

# RTSA SA CHAPTER NEWSLETTER

MAY 2010 EDITION



NEXT MEETING

## Joint PWI / RTSA Visit – Dry Creek Railcar Depot

To make way for the new Royal Adelaide Hospital, the existing TransAdelaide railcar depot near Adelaide Railway Station has to be vacated. To allow this, a new railcar depot is being constructed at Dry Creek. The new depot, when completed later this year, will contain railcar maintenance, cleaning, refuelling and stabling facilities.

The construction is proceeding well with most of the buildings and their internal layout readily identifiable and the trackwork well advanced. This site visit will take in most of the site.

### Timetable of Events:

- 3.30pm – Attendees meet in Contractors' Car Park (Map to be provided)
- 3.35pm – Safety Induction and Description of the Project
- 3.50pm – Site Inspection Commences
- 5.15pm – Light Refreshments
- 5.30pm – Depart Site

As the Railcar Depot is a construction site, correct PPE is mandatory. Attendees will be required to wear / bring with them the following items: safety shoes, hard hat, orange vest, safety glasses, long trousers and long sleeves.

Persons without the correct PPE will not be permitted to participate in the inspection.



## TECHNICAL PRESENTATION

**VENUE:**  
Dry Creek Railcar Depot

**DATE:**  
Thursday 3 June 2010

**TIME:**  
3.30pm

Light Refreshments to be provided.

The Railway Technical Society of Australasia (RTSA) - NSW Chapter

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## CHAPTER MEETINGS 2010

### Thursday 1 July

Cairns Tilt Train Accident, Larry Matters, ATSB

### Thursday 5 August

Wheel Profiles - Carolyne Southern (Pacific National) & John Furness (ARTC).

### Thursday 2 September

Joint IRSE, RTSA and PWI Meeting, topic TBC  
Gil Langley Room, Adelaide Oval

### Monday 27 September

Andrew McNaughton, Eminent Speaker CORE 2010  
Eminent Speaker Tour

### Publisher

This newsletter is a publication of the South Australian Chapter of the Railway Technical Society of Australasia. Opinions expressed within are not necessarily those of the Chapter, Society or Editor.

### Contributions

Contributions, including news, opinions, or letters to the editor, are always welcome. Send material by e-mail to [saeditor@rtsa.com.au](mailto:saeditor@rtsa.com.au)

### Continuing Professional Development

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

### RTSA Website

The RTSA website [www.rtsa.com.au](http://www.rtsa.com.au) has details of RTSA activities, including future meetings and reports from past meetings, for all Chapters. Membership information for potential new members and an application form may be found at [www.rtsa.com.au](http://www.rtsa.com.au).

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### Newsletter Dispatch

Despatch of the newsletter is undertaken by Steve Torok. Contact Steve on [storok@tge.com.au](mailto:storok@tge.com.au) if you have any problems receiving this newsletter electronically or in hard copy, or to change your e-mail address.

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## NEWS

### SA Chapter Meeting 6<sup>th</sup> May 2010 – South Road Tram Overpass, Paul Gelston

At the last meeting, Paul Gelston of DTEI gave an interesting presentation on the challenges of constructing the South Road Tram Overpass.

The overpass had to be constructed on an extremely constrained site with the added difficulties of keeping South Road and the trams

running smoothly! Paul highlighted the importance of stakeholder involvement and consultation through all stages of the project.

Further details are contained within Paul's slides at the end of this Newsletter.

## COMING EVENTS

### Core 2010 – Wellington, NZ

Registrations are now open for Core 2010 in September this year. A full conference program, together with the social and partners' program, are available for viewing on the website. Given the staggering number of technical papers submitted for consideration, the final 72 papers selected promise a technical program second to none! Take a look at the website now

<http://www.core2010.org.nz/> for more information and get booking!

### AusRAIL 2010 – 23-25<sup>th</sup> November, Perth

This year AusRAIL will focus upon taking the industry forward through innovation, modernisation and technology leadership. To find out more see the website [www.ausrail.com](http://www.ausrail.com)

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## CHAIRMAN'S CHATTER

### Chartered Status

Plans are afoot for a treat or two. One is a presentation of the RTSA's Professional Development Assessment Program by its Subcommittee Chair, former Executive Chair Ravi Ravitharan. Instituted two years ago with Engineers Australia (EA), Ravi was able to initiate a useful program - with particular advantages for those members not employed by organisations that are part of an EA-recognised Professional Development Program, which normally offer relevant support, guidance and mentoring. In this case, the RTSA is that organisation - the only industry body, rather than commercial entity, to be thus recognised.

Membership of EA itself is not required for all but the optional final step: a final interview by the EA panel to consider conferring status as a Chartered Professional Engineer (CPEng). For younger engineers seeking professional development and recognition of skills, this should be of interest.

### One B-Double on the M1 every 100 seconds?

Recently, in demonstrating the importance of the interstate mainline between Melbourne and Adelaide, I derived an interesting little soundbite from statistics in the publication *Australian rail freight performance indicators 2007-08*<sup>1</sup>. This document accumulated volumes of intermodal and steel rail traffic, based on data provided by infrastructure managers. Between Melbourne and Adelaide, 86 trains per week were counted - *more than any other mainline freight rail corridor*

<sup>1</sup> Bureau of Infrastructure, Transport and Regional Economics

*in Australia.* The next busiest was between Port Augusta and Crystal Brook (83), then between Sydney and Cootamundra (80).

BITRE figures are a sound yardstick, so this isn't a bad effort for a segment dominated by a hilly, one-way, c1880s alignment competing against a modern eight-lane and bi-directional freeway!

But the soundbite really related to what this volume of rail freight traffic actually means. These trains have a maximum length of 1,500m, with a typical consist of about 70 standard flat- or well-wagons - each capable of carrying three twenty-foot equivalent units (TEUs). With 86 such trains a week this represents the movement over 18,000 TEUs; spread evenly, this amounts to a fully-loaded B-Double every 100 seconds!

Of course this is a simplistic derivation, but it does help to visualise the scale of what could be on the Southeast Freeway and Adelaide's urban road freight routes if the railway didn't exist.

The corollary to this is also what could happen if the railway was closed, perhaps on the assumption that all this freight can bypass Adelaide. Other data<sup>2</sup> reveals this assumption to be false: between half and three-quarters of the tonnage involved is destined for, or originates in, our fair city. **Daniel Martucci – Chair, RTSA SA**

<sup>2</sup> BTRE Information Paper 59 "Australian Rail Freight Performance Indicators 2005/ 6" Table A.11 Page 44; Adelaide Rail Freight Movements Study Discussion Paper, Department of Infrastructure, Transport, Regional Development & Local Government, Page 6.

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## April RTSA Presentation – South Road Tram Overpass

**South Road Upgrade  
Glenelg Tram Overpass Project**

Institution of Engineers  
Railway Technical Society of Australia

Paul Gelston – Project Director  
May 2010

Government of South Australia  
Department for Transport,  
Energy and Infrastructure

### The Big Picture

- Release of "Strategic Infrastructure Plan for South Australia" 2005
- Four priorities
  - Port of Adelaide
  - Public transport investment
  - Regional Freight corridors
  - Upgrade North South corridor
- Create a 'non stop' North South corridor between Port River Expressway and Southern Expressway
- Works underway
  - Gallipoli Underpass (\$117.9m)
  - Tram Overpass project (\$32m)

Infrastructure that creates prosperity.



### Tram Overpass - Project drivers

- *Keep South Road moving*
- *Keep the trams moving*
- *Deliver 'on time' and within budget*
- *Deliver good urban design outcomes*
- *Provide noise mitigation*
- *Ensure a pedestrian friendly space*
- *Good bus/tram connections*
- *Cater for pedestrians and cyclists across South Road*

Infrastructure that creates prosperity.



### Tram Overpass project

- 'Design and construct' delivery model
  - Reference design
  - Specification
  - Four span structure
- Constrained project site
  - Local streets on three quadrants
  - Significant trees
  - Stormwater main
  - Adjacent residential properties – shift workers
- Project constraint - 2 tracks
  - examined single track operation

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### Glenelg Tram Overpass



### Issues along the way!

- A road or a rail project?
  - What construction expertise do we need?
- A 'risk based' approach to tender evaluation
  - what level of risk represents a 'show stopper'
- Impact of the project on local street network
- Impacted by traffic disruption associated with Gallipoli Underpass

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## Construction Issues along the way!

- a safe temporary road crossing at South Road
- maintaining stormwater services along the corridor
- installation of 42 precast beams over three weekends – trams shut down, alternate bus services in place
- complexity of programming works in narrow windows several weeks in advance
- Difficulty in programming works at night in residential areas
  - rail work is generally noisy – ask the residents!

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## Glenelg Tram Overpass



## Construction issues along the way!

- a smooth rail vertical alignment over an 8 span bridge structure with precast concrete beams
- a consistent 235mm between top of rail and platform surface where platform and tracks are on separate beams with different loading arrangements
- Use of 2<sup>nd</sup> hand rail for temp track - difficulty in welding
- Dust and vibration management
- Property condition surveys – project gets blamed for every crack!

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## Construction issues along the way!

- Other engineering/technical
  - Ensuring safe working practices
  - Working in traffic, speed limits and enforcement
  - Crane operations – overhead clearances
  - Track protection requirements
  - Trained operators eg track welders for grooved rail
  - Fatigue and Alcohol

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## Issues along the way!

The importance of good urban design

- A finished project that is functional and looks good
- An expectation of 'public art'
- Graffiti management challenges
- CCTV provision - 16 cameras
- Safety and security – throw screens
- CPTED principles
- Landscaping schemes
- Tree removals along the corridor and clearances to overheads, Impacts on tree stability

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## Glenelg Tram Overpass



## Issues along the way!

Use of the tram corridor as a recreational facility:-

- Mike Turtur Bikeway
- Complements other projects along corridor
- Extent of fencing between bike track and tram tracks
- Impact on trees along the corridor
- Expectation for extra crossing points along the track
- Overlooking concerns

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## What did we learn!

- A need for plenty of contingency in planning milestone activities
- The importance of informing and engaging with community
  - Can't do too much!
- First project under Rail Commissioner's Safety Management System
  - Improved interface plans
  - Enhanced project management processes for rail projects taken forward into other projects
- Competition between projects for resources ranging from rail expertise, steel fixers, concrete supply etc

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## Where are we up to?

- Construction completed
- Handover processes underway
- Defect remedy underway
- Continuing to manage community issues

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