

NEWSLETTER No 6/2003



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

JULY 2003

NEXT MEETING

**THURSDAY 7th AUGUST AT BAGOT ST, NORTH
ADELAIDE - Starting at 17:30**

**RENEWAL OF TRANSADELAIDE'S CONTROL
SYSTEM**

GEORGE ERDOS and ALISTAIR MORRISON

The Adelaide metro control system is a sophisticated system operated entirely from a central control in Adelaide. It was well ahead of most other Oz metro systems (except possibly Brisbane) in this regard, and is memorable as far as travellers are concerned for the cheery 'ting' of the transponder driven automatic warning system as the railcars pass signals along the way.

Time catches up with all things and TransAdelaide are now in the position of having to replace their control system with a new one. Why you ask? Well that is something that will be revealed to those who are in attendance next Thursday evening. Much more of course will also be revealed, more or less following through the following key topics for the replacement process:

- The current situation and the history as to why the existing system needs to be replaced,
- The expectations and requirements of the various stakeholders of the proposed systems,
- The proposed solution for the various CTC functions,
- Support services including maintenance and diagnostic facilities.
- How the new system will be implemented with minimal effect on train operations or related services.

This paper will look at various problems and risks and the methods used to mitigate the affects.

Presenters will be our own George Erdos and Alistair Morrison of Alstom. George is *Manager Safety and Technical Services for TransAdelaide*, and is a Chartered Professional Electrical Engineer by discipline. He commenced employment with the South Australian Railways in 1973 and has worked extensively within the rail industry since then. He is a specialist in Railway Signal Engineering and Rail Infrastructure Management and has held senior management and executive positions

since 1978. He is the State's nominated Rail Safety Investigator.

Alistair is an Electronics Engineer specialising in Micro Electronics and Programming – System Design. He is the National Sales and Business Development Manager with Alstom. He had had twenty years experience in railway signalling on electronic based signalling, specialising in BR SSI systems, digital input/output systems, telemetry systems and communication. Three and a half years was involved with military radar systems.

JUNE MEETING

The July meeting was a double header, with a presentation by the Two Waynes (Wayne Potter and Wayne Londema) on their winning RTSA student thesis award for 2003 on the subject of "The Influence of Vegetation on Rail Track Stability Along the Adelaide to Melbourne Corridor", followed by Ron Stewien who gave us an entertaining overview of two notable SAR engineers who were around 150 years older than our first presenters.

The two Waynes project was a Rail CRC project that was supported by ARTC and set out to prove a hypothesis that the presence of vegetation assists in soil stability in areas of expansive clay soils with high moisture content.

The clayey soils of the Wimmera have for a long time presented problems of track formation stability (and road formation as well judging from parts of the Western Highway) and for many years kept line speeds below those elsewhere on the main Western line.

The presentation went into some detail of how two sites at Horsham and Miram in western Victoria were selected and tested. At each site two locations, one vegetated and one non vegetated, were identified and used as the basis of comparative tests.

It was concluded that, in the areas examined, the moisture content in the track formation where trees existed up to 10 metres from the track was lower than at un-vegetated sites. The project will be extended to look at the impact during wet and dry seasons.

There were two enlightening points that were evident from this particular project –

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The CRC projects are beginning to produce real world solutions to some of the long running technical issues associated with good track and,

It is encouraging to see that ARTC not only sponsored this project but have also nurtured one of the Waynes, both during and after this project, in what is probably the 21st century equivalent of the apprentice or cadet system of 50 years ago.

Ron Stewien gave us a presentation on the SAR careers of engineers Henry Mais and William Thow. The former was the Engineer in Chief for South Australia from 1868, following time with the Sydney Railway Company, construction of the Bendigo line and Manger of the Melbourne Suburban and Brighton Railway. Between 1875 and 1888 he was the Chief Engineer of SAR and as such was responsible for all Mechanical activities despite being a trained Civil engineer (this seems to have been a common situation with many of the then colonial railways in Australia). Thow was appointed Locomotive Superintendent of the SAR in 1876 from England at the ripe old age of 34 years. Almost from the start he came into conflict with Mais, and in 1879 he asked the Commissioner of Public Work to separate the Mechanical Department from the control of the Civil Engineer (Mais). These two had already come into conflict over the sourcing of locomotives, Mais being in favour of American designs against Thow's avowed belief in English designs, the outcome of which was the importation of 4 broad gauge and 8 narrow gauge Baldwin built locomotives ordered by Mais just days before Thow's functional separation proposal came into being.

Ron went into some detail of the rather unfortunate series of events on the opening day of the Nairne railway, when one of the Baldwin ten wheelers (O class) disgraced itself en route a seriously delayed the whole days events. The more interesting aspect was the revelations about poor and non existent communications within and between the Traffic and Mechanical people, which in many ways was more to blame than the particular loco failure.

Thow's most notable achievements in SA were introduction of the BG 'R' class (precursor to the Rx class which survived to the end of steam in SA and can still be seen on the Goolwa – Victor Harbor Railway) and the NG 'Y' class which in the end was to be found in limited numbers on all other NG rail systems in the country at one time or another. He also reorganized the running sheds and repair facilities such that the average cost per train mile for locos and rolling stock fell from

33.91 pence/mile before his arrival to 22.12 pence/mile after he was in charge of the Mechanical department

Thow left the SAR in 1888 and went to NSW where he made a notable mark with introduction of the 32 and 50 classes of 'standard' locomotives that also saw out the life of steam on that railway.

The issue of American or English design (and the more subtle issue of the practices that lay behind that rather simple segregation) is one that may have changed the way that the 19th century colonial railways developed. The Narrow Gauge railways in Queensland and Western Australia certainly seem to have adopted some American design practices much earlier than the big gauge railways. The revolution wrought by Webb in the 1920's with introduction of American 'design' (but British built) locomotives, with wagons, railcars and signaling also inspired by his home country almost certainly saved the SAR from financial collapse during the depression and left SAR with a legacy that saw it manage inflated WW2 traffic more easily than any other railway. Perhaps there is another presentation (or more likely debate) coming up about 'what might have been'?

FUTURE MEETINGS

The next meetings will be on **Thur 4th September** and **Thursday 2nd October**.

The AustRail Plus 2003 conference will be in Sydney over the period Mon 17th Nov to Wed 19th Nov, while locally our RTSA Chapter is planning another of our 'Dinner/AGM's' for late November.

The 2004 program will start on Thursday evening 5th February.

CORE 2004 will be in Darwin from 20th to 24th June and promises to be a highlight of the railway year. For those who like to get in early you can book flights up to 355 days in advance, so bookings are open for flights suitable for the CORE2004 conference now. Cheap fares and Frequent Flyer flights are sure to go quickly once the CORE2004 bookings are opened so think about getting in early and saving the dollars.

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SA TRANSPORT PLAN

The SA Draft Transport Plan which was open for comment until the end of July is now open until mid August. I know some members have responded to the Plan and RTSA has put in a 'national' submission. A local RTSA submission is also in preparation.

Further information is available from www.dtup.sa.gov.au or by phoning 1800 020 999.

Please try and put in your personal to the draft plan, however brief it may be.

DARWIN PROGRESS

The Darwin Railway is rapidly coming to a conclusion. Tracklaying had reached to within approximately 140 km of both Darwin and Alice Springs by the end of June and by now should be less than 100 km from each. Almost all the aril has been delivered (the last train from Whyalla is this month) and sleeper manufacture should reach the target of 2 million this month also.

Plans are being made for the first Darwin freight train to depart Adelaide late morning on Thur 15th January 2004, arriving at Darwin in the afternoon of Sat 17th Jan. Scheduled services will start with the Friday evening (16th) departure from Adelaide and Monday morning (19th) departure from Darwin.

The first Ghan will head north from Adelaide around midday on Sun 1st Feb to arrive at Darwin two days later. Scheduled Ghan services will start on the following Sunday (8th Feb).

NEWSLETTER DESPATCH

The majority of SA RTSA Chapter members receive their newsletter by e-mail. Every so often the e-mail will bounce (in effect the electronic equivalent of 'address unknown'). In these cases the member will automatically revert to hard copy mailing until a new e-mail address is advised. The main issue here is to let Malcolm Menadue know IN ADVANCE of any e-mail address change so that you don't fall on hard (copy) times. Please also advise if you would rather receive via e-mail instead of hardcopy post.

In all cases let Malcolm Menadue know at mmenadue@ozemail.com.au

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Articles or editorial comment for Newsletter are more than welcome. Between well over 100 members locally there must be some stories, events or developments of interest that could be the basis of an interesting article in Newsletter. After all part of the function of RTSA is to keep members in touch with what is going on in the industry and with each other.

Send copy to the Editor, Max Michell at samrom@bigpond.com or fax to 08 8390 3772

CONTINUING PROFESSIONAL DEVELOPMENT

Those of you who are members of I of E (i.e. are professional engineers) should be aware that attendance at RTSA meetings can be counted toward your CPD requirements. The most convenient way to record this will be in your professional dairy or similar form. A short paper covering CPD in some detail is available from Malcolm Menadue or Max Michell.