

NEWSLETTER No 9/2007



Railway Technical Society of Australasia
SA Chapter
Engineering House, Bagot Street
NORTH ADELAIDE SA 5006

September 2007

NEXT MEETING

Next Meeting – 4th October 2007

The next meeting of the RTSA - SA Chapter will be held on **Thursday 4th October 2007**. The meeting will be held at the:

**Chapman Hall, Engineers Australia
Bagot Street, North Adelaide. SA 5006**

commencing at **5.30pm**.

The speaker for the meeting is:

**Mr Peter Jaehne
Freightlink**
who will speak about the

“Alice Springs to Darwin Railway Six Years On”

Six years ago the Alice Springs to Darwin railway project was launched. Just over three years ago after a frenetic construction period the railway commenced operation.

Peter will talk about what the railway is all about from a business perspective, new traffics won and opportunities for growth, how the infrastructure is managed and the experiences and challenges in operations and infrastructure maintenance.



Light refreshments will be served prior to the meeting.

Continuous Professional Development (CPD)

IEAust members are reminded that attendance at RTSA technical meetings contribute towards CPD requirements. Each RTSA technical meeting generally has a value of 1 CPD point.

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LAST MEETING

At the last meeting, Malcolm Menadue spoke about In Cab Activated Points System (ICAPS). The paper below was developed from his presentation.

The meeting was attended by 23 members and visitors.

In Cab Activated Points System (ICAPS)

**Malcolm Menadue
FIRSE FIEAust CPEng**

Project Concept

The idea for the project for the installation of an in-cab points operating system across the TransAustralia Railway (TAR) resulted from my trip to Darwin on The

Ghan, where radio controlled points are used at crossing loops. The TAR was already fitted with motor operated self restoring points and colour light enhancers and Pacific National could see the operational benefits for the TAR with a similar system installed.

Pacific National discussed the project concept with ARTC during a monthly Track Access meeting and a project working group was formed with ARTC, Operators & Suppliers. After further investigation, the project was given the approval to proceed. A workshop was then established with Pacific National drivers to define the "on screen" AWARE interface.



In Cab Activated Points System (ICAPS)

ICAPS allows the train crew to request the facing points to **Reverse** from the cab of a locomotive. ICAPS is installed at 44 crossing loops between Port Augusta (Tent Hill) and Kalgoorlie (Parkeston).

There are three main components to ICAPS:

- i) Locomotive Equipment
- ii) "Over Air" Interface
- iii) Base Station (crossing location) equipment

There are two main types of locomotive equipment"

- i) Stand alone UHF radio (Simoco 9030), with hardware & software enhancements, installed on selected locomotives
- ii) Fully integrated ICAPS into the AWARE train radio system on NR class locomotives.

ICAPS Objectives

The objectives of ICAPS are:

- i) To achieve safe remote operation of the points
- ii) Be suitable for the traffic density on the Nullarbor corridor

- iii) Be able to support the current and any planned crossing loops
- iv) To use UHF radio communications and utilise any existing radio infrastructure Provide a simple and consistent operation of all crossing loops by the Train Crew.

ICAPS Solution

The solution adopted for ICAPS was a GPS based locomotive positioning system together with the establishment of a datum from which the system can be initiated. It is a cost effective solution that provides Train Crews with train location information. The need for drivers to enter a location code number is eliminated.

The Man-Machine interface is simple to use. Two button pushes only is required to activate the facing points.

The system operates on the dedicated state wide UHF frequency for SA and WA. This allows the use of standard UHF transceiver technology, which is the equipment currently in use for voice communications on the rail network.

CCIR 5 tone (Selcall) messaging is standard.

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A similar system is in use on the rail network for remote points operation on 4 DICE crossing loops in Victoria.

Risk Analysis

ARTC, Pacific National and other operators performed a full risk analysis during the system development phase. Key items addressed included:

- i) Control codes for each end of every crossing loop
- ii) Location of the "Window of Opportunity" for ICAPS control
- iii) Location of the existing colour light Enhancer Repeater at some locations
- iv) Radio Air Protocols
- v) Overall system timing

Use of GPS to select control codes had significant importance. If manual codes were required to be entered, an incorrect code may be the correct address code for another crossing loop.

Radio transmission skip may also occur on the straight flat terrain of the TAR. This could result in the points moving at the wrong location.

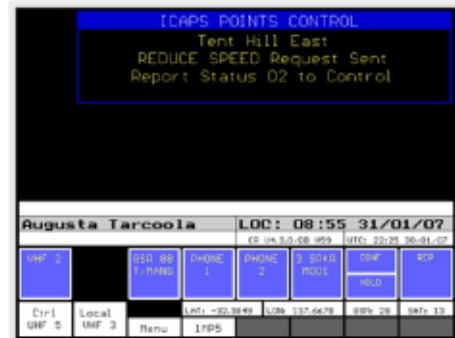
GPS control overcame this risk by presenting the name of the loop to the driver, and automatically and transparently selecting the codes from the computer database.

Locomotive Equipment

The locomotive equipment design included:

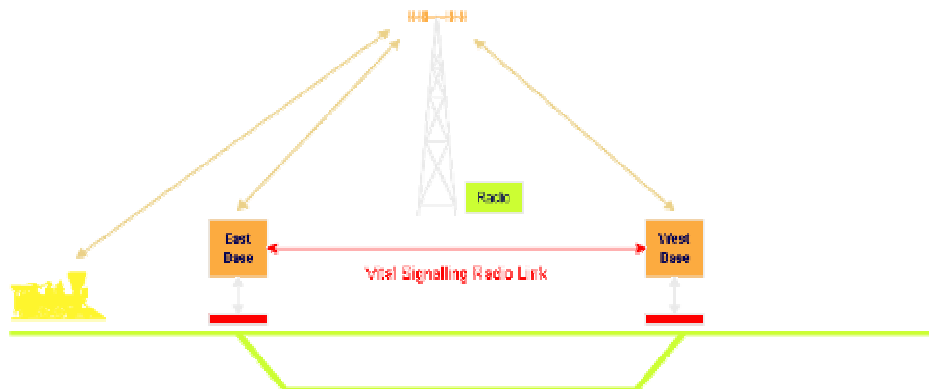
- i) The man-machine interface for the locomotive crew
- ii) A GPS position datum from which to control the points to reverse
- iii) The identification of a "Window of Opportunity" during which, by distance or time, the points control can be initiated

- iv) A lockout of ICAPS functions when the "Window of Opportunity" closes
- v) A lockout of ICAPS if the train takes too long to pass through the window (5 minutes)GPS controlled Security Code for points operation.



"Over Air" Interface & Base Station

The system requires robust communications between the Mobile (locomotive) and Base Stations and allows up to 3 automatic retries. The correct level of security is built into the radio protocols to ensure reliable and safe operation. The system controls interaction with the existing self restoring points and recognises the Fleet and Identity of individual locomotives.



Crossing Loop Radio Installation

The crossing loop infrastructure includes:

- i) The Wayside Hut with radios, solar power and control equipment.

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- ii) The UHF “Yagi” antenna for loop end to end (top) & ICAPS UHF whip antenna (bottom)
- iii) The crossing loop train control radio base station and radio repeater.



ICAPS Operation

The crossing loop default state is for the points to be set for NORMAL and LOCKED for the main line. The enhancer indications are set at Green.

“Window of Opportunity”

ICAPS operation is only available within a “Window of Opportunity”. The window of opportunity is generally between 7.5Km and 5.5Km from the loop ends (facing switches).

The availability of ICAPS control to the driver is database driven and controlled by GPS. Some locations have a window slightly closer to the loop, due to the safe working layout at the location. The name of the approaching location is displayed to the driver.

ICAPS Operation for a Train Cross

Train to Train communications between drivers establishes control of the Crossing Loop and confirms which train will enter the loop. The first train passes the Strike In location (7.5K) and enters the Window of Opportunity. The loop name is displayed to the driver, e.g. *Hesso West – Point Operation Available*.

If no action is taken by the driver before the Strike Out location (5.5K), the points control is removed and the points remain locked for the main line.

Upon entering the window of opportunity:

- i) The driver checks the Train Authority

Ground Based Equipment

The ground based equipment consists of:

- i) NEC Points Controller that allows configuration of the loop end codes
- ii) Radio equipment (Loop End to End and Locomotive Repeater)
- iii) Equipment Hut & Solar Power supply
- iv) Westinghouse Signals Points Machine Vital Interlocking
- v) Mechanical Points Indicator
- vi) Colour Light Enhancer

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- ii) If a meet is to occur, the ICAPS Loop request is sent
- iii) ICAPS displays Confirm Point Operation to which the driver confirms
- iv) The Crossing Loop Enhancer changes to **RED**
- v) A “REDUCE SPEED – Request Sent” is displayed
- vi) 90 seconds after the request, points the set to Reverse, are Locked and the Enhancer changes to **FLASHING YELLOW**

The train moves into the loop at the maximum speed of 35Km/H. The Enhancer shows **RED** when the train occupies the track circuit.

When the train is fully in the loop, the points self restore to the main line and the Enhancer changes to **GREEN**.

The second train passes the Strike In location (7.5Km) and enters the Window of Opportunity – Loop name is displayed, e.g. *Hesso East – Point Operation Available*.

The driver checks the Train Authority and as no action is needed by the driver for the Main Line, the driver can opt to do nothing. The loop control functionality will be automatically removed when the train reaches the Strike Out location (5.5Km).

Alternatively, the driver can dismiss the points command anywhere in the window of opportunity to clear the screen message. As before, the points remain Locked for the Main Line and the Enhancer remains at **GREEN**.

Once the second train has cleared the loop, the first train in the loop uses the push buttons in the enclosure on the equipment housing to reverse the points. The train then exits the crossing loop. The points self restore to the Main Line and lock.

There are two types of ground signalling equipment layouts that have been implemented. The two types are determined by the terrain and the sighting distance of the enhancers. They are:

- i) Standard Crossing Loop
- ii) Crossing Loop with an Enhancer Repeater

Shown below are the Blamey Repeater (western end) and the Crossing Loop (western end) with the loop set for the Main Line.



NR class “AWARE” Locomotives

NR class locomotives currently carry approximately 300kg of communications equipment. Add another radio? There had to be a better way.



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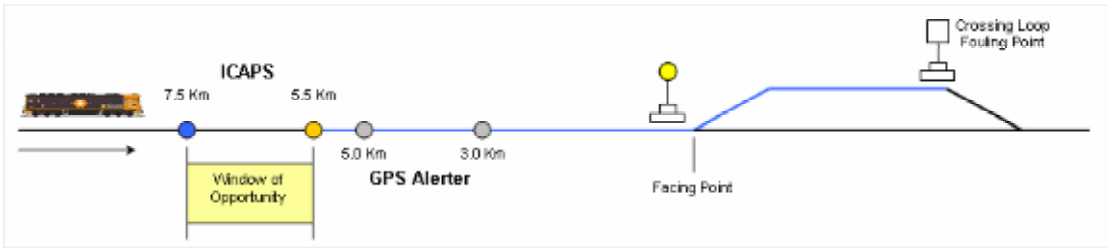
The decision was made to upgrade the existing AWARE software to include the new ICAPS functionality. The decision was made to use the existing 3 radios and share their use with ICAPS.

The third radio is not dedicated to Train Control and Train to Train traffic, but is used to monitor the Train Manager communications on passenger trains. This radio, with modifications, was chosen for use with ICAPS. The modification made is such that in an ICAPS window of opportunity, AWARE monitors the Train Manager channel and when vacant for 5 seconds

changes to ICAPS control. When ICAPS transmissions are complete, the radio automatically reverts back to the Train Manager channel. ICAPS typically takes less than 10 seconds of air time.

AWARE ICAPS & GPS Alerter

AWARE has the additional complication in that it supports the GPS Alerter functionality as well as ICAPS, on the approach to a crossing loop. ICAPS operates between 7.5Km and 5.5Km while the GPS Alerter operates between 5Km and 3 Km.



When ICAPS is set for the Main Line, the GPS Alert is present at both 5Km and 3Km. When ICAPS set for the crossing loop, The GPS Alert is suppressed at 5Km. At 3Km, the GPS alerter is always active.

AWARE ICAPS Operation

The ICAPS Availability is shown at the top of the Drivers screen while in the Window of Opportunity. A “Dismiss” will confirm main line operation and remove the control panel.

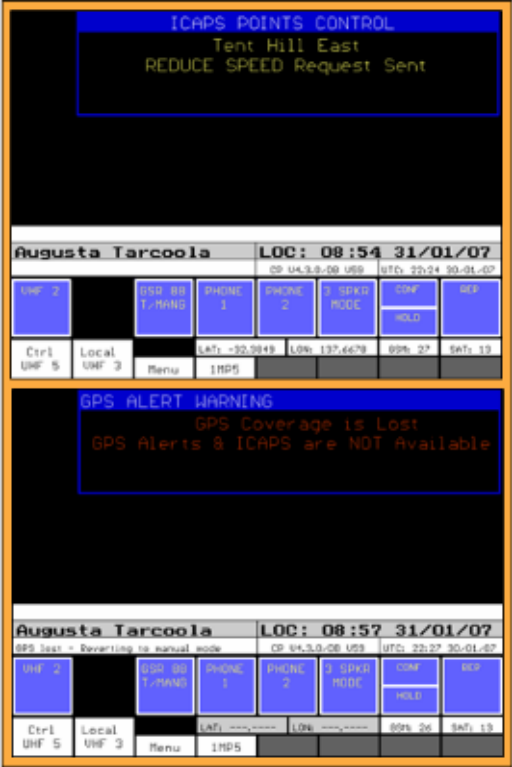
The Co-Driver selects the Loop option, after confirming the train authority with the driver with 2 man crewing. A “Please Wait” indication is displayed while locomotive communicates with ground equipment, taking approximately 3 seconds.



If the AWARE radio is in use by the Train Manager, a “Radio Channel Busy” indication is displayed. The driver may opt to cancel ICAPS operation or wait until the radio is available. When Train Manager channel is idle, AWARE changes to ICAPS radio channel.

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The confirmation for loop indication is displayed and the driver has the option to “Decline” and leave the route set for the main line.

If the loop is required, the main driver selects “Confirm” (2 man crew). An ICAPS message is transmitted to the ground equipment.

Following confirmation of the loop request command, the screen displays “REDUCE SPEED Request Sent”. The route is set to the crossing loop and confirmed to the driver by the “Flashing Yellow” enhancer and Yellow mechanical points indicator. The ground equipment can provide the driver with a Status Report number for a fault at the location should one be detected.

Should a GPS failure occur, no ICAPS or GPS Alerter is available and the train is required to stop at the points and manually set the route.

Entering & Departing a Crossing Loop

A flashing Yellow Enhancer Light and a Yellow Mechanical Points Indicator shows that the points are set for loop entry at 35Km/H.



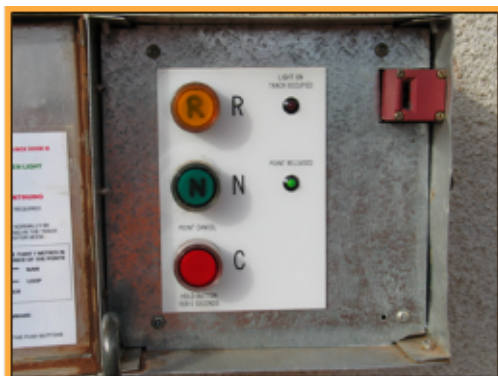
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Photo below shows an approaching train that has the Green Enhancer Light and Green Mechanical Points Indicator set for the main line.



The points are set to Reverse for loop depart using the push button control. A Yellow Mechanical Indicator shows the points are set for the loop.



The points restore to main line after train departs.

ICAPS System Testing

Prototype testing was carried out across the Nullarbor using a HiRail and portable radio equipment.



Demonstration and testing of portable equipment at Tent Hill & Golden Ridge was carried out to gain Rail Regulator Approval.

Testing of ComGroup (Simoco) stand alone locomotive radio system was carried out between Port Augusta and Kalgoorlie.

AWARE Factory Acceptance Testing was carried out in Melbourne NR locomotive Light Engine Field Trials were carried out at Tent Hill and Hesso loops. Full AWARE NR locomotive trials were carried out between Port Augusta and Perth together with the extension of the GPS Alerter between Kalgoorlie and Perth. Next, twenty AWARE NR locomotives were upgraded for extended field trials and driver feedback.

Following commissioning trials from Perth to Adelaide, the fleet was upgraded.

ICAPS Benefits

The benefits of ICAPS include:

- i) Quicker entry into crossing loops with reduced section running times. A typical

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- i) Broken Hill to Crystal Brook
- ii) Crystal Brook to Port Augusta to Whyalla
- iii) Port Augusta to Kalgoorlie
- iv) Kalgoorlie to Perth (recent extension to CTC territory)
- v) Tarcoola to Darwin

GPS Alerter does not interface to the locomotive throttle, braking or vigilance system.

The driver is required to enter the Train Trip number. The AWARE database contains all current train trips. Generic codes are available for special train services. The number is entered using the touch screen.



The Alerter provides a visual alert and single audible “beep” at 5Km from the crossing loop facing points or block location. It provides the Location Name & Track Km for the location. The drivers have to check train authority. No other driver action required at 5Km.

The Alerter provides a visual alert and a triple “beep” at 3Km. The acknowledge button is displayed and flashes Red & Yellow. ACK is required within 10 seconds or an increasing volume alert occurs. The co-driver required to ACK from the second driving console for 2 man crew or the main driver must ACK from primary position for DOO.

The next location alert is displayed between 3Km & 5Km on the departure of the current location. No action is required from the drivers.

ICAPS System Performance

Extended testing using the initial 20 NR class locomotives identified some faults. Software modification was necessary to prevent an “ICAPS Unavailable” indication that was displayed on the loco when the loop was set. There were too many radio ACK’s required between ground and loco equipment.

The AWARE system did not fully capturing ICAPS log files.

Not all faults were “high technology” system faults. Parrots damaged radio antennae and coaxial cables. All radio sites now have stainless steel radio antennas and metal conduit for the coaxial cables.



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Software modification has been implemented on both ground equipment and locomotive communications system.

Project Conclusion

NR AWARE Locomotive upgrades have been completed. 110 units upgraded and fully operational. The remaining 9 units will be upgraded prior to the start of the September 2007 Peak Train Plan.

ComGroup "9030" Based Equipment - 23 Fixed locomotive installations have been supplied with some units combined with train control functionality.

Twelve transportable units, complete with internal 74 volt power supply, have been delivered.

Driver training has been completed. Valuable feedback from drivers was obtained during the trial period. There has been a high driver acceptance of ICAPS.

The benefits of closer crosses and advancing crosses are already being realised.

No figures are available on Fuel Savings at this stage of the project but fuel savings are expected to meet expectations.

ICAPS Project Team

The ICAPS project team consists of:

- i) ARTC - Project management & safe working
- ii) ARTC Services Company - Field installations
- iii) ComGroup Australia - Locomotive equipment
- iv) NEC Australia - Field radio equipment and points controllers
- v) Pacific National - AWARE upgrade, database, project management & system testing
- vi) Westinghouse Rail Systems - Field signalling equipment

Vale Ian McFarlane

Well known railway engineer and identity, Ian McFarlane passed away on 26th August 2007.

Ian has been an active member of RTSA and a valued contributor to its activities. In recognition of his impressive professional career and valuable contribution to the industry, the RTSA awarded Life Membership status of the Railway Technical Society of Australasia in 2006. This made him only the fourth person in the history of the RTSA ever to receive this coveted honour. The RTSA and the railway community will greatly miss Ian, and offers its condolences to Ian's family.

CORE 2008 – Call for Papers

In 2008, the Railway Technical Society of Australasia (RTSA) will be hosting its biennial Conference on Railway Engineering (CORE), a major event on the rail industry calendar. The conference technical committee invites you to submit abstracts of potential papers for consideration.

The conference theme,

RAIL – THE CORE OF INTEGRATED TRANSPORT,

will highlight the successful role of rail in integrated transport systems in both urban travel and freight contexts. The conference theme seeks to put the spotlight on freight and the role of rail as an integral and integrated component of the freight supply chain.

Similarly, in an urban environment, the theme seeks to focus on the success of rail transport when an integrated land use and transport planning approach is adopted.

Full details including submission guidelines and proposed themes are available on the web site

www.core2008.org

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Chairman's Chatter – Duncan McLeod

Our August joint meeting presentation, hosted by the Institution of Railway Signal Engineers, featured a most interesting and innovative development. ICAPS – the In Cab Activated Points System – enables drivers of trains between Port Augusta and Kalgoorlie to set main line points by radio from the cab of the locomotive. This can be done while the train is still some distance away from a crossing loop. Trains can therefore enter a crossing loop at an appropriate speed, without having to first stop for the crew to operate the points.

But at least as significant as the innovative aspects was the way in which a relatively modest investment gave immediate and substantial paybacks, in both train transit times and in fuel savings. Also significant was the manner in which the project was developed in co-operation between operator and track owner, for the benefit of all who use the railway. A real success story.

All too often, the rail industry is accused of being wedded to the past, too conservative, slow to adopt new technologies, etc, etc. And to some extent this is true. Various people who have come into the industry from other backgrounds, or who have been newly exposed to rail, have commented on such initial perceptions.

I believe this apparent conservatism is likely to be partly due to the industry's government heritage. In the past, railways were seen as a public service – one which freight consignors were often required by legislation to use. It is only in relatively recent times that deregulation, privatisation, and exposure to market competition have driven improvements in efficiency, including those resulting from innovation. In addition, I believe that the industry's regulatory regime tends to stifle innovation rather than to promote it. The regulatory process, and the plethora of agencies involved, tend to result in an approach whereby the likelihood of regulatory approval is enhanced by departing as little as possible from past practice.

But more importantly, perhaps it is that the innovation is occurring, but because rail has such a low public profile, the population at large just doesn't know and appreciate how rail is moving forward?

Take the railways in the Pilbara. Aspects such as axle loads, train lengths, and rail management technology are all world class. In heavy haul technology, Australia is right up near the front of the world scene – a leading innovator.

Australia's railway engineering expertise is world class, and not just in heavy haul. We have been exporting our capabilities to many places around the globe, such as to

the urban railways of Hong Kong and Singapore, and now to the Middle East. Our rail contracting and supply industries have clocked up impressive overseas performances, particularly in South East Asia. So ICAPS is just one example of Australian railway innovation and technological development. Albeit a very worthwhile example.

Those involved in the ICAPS project are to be congratulated on its success. It is to be hoped that this success can achieve wider recognition, by entry of the project for one or more engineering awards.

THE OBSERVATION POST – Max Michell

After many years of persistent effort it seems that the proposed Inland route between Melbourne and Brisbane might be on the agenda. The states alone were never going to achieve anything on this particular issue (more on this later) while the Feds were conspicuously silent – at least until recently. Their first overt foray in support of the Inland Route was a substantial study last year which highlighted a number of possible corridors (not routes – that is for later) and the viability of each. Their conclusion was twofold – that the western corridor (inland – hence the name Inland Route) was the preferred location for the new route, and that it was unlikely that the private sector would be interested in building the new line due to the marginal financials and the fact that it (or any serious rail project) is a long lead time prospect which doesn't rate well with the quick return brigade in the financial world.

To the extent that the report's preferred corridor is the same as the one long proposed by the indefatigable Everal Compton and more recently other luminaries such as Vince O'Rourke suggests that the outcome in that regard is probably rather robust. Now the Feds are putting up the where-with-all to do a detailed study, at some considerable cost, to determine the route and refine the costs.

In fact rail track exists between Melbourne and near the Queensland border that would allow a 'poor man's' route to be created at least that far with little more than track upgrading. Some sections of this route are likely to be part of any future route due to their strategic nature while other sections remain as candidates for bypassing with alternate routes, the major reason for which is either traffic potential or avoidance of difficult and indirect alignments.

Between Seymour and somewhere on the Cootamundra – Parkes line is one such candidate while a cut off line between the Coonamble area and the Narrabri area is another. In addition there is a need for a new SG route in Queensland from the border somewhere near Goondiwindi to Toowoomba (probably

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via Millmerran to avoid the circuitous and difficult existing NG route east of Inglewood) and the new line between Toowoomba and Brisbane, probably in dual gauge. The alignment for the latter has largely been reserved except for a critical section between Rosewood and the existing SG line south of Acacia Ridge.

The whole route between Melbourne and Toowoomba runs through productive agricultural land and some substantial coal reserves which are anticipated to generate significant volumes of on line traffic, although the key justification for the line remains through traffic between Melbourne and Brisbane.

Almost inevitably not everyone is happy with the outcome to date. Various proponents in the New England high country continue to argue that the route should be via the original inter-state route between Werris Creek and Warwick (a distance of 485 km and ascending to a summit of almost 1400 metres, with 315 km of track in need of total reconstruction) before then finding a route of between 160 and 200 km of new track to get to Brisbane. It has been pointed out on more than one occasion that for this route to achieve preferred status it would be necessary to have significant on line traffic opportunities that not only exceed the traffic value of the western corridor but also cover the additional operating cost of lifting all traffic over the 1400 metre summit.

A rather different, and in many ways less rational approach has come from no less a personage than an honourable gentleman in Macquarie St. Speaking recently at the Rail Summit the Minister suggested that by passing Sydney, which is the major traffic hub on the east coast, would be foolish and would not solve the freight problems of Sydney (see what I mean about relying on the states to sort things out!). Quite apart from the fact that Sydney is NOT the major traffic generator on the east coast, (assuming the east coast extends beyond NSW) it has been the obtuse obsession of a succession of NSW governments with peak hour passengers, coupled with the complete absence of any interest in extension of the goods lines that has contributed to the political viability of the current Inland route proposal.

The goods lines were established in their current location in the mid 1920's at a time when electric train services were just starting and the centre of gravity of the suburban network was well inboard of the goods line fringes. It was not until well after WW 2 (in fact in the mid 1950's) that the electric network started growing outward, yet in the 50 years since that time not one bit of freight infrastructure has been provided that has been effective in alleviating the creeping cancer of freight curfews.

At the same time electrification has been extended to the rest of N-S-W (that is Newcastle, Sydney, Wollongong not the state of NSW) yet nothing was done there either to provide for passage for freight trains during quite substantial parts of the day. Modern refuge facilities and some critical alignment improvements would have gone a long way to easing the curfew constraints while in some cases improving the journey times for passenger trains.

I well remember one of the Minister's predecessors standing up at Transport Research Forum Conference and giving a keynote speech ranging over transport across the state, which finished up with words along the lines of 'what I really want to see each morning is that the morning trains have been on time'. Not only has that attitude been at the root of some very unfortunate incidents over the years but it has not engendered one nanosecond of real effort to finding an equitable and lasting solution to the Sydney freight issue. As long as the simple and facile takes precedence, then it is hardly unreasonable if the Inland Route starts to look attractive to those who don't live in N-S-W. (come to think of it the Inland Route should gladden the hearts of many inside N-S-W since it would remove some of the impediments to on time train running in the suburban area).

The Minister should perhaps divert his zeal for curfews into placing truck curfews on Sydney roads during peak periods – after all the majority of urban journeys are undertaken by car rather than public transport and trucks are a major hindrance to the free flow of cars at peak times. Or maybe to make a point he should redirect Newell Highway truck traffic (which at present handles the majority of Melbourne – Brisbane freight traffic) through Sydney to display a truly even handed approach.

Fortunately at this stage the issue is mainly words – predictable given the proximity of a Federal election. But should it turn to something more at some later stage there is likely to be a strong and quite stinging response from those not wedded to a 'centre of the universe' philosophy, which would more than likely divert focus and resources from the real issues that Macquarie Street is supposed to deal with.

Clear thinking is a great attribute. Try it!

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Technology Provides Solutions for Level Crossing Safety

The Railway Technical Society of Australasia (RTSA) is calling on the Australian Government to investigate new and emerging technologies for fail-safe protection at railway level crossings.

The RTSA welcomed the decision by the Victorian Government through its Road Safety Committee for the setting up an inquiry into Improving Safety at Level Crossings and to identify existing, new and developing technologies for implementation to improve safety at level crossings.

Along with greater enforcement, public awareness campaigns and a review of signage standards, Governments also needs to commit additional funding to implement new technologies for the active protection of life and property.

RTSA Executive Chairman, Ravi Ravitharan said 'The incidence and severity of accidents at level crossing in recent times is a national transport tragedy.'

"Clearly both the road and rail tasks are rapidly expanding, as Australia meets the challenge of a rapidly growing freight task.

"With the increasing use of larger, longer and heavier trucks, such as B-Doubles and B-Triple trucks, the risk profile of level crossings on our arterial and regional transport corridors appears to be deteriorating.

"The effectiveness of protection measures at level crossings needs to be re-assessed in light of these new freight challenges. The use of new technologies to protect drivers and pedestrians should play a more prominent role in reducing the risk profile," Mr Ravitharan said.

The RTSA is calling on all Australian Governments, to commit additional funds to research cost-effective fail-safe level crossing technologies as part of a coordinated response to the scourge of level crossing accidents.

The RTSA favours a national body responsible for overseeing research into safety of level crossings and

the implementation of technological solutions to improve their safety. Such a national body should bring together scientific experts to review past level crossing accidents and identify the causes of these accidents as well as explore possible technological solutions which would mitigate risks of accidents at level crossings in the future.

How to Properly Place New Employees

(Courtesy RTSA NSW Chapter Newsletter)

Put 400 bricks in a closed room. Put your new employees in the room and close the door. Leave them alone and come back after 6 hours. Then analyze the situation. Place your new employees as follows:

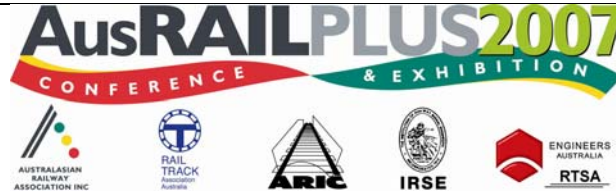
- a) If they are counting the bricks, put them in the Accounting Department.
- b) If they are recounting them, put them in Auditing.
- c) If they have messed up the whole place with the bricks, put them in Engineering.
- d) If they are arranging the bricks in some strange order, put them in Planning.
- e) If they are throwing the bricks at each other, put them in Operations.
- f) If they are sleeping, put them in Security.
- g) If they have broken the bricks into pieces, put them in Information Technology.
- h) If they are sitting idle, put them in Human Resources.
- i) If they say they have tried different combinations, they are looking for more, yet not a brick has been moved, put them in Sales.
- j) If they have already left for the day, put them in Marketing.
- k) If they are staring out of the window, put them in Strategic Planning.
- l) If they are talking to each other, and not a single brick has been moved, congratulate them and put them in Top Management.
- m) Finally, if they have surrounded themselves with bricks in such a way that they can neither be seen nor heard, put them in Government

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4th, 5th & 6th December, 2007 ~ Sydney Convention & Exhibition Centre

AusRAIL PLUS 2007 is *the* comprehensive rail event of the year; it is the largest and most prestigious rail event in the Asia-Pacific region. Held biennially, the previous AusRAIL PLUS attracted over 3000 trade visitors per day to the exhibition and in excess of 800 senior executives and experts to the conference. The official dinners filled to capacity and were a resounding success. AusRAIL PLUS 2007 will be as successful and popular as ever. This year's event includes a three day conference with plenary sessions and technical streams, a major exhibition, exhibitor and product demonstrations, two official dinners, and a delegate and exhibitor networking evening.

AusRAIL PLUS 2007 will give you access to the latest insights into rail policy and will allow you to debate and discuss the direction for rail with the leading influencers in the sector. The conference will feature addresses from:

- The Hon John Watkins, MP, **Deputy Premier, Minister for Transport and Minister for Finance, NSW**
- The Hon Martin Ferguson AM, **MP, Shadow Minister for Transport, Roads and Tourism**
- Phil Reeves **MP, Parliamentary Secretary to the Minister for Transport, Queensland**
- The Hon. Tim Fischer, **Company Director including APT FreightLink**

The CEO's Forum on the second day of the conference is a rare opportunity for you to see the heads of major players in the rail industry together in an open discussion. Bring your questions to the table and find out where these leaders stand and how they are planning for the future. The panel on the CEO's Forum will include:

- Don Telford, CEO, **Pacific National** and COO, **Asciano**
- John Fullerton, CEO, **Freightlink**
- David Marchant, CEO, **ARTC**
- Reece Waldock, CEO, **Public Transport Authority, WA**
- Bill Watson, General Manager, **TransAdelaide**
- John Cleland, CEO, **WestNet Rail**
- Bruce Farrar, CEO, **Rail Infrastructure Corporation**
- David Jackson, CEO, **Toll NZ**
- Rob Barnett, CEO, **V/Line**
- Tony Braxton-Smith, CEO, **Great Southern Railway**
- Stephen Cantwell, Chief Operating Officer, **QR**

The conference includes a wide range of international speakers bringing best practice, new technologies and project updates from around the globe. These include:

- Joanna Gilligan, Programme Manager, Sustainable Development, **Rail Safety & Standards Board, UK**
- Cliff Mackay, President and CEO, **Railway Association of Canada**
- John Samuels, President, **Revenue Variable Engineering, USA**
- Bob J Good, Vice President of Special Projects, **Bombardier Transportation, USA**
- Steve Cox, Director – Technical Development, **Pandrol Rail Fastenings, UK**
- Prof. Peter Winter, Senior Advisor, **SBB Consulting Group, Switzerland**
- Charles Mosimann, Business Development Manager, **Hasler AG, Switzerland**
- Peter Boom, Principal Consultant, **Lloyd's Register Rail Europe BV, The Netherlands**
- Richard Hilldrup, Project Director, **Ansaldo STA, Botswana**
- Rainer Wenty, General Manager Marketing & Technical Sales, **Plasser & Theurer, Austria**
- Hubert Rhomberh, Managing Director, **Rhomberg Group, Austria**
- Dr Wolfgang Schoech, Manager External Affairs, **Speno International SA, Switzerland**
- Alexander Bernhard, Head of Product Marketing, **ABB Switzerland**

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- Paul Cheeseman, Global Technical Director, **Lloyd's Register Rail, UK**

The AusRAIL PLUS 2007 conference offers a full compliment of technical streams organised by the RTAA, IRSE and RTSA, allowing your whole team to benefit from in-depth sessions, case studies and updates specific to their area of expertise. The technical streams include:

Day 1:

- Sleepers and technology
- Rollingstock updates & case studies
- Signalling the next generation
- Innovations in track technology
- Asset management
- Signalling the level crossing

Day 2:

- Track maintenance
- Human & asset management
- Signalling projects & technology
- Track projects of note
- Environment & rail
- Signalling: a changing environment

For general enquiries, to book your place, or for more information about the **AusRAIL PLUS 2007** conference, exhibition or dinners please contact our customer service team on:

- Email: enquiries@informa.com.au
- Telephone: (+61 2) 9080 4307
- Website: www.ausrail.com

MEETINGS FOR 2007

Future Speakers/Dates/Topics				
<u>Date</u>	<u>Speaker</u>	<u>Organisation</u>	<u>Topic</u>	<u>Venue</u>
4/10/2007	Peter Jaehne	Freightlink	Alice Springs-Darwin Railway – Six Years On	Chapman Hall, Engineers Australia - Bagot Street North Adelaide
1/11/2007	Max Shuard		Adelaide Tramline Extensions	Chapman Hall, Engineers Australia - Bagot Street North Adelaide
27/11/2007	Mr Jim Hallion, CEO Dept for Transport, Energy and Infrastructure	RTSA Annual Dinner	Strategic Direction for Railways in SA	Hyde Park Tavern
4-6/12/2007		ARA	AUSRAIL PLUS	Sydney

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KEY RTSA CHAPTER COMMITTEE CONTACTS

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Secretary	Daniel Martucci	08 8204 8213
N/L Despatch	Steve Torok	08 8264 2552
N/L Editor	Stephen Townsend	0400 135 481

Articles or editorial comment for Newsletter are very welcome. We have over 100 members locally some of whom will have stories, events or developments of interest that could be reported in 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.

Send copy to the Editor, Stephen Townsend at st771048@bigpond.net.au or fax to 08 8297 0992.

Electronic despatch of Newsletter is undertaken by Steve Torok – contact Steve on storok@tge.com.au if you have any problems receiving Newsletter electronically or in hard copy. Note that electronic subscribers will get their Newsletters and flyers as soon as the editorial work is done, while the hard copy mail will of course be some days slower.

For all other matters relating to RTSA SA Chapter contact Duncan McLeod (Chairman) at e-mail dmcleod@aapt.net.au, or by phone on 08 8338 7919.

Disclaimer

This Newsletter is a publication of the South Australian Chapter of the RTSA. The opinions expressed within are not necessarily those of the Chapter, Society or Editor.