RTSA NSW CHAPTER NEWSLETTER

SEPTEMBER 2014 EDITION

NEXT MEETING – MONDAY 22nd SEPTEMBER

INLAND RAILWAY – THE GOOD OIL

MAX MICHELL

Image: Mark Carter

The idea of an Inland Railway. linking Melbourne and Brisbane with a shorter and more direct single gauge railway, has been around for 100 years, but is only now getting sufficient political traction that it might actually be built. While there is general agreement that an Inland Railway is long overdue, avoiding the black hole that is Sydney and the less than helpful 19th century alignment of much of the existing route, it is not generally realised that there are a multitude of options as to actual route, construction standards and outcomes. Max will outline some of the issues and indicate where and why the current ARTC managed plan for Inland Rail is heading.

The Inland Railway is the biggest single rail project in this country since the Transcontinental line between Port Augusta and Kalgoorlie in 1917. It has the potential to completely change the east coast logistics network along with the demographics of significant cities and regional areas over a distance of around 2000 km - a not insignificant project by any measure. On present indications initial on the ground work could start as early as next year.

RTSA TECHNICAL PRESENTATION

VENUE:

Bradfield Room, Central Station Meeting Rooms, - next to Left Luggage, opposite Platform 1

DATE:
Mon 22nd SEPT 2014

TIME:
11.30am for 12.00pm

LIGHT REFRESHMENTS WILL BE PROVIDED FROM 11.30am, PRIOR TO THE PRESENTATION

MEMBERS, GUESTS AND INTERESTED FRIENDS ARE MOST WELCOME TO ATTEND.

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WORDS FROM THE CHAIR – DAVID CALDWELL

It is with pleasure that I take up the role of Chair of the NSW & ACT section. I thank the outgoing Chair, Steve Muscat, and the committee for their on-going support of the organisation and development of the RTSA. Although it is a pleasure, it is also a challenge - a challenge because there are clear opportunities for the RTSA to better engage with participants in the rail profession. For this, my first column as chair, I'll briefly set out three areas in which I hope we can make some progress in the coming 12 months:

1. Increased participation with Government and operating agencies. In the past the RTSA has had several committee members and routine technical presentations from government and operator specialists. We also enjoy the support of the agencies at the highest level- for example from Howard Collins addressing our upcoming annual dinner. But unlike all other states and New Zealand, there are presently no NSW & ACT committee participants from an operator, infrastructure owner, or the public sector.

2. Increased participation with young practicing professionals. The RTSA has been an industry leader in recognising and awarding excellence in graduates and developing professionals. But young professionals are underrepresented both as attendees at our monthly technical meetings and in the decision making process.

3. Increased participation with women in the industry. When I joined the RTSA committee three years ago, there were two women on the NSW committee. Today there are none- though the good news is that one moved up to become our National Executive Chair, Katharina Gerstmann. There is a general industry-wide gender imbalance, but as an organisation leading development in the rail profession, I expect we should do better, and we need "to be the change we wish to see in the world".

To help us understand how we can achieve this, I am particularly interested in hearing suggestions from young professionals, women, operators and public sector participants. Please email me, or collar me at a presentation, and tell us what and how we can do better.

We have a full programme of presentations for the rest of the year on Inland Rail, Sydney's newest trams, and North West Rapid Transit. I am looking forward to seeing you there.

AGM, COMMITTEE AND MEETINGS

At the RTSA AGM, conducted prior to the August general meeting, a number of new faces joined the committee for the coming year. David Caldwell has been elected as the new Chapter Chair and his first Word from the Chair contribution to Newsletter is at the head of this page. Details of the makeup of the new committee can be found on the last page.

Basil Hancock has taken on the role of coordinating the general meeting presentations starting from February 2015. Basil has asked that the following message be brought to the attention of all members –

At the August AGM I was elected to the position of Meetings Co-ordinator again after a gap of a few years, so I will soon be starting to plan for next year's monthly presentations.
The Sydney Chapter of the RTSA has always tried to hold presentations on a variety of topics in order to meet the interests of as many members and

visitors as possible, and I would hope that we have by and large met your expectations over the years. However I am always willing to consider different topics, so I am appealing to you as members or readers to let me have ideas as to what you would like to see presented at the monthly meetings.
If you could send me details of any topic you would like to see, it would be most useful. If you know a suitable (and willing) speaker then it would be even better. And if you would like to volunteer to make a presentation yourself, please let me know the subject and a few brief details.
I will though just add a few words of caution, not to reduce the number of suggestions but to give you an idea of the considerations which need to be taken into account before selecting a suitable presentation:

- *The subject needs to be a railway topic which should be of interest to a large proportion of the members;*
- *It needs to contain relevant engineering and/or technical content (we are after all an Engineering Institution and attendance at meetings counts towards CPD);*
- *It should not be mainly historical (except as noted below);*
- *It should not be a blatant commercial for or by the presenter – it needs to have relevant and topical content;*
- *It should be a topic which can be presented and is not restricted by, for example, being the subject of a current tendering process or a legal issue;*
- *It should be one where the stakeholders will agree to its presentation (no undue commercial, political or financial sensibilities);*
- *We need to bear in mind that track topics are usually presented at the Permanent Way Institution (PWI) and signalling topics at the Institution of Railway Signal Engineers (IRSE), and we should respect their specialisation on those topics; and*
- *Finally we should also remember that there are also other Divisions, Colleges and Technical Societies within Engineers Australia who may also wish to present similar topics.*

I have in the past tried to include a relevant heritage topic at the December meeting. I think it has been well accepted in that it sometimes helps to look backwards as well as forwards and to learn from the past. In addition it helps us all to wind down before the Christmas and New Year break, but again I would appreciate feedback on whether this is something you would like to see continued.
If you have any ideas or observations, please email me on basilhancock@interfleet.com.au .

Basil would welcome any thoughts and ideas you may have, in line with the above.

Andy Chiem has been elected as Deputy Newsletter Editor so it would be appreciated if any correspondence in relation to RTSA or Newsletter matters could be addressed to both the Editor and Deputy – it makes for greater efficiency in preparation and timely distribution of the Newsletter to members. Contact details can be found in the usual place – on the last page of every Newsletter.

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POINT OF VIEW – MAX MICHELL

Railway progress, at least in the former state railways during the last 100 years or so, was really all about a 'chain of events' type system – only when a visionary within managed to break out of the existing mould did spontaneous progress appear in other parts of the system. In some ways this is to be expected in an organisation that is a complex network. Perhaps an example from history might help to explain.

In NSW railways radiating from Sydney (and for that matter Newcastle) were constrained to some degree by geography - mountain barriers and major rivers standing between the town and richer pastures on the far side of natural barriers. Cheaply built but convoluted and heavily graded railway lines extended out over time but with severe constraints on train loads and time – albeit initially the competition was with bullock drays and the like where rail looked positively brilliant. The operating cost burden imposed by the original 'low cost' rail routes took its toll with the result that around half a century after the first train there was a concerted push to increase the power of locomotives and regrade the main lines heading toward the city and its port. The former brought forth a massive fleet of near identical freight locomotives – over 500 of the so called 'standard goods locomotives', with their plodding 30 mph maximum speeds they were hardly greyhounds but if time was not of the essence then they were quite effective for their period. They were large locomotives when introduced, and infrastructure was progressively adjusted on major lines to the extent necessary to accommodate them.

Around the late 1920's once again the inadequacies of the system needed addressing (as it did in all the standard and broad gauge states) so even larger (in fact very much larger) steam locomotives were built – but in NSW only 25 of them. These took on freight work to Lithgow and later to Cootamundra and Thirroul but they made minimal difference to the vast fleet of 'standards' which had a far wider range. For some reason NSW never tried to develop an intermediate freight locomotive for main and secondary lines, unlike Victoria and South Australia, with the result that it met WW ll with the majority of its freight power based on a dated 1890's design. It was probably the sheer weight of numbers that enabled NSW to get through the war, albeit with far lower efficiency that might otherwise have been the case.

Post war saw a major restoration effort by all rail systems with attention to the now significantly run down loco fleet being a major issue. In NSW this involved a number of new steam locomotive designs along with the first tentative steps to adoption of diesel traction. Among the steam orders was one for twenty freight locomotives from Baldwin in America – a standard design that could have been supplied almost immediately from the manufacturer's production line. But no, the lack of vision shone through and the new locos had to be redesigned to fit on a 60 foot (roughly 19 metre) turntable, the result of which was that delivery was delayed by years. When they did arrive they were put into main line running between Sydney and Newcastle and along the North Coast line – where turntables were all longer than 60 feet. The only time when the 60 foot capability has been useful has been when these locos were in heritage use.

The decision to require a bespoke variation for these locomotives was based on a flawed thinking process – that 20 new locomotives would simply randomly replace 20 of the ancients rather than be dedicated to a specific route or activity defies common sense. The standard goods locos were so ubiquitous on main lines in those days that 100 new locomotives with higher power and longer range design could have been built to replace them on main lines only – which would have made a material difference to overall system enhancement and efficiency.

As it was these locomotives had a short and fairly unproductive working life, being largely overtaken by diesel technology even before they were placed in service.

Even a decade or so later, when it came to large scale diesel orders, a 900hp design was acquired to replace branch and secondary line steam on a one for one basis which ultimately resulted in the largest single class of non steam locomotives that this country has seen. The fact that we went from 1890 to 1960 in one jump didn't seem to have stirred the slumbering masses to consider if we should be doing more than just dealing with locomotives – might it have been useful to look at infrastructure, train running practices and the like and change the system rather than just change the locomotives.

Why would these now historic issues matter? In my view it gets to the nub of why we have a far from efficient freight railway in this state and indeed on the east coast of this country. Probably driven by the mandarins of the various state Treasuries, who always seem to work on 'cheap is best' principles, we now have rail alignments that are best described as early 19th century standing alongside an extending network of Freeways or Motorways (either way they should be described as Truckways) and arterial main roads which will eventually leave east coast rail as virtually irrelevant. We spent too much time concentrating on single issue matters (such as locomotives) and too little on attending to the other issues that make up a working system. Adding fuel to the smouldering fire is the current belief that the work of bean counters and econocrats is a precise science when in fact it is nothing more than a rather unskilled humanity – we now have paralysis by analysis as a current work related difficulty that is very germane to the rail issue.

We still haven't learned – we replace timber sleepers with concrete sleepers on the same alignment that was laid down more than 100 years ago, ignoring the straight heavy duty highway being constructed just over the fence. We rebuild bridges under impossibly ancient alignments rather than dealing with the system issues of alignment and bridges (ask about What Fools Bridge - it is labelled as such - and I will tell you a story). We create bureaucracies that would put the past to shame, that have little idea of and no regard for the commercial reality that freight rail must work under. New technology arrives (such as AC diesel traction or ECP braking, both recently adopted by most freight operators) so we create another set of rules and dargs that make the commercial aspect of rail seem like a fairy tale. We run slower timetables to meet political fantasies about 'on time', we create rules and difficulties that do damage to the rail industry, we do knee jerk responses to things that are often imaginary, we pay little regard of the need to be cost effective and overprice much of new infrastructure to the point that it has no commercial or political point. We paralyse ourselves and make ourselves unattractive to the public and political system.

I have a recurring fantasy that we will adopt best practice technology, excellence in train running and other issues that make up the whole, that we will do these with the needs and wants of the users foremost, that we will apply and have logical proper outcomes accepted, that we will deal in whole of life costs and recognise social costs, that we will rely on the intuition and experience of those who have a solid grounding in the industry ahead of computers as decision makers, that we will stop relying on knee jerk action as a substitute for policy, that we will look at the real issues and problems and determine the action that gives the best outcomes, that we will do things in our patch which is not only good for us but for the industry as a whole. Rail will again become the mode of choice for mainstream freight movement and the highways (in relative terms) will again become more or less the domain of the private car.

Dream on !!!

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MEMBERS MEETING REPORT – MALCOLM CLUETT

North Strathfield Rail Underpass (NSRU) Project
Nicolas Law de Lauriston, NSRU Alliance

This project is part of the wider Northern Sydney Freight Corridor program, and includes grade separation, track amplification and the provision of passing loops between North Strathfield and Broadmeadow.

The NSRU Alliance was set up with the task with building the dives and tunnel under three live railway lines, with associated works. A slide was shown of the numerous companies and organisations which comprise the Alliance. The composition of the Alliance demonstrated that this was a particularly multi-disciplinary project.

At present, Southbound freight trains stop Northbound trains in order to cross from the Up main over the Down Main and onto the bi-directional relief road on the western side of the rail corridor through both Concord West and North Strathfield then via the freight loop to Homebush and beyond (having gained the freight line at North Strathfield Junction it is possible for freight trains to get as far as Macarthur before again joining mixed purpose tracks)

The main purpose of the underpass is to allow Up freight trains to pass under the Down line, eliminating the use of the current flat junction. The line through the Underpass and Dives is designated the **UP FREIGHT** line.
Northbound freight trains will not use the underpass, and are not greatly affected by the works. They will use a new crossover to gain access to the bi-directional Relief line, as happens currently. Provision has been made for a future Down freight line if required between the Southern Dive and the Western boundary.

2400m of new track will be laid, and 850m of existing track upgraded, on the Up approach to the underpass structure. The underpass itself is 148m long with a maximum depth of 9m. The dives at each end are 350m long. One has a grade of 2.1% and the other has a grade of 2.8%, which hints at the space constraints at the site. The maximum depth of the invert is 9m.

The location of the Southern Dive is close to the heritage Arnotts Biscuit Factory at North Strathfield (now a shopping and residential centre). The Northern Dive connects in to the existing up relief loop near the Pomeroy St overbridge, in the vicinity of North Strathfield station.
The new Up Relief and Up Freight lines will be electrified and suitable for passenger trains during special events and for transfer of empty train sets between depots. As a separate project, operationally redundant crossovers on the passenger lines between Parramatta Road underbridge and North Strathfield station have been removed by Sydney Trains.

Southbound freight trains will have a 1500m long section to wait in the clear before entering the underpass and the single track section towards Homebush. Following Up trains will be able to pass unimpeded on the UP line. This is the reason for the new Up Relief line, which commences not far south of Rhodes station.
The underpass is in close proximity to the running lines, both laterally and vertically. It is also heavily skewed to the axis of the existing tracks. The cover is limited to just 2500mm between the top of the roof and the bottom of the existing trackbed.

The new line will not be suitable for double-stack container freight trains (getting such trains between Sydney and Newcastle would require massive infrastructure works – so double stacking is not and never will be an issue at this location). The tunnel

has a horse-shoe cross section, with an arch roof and a flat floor with the rails attached to a track slab. The upper parts of the tunnel are bored in weathered shale, and the lower portions in competent shale.

The ground was supported by Canopy Tubes during each advance of the face. These are steel tubes 12,000mm long and 138mm diameter, that are driven in (at a slightly inclined upwards angle) over the top of the face, with a 3000mm overlap. After the shotcrete is applied, the result is a sawtooth profile in the crown, when viewed in side elevation, and this will remain in the finished bore.
Fibreglass dowels (face nails) 12,000mm long were added for temporary support at the front face.
The interior of the tunnel is lined with synthetic-fibre-reinforced shotcrete, which is sprayed on in several passes. Tell-tale projections were affixed so that the applied shotcrete thickness of 250mm could be gauged by the operator. The lining of the tunnel has a four-hour fire rating.

The temporary and the permanent supports were designed to cope with all dead and live loads at the site. Train operation on the surface running lines was not interrupted by the tunnelling.
Detailed design drawings of the tunnel were shown to the audience.
The machines that were used for tunnelling consisted of:

- Cherry Picker for man-access to the face.
- Road Header (type S300) for excavation
- Jumbo for insertion of canopy tubes and face nails
- Shotcreting machine, which was robotic
- Air Scrubbing Machine, which was moved along as the work progressed.

Enough space had to be provided each item of plant to operate past the scrubber and take turns at the face.
Tunnelling progress was 8m high x 7m wide x 1m axial for each advance. A temporary water treatment plant was built to process and clarify the water used in the tunnelling process.

Dive Structure Side Walls
Vertical holes were bored from above, and made into vertical cylindrical columns of reinforced concrete. The infill walls were then tied in to the columns, and then shotcreted.
The tops of the retaining walls of the dive structures were strengthened by horizontal struts, passing above the dive tracks. These were designed to withstand a collision with a derailed rail vehicle on the adjacent tracks.

Drainage
Surface water from the approach dives is diverted by drains before it can enter the tunnel bore. For the unavoidable amount of water that enters the bore, from windblown rain or dripping trains, suitable collection sumps and pumps are provided.
The capacity of the local Powells Creek stormwater drain was enhanced by removing cable ducts suspended from a road underbridge, increasing the flow area and thus the hydraulic capacity. Relocating the cable ducts was more cost effective than augmenting the stormwater drains with new construction.
Some new drainage works were made by microtunnelling under nearby roads and the railway. No settlement was observed here. A diagram was shown of the drainage catchment and the augmented drainage provided, which discharged into Powells Creek. Some gas mains were also relocated.
The underpass structure was designed to withstand a 1 in 100 year flood without inundating the tunnel.

Railway signals
Signals have been designed so that freight trains in both directions will not need to stop within the tunnel. There are also some signal adjustments required for the current running lines, due to alterations to the location of crossovers, etc.

Station improvements
Concord West – New disabled lifts, weather shelters and an enlarged overhead concourse were provided. It was difficult to do this on an active

railway station, which had to be kept open for normal business, apart from the occasional closedown. The new concourse opening is scheduled for 26 October 2014. Photos were shown of the problems of building a new overhead concourse, stairways and four lift shafts, in the middle of an operational railway station. This work continues at the current time.
Because of the new UP Relief line, a new platform face had to be made on the Eastern side.
No changes were needed at North Strathfield station.

Footbridge at North Strathfield
A pier needed to be removed, as it was in the path of the Northern Dive. It was replaced by an unusual cantilevered support from outside the area of the new running lines, without disturbing the main footbridge span. The side frames of the cantilever were made from precast concrete.

Track monitoring while tunnelling
A robotic laser system was set up, which gathered data from target prisms glued to the rails. The scanning theodolite was mounted on top of a steel mast at a strategic position beside the tracks. It was found that the mast deflected from the sun's rays, which occur in different directions at different times of the day as the sun moved across the sky. At first it was thought that the track had a daily deflection cycle, but when the mast was insulated the problem was resolved. The site was monitored for three months before tunnelling began.
Track geometry parameters such as Top, Line, Short Twist, Long Twist, etc were monitored.
It was recognised that there would be some deflection as a result of the tunnelling activity underneath. The movement was progressive as the face of the tunnel advanced. The deflection was in line with the predictions.

Construction Sites
There are four work sites. One at each end of the dives/underpass, one at Concord West station and one at Harrison Avenue (a bit further North).

Possession Calendar.
Some of the works were in very close proximity to the running lines, and had to be done during possessions.
Example – the Sheet Pile wall between the Down Relief line and the Southern Dive. The Capping Beam of this wall was poured during a possession, and a picture was shown of this.
Very complex plans were presented showing all structures, underground and overhead services.
The NSRU Methods Department came up with the means to accomplish the required tasks while complying with the space constraints and keeping workers and plant out of the Danger Zone. Computer drawings were shown to the audience. The actual plant employed for the project were used in these diagrams. One result, arising from the availability of a large Road Header machine, was that the tunnel had a larger cross section than originally planned. Construction staging diagrams were used, and some examples were shown.
All staff on the project required RISI cards, and were breathalysed each day before going on duty.
An access road occupies part of the site, which could be used to build a future UP railway line. This is the alignment of the former Up Relief line. There is also space to build a future extension of the Down Freight line between the South Dive and the Biscuit factory.
Acoustic walls were built beside the lines at some locations. Cutting walls were stabilised with soil nails and shotcrete.
An existing water pipe overbridge near the Pomeroy Street overbridge needed to be rebuilt. The opportunity was taken to remove intermediate piers and the new pipe bridge is a single span.
Two cross-drains were constructed during possessions underneath the tracks from East to West, to the North of Concord West station.
One final point was that safety was paramount in designing the work method and construction of the project as a whole particularly for work so close to the Danger Zone of a live railway.

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Q&A

Is there a possibility of duplicating the current single track towards Homebush ?

The benefit of the project is the elimination of a flat junction at Concord West for Southbound–to Westbound freight trains. Double tracking of the North-to-West leg of the triangular junction was not part of the proposal. In the past, there were double tracks laid on this leg, however at this time there was no dedicated freight line West of Homebush.

There is provision for a future additional Down freight track beside the Southern Dive, which would add flexibility.

What was the role of ARTC ?

ARTC will obtain benefits from the revised track arrangements. There was between $250 and $300m of Federal Funding for this project, as well as funding from NSW.

Was the depth of the cover of the tunnel adjusted ?

The depth depended on the support system that was chosen.

The face of the tunnel was not benched – it was done as a full face. By the way, the tunnel was bored north to south and not from each end.

The maximum settlement was 12mm in the ground, and 7mm in the track, which is a minor adjustment.

This was a technically challenging project. If starting again with hindsight, what would have been done differently ?

The site works at the Northern end would have been started earlier. Most of the critical path problems occurred at the Northern end. There were also delays in the signalling design and station-rebuild aspects of the project.

Drainage and Pumpout in the tunnel ?

There are sumps at each end of the tunnel, to capture windblown rain, or rain off a dripping wet train. In addition, there are subsoil drains. There are also strip drains between the two layers of Shotcrete. Sumps are provided for both Stormwater and Groundwater, and both are pumped out as required. The drain from the bottom of the tunnel was pipe-jacked to a suitable stormwater drain, in a North Easterly direction.

LETTERS TO THE EDITOR AND OTHER TITBITS

No letters but ....

Apropos the whimsical note in last month's Newsletter, a correspondent has pointed out that the Waratah sets not only have cars 5555 and 6666 but also 5678, 5432 and 6543. As if to reinforce this, on one of the Editors recent trips to Sydney he quite randomly travelled in sets 55 and 66 and saw two of the other three sets mentioned (54, 56, 65) in passing. It never rains but it pours

EVENTS AND GENERAL INTEREST

ENGINEERING INSIGHT COURSES – BRISBANE, September 23rd and 24th

Members are reminded that Brisbane will be host to the joint RTSA / ARA Engineering Insight courses on Rolling Stock (Sept 23rd) and Track (Sept 24th). These courses have been designed to inform and educate rail practitioners not directly involved in these specific disciplines and to provide a better understanding within the broader rail industry. They have been held in a number of cities so far and have proved to be very useful and for that matter popular. Details can be found in the flyer sent to members earlier in August or from the RTSA website at www.rtsa.com.au

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ELECTRIC RAIL – BUILDING AUCKLAND'S FUTURE – AUCKLAND, Oct 3rd and 4th

A joint initiative of RTSA, IPENZ and IRSE is a two day conference on the Auckland electrification which is being commissioned over the next year or so. As with Perth the Auckland suburban rail system had declined to a point where it either had to be significantly improved or shut down. Local and national government showed some vision and combined to do a very considerable makeover, with a new city station (a most striking place), track upgrading and duplication, two new branch lines, new trains and of course electrification.

Friday 3rd of Oct will be a conference day while Saturday 4th will involve a tour of most of the key facilities and locations by electric train. For those wishing to get additional benefit from the event an Automatic Train Protection seminar is being run by IRSE on Thursday 2nd Oct.

Full details and registration (which is now open) can be accessed at *www.aucklandrailconference2014.org.nz*. .

RTSA NSW CHAPTER ANNUAL DINNER – SYDNEY, OCT 23rd

An excellent sponsorship opportunity exists to support our Annual Dinner to be held on the 23rd of October, 2014. With rapidly expanding opportunities in the NSW rail industry, and some new exciting rail projects about to proceed, the dinner will allow attendees to socialise, network and gain insight into wider aspects of the rail sector as presented by our guest speaker Howard Collins, CEO of Sydney Trains. This high profile event gives companies an invaluable opportunity to raise their profile in the rail industry.

This year's Dinner will be held on Thursday the 23rd of October at the Sydney Harbour Marriot, Circular Quay. The format is intended to remain the same with pre-dinner drinks and a presentation on the night. The cost will remain $80 per person all-inclusive for members and partners, and $120 for non members. Numbers for this event will be limited to 120 with a first in best dressed system – so get in quickly.

All bookings for this event will be either via online services at http://www.rtsa.com.au or phone to Stephanie McMullen on 02-6270 6584.

AusRAIL 2014 – PERTH, Nov 11th and 12th

The theme for AusRail this year is Making Innovation Work. RTSA, RTAA and IRSE are all significant contributors to the technical streams at AusRail, providing the core program at the conference. At plenary sessions industry leaders, rail manufacturers and operators from across the Asia-Pacific region and beyond will discuss putting the latest innovations into practice.

In addition to an exciting technical program, the two-day conference and busy exhibition are invaluable platforms for networking and exchanging ideas with your peers across the sector.
Please visit **www.ausrail.com** to view the conference agenda and book your places.

Corporate readers may be interested in taking advertising space in the Official Event Guide (2014)

or taking up an exhibition spot at next year's event at AusRAIL PLUS 2015, which are selling fast. Please contact Deborah Bocock for an update before the best Official Guide pages (AusRAIL 2014) and exhibition locations (AusRAIL PLUS 2015) are sold out - p**hone: +61 (0) 2 9080 4348, Email: deborah.bocock@informa.com.au**

By far the biggest boxcars seen in Australia – SCT's Greater Freighters are a common sight between Parkes, Adelaide and Perth, but could also be seen between Melbourne and Brisbane on an Inland Railway in the not too distant future.

Image: Mark Carter

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FUTURE RTSA MEETINGS AND EVENTS

DATE AND TIME	ACTIVITY	LOCATION
Monday 22nd SEPTEMBER 2014	INLAND RAILWAY – THE GOOD OIL Max Michell	Bradfield Meeting Room Central Station Concourse Sydney
Monday 27th OCTOBER 2014	SYDNEY LIGHT RAIL'S NEW TRAMS Henry Mooser and Bruce Wooldridge	Bradfield Meeting Room Central Station Concourse Sydney
Monday 24th NOVEMBER 2014	NORTH WEST RAIL LINK Adrian Bull	Bradfield Meeting Room Central Station Concourse Sydney
Monday 22nd DECEMBER 2014	NO MEETING	
Monday 26th JANUARY 2015	NO MEETING (Australia Day)	
Monday 23rd FEBRUARY 2015	TBA	Bradfield Meeting Room Central Station Concourse Sydney
Monday 23rd MARCH 2015	TBA	Bradfield Meeting Room Central Station Concourse Sydney
Monday 27th APRIL 2015	TBA	Bradfield Meeting Room Central Station Concourse Sydney
Monday 25th MAY 2015	TBA	Bradfield Meeting Room Central Station Concourse Sydney
Monday 22nd JUNE 2015	TBA	Bradfield Meeting Room Central Station Concourse Sydney

For 2014 RTSA Meetings will be on the **FOURTH MONDAY** of each month from February to November. All meetings will be in the **Bradfield Room** off Sydney Central station main concourse. Any changes will be advised in the Newsletter, or if too late for the Newsletter then by special Flyer.

Presentations in **black are confirmed** those in **red are provisional** at the time of publication.

Members with thoughts, ideas or offers of presentations for our monthly general meetings should contact Basil Hancock, RTSA Meeting Coordinator at the address shown on the next page. While Basil has a list of good ideas he is always open to member thoughts and contributions.

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RTSA CONTACT AND SOCIETY DETAILS

The committee for 2014/15 comprises.

OFFICE HOLDERS			
David Caldwell	Chair	nsw-chair@rtsa.com.au	
	Deputy Chair		
Malcolm Cluett	Secretary	nsw@rtsa.com.au	
Max Michell	Newsletter Editor	max412@gmail.com	02 4975 4310
Andy Chiem	Deputy Editor	andychiem@interfleet.com.au	
Andrew Mackay	Treasurer		
Basil Hancock	Meeting Coordinator	basilhancock@interfleet.com.au	
COMMITTEE			
Stuart Allabush	Nathan Boland	Dominic Cancian	Andrew Honan
Bill Laidlaw	John Watsford	Kenelm Wong	

For matters directly related to the running of RTSA please contact the appropriate office holder as listed above. For general matters or membership enquiries you should contact:

RTSA NSW Chapter, Engineers Australia, 11 National Circuit, Barton, ACT, 2600

The easiest way to submit contributions for the Newsletter is by e-mail to the Editor at max412@gmail.com AND the Deputy Editor at andychiem@interfleet.com.au, alternatively to the address shown above.

Engineers Australia members are reminded that attendance at RTSA technical meetings and events contributes towards CPD requirements. Each RTSA technical meeting generally has a value of 1 CPD point.