



NEXT CHAPTER MEETING:

**Thursday 5 March 2009 – helping to prevent this ...**



### **Non-destructive Measurement of Neutral Temperature in Rails**

*by*

**Max Shuard and Duncan McLeod**

The risk of track buckling can be mitigated by ensuring that the neutral temperature of continuously welded rail is within an acceptable range.

The presentation will set the scene with an explanation of the concepts involved, and outline recent developments that enable the neutral temperature of welded rail to be measured non-destructively. Currently available devices, and new concepts undergoing development, will be described.

**Venue: Engineering House, 11 Bagot Street, North Adelaide**

**Light refreshments from 5:30 pm, meeting commences 6:10 pm**

## Contents

Chapter Meetings.....	2
News .....	2
Coming Events.....	3
Chairman's Chatter .....	3
Trams, Trains, and Tramtrains.....	4

### Publisher

This newsletter is a publication of the South Australian Chapter of the Railway Technical Society of Australasia, Engineering House, 11 Bagot Street, North Adelaide SA 5006.

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 [sa-editor@rtsa.com.au](mailto:sa-editor@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

Dispatch 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 newsletter electronically or in hard copy, or change your e-mail address.

## Chapter Meetings

### Thursday 5 March 2009

Chapter meeting, 11 Bagot St North Adelaide – Non-destructive measurement of neutral temperature in rails, by Max Shuard and Duncan McLeod – see Page 1.

### Thursday 2 April 2009

Chapter lunch meeting hosted by PWI, at ARTC offices, Mile End – new ultrasonic rail flaw detection contract for ARTC.

### Thursday 7 May 2009

Chapter meeting, 11 Bagot St North Adelaide – Improved turnout technologies + update on Australian track materials standards.

### Thursday 4 June 2009

Chapter meeting, 11 Bagot St North Adelaide – Rail maintenance developments in the Pilbara.

### Thursday 2 July 2009

Chapter meeting, 11 Bagot St North Adelaide – Belair line upgrade, by Philip Agnew.

### Thursday 6 August 2009

Chapter meeting, 11 Bagot St North Adelaide, with joint Mechanical Groups.

### Thursday 3 September 2009

Chapter meeting, hosted by IRSE.

### Thursday 1 October 2009

Chapter meeting, 11 Bagot St North Adelaide – ARTC network enhancement investment update.

### Thursday 5 November 2009

Chapter meeting, 11 Bagot St North Adelaide.

### Tuesday 24 November 2009

Annual dinner meeting + AGM.

## News

### New Editor Appointed

The Chapter committee is pleased to announce that **Lucie Mitchell** has been co-opted onto the committee as newsletter editor. Contact details are on this page.

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## Coming Events

### IRSE Convention

The Institution of Railway Signal Engineers is holding a Technical Meeting "Controlling Railways – Australia's Next Generation Systems" in Adelaide on 3 – 5 April 2009.

Full details can be obtained from Malcolm Menadue: mmenadue@internode.on.net.

Details will be advised in the newsletter as they become available.

### CORE 2010

RTSA's biennial Conference on Railway Engineering, CORE 2010, will be held in Wellington, NZ on 12 – 15 September 2010.

Conference theme is "Rail – Rejuvenation & Renaissance". Details are becoming available on [www.core2010.org.nz](http://www.core2010.org.nz).

### Study Tour on Railway Engineering

The NSW Chapter is planning a Study Tour on Railway Engineering (STORE) to Asia, tentatively in September/October 2009.

## Chairman's Chatter

The presentation by Daniel Martucci at our February meeting, outlining developments in European urban transport, contained much of interest.

Of particular note was the way in which cities with populations similar to Adelaide (i.e. around 1 million) tend to have developed their public transport infrastructure to a much greater extent than in Australia. No doubt higher population densities, generous availability of dedicated corridors, and focus on service to passengers have all assisted in this regard.

It is interesting to observe how, historically, European developments and technologies have had relatively little impact on the Australian scene.

Railways in Australia were, in their formative years, largely modelled on British practices (as in Victoria, particularly, and New South Wales), or on America (as in South Australia). And, through some quirk of history, a peculiar gauge from Ireland was adopted by two States. Very little came from Europe.

However, in more recent times, European technology has come to the fore, particularly for trams. This is partly a reflection of globalization, where rolling stock manufacturers offer a suite of designs worldwide, with a minimum of customization for specific markets. Many of these originate from European concepts.

As an exception to the historical trend, Adelaide achieved prominence in the urban transport field two or three decades ago, by adopting European O-Bahn technology for its guided busway. This continues to operate successfully. There was considerable interest in Adelaide's use of this concept, with many visits by other interested parties, and even a local conference specifically devoted to the subject.

It is not through any lack of success in our local environment that the O-Bahn technology has unfortunately seen limited new installations outside Germany, where the idea originated.

At the time the O-Bahn was introduced, there would no doubt have been considerable controversy, and skepticism that a locally un-tried technology was appropriate, or would work. Some Chapter members were probably involved at the time.

Unfortunately, with the introduction of restrictive legislation, standards, regulations, and regulators, new technological initiatives seem to be harder to implement today than they were a generation ago.

But, with the investment and focus on Adelaide's urban transport, perhaps it's again time for some bold steps forward by adopting leading edge technology?

**Duncan McLeod**

# Trams, Trains, and Tramtrains

## Inspirations from European transport infrastructure

*Highlights from a presentation to the February 2009 Chapter meeting by Daniel Martucci, Transport Planning Division, Department for Transport, Energy & Infrastructure.*



A high standard of amenity is provided in vehicles (Deutsche Bahn 280 km/h ICE train)



Comprehensive passenger information is widely available (Alstom Citadis tramtrain, Kassel)



Rolling stock typically has straight sides. Plug doors optimise the provision of windows (S-bahn, Frankfurt)



On double deck cars, the entry and lower saloon are typically at platform level (regional service, Kassel)



Articulated railcar sets reduce overall train weight and length ...



Standards for platform gaps and step heights appear to be less rigorous than in Australia (Alstom Cidatis tramtrain, Kassel)



in comparison to conventionally coupled vehicles (Alstom Lirex at Salzgitter plant)



Complex step mechanisms accommodate platforms of differing heights – top deck removed for photo, a movable step extends and lowers for low platforms (Hanover tram network)



Modern tram designs achieve very low floors (Vienna)



Urban corridors are typically very wide and are used for infrastructure of economical size (Karlsruhe)



The German solution for dual running – a mixed profile tramtrain wheel – standard rail wheel back-to-back, with a wider section for tramway running towards the tip of the flange (Karlsruhe).



A standard raised check rail on German railways, 20 mm – 40 mm above running surface (Karlsruhe)



Cycling is oriented towards commuting and city transport rather than recreation (Deutsche Bahn pool)



Many stations provide a significant presence in the city and cater well for the integration of buses, trams, local rail, intercity rail, and even freight, and are often large commercial centres in their own right (Salzburg)



However, as in Australia, there are social problems (Frankfurt area)