

# NEW SOUTH WALES NEWSLETTER



ENGINEERS  
AUSTRALIA

**RTSA**

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

**APRIL 2009**

**RTSA NSW CHAPTER MEETING**

**Wednesday 6<sup>th</sup> MAY**

11.30 for 12.00 in the

**CENTRAL STATION - CONCOURSE MEETING ROOM**

(next to Lost Property, opposite platform 2)

## **RAILWAY ACCIDENT INVESTIGATION**



**Paul O'Sullivan, the Chief Executive and Chief Investigator of the Office of Transport Safety Investigations (OTSI)**, will provide an insight to the role and functions of OTSI as NSW's independent investigator into major rail, bus and ferry accidents. He will place an emphasis on rail accident investigation in NSW, but will also draw on some of the major ferry and bus accidents that OTSI has investigated to illustrate the multi-modal responsibilities of the Office.

In addition, Paul will explain the service OTSI provides to transport employees to investigate safety concerns reported to the Office under the Confidential Safety Information Reporting Scheme (CSIRS).

Paul is OTSI's inaugural Chief Investigator and took up his position in 2004 when the Office was established following the Waterfall tragedy.

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

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## A WORD FROM THE CHAIR: Andrew Honan

The RTSA continues to push for a better deal for Regional Rail. Many of you will be wondering what has happened since the Neville Inquiry, the study tour and Wagga conference the RTSA organised on Regional Rail in 2007.

Unfortunately not much has changed. The new Federal Labor government is conducting an inquiry into the NSW Grain Freight Task. Although this sounds like it is solely concerned with grain freight there is a clause in its terms of reference concerning the opportunities for new rail freight:

*“ potential new rail freight opportunities that could reduce rail’s dependence on seasonal grain freight flows...”*

The RTSA concentrated on this wider role for rail in regional NSW. In its submission the RTSA stated:

*“Much of the focus on transport in the past decades has been on achieving efficiencies through economies of scale. Rail is well suited to delivering economies of scale, particularly over long distances...However the role of rail in this freight task, particularly between Melbourne, Sydney and Brisbane has not been high with modal share for rail around the teens...”*

*The transport task in regional areas is complicated by patterns of production, distribution and consumption which vary due to seasonal conditions and geographical location...(nevertheless) regional rail can contribute more than it does currently, for producers, consumers and the welfare of communities.”*

Overseas experience in North America supports the view that small to medium enterprises (SME) taking up rail systems in regional areas (called short-lines) make a significant contribution to regional development, to Class 1 rail operators’ revenue (where regional freight is interchanged with Class 1 operators) and more efficient overall transport outcomes.

The contention is that rail can increase its scope by breaking down institutional barriers (such as access pricing and regulation), developing fit-for-purpose safety regimes, developing entrepreneurialism (with government support programmes) that allows short-line operators to win over freight (at the margins) from road to rail.

This capability will see rail improved performance in any number of supply chains; whether it is bulk grain, containerised wheat, rice, cotton, stone fruit, viticulture, paper or any other emerging regional freight. Short-lines by their nature have the ability to adapt and respond quickly to regional transport demand.

*“Rather than looking to increase economies of scale, regional rail needs to focus on increasing its scope in transport, within a framework that promotes localising railways and recognising the market failures inherent in regional areas.”*

In order to understand this new role for rail the RTSA proposed in its submission that institutional capacity building of (integrated) rail and road transport is required within the regional areas.

One example would be to conduct applied transport research within the regional areas of NSW and Victoria. For example an origin-destination model of freight, based on transport surveys of enterprises could be linked into the road and rail infrastructure elements of a geographical Information system (GIS) of transport movements for both road and rail thereby providing a better capability to plan new transport links and forecast transport maintenance costs.

Allied with this, the RTSA also specifically commended institutional research with Regional Development Authorities (RDA) and LGA’s to actively promote rail programmes and capability, building on the strengths of the Saskatchewan model. Many LGA’s have civil engineers and development managers experienced in road based transport solutions, but know little of the opportunities of rail or road/rail integration. Also unlike local roads, LGA’s do not have accountability for local rail lines.

The RTSA offered whatever support it can, to ensure regional communities have viable transport options. It must be recognized however that we are volunteer organisation and our resources are limited. Nevertheless we do have a network of rail engineers that can help facilitate and participate in sponsored programs.

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Many of you will know of specific freight tasks, well suited to rail but which currently go on road. Whether it is paper from the mills in NSW, produce and wine in the Griffith area (or the cardboard and glass that goes into bottling), containerised wheat or the many other agricultural production commodities (not to mention bulk commodity transport), many of you will lament that these should be on rail, and that existing arrangements do not have to be as they are.

I was therefore pleased to see articles appear in the NSW RTSA newsletter over the last couple of months debating wagon load transport. (I hope there will be a discussion on the use of private sidings, in particular the experience in Europe in the months ahead).

Regional Rail may never challenge the dominant role of road transport, but it can contribute more to transport efficiency (and importantly regional development) than it currently does. Breaking down some barriers and building up some rail capability can provide the dynamic efficiency necessary to offer choice in regional transport.

These gains are significant and worth pursuing in regional areas.

## **ASIA METRO STORE**

As most members will be aware the STORE tour was 'launched' at the April meeting of the NSW Chapter. An electronic flyer was distributed the same day to all members of RTSA. The Asia Metro store is 'out of the starting blocks'. This is a fantastic opportunity to learn of the rail practices in Asia and to compare that with Australia.

Despite the economic gloom and the threat of unemployment, rail within our cities will have increased resources poured into them. Indeed the economic crises could see a drift in resources from road to rail (albeit mainly from the government sector). Just how land use planning, development and employment patterns (and the role of different transport modes) in our cities will occur in the medium to long-term is uncertain. But as pressure comes to bear on the environmental, social and economic costs of cities, it is clear rail transport will have much more to offer.

For this reason and for the opportunity to network with the very many rail people in Singapore, Kuala Lumpur, China and Hong Kong please consider coming on this tour. We should all consider this study tour as an important part of our career development – it certainly comes at a very significant point in time for Australia and Asian metro rail development.

Members who intend going on this tour are reminded that bookings must be made before the end of May – a deposit should be made as early as you can, with the final payment to be made by the end of next month. Do not delay too long in case you miss what looks to be a highlight of the RTSA year.

## **2009 YOUNG RAILWAY ENGINEER AWARD**

The 2009 Young Railway Engineer award has been made to two candidates, Mr. David Coker (NSW) and Mr. Chris Gordon (Victoria).

Mr. David Coker's award will be presented by the RTSA NSW Chapter Chair at the lunchtime technical talk on the 6th May 2009 just prior to the main agenda item.

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**Mr. David Cocker** is a Technical Manager with the Transport Infrastructure Development Corporation. He was involved recently with the final stages of construction and commissioning of the Epping-Chatswood Rail Link. He has considerable experience as a specialist tunnel engineer acquired in Australia, Singapore and the UK. He graduated from Sydney University with a bachelor of Engineering (Civil) degree and, in his final year, he received the prize for the best honours thesis. David is a Chartered Professional Engineer, a Member of Engineers Australia and a Sydney Committee member of the Australasian Tunneling Society.

## **THE APRIL MEETING: Reported by Malcolm Cluett**

### **ARTC North-South Strategy – Unlocking the Potential - Tim Ryan, GM North-South Corridor, ARTC**

Rail's share of the freight market is currently only 15% in the Melbourne – Brisbane corridor. This is much less than on the East-West corridor. So there is room for growth.

The North-South Management Team has responsibility for:

- Train Operations
- Asset Management
- Major Works Programme.

ARTC took over responsibility for the corridor in 2004, and introduced a Corridor Management model (which seeks to match the infrastructure to the transport markets). This involved:

- Train Control Consolidation
- Dealing with the maintenance deficit
- The Investment Programme to achieve strategic outcomes
- Unlocking freight access in and out of Sydney
- Nation Building Stimulus Projects

The planned train lengths are 1800m trains on the Sydney – Melbourne corridor and 1500m on the Sydney – Brisbane corridor. This is a major advance on train lengths in the past, and exploits the improvements in locomotive design in recent years, as well as ARTC's infrastructure improvements.

There has long been under-investment in the Melbourne – Brisbane rail corridor. Major works were commenced in 2007, including a programme of resleepering with concrete sleepers. This resulted in \$45M of timber sleepers having a very short life (from the time when ARTC took over the corridor). The fact that timber sleepers needed to be urgently replaced is a result of the maintenance deficit by the previous State Governments.

There are three major elements of the North-South strategy:

- Capacity for growth
- Reliability (ranked as most important in customer surveys)
- Reduced Transit time (target is 27 hours Melbourne – Brisbane)

A slide of the ARTC business model was displayed, with High, Medium and Low Growth traffic scenarios.

**Train Control Consolidation** – all signal boxes on the corridor have been closed and replaced by Centralised Train Control. A recent achievement was the replacement of the electric staff system of

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safeworking with CTC between Casino and Acacia Ridge. ARTC will take over the track from the NSW/Qld border to Acacia Ridge in July 2009. The North-East Victorian line, which is presently controlled from Adelaide, will shortly be transferred to the control centre at Junee, while Cootamundra to Broken Hill will be transferred the from Junee to Adelaide

## **Victoria:**

- \$50M Tottenham – Dynon: duplication, bi-di working, refuge track, parallel moves at junctions
- “Missing Link” – Separation of SG passenger and freight trains
- Dynon – Port of Melbourne rail link
- \$15M – Sunshine–Brooklyn leg of triangular junction. (from West to North)
- Metropolitan track upgrade

## **Melbourne – Seymour**

- Four Passing lanes, each 6.8km of double track
- New standard-gauge platform
- Rebuilding of the broad-gauge yard at Seymour

## **Seymour – Wodonga**

- Completed gauge conversion (200km converted in under 3 months, while keeping the adjacent SG line open). All new sections have concrete sleepers.
- Complete resignalling including crossovers & bi-directional sections
- Benalla – Oaklands gauge conversion on behalf of the Victorian Government

**At Wodonga**, the opportunity was taken to make the new bridge over the Murray River floodplain double-tracked. Essentially two identical bridges were built side-by-side. The original single-tracked Wodonga re-alignment was a Victorian Government initiative, and the double-tracking was made possible by Federal Government Nation-building funding.

## **Albury – Macarthur**

- Five new passing lanes (each a 6.8km double-track section)
- All signal boxes closed and train control relocated to Junee
- Passing Lanes will allow for three-train running crosses. Turnouts are Vossloh inclined-rail type (noticeably smoother than existing turnouts)

**Southern Sydney Freight Line** from Macarthur to Sefton Junction the new line will have one crossing loop, and new crossovers South of Macarthur.

At present the entire interstate freight timetable is planned around the Sydney curfew, which is a major constraint. Trains tend to bank up approaching Sydney, awaiting the end of the curfew, which is itself an inefficient use of terminal resources. The freight forwarder's ideal times coincide with the curfew, which is a disincentive for them to use rail freight. The new SSFL will offer access to Sydney for freight trains, totally independent of RailCorp's passenger lines.

Other works in Sydney include:

- ARTC take-over of metropolitan freight lines, including line to Port Botany
- Additional Holding roads at Enfield Yard, and other separation works
- Restructured yards at Port Botany (no more propelling movements onto the dock areas)

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- Capacity increases at Port Botany

## **Sydney – Brisbane**

- Seven new crossing loops to cater for 1500m trains.
- Six existing crossing loops extended.
- Extension of CTC and take-over from the NSW border to Acacia Ridge terminal

ARTC have identified a programme of curve-easing on the North Coast line. Deviations are another prospect, but a more expensive one. The objective of both is to move away from the steam-era alignment and allow higher speeds.

## **Sydney – Newcastle**

This section of track is currently controlled by RailCorp instead of ARTC. However upgrading works for freight trains are being planned. ARTC's requirement is for four freight trains paths (each 1500m) per hour, 22 hours per day. This is obviously impossible with current infrastructure constraints. A joint Federal/NSW Government Study is under way to explore options. The objective will probably be achieved from a combination of additional tracks, some new dedicated freight tracks, improved signalling and additional passing loops.

Cowan Bank (the steep incline for Southbound trains from the Hawkesbury River) could possibly be replaced with a deep tunnel. The terrain from Sydney to Gosford is difficult for the installation of additional tracks, with environmental concerns.

## **Resleepering**

ARTC have developed a technique of spot placement of concrete sleepers by a side-insertion method (resulting in shorter possessions and reduced costs per sleeper).

**Soft spots** in the track bed are being rectified, before they become a major problem resulting in speed restrictions.

## **Higher Transit Speeds**

ARTC is finalising research into an increase in the allowable Cant Deficiency prior to revising speed boards on curved track. This will be an important factor in allowing shorter transit times on the North South corridor, which will have much curvature for the foreseeable future.

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## **Questions from the Floor ...**

Q: How long is the Wodonga deviation ?

A: 9 km of track with 5.8 km of bridges.

Q: Implementation of ATMS (Automatic Train Management System - called ATP in NSW) ?

A: To be trialled between Port Augusta and Adelaide. Will be installed on the East-West corridor first.

Q: Will operations on the Passing Lanes involve micro-management of speeds ?

A: This will be timetabled, and the aim is to get a three-train running cross with no need for slowing down or stopping. Yes this will need careful control of train speeds.

Q: When will the 27 hours Melbourne – Brisbane transit time be implemented ?

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A: Later this year

Q Where are deviations most likely to be built ?

A On the Sydney – Brisbane corridor. Some on the Melbourne – Sydney line are a lesser priority.

Q Possibility of shared Road/Rail Corridors for future deviations ?

A No firm plans at present.

Q Possibility of second track on the Botany Freight Line ?

A With holding yards at each end, there should be enough capacity for the moment. Current shuttle services are 600m long.

Q Any progress on the future Moorebank Freight Terminal ?

A Negotiations are currently under way on what is currently Dept of Defence Land. There are some sensitivities involved.

Q Possibility of re-using the old 19<sup>th</sup>-century single-track alignments as deviations, which are more direct (but steeper) than the current 20<sup>th</sup> century rail alignment ?

A Not a real priority, but there is the possibility of UP trains using the direct track at Bethungra rather than the spiral track (if they can make the grade)

Q Possibility of Open-Access Freight Terminals, like Open-Access Ports ?

A Current terminals are not planned for future open access.

Q What about rail traffic originating in Newcastle and Port Kembla ?

A Most intermodal business is consumer goods (ie, major supermarket and retail chains) being handled between the major population centres. So Newcastle and Port Kembla are not a major focus at present. (Incidentally, in terms of tonnage, volume or dollars, pet food to WA is ARTC's biggest commodity !)

Q Are there enough terminals for the projected four-fold increase in traffic ?

A Sydney will have problems with terminal capacity in the future.

Q Possibility of Double Stacking on the Sydney – Melbourne corridor ?

A There are restrictions in terms of overbridges and tunnels.

The Bunbury St tunnel in Inner Melbourne is a particular obstacle for double stacking to Port Melbourne. There are heritage houses above (which would need to be demolished if the tunnel was daylighted).

Q Electronically Controlled Pneumatic brakes are reputed to halve braking distances. Any plans for implementation on ARTC trains ?

A The benefits of ECP are not so great for intermodal trains, as for mineral trains.

Q What is the viability of Inland Route bypassing Sydney ?

A This will be required when the coastal route runs out of capacity, estimated to be around 2020.

**AS A MATTER OF FACT: Max Michell** (postponed – we have run out of room!!!)

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## LETTERS 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, or 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.*

*FRANK HUSSEY writes:*

Recently the Editor has been examining rails lamentable share of general freight on the east coast and suggesting a range of historical reasons – and historical thinking – that has led rail to this sorry state of affairs. He particularly targets the obsession with long intermodal trains and the virtual disappearance of wagon load traffic as prime reasons.

I agree with his analysis – and in pointing to SCT as an example of his thesis (successful wagon load traffic), it is an example that needs a detailed explanation- not the least of which is that it is an east west service and comprises very long trains.

SCT was born out of National rails refusal (and I use that word advisedly) to deal with wagon load traffic at its terminals in the late 1990's. SCT's customers loaded pallets – things that are not ideal to load into containers –still!. Furthermore they has established a fledgling warehouse/ break bulk facility in Perth that added a healthy margin to what is otherwise a marginal business (interstate intermodal traffic). This business thrived, and warehouses were added in Adelaide, Melbourne and Parkes, providing SCT with a business in “just in time” (JIT) delivery and inventory management. The rail haul became just a link in the whole logistic chain that SCT owned and operated.

It is worth considering pallets for a while. These are still the preferred mode for handling most non bulk materials – but rail does not offer a large range of suitable wagons or “boxes’ to house them. This is where the B doubles have really hit their strides. I did some work some time ago for Patrick Portlink at Shepparton (Vic) and remember watching the loading process at SPC/Campbell's soup. The B doubles had a drive through facility at the loading bay, the curtain sides would be opened and two fork lifts (one working each side) loaded 40tonne of product in pallets in about 15 minutes. Truck departs for Melbourne and in 2.5 hours time it is unloaded just as quickly at another warehouse (from which the bulk loads are broken up into local JIT deliveries to customers). It was possible to get two loads a day into Melbourne. SPC had a disused siding – but if rail was to be used the product has to be packed into a container, driven to Patricks yard at Mooropna, grounded or put on an idle empty wagon to wait for the morning daily freight (as it was then).

Look at the trucks on the highways. They are not carrying containers – they are nearly all curtain sided B doubles. Look at the interstate trains – they are all carrying containers, along with a few curtain sided boxes that have a heavy tare because most rail yards insist that everything be capable of a top lift – not a good thing for a rectangular frame full of pallets unless it is heavily reinforced.

Other successful rail freight operators (i.e. those holding a high market share of the business in which they are engaged) are PNQ and Freightlink. Their success in holding onto supermarket traffic for Darwin and Townsville/Cairns lies in the huge warehouses establish by Tolls in those locations, serviced by the trains. Additionally they use a non ISO container that is designed to contain pallets, (the sides open right up) and use bottom lift equipment.

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All this suggests to me that it is not the extra cost of door to door that denies rails market share but it lack of suitable equipment to serve the market. Indeed ARTC did some research which showed rail had lower door to door costs than road on all corridors except Melbourne – Adelaide, and that rail was on average 19% cheaper (ARTC Links newsletter May 2008). This is also compounded by, as the editor suggests, offering a “daily” service in a market that demands an hourly one.

It's too late for a return to wagonload traffic in my view. Recently the big two supermarket chains have established huge warehouses to do their own inventory, break bulk and JIT delivery services – and rail sidings to them are conspicuously absent. Rail needs to be part of the logistics chain supplying these by either owning the chain (like SCT), be in partnership with someone who does (PNQ, Toll North) and start providing methods of handling the customers product that meets the standards that have been set by the road industry.

*BASIL HANCOCK writes:*

I refer to Geoff Sandford's letter on rail freight in the March issue. Let me open by saying that I am not an expert in freight transport, so some of my comments may seem naive or just plain wrong, but here goes anyway.

Geoff describes the "serious error of 1500 metre trains". I too have often questioned the advantages of long (say 1500 metre) intermodal trains. I can understand the advantages of long coal and ore trains, but I am not so sure about a long intermodal train, other than over very long distances (e.g. Adelaide to Perth).

A long train operating over a typical Australian single track and loop line will inevitably require more time than a shorter train unless all loops can be traversed at line speed. Operating over, say, a 40 km/h set of points, a 1500 metre train will take 2.25 minutes to clear the points. A 750-metre train will take 1.13 minutes. Take ten loops (twenty points) and the longer train will take 22.5 minutes longer over the trip than the shorter train (insert alternative figures for different loop speeds if you wish to challenge this). And the crawl along a longer loop will take longer than travelling along a shorter loop too. Add in longer times to clear curves, temporary and permanent speed restrictions before accelerating back to line speed, plus delayed braking response (unless ECP brakes are fitted) and I would suggest that the longer trains could take hours longer than the shorter ones over, say, a Melbourne to Brisbane journey.

In a market where I would assume that it is not just journey time, but also time of day that is important, I wonder whether it would be better from the customers' viewpoint to run two shorter trains (say one morning and one evening) with one or two locos rather than one longer train with twice as many locos once a day. Other than additional loco crewing costs, there should be little difference in operating costs, and on the plus side it shouldn't take much marketing of what should be a more attractive (i.e. more frequent and faster) service to generate the additional income required. I am not so sure about access fees for two shorter trains compared with one longer train though.

In addition the expensive lengthening of loops would not be required, the problems of long trains blocking level crossings would be reduced (just check the current press coverage of Dubbo to see how blocked level crossings cause problems), and trains would not need to be divided and shunted to enter some of the terminals. Except for the rare case of the line being at full capacity, the additional trains are unlikely to cause congestion problems, and even if they do there should be little difference in cost between providing an additional 800 metre loop mid-section and lengthening an existing short loop to 1600 metres. In practice many long loops are entirely new and at a different location from the shorter loops they replace, so the cost difference may favour the shorter loop.

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I'm sure I am missing something here, or else presumably this would already be happening, but I'm equally sure someone will write in and tell me (politely) what it is.

## **THE PROBLEMS OF RAIL FREIGHT CAN BE OVERCOME – by Barry Skelton**

There are many similarities between the freight problems in New South Wales and those of Britain, many of which came with the aftermath of World War II. Not least of these was due to 'mind set', as referred to by Geoff Sandford in his recent article "Disappearing Markets – The Relentless Pursuit of Indifference". Coincidentally, the problems he alludes to have been identified in government pronouncements both here and in Britain. In this article, I have attempted to translate the response to the British White Paper by the Planning Director of the English, Welsh and Scottish Railway into New South Wales terms.

### **Rail freight – the challenges**

- Introduction of 62.5 tonne gross weight lorries/trucks (RTA still licences 'lorries'!)
- Increases in fuel costs
- Unpredictable industrial relations
- The frequent changes to the administrative structure of the rail industry
- Ensuring that the infrastructure provider is responsive to the needs of its customers
- The possible uneven 'playing field' when considering the environmental benefits
- The increasing age of the lorry drivers.

### **Government Policy and Planning**

In December of 2005, the NSW state government published "City of Cities – A Plan for Sydney's Future" in the form of a web site, which put a few bits of the transport jigsaw on the table for the public to chew over. The general areas of consideration were:

D5 Ensure sufficient port capacity is available to serve Sydney (including maximise the efficiency of freight transport and the proportion transported by rail.)

D6 Improve efficiency of all types of freight movements in Sydney (including facilitate the upgrading of the metropolitan rail freight network.)

This was followed over the next couple of years by infrastructure reports to COAG, by various Auslink Corridor Strategies whereby the federal government delineated a number of main routes for rail and road between the state capitals, with urban corridors. In July 2007, the federal parliament, in "The Great Freight Task" report included the statement 'Most States have set targets for increasing the share of freight carried by rail in an effort to control the rapid growth in road freight.

A further spur that rail can and should promote is the tiny number of accidents on rail compared to road. Unfortunately, the Australian statistics are not in the form that is used in Europe, so a direct comparison is difficult. However, it does seem that our statistics are comparable. The European Commission produced data showing that typically there are around 43,000 road related deaths compared to typically around 120 rail passenger deaths per annum

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## The Overview for Sydney

The state of New South Wales has three main ports, Newcastle, Sydney (Port Botany) and Wollongong (Port Kembla). Of these three, Port Botany handles the majority of the shipping containers, most of which are destined for Sydney anyway. Newcastle handles a huge volume of export coal along with many other bulk traffics while Port Kembla has been promoted by the NSW government to take up the erstwhile Port Jackson tonnage (import cars and trucks, regional containers) as well as serving the steel works and handling a small export coal business, despite the vagaries of the Illawarra Escarpment and the consequent road and rail difficulties. The vast majority of local freight to be conveyed around Sydney is transported by road, with all the consequences of pollution, traffic accidents, carbon footprint and so on. As rail has abdicated the task of conveying goods within the circle of say 40 km around Sydney, it now has the task of regaining some of it. This requires a major mind-set change, not only within railway industry but also the government and the population as a whole, that rail is a possible alternative to road transport. It uses less fuel, it kills and maims a small fraction of the people, and the pollution it causes is a tiny fraction of that produced by road transport.

The Federal ARTC has made a start on the Southern Sydney Freight Line, due to open early in 2010, which will fill a void between the old established 'goods line' in inner Sydney and the now expanded dormitory suburbs out to Campbelltown. This will provide rail transport links to substantial container transshipment centres such as Leightonfield and Moorebank as shown in the map.

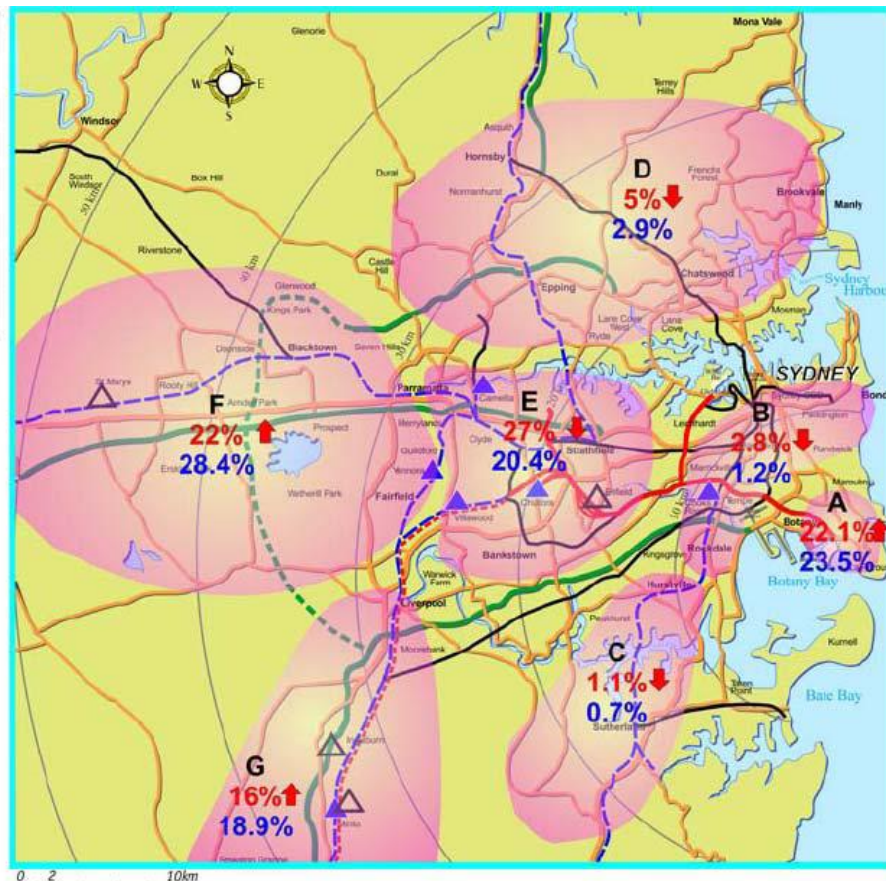
Reference	Areas	Existing %	Future % (2025)
A	Botany	22.1%	23.5%
B	City, Eastern Suburbs & South Sydney	2.8%	1.2%
C	Southern Suburbs	1.1%	0.7%
D	North Shore & NW Sydney	5%	2.9%
E	Inner West and Central West	27%	20.4%
F	Industrial West, Blacktown and Penrith	22%	28.4%
G	Liverpool and South West	16%	18.9%
	Interstate & Intra-state	4%	4%
	<b>Total</b>	<b>100%</b>	<b>100%</b>

### Origin and Destination (road transport)

Current Percentage

Future (2025) Percentage

- Dedicated Freight Rail Line
- - - Shared Passenger - Freight Rail Line
- Dedicated Passenger Rail Line
- Motorway/Freeway
- Main Roads
- ▲ Intermodal Terminals
- △ Proposed Intermodal Terminals
- ⤴ Port Botany Expansion



**Auslink Current 2006 and Future 2025 Port Botany Container Distributions**

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## **Inland Ports**

Both federal and state governments have been promoting the use of inland 'ports' for the storage and sorting of containers from Port Botany. Consultants Maunsell and Meyrick in 2006 identified a number of existing and potential inland rail terminal sites – Enfield (potential 300,000 TEU p.a.), Chullora (300,000TEU), Camellia (70,000TEU), Leightonfield (26,000TEU), Minto (expandable to 200,000TEU), Yennora (40,000TEU), Cooks River (150,000TEU), Moorebank (potential 500,000TEU), Eastern Ck (potential 500,000TEU), plus Clyde, Ingleburn and St Marys with unknown capabilities.

In its Trade Report for 2005-06, the Sydney Ports Corporation reported that the total number of containers passing through Sydney continued to grow and reached 1.445 million TEUs in the last year, 5 per cent more than the previous year. It can be seen that there is a considerable shortfall in the space available at Sydney's intermodal terminals!

It is also apparent that a much more efficient way of dealing with loading and unloading trains (and trucks) will be needed to cope with the enormous increase in throughput required. It is getting towards the time when dock layout must be considered so as to reduce the waiting time associated with land-side transport. Both trucks and trains suffer substantial expenses due to the complex combination of matching capacity, customs, quarantine and simply port handling capacity.

Suppose rail were to transport the whole of the load from a ship – not just 40%, or 20 trains a day. If we assume that the usable space in a typical 600 metre siding associated with dockyard use will take a locomotive and a train of up to 80 TEU (twenty foot equivalent container units), and the latest container ships coming to Port Botany carry 6 000 TEU, then we will need 75 trains to cope with the whole of that ship's load.

There is no way we can manage that number of trains with existing dead-end sidings, although it was advised at the April meeting that ARTC are already taking steps to improve access to the actual container swap tracks at Botany to avoid the current delays

According to the NSW Ministry of Transport, the domestic freight task, as the largest single task for NSW, is dominated by fuel (mainly coal) with non-metallic minerals such as aggregates and construction materials also being a significant contributor to volume flows. Newcastle and Wollongong mainly handle this load.

- Coal (classified as "fuel") is the largest category of product moved within NSW making 33.4% of the total task
- Non metallic minerals e.g. limestone, gypsum, salt, sand, construction materials are the second largest category of products moved domestically within NSW at 15.2%
- Foodstuffs e.g. meat, fish, dairy, grains, vegetables and beverages - 15.1%
- Metals, metal manufactures e.g. steel, iron, appliances and machinery – 13.2%
- Non metallic products e.g. cement, concrete, glass and bricks – 5.1%
- Remaining categories are not significant domestic NSW freight tasks e.g. chemicals, livestock, other manufactured goods and metallic minerals.

It is not clear whether trade waste and domestic garbage are included in this last category; notably, much of Sydney's waste is transported by rail to Tarago on the Canberra line.

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## **The Suburbs**

The Sydney suburbs extend out up to 50 km from Port Botany, and virtually all of the transport from the port is carried by truck. Very few of the 'old' sidings remain, the main exception being at Leightonfield, Yennora Minto and Camellia where containers are regularly loaded and unloaded.

As a way of reducing the impact of the high volume of heavy freight around the city, it may be that some of the facilities that used to tranship considerable quantities of freight could be resurrected. An example might be the yard and warehouse complex at Flemington Markets, conveniently located adjacent to the Northern Sydney Freight Line. Much of the problem, as pointed out by our Editor in the January 2009 newsletter, is the Pick-Up and Delivery cost (PUD) of getting freight from a terminal (or station) which under the current economic conditions we might be able to reduce. However, as has been pointed out in various ARTC reports, PUD costs are a major part of the total transport cost of getting a freight load from A to B. According to the ARTC Network Audit of April 2001, the PUD cost for the east coast freight market amounted to around 30% of the total door-to-door cost although substantially less on the east-west run to Perth.

According to the NSW submission to Infrastructure Australia in June 2008, transporting freight around Sydney is a complex task and the volume of freight is growing rapidly. Over the past 10 years, container freight has been growing at an average annual rate of 8%. In 2006/07, Port Botany handled 1.62 million containers, of which 81.5% were carried by road and 18.5% by rail. The total container throughput is expected to increase to the maximum approved capacity of 3.2 million containers per year by as early as 2018.

The majority of Sydney's freight is moved by road (86%). Any growth of rail mode share will lessen, but not eliminate, future road transport growth. Even with the NSW Government's target of increasing rail's share of container traffic from Port Botany from 18.5% to 40%, the growth in the overall freight task means that container freight on inner Sydney roads will double from the current 900,000 containers to around 1,800,000 per annum by 2021.

## **The State**

Apart from the traffic between the capitals of Victoria and Queensland, there are substantial flows of freight between Sydney and the so-called hinterland, every bit as important as the inter-capital volumes. The fuel consumed, to say nothing of road wear, must be substantial. We find, for example, that the very capacious railway sidings in Canberra have hardly any traffic – just a few fuel trains a week. This is for a city population of more than 300,000. Surely this must be a profligate waste of opportunity!

In the November 2006 issue of our newsletter, our editor pointed out that rail delivers freight at various locations in the country such as Narrabri, Wee Waa, Blayney, Dubbo, Warren, Griffith, Leeton, Bomen and Wodonga. These country locations mainly load for export, with empty containers being railed from Sydney for that purpose. With the expansion of Dubbo into a major rail connecting point, one would think there are other major centres of population where rail transport could be important, such as Orange, Tamworth, Moree, Grafton and Goulburn.

The freight traffic between Sydney and the rural areas of NSW is substantial – around 27 million tonnes in 2006. At the same time, as the Canadians have found, short lines bring in around 25% of the grains traffic. Similar statements can be made about small number of wagon loads of general traffic. Nor is it clear why sidings are so expensive to construct. Surely they do not have to be constructed to main line standard. In the NSW Audit Submission made in June 2008, the government made this submission to Infrastructure Australia to show the freight traffic around the state:

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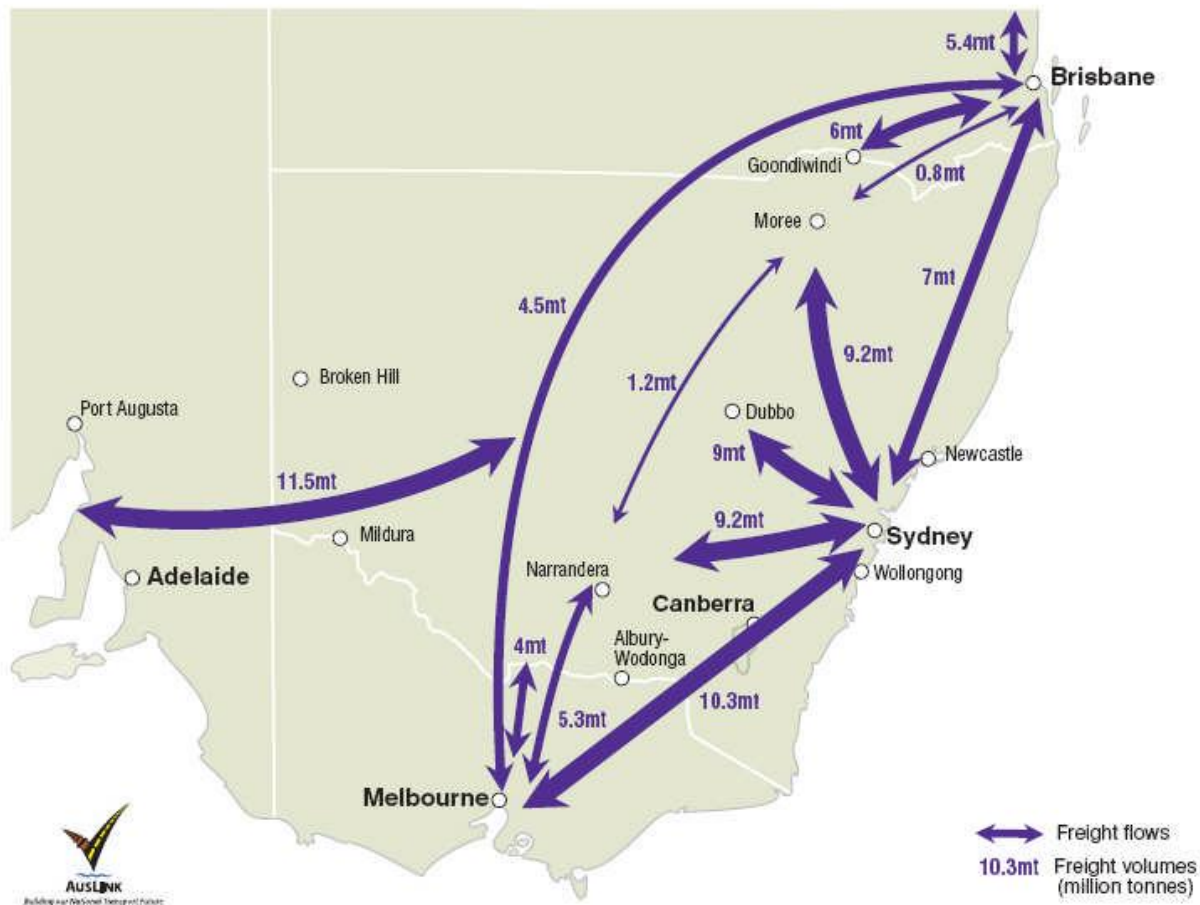


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## Freight flows between Sydney and other parts of NSW and interstate

### Other Ports

The Great Freight Task referred to expansion plans for Newcastle so as to reduce the virtual total dependence of New South Wales on Port Botany for container traffic. It may be that with the much greater amount of stacking space that will be available that a balloon loop concept can be planned for before any construction begins. The opening of a container terminal in Port Hunter would greatly relieve the traffic load on Port Botany, and has the potential to provide for the country areas without being involved in the Sydney passenger curfew. It also has an existing rail network connecting those areas.

### Rail and Road

Probably the most important matter in Britain is the recognition that more and more heavy loads have to be transported around the suburbs as a natural consequence of the increase in population. It seems likely that organizations, such as the RTA, have no interest in grasping the problem of heavy loads, even though there have been many reports about damage caused by heavy vehicles.

### Fuel

Concerns of the green movement would limit the use of coal, but the next cheapest competitor – nuclear fuel – is ruled out. Is this a case of cutting the nose to spite the face? The supply of electricity, especially

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for traction purposes, is not unlimited, and assuming the Maldon – Dombarton line does eventually get completed, a substantial supply of electricity might be required to haul trains (even car-carrying trains?) up the Illawarra escarpment. The 'carbon footprint' problem of transport has not really been addressed – the road transport lobby has been very efficient at disguising the quantity of effluent they produce, to say nothing of the pollution and other problems such as road crashes.

## **STUDY TOUR OF RAILWAY ENGINEERING (STORE 2009)**

Join the RTSA for an exciting 10-day tour of Asia's Metro Systems starting in Singapore and continuing to Kuala Lumpur, Shanghai, Beijing and finally Hong Kong!

### **Day 1 – September 13th**

STORE Opening Event – Evening Drinks Reception & Welcome.

### **Day 2 & 3 – September 14th & 15th**

Fly to *Kuala Lumpur*

#### **Visits to:**

RapidKL Metro systems, operational control centre, maintenance facilities.

Possible tour with Hartasuma

**Evenings FREE** to explore KL or join group dinner on both nights at local restaurant to be arranged.

### **Day 4 – September 16th**

Fly to *Singapore*

#### **Visits to:**

SMRT Metro control centre, maintenance facilities.

Possible visit to EZ-link smart card or LTA Academy

**Evening FREE** to explore the local area or visit the night markets or group dinner.

### **Day 5 & 6 – September 17th & 18th**

Fly to *Shanghai*

#### **Visits to:**

Shanghai metro, Shanghai high speed facilities, Voith Turbo facilities (all subject to confirmation)

**Evening flight to Beijing** (or possible overnight HS train). Dinner included.

### **Day 7 – Saturday, September 19th**

#### **Visits to:**

Beijing metro facilities, China Academy of Railway Sciences, Chinese rail museum

**Evening FREE** to explore local shopping or join group dinner.

### **Day 8 – Sunday, September 20th**

**Day Free:** All participants will be responsible for their own activities.

As an extra we plan to visit the Forbidden City in the morning and the Great Wall of China later where we will have lunch and walk the wall.

### **Day 9 – September 21th**

Fly to *Zhuzhou*, in the beautiful Hunan province with its famous cuisine.

#### **Visits to:**

Times Electrical Group, Times Material Technology, and China Southern Railways (subject to confirmation).

**Evening experience** the hot spicy flavours, fresh aromas and deep colours of local cuisine with a group dinner. Stay overnight.

### **Day 10 – September 22nd**

Early flight to *Hong Kong*

#### **Visits:**

MTRC facilities at Kowloon Bay Depot and presentation & Tsing Yi Operational Control Centre

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**Evening:** closing dinner and technical presentation with the China Hong Kong Permanent Way Society (CHKPWS).  
*Flights then return to Australia on the next day* (or if you have previously arranged later flights you can stay over, at your own expense, to do extended shopping or sightseeing).

**Note Itinerary is subject to change**

## Tour Benefits

This technical tour is a valuable opportunity for like-minded rail professionals to experience first-hand, how the most extensive metro systems in Asia transport millions of passengers to their destinations every day.

You and your fellow group members will learn of the practices and technologies in use by world-leading metro operators and manufacturers and have the opportunity to discuss how new ways of working can be introduced into your organisations. RTSA members will develop their rail capability for the emerging Australian and New Zealand metro industry, and build relationships with like-minded overseas professionals.

This educational and cultural exchange is a vital component in developing efficient urban rail systems for our Australasian cities, a vital component for economic growth and prosperity. So, join us on this exciting 10-day tour, broaden your horizons and network with other rail professionals to bring new ideas to your rail business!

Members of Engineers Australia can claim CPD hours for attendance at this event. Members should refer to Engineers Australia's CPD Policy for requirement details and conditions.

## Tour Prices (all Australian dollars)

The RTSA offers special discounts to members of the RTSA and young rail professionals:

**RTSA Young Rail Professionals:** (applies to young engineers under 35 years of age at time of booking):  
\$3,400 per person (twin share)

**RTSA Members:**  
\$3,900 per person (twin share)

**Note :** A single person supplement of \$1,194 shall apply to attendees requiring their own hotel room.

## Included in Price

- International and domestic air fares as defined in the itinerary (including from / to Australia)
- Transfers from / to airports using public transport
- Twin share accommodation including, taxes, breakfast daily.
- Lunches, evening meals (of standard local quality)
- Local rail travel (as part of the formal itinerary)
- Transfers to and from technical visits

**Note 1:** The above prices include departures from any of the major Australian gateways (i.e. Sydney/Brisbane/Melbourne/Perth/Adelaide).

**Note 2:** Air fares prices to / from Australia cannot be broken out from total tour.

**Note 3:** New Zealand members will be responsible for their own airfares to Australia. Flights from New Zealand to Australia are classified as domestic fares, that is, instant purchase and subject to availability. A further discount of \$150 to the tour price is available for New Zealand members to assist in these travel costs.

## Not Included in Price

Personal expenses such as:

- Lunch and dinners on free days / Alcohol at meals / Hotel services (phone calls, laundry) / Sightseeing tours.
- Visas and Travel insurance

Application forms from the RTSA web site [www.rtsa.com.au](http://www.rtsa.com.au)

For more information about Store 2009 contact: [MetroTour@rtsa.com.au](mailto:MetroTour@rtsa.com.au)

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## **GRAFTON CONVENTION – 12<sup>th</sup> to 14<sup>th</sup> JUNE 2009**

IE Newcastle Division, in conjunction with RTSA and IE National Committee on Transport is holding a Convention in Grafton from Friday 12<sup>th</sup> June to Sunday 14<sup>th</sup> June this year. The topic is **Transport and Communication: Australia's Backbone – Past, Present and Future** and is in Grafton as part of the 150<sup>th</sup> anniversary of the founding of that city as well as the 75<sup>th</sup> anniversary of opening of the double deck rail and road bridge which completed the standard gauge rail link between Sydney and Brisbane.

A number of keynote speakers have been invited including David Marchant, CEO of ARTC and Wal King, head sharang of Leighton Holdings both of whom are natives of Grafton.

Early bird registration is available until April 24<sup>th</sup>. RTSA members who are not EA members get the same discount as EA members.

Registration is now open. Registration documents have been circulated to EA and RTSA members and details are also on the EA Newcastle web site - ([www.newcastle.engineersaustralia.org.au](http://www.newcastle.engineersaustralia.org.au))

Chris Venn-Brown is the RTSA coordinator for this event. Chris can be contacted at [rpes@bigpond.net.au](mailto:rpes@bigpond.net.au) but it would be sensible to go to the EA Newcastle web site first. Coen Stoltz is looking after the Young Engineer side of this event on behalf of RTSA, and he can be contacted on [Coen.Stoltz@ttgt.com.au](mailto:Coen.Stoltz@ttgt.com.au). He is particularly interested in Young Engineer input.

### **SPECIAL MEETING:**

We expect to have an overseas speaker to talk about modern electric locomotives at a special industry presentation on TUESDAY JUNE 16<sup>th</sup> next. This will be at lunch time at our usual Central Station venue. Stay tuned for confirmation and more details in the next Newsletter

### **HEALTH NOTE:**

For those of you who watch what you eat, here's the final word on nutrition and health. It's a relief to know the truth after all those conflicting nutritional studies.

1. The Japanese eat very little fat and suffer fewer heart attacks than Americans.
2. The Mexicans eat a lot of fat and suffer fewer heart attacks than Americans.
3. The Chinese drink very little red wine and suffer fewer heart attacks than Americans.
4. The Italians drink a lot of red wine and suffer fewer heart attacks than Americans.
5. The Germans drink a lot of beers and eat lots of sausages and fats and suffer fewer heart attacks than Americans.

### **CONCLUSION**

Eat and drink what you like. Speaking English is apparently what kills you.

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DATE	SPEAKER	TOPIC	LOCATION	TIME
6 May 2009	Paul O'Sullivan Chief Investigator Office of Transport Safety Investigations	Railway Accident Investigations	Central Station Concourse Meeting Room	11.30 for 12.00
3 June 2009	Ivan Waterfield Executive Manager, Cardiff Operations, Downer EDI Rail	RailCorp PPP A-Trains	Central Station Concourse Meeting Room	11.30 for 12.00
16 June 2009 (Note: Tuesday not Wednesday)	Dr Janis Vitins Director Locomotive Marketing and Product Planning Bombardier Transportation	Bombardier Electric Locomotives (TRAXX and Heavy Haul)	Central Station Concourse Meeting Room	11.30 for 12.00
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	TBA	TBA	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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Andrew Mackay	Treasurer		
Tomas Magyla	Committee	Coen Stoltz	Committee
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 some of whom have stories, events or developments of interest that could make an interesting item for our NSW Newsletter. Items for publication should be in electronic (Word) format and preferably Arial 11 point text.

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 but are able to get it by e-mail (quicker and more reliable) then please let Canberra know (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. There are occasions (as recently) when email members are able to be advised of events or changes at very short notice which means members relying on the post could miss out..

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