appropriate for a regional railway – these need to be close to the people and industry that they serve, with more emphasis on the region than on the shareholders. Regional railways need to concentrate on the trio of customers, employees and community and from that will flow the gains that the shareholders so crave, although for many regional lines the shareholders are the community.

Although NSW and WA have not seen the same depredations as in Tasmania and Victoria there have been a number of regional lines that have been allowed to wither for lack of interest as much as anything else. NSW has classified all its 'pioneer lines (the class 5; 30kg/m rail type lines) as suspect with a number of closures of the worst performing. Recently however a small number of lines with reasonable potential under the right ownership and operating model have been slated for closure. In some cases these have been deliberately downgraded over a long period of time, firstly by withdrawing any scheduled services,

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then classifying them as grain only and thirdly then claiming that the grain traffic is not sustainable. In reality there is a significant potential for non-grain traffic in some cases which has been completely (and probably deliberately) overlooked. WA (and Victoria before it was plundered) both had upgraded the surviving branch lines to what might be termed secondary main line standard so that the light lines issue did not exist there anymore. The issue in these States is one of inadequate traffic to cover the ongoing maintenance costs of these lines, which in a way is a derivative of the differing treatment given to road funding and rail funding. It is interesting that the Conservative Government in WA has (thus far) refused to support Westnet (the privately owned WA track lessee) with funding to keep a number of branch lines in workable condition. Superficially the issue of government money to private companies resonates, but in that case what of the direct support for the car industry, indirect support for car ownership, funding and guarantees for banks, commercial developers, home buyers, miners and so on? There is a dual standard here which regards some forms of private activity and supportable and others not so. It does regional rail no favours.

One problem is that most regional lines these days have no resident staff at all. Trains are run from a main line depot, track maintenance is by 'fly in - fly out' gangs and local customer contact is through a city based grain marketing authority. In a recent example that came to this author's attention, the track owner was based in Newcastle, the maintainer based in Adelaide, the (main) train operator in Sydney but with their business office in Melbourne, using crews who lived at least 50 km from the nearest point on the line and dealing with traffic controlled by a grain company based in Sydney. There is no person at all anywhere near the line who has an interest in that particular line, in generating whatever business can be garnered in the local area and looking after the interests of the railway. No wonder the regional rail network in a non event thus far.

Interestingly it is in NSW, a state that does not have a good reputation for matters to do with rail, where a workable model for an Australian short line model may emerge. There are some aspects of the 'stars aligning' that at least hold some promise for a new regional railway concept and model in this country. A traffic base that is rather more than simply grain is an important consideration, as is a rail line that is essentially in good order and capable of relatively low cost maintenance. A critical issue is having community involvement, which means that there needs to be a locally based operation which in some way involves more than just the relatively few customers and employees that a regional line might be directly involved with. Time will tell, but there is a small group of readers and friends who have a feeling of optimism that at last the regions might be able to realistically work towards retention of their railway, rather than see it slowly but inevitably dying.

## **VIDEO COMPETITION - RTSA TUBE 2009**

The NSW Chapter of RTSA has started planning a railway themed video competition for undergraduate and high school students on "How Railway Engineers Make a World of Difference".

The aim is to increase public awareness (in particular in NSW) of 'railway', and to foster and maintain a positive image of railway engineers and the railway industry through a program designed for a youth audience using video-sharing sites like YouTube.

The competition will seek creative, topical, and effective videos of three minutes or less that focus on railway and railway engineer's contributions to the quality of life. The students can gain adulation of their peers, professors, family, and strangers who may view it, and some videos possibly will appear on the RTSA website and used to promote RTSA and the Railway Industry. But the most effective video clips may well compete for seven prizes totalling \$2,500.

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This event is designed to serve as an excellent opportunity for students to win cash, gain experience, and earn recognition while in college or at university.

Further details including a call for entries will follow in the next few months, once the methodology has been sufficiently detailed.

## **ASIA METRO STORE**

STORE is going forward smoothly with most of the scheduling already in the final stages. Almost 30 professionals are coming onto the tour from across the country.

The itinerary is more or less the same as originally advertised, but much more enriched. Warm hospitality has been offered by CARS and TMT in Beijing and Hunan, who have not only planned for company visits but also other aspects of sightseeing, transfer and translation so as to make sure our group will have a wonderful time in their country.

Shanghai Maglev is on our agenda as are some other unexpected surprises.

The only rather obvious change is the starting location of the tour; initially from Singapore it is now from Kuala Lumpur; this is to allow for better travel logistics, to lengthen the stay in each hotel and to minimise travel time, making the tour less tiring for members

## **THE JUNE MEETING: reporter Malcolm Cluett**

### **Sydney Metro - Mr Tim Parker, General Manager, Metro Delivery**

The speaker joined the Sydney Metro Team in March 2008. He had previously worked on similar projects in Hong Kong, and elsewhere.

The enabling legislation for the Sydney Metro was passed by the NSW Parliament 2 Dec 08

The intention of the Metro is to complement Sydney's heavy rail system – not compete with it.

Work is proceeding rapidly, including land acquisition. The planned timeframe is very tight, and the speaker displayed some progress charts for the planned construction schedule.

The CBD Metro will provide the basis for metro expansion in various directions. The North West Metro will run from Central to Rozelle and beyond, and the Metro West will proceed towards Parramatta. The initial stage to Rozelle, incorporating six stations, is fully funded by the NSW Government, and is scheduled for completion in 2015. Provision will be made for a future station at White Bay.

Funding for the Metro West extension has been boosted by a Commonwealth Government Grant through Infrastructure Australia (IA) to the value of \$91M. This will be used for planning, design and preparatory work in order to get it to the "shovel-ready" stage. At this point it may be the recipient of further Commonwealth funding from Infrastructure Australia.

There will be increased land development (densification) around the Metro corridors and stations.

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## Reference Design of the Metro – This will:

- Validate performance
- Provide a basis for cost estimate
- Provide a basis for tender comparison.

The following is a list of Metros which have some similarities to the proposed Metro in Sydney.

- Copenhagen
- Dublin
- Hong Kong
- Singapore
- Madrid
- London – Jubilee Line

In terms of contracting, the preference is for a stand-alone tunnelling package, while the “Rolling Stock, Station and Rail Systems” will be a separate integrated package. This is a reflection of the close integration of signalling, traction, rolling stock and station systems in a modern metro.

Stations and rolling stock are the key interface with customers. By comparison, the civil engineering works (including tunnelling) works are not really seen by the travelling public, and many of the future commuters will not give them a thought.

Sydney’s underlying sandstone and shale is good ground for tunnelling. However the sediments under the harbour (which is a flooded valley) are less so. The Metro will need to pass underneath Darling Harbour and the channel under the Glebe Island bridge. Geo-technical test drilling is under way at present.

The primary focus of the Metro team is finding the technical solution that provides the best value for money. Other objectives are to:

- support the development of sustainable communities and active precincts
- meet the functional/performance and whole-of-life requirements of the project
- meet sustainability concepts
- have flexibility for future expansion
- have integrated ticketing

**City Building basements.** A careful as-built survey is required because the CBD buildings are not necessarily the same as per the development plans, and the drawings. What is thought to be a 3-level basement just above the metro tunnel may in fact a ten-storey basement which interferes with the tunnel alignment.

**Grades** A compromise as to what is possible, and desirable, is being made. The metro will probably will be laid at a maximum grade of 4.5%, though Metros overseas can negotiate even steeper grades with conventional steel wheels.

Longitudinal sections of the planned Metro route were displayed, and of the stations. Typical station chamber cross-sections were also displayed.

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## Stations

Modularity of station design elements will provide economies, as well as a uniform appearance. The stations will be at varying depths and will be in varied geological strata.

There will be effective vertical transport from platforms to surface, or to underground shopping arcades. Offsets from other stations and surface features for desirable to allow sufficient space for Vertical Transport. (For example, the new Metro will be one block East of the existing Town Hall station, to permit enough space for escalators aligned East-West.)

Platform Screen Doors will be provided on the stations, to assist with ventilation and fire control, as well as passenger safety. CCTV will be provided in stations and trains.

Indications are that no Air-Con will be required at the stations. Mechanical Ventilation and Fire Protection systems will be provided.

## Trains

Rail traction systems will be 1500V DC with solid conductors, as used in the rapidly expanding Madrid metro lines. This is proven technology. The track will be standard-gauge.

The normal consist will be a 5-car EMU. Each car is 22m long. 2x2 lateral seating is planned initially. (No longitudinal seats as per Hong Kong). The trains themselves will be air-conditioned.

Passengers per 5-car train = 965, assuming four passengers per square metre. This is 320 seated and 645 standing.

The speaker showed a number of illustrations of the planned layout of the cars. Each car will have three sets of doors on each side (something new for Sydney).

Station cavities and power supplies will have provision for future 6-car trains.

A two-minute headway is planned, which is sufficiently short to eliminate the need for a published timetable.

Copenhagen and Singapore Metros are driverless. Sydney Metro will follow this practice. (The Hong Kong Metro is automated, and effectively driverless.) In terms of safety, eliminating the human element is considered to be an advantage.

There will be an integrated Operations Control Centre. A dedicated stabling yard at will be built at Rozelle. It is planned to use the disused goods railway from Rozelle for spoil removal (as per the North Side Sewerage Storage tunnel a few years ago).

**Question** - Comparison with the Docklands Light Railway in London ?

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**Answer** - DLR started off as a Light Railway, but successive upgradings and extensions have taken it into the Heavy Rail category. It is hard to imagine Eastern London without it, especially in view of the forthcoming London Olympics. The DLR is driverless, too. So yes, there are similarities.

**Q** - Metro West – will it sterilise alignments for future North-South RailCorp corridors for Heavy Rail under the CBD ?

**A** - The CBD Metro will utilise the existing RailCorp “Metro Pitt” corridor (which basically runs North-South under Pitt St). The Metro West corridor under Kent St will remain possible for a future North-South Heavy Rail line and a new harbour crossing, and won't be blocked by the CBD Metro. Engineers are working with RailCorp in developing the route. A North-South alignment under Elizabeth St (further East) is another possibility for a future Heavy Rail line.

**Q** - Eastern Suburbs Railway – this is a cheaper model than the Epping-Chatswood railway. Has this been considered in terms of estimating costs for future railway construction ?

**A** - Underground rail stations are always very expensive. The ESR may have involved some construction techniques that are not acceptable now. Cost saving practices in Hong Kong, such as closing major roads for months for excavations, would also be considered unacceptable in Sydney.

Once a Metro project has been commenced, then it is a cheaper process to build extensions. An example of this is the rapid expansion of the Madrid Metro. Getting started is the difficult part.

The costs of the Epping – Chatswood line have been inflated by the decision for an underwater crossing of the Lane Cove River, rather than a low-level or a high-level bridge.

**Q** - – use of third rail for the electrical conductor ?

**A** - not compatible with the reference design, and therefore ruled out.

**Q** - Planning Betterment tax – around stations ?

**A** - This approach is used in Hong Kong. It is unlikely that the intensity of development, as practiced in HK, would be acceptable in Sydney. Needs to be considered in the context of the wider issue of Private Vs Public Transport.

The speaker was thanked for an interesting presentation. For your correspondent, a most interesting observation was the requirement of the Madrid Metro organisation for its tunnelling contractors. In addition to the usual requirements for pre-qualification, prospective tenderers were required to have a spare tunnel boring machine in their yard, ready to start work at the date the contract is issued!

*The special June meeting on June 16<sup>th</sup> (Bombardier Traxx Locomotives) will be reported in the July Newsletter*

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## DEPUTY MEETING REPORTER:

Malcolm has loyally reported meetings now for a couple of years, even when he has been under a bit of pressure in other quarters. Which raises another issue – we need a back up reporter to help record each meeting for the Newsletter. The work is not onerous – you get free entry to the meeting, a front row seat and generally a copy of the power-point presentation for your trouble, in return for which you write up the meeting in an informative but reasonably concise way for publication in the next Newsletter. No one has yet volunteered – surely among the 400 or so members, or more particularly the 60 or more attendees at meetings there is someone of literary bent?

## RTSA DINNER

We felt it was about time that we expanded from our regular technical events to something more sociable. In furtherance of the end we have organised the first Annual Dinner, to be held at the Royal Automobile Club (down near Circular Quay) for 6th August, starting at 6-30 for 7-00 pm.

Partners are invited, and the per person cost will be \$60.00 for the evening. Parking is available at the Club for \$22.00 for those unable to use public transport.

The guest speaker will be Dale Budd AO, whose topic will be 'The Digital Railway'. Dale has had an unusually varied career. He graduated as a mechanical engineer. He was Chief-of-Staff to the then Prime Minister, Malcolm Fraser, and has been a consultant in management and government relations.

In the railway field, he was closely involved in the two successive attempts – VFT and Speedrail – to bring high speed rail to Australia. Later he was an adviser to the Saudi Railways Organisation on their project for a high speed railway between Mecca, Jeddah and Madinah. He was a member of the ARTC Board for 6 years. He had a particular involvement in the early development of the Advanced Train Management System, ATMS. Since 2008 he has been Chairman of the Development Advisory Board, an independent body whose role is to oversee and review the processes of development of standards for the rail industry. He is currently project manager of the Melbourne-Brisbane Inland Rail Alignment Study which is being managed by ARTC on behalf of the Australian Government.

The 2009 Annual Dinner is the first of what the NSW Chapter Committee hopes will become a regular event which will be both entertaining and interesting, and will, at the same time, provide an opportunity for networking with other members.

A flier for the event, incorporating a registration form, will be circulated to members within two weeks.

## LETTER TO THE EDITOR

*Letters to the editor are very welcome. In general **letters should be relatively concise (no more than half a page)** and should relate to either past material in the Newsletter, events or activities of interest, reminiscences or future watching of the rail industry as a whole. If in doubt write anyway – the editor is quite pleasant to deal with after that first cup of coffee in the morning.*

## GRAFTON CONVENTION – reported by Chris Venn-Brown and Philip Laird

The biennial Regional Convention, hosted by the Newcastle Division of EA, and 'co-badged' by the RTSA, was held in Grafton, NSW, between Friday, 12<sup>th</sup> June and Sunday 14<sup>th</sup> June.

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The theme for the Convention was 'Transport and Communications – Past, Present and Future'. Included in the program was a Heritage Recognition Ceremony for the Grafton to Brisbane National Railway Link, which includes the famous bi-level Clarence River Bridge.

The Convention was attended by about 66 Delegates, including about 12 RTSA members, as well as a number of partners. A young RTSA engineer, Nicholas Hurley from Melbourne, won a free registration to the Conference, together with subsidised travel and accommodation expenses.

The Convention was privileged to have four prominent keynote speakers – David Marchant, CEO of ARTC, Wal King, DEO of Leighton Holdings, Rex Glencross-Grant of the University of New England, and Dr. Robert Lee of the University of Western Sydney. (Both David Marchant and Wal King spent their youth in the Grafton area). The fifth keynote speaker, Michael Bushby, Acting CEO of the RTA was unable to attend, due to the recent reorganisation of government departments by the NSW State Government. The President of Engineers Australia, Peter Godfrey, the President of the EA Newcastle Division, Barry Finlay, and the President of the EA Sydney Division, Peter Hitchiner also attended the Convention, and took part in a number of the discussions.

David Marchant in his keynote address noted that ARTC wishes to bring rail back into the mainstream for freight. To this end, ARTC is investing \$3.1 billion with its own cash (from an annual revenue of \$540million), borrowings and some government grants. Here the \$1.2 billion grant of December 2008 has allowed more work on the North - South corridor including extra loops and double track for the new Wodonga bypass. To improve, rail freight needs replacement of some aged and dated infrastructure and signalling. The aim is more capacity for freight forwarders, speeding up transit times.

Along with outlining the Advanced Train Management System (ATMS), his talk looked at potential rail tonnages on various corridors in the future - including an ambitious 6 million tonnes per annum (mtpa), for Sydney - Melbourne, and roughly 4 mtpa each for Sydney - Brisbane and Melbourne - Brisbane under scenarios including oil \$US85 per barrel, exchange rate 0.70, carbon price \$50 per tonne, labour costs up 22 per cent and real road access pricing up by 10 per cent.

He said that more competition for Melbourne - Perth freight is expected from sea, and that there will be some investigations into potential deviations. In relation to shared road-rail corridors (where feasible) ARTC supports improved corridor planning.

The Convention was also the setting for the launch of the book 'Fruits of Federation : the Grafton - Brisbane uniform gauge railway and Clarence River bridge', which was written by Dr. Robert Lee, with foreword by David Marchant. As the basis for the book, Dr. Lee used the research that he carried out into the Grafton to Brisbane Railway Link for the purposes of the Heritage Ceremony.

This book is recommended reading, not only for the history (including that Sydney Brisbane was once a profitable line with an operating ratio of 42 per cent), but for an assessment of present conditions. The Grafton – Brisbane standard gauge railway, with the Clarence River Bridge added on as a separate project almost as an afterthought, was opened in 1932. It was the first link in the national standard gauge railway system that was agreed to by all state premiers in 1921. At the turn of the century, the Australian railway system was considered to be a security risk. General Lord Kitchener, who was invited to report on Australian security in relation to a number of potential threats that existed at the time, said that the Australian railway system would be more useful to an invader (as it could be used to transport invading troops from the ports into the countryside), than it would be in the defence of the country (as it could not be used to transport defending troops from city to city). As a result, the premiers made the belated agreement in 1921. However, only the Grafton – Brisbane link, and soon after, the Adelaide – Port Pirie link eventuated.

On the final day of the Convention, two technical tours were available to delegates, one to the new Shannon Creek Dam, which provides water for Grafton, and the other to the Nymboida Hydro-Electric Power Station.

The Nymboida Hydro-Electric Power Station has been in service since the 1920's, and still uses equipment that was originally installed prior to World War 2. It has an output of 1.6 MW, and can be used to supply

# NEW SOUTH WALES NEWSLETTER

**JUNE 2009**



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

Grafton and Coffs Harbour, or it can feed the NSW grid. While all of the equipment, including turbines, generators and instrumentation, is very old, it has been well maintained and apparently still runs quite reliably.

The station is currently operated by Country Energy, and requires only two operators, with one being on site at any given time. Under the Country Energy OHS policy, it is necessary to hold a fire drill every six months. Our guide explained that on fire drill day, he puts on his fire-warden's hat, walk outside, and counts himself. Then he goes back inside and makes a record of the drill. If he does not do this, he is penalised by his superiors!

Generally the Grafton Regional Convention was a considerable success, and all delegates would have gained a great deal from their attendance.

## **HOW LONG DOES IT TAKE TO TRAVEL BY TRAIN? ... Alex Stoney, March 2009.**

The new draft timetables, after the integration of the Chatswood-to-Epping railway into the Suburban network, have been published on the Web. So let us have a look at what time-saving travels await a commuter boarding a train at Epping for a City destination.

### **CURRENT TIMETABLES.**

The current North Shore timetable (effective from 28 May 2006) shows the running time from Chatswood to Wynyard (of 23 trains between 7.00 am and 9.00 am Chatswood departure times) of either 20 or 21 minutes; all trains stop at all stations, (except two, which skip Wollstonecraft and Waverton and take 19 or 20 minutes.)

The current Northern Line timetable (also effective from 28 May 2006) shows 8 trains between 7.00 am and 9.00 am, 4 of which take 36 minutes from Epping to Wynyard (via Strathfield) skipping 6 stations, and 4 trains, taking between 44 and 47 minutes. (In addition, between 7.27 am and 8.12 am, 4 trains originate at Eastwood, taking 41 minutes to get to Wynyard.) In the same period, 6 InterCity or Outer Suburban trains stop at Epping and terminate at Central Terminal. All stop at Strathfield; all but one stop at Redfern also. Two of these stop at West Ryde; one of these at Meadowbank also.

**NEW TIMETABLES.** (RailCorp Standard Working Timetable 2009, Version 1.0, Pages 285 to 288 - Intended to be introduced in November 2009.)

The present shuttle service from Epping to Chatswood takes 17 minutes, which will be increased in the new timetable to 18 minutes (in one case to 19 minutes.).

Between 7.00 am and 9.00 am weekdays, 8 trains depart Epping for City via Chatswood All come from Hornsby, and stop at all stations to Epping, and to Chatswood, and to Central taking 37 or 38 minutes Epping to Wynyard (except the last 3 which skip Wollstonecraft and Waverton and take 36 minutes). In this two hour period 8 trains start at Epping and stop all stations to Strathfield, before continuing to the City. In the same period, 8 InterCity trains stop at Epping and Strathfield, and terminate at Central Terminal; all but one stop at Eastwood also.

### **COMPARISON.**

Using these timings let us look at how long it takes to get from Epping to the City.

To consider the morning commuter's viewpoint, one should include all times, such as:-

1. *Time to get from home to the station.*
2. *Time to buy one's ticket.*
3. *Time to get from the ticket machine or window to the platform*
4. *Time to wait for the train.*
5. *Travelling time to the destination station.*
6. *Time to get from the station to the destination, (presumably one's workplace.*

# NEW SOUTH WALES NEWSLETTER

**JUNE 2009**



ENGINEERS  
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**RTSA**

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Since we are comparing two different routes of train travel, the items 1, 2 and 6 will be left out, since the commuter is considered to live at the same place, and travel to the station by the same means, for both routes of train travel, and to the same workplace. So our comparison commences at the ticket machine at Epping, and terminates at the arrival platform at the City station. First look at how long it takes to get to the train,

On 18 March 2009 the following times were recorded, at Epping;-

Departure from ticket machine	0 (i.e. base time)
Entry to ticket barrier gate	15 seconds
Exit from ticket barrier gate	20 seconds
Entry to Escalator 1	32 seconds
Exit from Escalator 1 (at Platform 1-2)	54 seconds
Arrive at Platform edge, ready to board	1 min 05 seconds (i.e Platform 1 access time.)
Entry to Escalator 2	1 min 08 seconds
Exit from Escalator 2 (at transfer concourse)	1 min 31 seconds
Entry to Escalator 3	1 min 40 seconds
Exit from Escalator 3 (at Platform 5-6)	2 min 39 seconds
Arrive at Platform edge, ready to board	2 min 50 seconds. (i.e Platform 5 access time.)

(Some time might be saved by running, or by walking down the escalators, but at peak times both are practically impossible)

Note that it took 1 minute 45 seconds longer to get to Platform 5-6 than it did to get to Platform 1-2. For all passengers travelling on the new Chatswood - Epping line, (i.e. from Platform 5) this time will apply and be added to the times shown in the timetables.

This gives the following best times from Epping to City stations (during the morning 2-hour peak period, and including Platform access time.)

Destination.	Time via Strathfield current timetable.	Time via Strathfield based on New timetable	Time via Chatswood based on New timetable.
Wynyard.	37 min. 05 secs.	45 min. 05 secs.	38 min. 50 secs.
Town Hall	34 min. 05 secs.	41 min. 05 secs.	42 min. 50 secs.
Central	31 min. 05 secs.	38 min. 05 secs.	45 min. 50 secs.

Even a commuter from Cheltenham (who, like those from further North, does not have the delay of using Epping's escalators) will take 42 minutes via Chatswood to Wynyard, when he/she used to do it via Strathfield in 39 minutes. It is a lot worse for the commuter going to Town Hall.

In some cases Epping to Central passengers will find better times by using InterCity trains to Central Terminal station. Perhaps the only winners are commuters going from Eastwood to Central, by InterCity trains, in 24 minutes (same as now, but more trains will stop at Eastwood).

## CONCLUSION.

On the basis of these figures, it is difficult to see how any commuter from Epping (or from anywhere else) could see an improvement in their travelling times, when the new timetable is introduced.

## ANNUAL GENERAL MEETING:

The AGM of the NSW Chapter of RTSA will be held in conjunction with the meeting on Wed 5<sup>th</sup> August. Formal papers will be sent separately in the next few days. However anyone interested in being involved at committee level or to support running of the association in any way should contact Andrew Honan at the earliest opportunity.

# NEW SOUTH WALES NEWSLETTER

**JUNE 2009**



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DATE	SPEAKER	TOPIC	LOCATION	TIME
1 July 2009	Kevin Warrell CEO Metro Transport Sydney	Sydney Light Rail and Monorail Systems	Central Station Concourse Meeting Room	11.30 for 12.00
5 August 2009	Stephen Walsh General Manager, Hardface Technologys	Rebuilding Rail Track In Situ	Central Station Concourse Meeting Room	11.30 for 12.00
2 September 2009	David Wynd Projects & Engineering Manager, Faiveley Transport Australia	Electronically Controlled Braking	Central Station Concourse Meeting Room	11.30 for 12.00
7 October 2009	Peter Moore Executive Director, UITP Australia	Presentation on the UITP	Central Station Concourse Meeting Room	11.30 for 12.00
4 November 2009	Yes! – it might just be .....	..... just be patient.	Central Station Concourse Meeting Room	11.30 for 12.00
2 December 2009	Alan Gardner Manager Infrastructure and Engineering RISSB	Restoration of NSWGR Beyer-Garratt Steam Locomotive 6029	Central Station Concourse Meeting Room	11.30 for 12.00

**BLACK TEXT:** indicates meeting is confirmed

**BLUE TEXT:** indicates request has been made to speaker

**RED TEXT:** indicates a suggested topic only at this stage

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John Watsford	Committee	Paul Harris	Committee
Chris Venn-Brown	Committee	Katharina Gerstmann	Committee
Malcolm Cluett	Committee		
Candice Ng	Committee		

## CONTRIBUTIONS TO THE SYDNEY NEWSLETTER

Part of the function of RTSA is to keep members in touch with what is going on in the industry and with each other and to that end we are only too happy to publish items of interest. Articles, letters or editorial comment for Newsletter are very welcome. We have several hundred members locally, of whom around half a dozen have actually put pen to paper, so I am expecting a couple of hundred more correspondents of the next how-ever-long. Items for publication should be in electronic (Word) format – the editor is a total klutz when it comes to typing and would be very grateful for not having to retype articles if at all possible.

Contact details are –

The Editor, Max Michell,

- e-mail to [samrom@bigpond.com](mailto:samrom@bigpond.com),
- phone 02 9331 5662 or
- post to P.O.Box 279, Potts Point, NSW, 1335.

For all other matters relating to RTSA Sydney Chapter contact Andrew Honan (Chair) or Bill Laidlaw (Secretary) as above.

## CPD CREDITS

**Engineers Aust members who attend RTSA meetings and events will qualify for CPD credits as per the Engineers Australia criteria. Members are responsible for recording their own CPD for audit.**

## NOTICE TO MEMBERS RECEIVING RTSA NEWSLETTER BY EMAIL

If you receive this Newsletter by post you will have missed out or been given late advice of events in several instances lately. This Newsletter may be one of them given the unexpected delay in production. E-mail is far quicker and more reliable, so let Canberra know if you are able to change from post to e-mail (address in the page header). E-mail saves time for you and costs for RTSA, which in the end can only mean better service to our members.

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